

**ORDINANCE 2019 –
AN ORDINANCE OF THE COCONINO COUNTY, ARIZONA
BOARD OF SUPERVISORS ADOPTING THE
INTERNATIONAL BUILDING CODE
INTERNATIONAL RESIDENTIAL CODE
INTERNATIONAL MECHANICAL CODE
INTERNATIONAL FUEL GAS CODE
INTERNATIONAL PLUMBING CODE
INTERNATIONAL ENERGY CONSERVATION CODE
INTERNATIONAL EXISTING BUILDING CODE
AND THE NATIONAL ELECTRICAL CODE**

AN ORDINANCE, ADOPTED PURSUANT TO A.R.S. 11-861, REGULATING THE QUALITY, TYPE OF MATERIAL AND WORKMANSHIP OF ALL ASPECTS OF CONSTRUCTION OF BUILDINGS OR STRUCTURES, PROVIDING FOR THE ISSUANCE OF PERMITS AND COLLECTION OF FEES THEREFORE, PROVIDING PENALTIES FOR VIOLATIONS, AND ESTABLISHING A BUILDING AND SAFETY ADVISORY BOARD.

SECTION 1. The Board of Supervisors hereby adopts, by reference, the following Codes: 2018 Editions, published by the International Code Council,

2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL RESIDENTIAL CODE
2018 INTERNATIONAL MECHANICAL CODE
2018 INTERNATIONAL FUEL GAS CODE
2018 INTERNATIONAL PLUMBING CODE
2018 INTERNATIONAL ENERGY CONSERVATION CODE
2018 INTERNATIONAL EXISTING BUILDING CODE
2018 INTERNATIONAL SWIMMING POOL AND SPA CODE

AND

The 2017 Edition of the NATIONAL ELECTRICAL CODE, published by the National Fire Protection Agency.

Amendments are listed in Section 10. Three (3) copies of the Ordinance and incorporated Codes are on file with the Clerk of the Board of Supervisors.

SECTION 2. Ordinance No. 2014-07, adopting the 2012 Editions of the International Building Codes and the 2011 National Electrical Code is hereby repealed.

SECTION 3. These Codes shall apply to the unincorporated area of Coconino County, excluding State and Federal Lands, including but not limited to, Indian Reservations unless an Intergovernmental Agreement (IGA) exists for Building Code Administration.

SECTION 4. This Ordinance and the incorporated Codes shall be administered by the Coconino County Department of Community Development. The administrator shall be the Building Official.

SECTION 5. It shall be unlawful to erect, construct, alter, extend, repair, move, demolish, convert, or occupy any building or structure covered by the Ordinance contrary to or in violation of any provisions of these Codes. Except as provided in A.R.S. § 11-322, any person, firm, or corporation violating any of the provisions of this Ordinance or these incorporated Codes, is guilty of a class 2 misdemeanor. Pursuant to A.R.S. § 11-322, any person, firm, or corporation who fails to obtain a building permit where one is required is guilty of a petty offense. Violations may be punished by imposing civil penalties, which shall not exceed the amount of a maximum fine for a class 2 misdemeanor pursuant to A.R.S. § 13-802 & 13-803. Each day during which the violation continues is a separate violation. Fines shall not exceed \$750 per violation per day for individuals, and \$10,000 per violation per day for enterprises. In addition to civil or criminal penalties and any other remedies provided by law, the County may institute injunction, abatement or any other appropriate action or proceedings to prevent, abate, or remove the unlawful violation.

SECTION 6. If any section, subsection, sentence, or phrase of this Ordinance is held to be invalid or unconstitutional, such decision shall not affect the validity of the remainder of the Ordinance. The Board of Supervisors hereby declares that it would have adopted this Ordinance and each section, subsection, sentence, or phrase irrespective of the fact that any one or more section, subsection, sentence, or phrase is declared invalid or unconstitutional.

SECTION 7. Pursuant to A.R.S. 11-862, there shall be a Building and Safety Advisory Board to determine the suitability of alternative materials and construction, to permit interpretations of the provisions of the Code, and to hear appeals and grant waivers to the Codes. There shall be at least one member from each of the following categories; Licensed Architect, Professional Engineer, Licensed General Contractor, representative of the Electrical, Plumbing or Mechanical Trade, and a representative of the Public. The Building Official shall serve as a non-voting, ex-officio member and shall act as Secretary to the Board.

SECTION 8. This Ordinance does not supersede any other applicable adopted code or ordinance. Where any provision of the Building Code conflicts with any other applicable code or ordinance, the more restrictive shall apply.

SECTION 9. The Board of Supervisors shall, in a separate action, establish fees for building permits, plan review, and inspections.

SECTION 10. The Board of Supervisors hereby adopts the following amendments to the International Codes.

PART I: 2018 INTERNATIONAL BUILDING CODE (IBC)

SECTION 101 GENERAL

101.1 Title.

These regulations shall be known as the *Building Code* of Coconino County, hereinafter referred to as “this code.”

101.2.1 APPENDICES. The following Appendices are hereby adopted as part of the IBC:

- Appendix C: Group U Agricultural Buildings
- Appendix H: Signs
- Appendix J: Grading
- Appendix N: Replicable Buildings

SECTION 113 BOARD OF APPEALS

Change: Building and Safety Advisory Board

113.1 General.

Change Text: In order to hear and decide appeals of orders, decisions or determinations made by the building official relative to the application and interpretation of this code, there shall be and is hereby created a building and safety advisory board. The board shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business.

Delete: Section 113.3 Qualifications.

SECTION 114 VIOLATIONS

Delete: Entire Section

SECTION 302.1 OCCUPANCY CLASSIFICATION AND USE DESIGNATION.

8. Residential (see Section 310): Groups R-1, R-2, R-3 and R-4.

Add: R-5

SECTION 310 RESIDENTIAL GROUP R

Add: 310.6 Residential Group R-5

Residential Group R-5 containing dwelling units where the occupants are primarily transient in nature; and not classified as Group R-1, R-2, R-4 or I occupancies which includes:

- Detached Cabins or similar structures 600SF or less with 10 or fewer occupants
- Group R-5 structures must comply with Fire-Separation Distances per IBC Section 602
- Group R-5 occupancies may be considered R-3 occupancies and regulated by the Residential Code
- Group R-5 Dwelling Units shall comply with the applicable provision of IBC Chapter 11 Accessibility

CHAPTER 11 ACCESSIBILITY

SECTION 1101.1 SCOPE

Add: § A.R.S. 41-1492 through 41-1492-12

SECTION 1505 FIRE CLASSIFICATION

Delete: Section 1505.4 Class C roof assemblies.

Delete: Section 1505.5 Non-classified roofing.

SECTION 1608 SNOW LOADS
FIGURE 1608.2

Coconino County Ground Snow Loads are established through a Case Study (CS) and references the “Ground Snow Load Case Study for Coconino County” prepared by Northern Arizona University (NAU).

SECTION 2308 CONVENTIONAL LIGHT-FRAME CONSTRUCTION

SECTION 2308.1 GENERAL.

Add: The Western Lumber Span Tables for Floor and Ceiling Joists and Roof Rafters is adopted as a secondary reference to Table 230.4.1.1(1) through Table 2308.4.2.1(2).

PART II: 2018 INTERNATIONAL RESIDENTIAL CODE (IRC)

SECTION R101 GENERAL

R101.1 Title.

These provisions shall be known as the *Residential Code for One- and Two-family Dwellings of Coconino County*, and shall be cited as such and will be referred to herein as “this code.”

R102.5 APPENDICES. The following Appendices are hereby adopted as part of the IRC:

Appendix Q: Tiny Houses, as amended
Appendix R: Light Straw-Clay Construction
Appendix S: Straw Bale Construction
Appendix T: Solar-Ready Provisions

R105.2 WORK EXEMPT FROM PERMIT

Building:

Add: 11. One-story detached agricultural hoop greenhouses

SECTION R112 BOARD OF APPEALS

Change: Building and Safety Advisory Board

R112.1 General.

Change Text: In order to hear and decide appeals of orders, decisions or determinations made by the *building official* relative to the application and interpretation of this code, there shall be and is hereby created a building and safety advisory board. The *building official* shall be an ex officio member of said board but shall not have a vote on any matter before the board. The board shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business, and shall render decisions and findings in writing to the appellant with a duplicate copy to the *building official*.

Delete: Section R112.3 Qualifications.

SECTION R113 VIOLATIONS

Delete: Entire Section

R202 DEFINITIONS

Add: Greenhouse. A structure such as a hoop greenhouse that is limited to one-story with a maximum wall height of 8 feet and an overall height of 15 feet.

Table 301.2 (1) CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

Amend Table as follows:

Ground Snow Load	Climate Zone			Wind Design				Seismic Design Category	Subject to Damage from			Winter Design Temp (°F)	Ice Barrier Underlay- ment Required	Flood Harards	Air Freezing Index (°F)	Mean Annual Temp (°F)
	Elevation (ft)	Climate Dsignation	Climate Zone	Ultimate Design Speed (mph)	Topogra- phic Effects	Special Wind Region	Windborne Debris Zone		Weathering	Frost Line Depth (in)	Termite					
See Snow Load Study	3000 to 4500	Warm-Dry	3B	115	No	No ^a	No	C	Moderate	12		25	No			59
	4500 to 5700	Mixed-Dry	4B	115	No	No ^a	No	C	Moderate	24	Moderate	15	Yes	Contact CD	Less	55
	5700 to 7100	Cool-Dry	5B	115	No	No ^a	No	C	Moderate	30	to Heavy	4	Yes	Engineering	Than	46
	7100 to 8500	Cold-Dry	6B	115	No	No ^a	No	C	Moderate	30		-5	Yes		1500	43
a. There is a Special Wind Region that follows the Little Colorado River valley.																

Delete: Manual J Design Criteria from the Table

SECTION R302 FIRE-RESISTANT CONSTRUCTION

R302.13 Fire protection of floors.

Exceptions:

Add: 5. Floor assemblies located directly over crawl spaces with fuel-fired or electric-powered heating appliances where the maximum distance from crawl space floor to finish floor above does not exceed 4 feet at any point.

R303 LIGHT, VENTILATION AND HEATING.

Change text: Where the air infiltration rate of a *dwelling unit* is 5 air changes per hour or less where tested with a blower door at a pressure of 0.2-inch w.c. (50 Pa) in accordance with Section N1102.4.1.2, the *dwelling unit* may be provided with whole-house mechanical ventilation in accordance with Section M1505.4.

SECTION R403 FOOTINGS

R403.1 General

Exception:

Detached accessory structures of light frame construction, such as storage sheds in residential zones for private use, sized 400 square feet or less may be set on pressure treated skids and shall be anchored by approved methods.

SECTION R502 WOOD FLOOR FRAMING

Section R502.3 Allowable joist spans.

Add: The Western Lumber Span Tables for Floor and Ceiling Joists and Roof Rafters is adopted as a secondary reference to Table R502.3.1 (1) through Table R502.3.1 (2).

SECTION R507 EXTERIOR DECKS

R507.9.2 Lateral connection.

Exception: Attached first floor decks that do not exceed 30-inches above grade at any point.

SECTION R702 INTERIOR COVERING

Section R702.7 Vapor retarders

Delete: Class I or II vapor retarders are required on the interior side of frame walls in Climate Zones 5, 6, 7, 8 and Marine 4.

SECTION R802 WOOD ROOF FRAMING

Section R802.4.1 Rafter size.

Add: The Western Lumber Span Tables for Floor and Ceiling Joists and Roof Rafters is adopted as a secondary reference to Table R802.4.1 (1) through Table R802.5.1 (2).

SECTION N1102 BUILDING THERMAL ENVELOPE

Section N1102.4.1.2 Testing.

Change text: The building or dwelling unit *may* 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.

SECTION N1103 SYSTEMS

Section N1103.3.3 Duct testing (Mandatory).

Change section title: (Mandatory) to (Optional).

Change text: Ducts *may* be pressure tested to determine air leakage by one of the following methods:

Section N1103.6 Mechanical ventilation (Mandatory).

Change section title: (Mandatory) to (Optional)

Change text: The *building may* be provided with ventilation that complies with the requirements of Section M1505 or with other *approved* means of ventilation. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

SECTION G2415 PIPING SYSTEM INSTALLATIONS

Section G2415.3 Prohibited Locations

Add: Gas piping shall not be installed to a structure that is not attached to a permanent foundation. Auger type tie-downs or similar devices shall not be considered as permanent foundations.

SECTION P2601 GENERAL

Add New Section: P2601.4 Plumbing Systems in Accessory Structures

Plumbing systems are only allowed to be installed in structures with permanent foundations. Auger type tie-downs or similar devices shall not be considered as permanent foundations.

SECTION P2603 STRUCTURAL AND PIPING PROTECTION

Section P2603.5.1 Sewer depth.

Add: Twelve (12) inches to paragraph.

SECTION E3601 GENERAL SERVICES

Add New Section: E3601.2.1 Systems in Accessory Structures

Electrical systems are only allowed to serve structures with permanent foundations. Auger type tie-downs or similar devices shall not be considered as permanent foundations.

Exception: 1. Electrical equipment for the service of a well.

E3601.2 Number of services.

One- and two-family dwellings shall be supplied by only one service. (230.2)

Exception: An additional Dwelling Unit on the same lot may be supplied from the existing dwellings primary service via a sub-panel service.

PART III. 2018 INTERNATIONAL PLUMBING CODE (IPC)

SECTION 101 GENERAL

101.1 Title.

These regulations shall be known as the *Plumbing Code* of Coconino County hereinafter referred to as “this code.”

SECTION 108 VIOLATIONS

Delete: Entire Section

SECTION 109 MEANS OF APPEAL

Change: Building and Safety Advisory Board

109.1 Application for appeal.

Change Text: Any person shall have the right to appeal a decision of the code official to the building and safety advisory board. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.

Delete: Sections 109.2 through 109.7

SECTION 305 PROTECTION OF PIPES AND PLUMBING SYSTEM COMPONENTS

Section 305.4.1 Sewer depth.

Add: Twelve (12) inches to paragraph.

PART IV. 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

SECTION C101 SCOPE AND GENERAL REQUIREMENTS

C101.1 Title.

This code shall be known as the *Energy Conservation Code* of Coconino County and shall be cited as such. It is referred to herein as “this code.”

SECTION C109 BOARD OF APPEALS

Change: Building and Safety Advisory Board

C109.1 General.

Change Text: In order to hear and decide appeals of orders, decisions or determinations made by the *code official* relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The *code official* shall be an ex officio member of said board but shall not have a vote on any matter before the board. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business, and shall render all decisions and findings in writing to the appellant with a duplicate copy to the *code official*.

Delete: Section C109.3 Qualifications.

SECTION R402 BUILDING THERMAL ENVELOPE

TABLE R402.1.2

INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT

Add Footnote: j. Passive solar design will be allowed to be designed with less restrictive requirements subject to the approval of the Building Official.

Section R402.4.1.2 Testing.

Change text: The building or dwelling unit *may* 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.

SECTION R403 SYSTEMS

Section R403.3.3 Duct testing (Mandatory).

Change section title: (Mandatory) to (Optional).

Change text: Ducts *may* be pressure tested to determine air leakage by one of the following methods:

Section R403.6 Mechanical ventilation (Mandatory).

Change section title: (Mandatory) to (Optional)

Change text: The *building may* be provided with ventilation that complies with the requirements of the *International Residential Code* or *International Mechanical Code*, as applicable, or with other *approved* means of ventilation. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

PART V. 2018 INTERNATIONAL EXISTING BUILDING CODE (IEBC)

SECTION 101 GENERAL

101.1 Title.

These regulations shall be known as the *Existing Building Code* of Coconino County, hereinafter referred to as “this code.”

SECTION 112 BOARD OF APPEALS

Change: Building and Safety Advisory Board

112.1 General.

Change Text: In order to hear and decide appeals of orders, decisions, or determinations made by the *code official* relative to the application and interpretation of this code, there shall be and is hereby created a building and safety advisory board. The board shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business.

Delete: **Section 112.3 Qualifications.**

SECTION 113 VIOLATIONS

Delete: Entire Section

PART VI. 2018 INTERNATIONAL MECHANICAL CODE (IMC)

SECTION 101 GENERAL

101.1 Title.

Change: These regulations shall be known as the *Mechanical Code* of Coconino County, hereinafter referred to as “this code.”

SECTION 108 VIOLATIONS

Delete: Entire Section

SECTION 109 MEANS OF APPEAL

Change: Building and Safety Advisory Board

109.1 Application for appeal.

Change Text: A person shall have the right to appeal a decision of the code official to the building and safety advisory board. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.

Delete: Sections 109.1.1 through 109.7

PART VII. 2018 INTERNATIONAL FUEL GAS CODE (IFGC)

SECTION 101 (IFGC) GENERAL

101.1 Title.

These regulations shall be known as the Fuel Gas Code of Coconino County, hereinafter referred to as “this code.”

SECTION 108 (IFGC) VIOLATIONS

Delete: Entire Section

SECTION 109 (IFGC) MEANS OF APPEAL

Change: Building and Safety Advisory Board

109.1 Application for appeal.

Change Text: A person shall have the right to appeal a decision of the code official to the building and safety advisory board. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.

Delete: Sections 109.2 through 109.7

PART VIII. 2018 INTERNATIONAL SWIMMING POOL AND SPA CODE (ISPCS)

SECTION 101 GENERAL

101.1 Title.

These regulations shall be known as the Swimming Pool and Spa Code of Coconino County, hereinafter referred to as “this code.”

SECTION 107 VIOLATIONS

Delete: Entire Section

SECTION 108 MEANS OF APPEAL

Change: Building and Safety Advisory Board

108.1 Application for appeal.

Change Text: Any person shall have the right to appeal a decision of the code official to the building and safety advisory board. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted there under have been incorrectly interpreted, the provisions of this code do not fully apply, or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.

Delete: Sections 108.2 through 108.7

PART IX. APPENDIX Q – TINY HOUSES

Appendix Q relaxes various requirements in the body of the code as they apply to houses that are 600 square feet in area or less. Attention is specifically paid to features such as compact stairs, including stair handrails and headroom, ladders, reduced ceiling heights in lofts and guard and emergency escape and rescue opening requirements at lofts.

SECTION AQ102 DEFINITIONS

Change Text: A dwelling that is 600 square feet or less in floor area excluding lofts.

SECTION AQ103 CEILING HEIGHT

AQ103.1 Minimum Ceiling Height.

Change Text: Habitable space and hallways in tiny houses shall have a ceiling height of not less than 6 feet 4 inches (1930 mm). Bathrooms, toilet rooms and kitchens shall have a ceiling height of not less than 6 feet 4 inches (1930 mm). Obstructions including, but not limited to, beams, girders, ducts and lighting, shall not extend below these minimum ceiling heights.

Change Exception: Ceiling heights in lofts are permitted to be less than 6 feet 4 inches (1930 mm).

SECTION R307 TOILET, BATH AND SHOWER SPACES

Figure R307.1 Space required.

Add Exception: Minimum clearance at front of water closet to wall or cabinet in any tiny house constructed per Appendix Q is reduced to 15 inches.

Section R304 Minimum Room Areas.

R304.1 Minimum area.

Add Exception: Habitable rooms excluding lofts shall have a floor area of not less than 65 square feet for Tiny Houses constructed per Appendix Q.

R304.2 Minimum dimension.

Add Exception: Habitable rooms excluding lofts shall be not less than 6 feet 6 inches in any horizontal dimension for Tiny Houses constructed per Appendix Q.

SECTION N1102 BUILDING THERMAL ENVELOPE

Table N1102.1.2

Insulation and Fenestration Requirements by Component

Add Footnote k. R-15 minimum in floors, walls, and ceilings; OR R-19 minimum in floors and ceilings and R-13 minimum in walls for Tiny Houses constructed per Appendix Q.

SECTION E3602. SERVICE SIZE AND RATING

E3602.1 Ampacity of ungrounded conductors. Ungrounded service conductors shall have an ampacity of not less than the load served. For one-family dwellings, the ampacity of the ungrounded conductors shall be not less than 100 amperes, 3-wire. For all other installations, the ampacity of the ungrounded conductors shall be not less than 60 amperes. [230.42(B), 230.79(C) & (D)].

Add Exception: Tiny Houses constructed per Appendix Q may reduce to 60 amperes minimum.

PART X. APPENDIX T - SOLAR-READY PROVISIONS

SECTION T103 SOLAR-READY ZONES

T103.6 Capped ceiling penetration.

Change Text: A capped ceiling penetration electrical conduit shall be provided from the main electrical panel through the ceiling assembly into the attic space adjacent to a solar-ready zone located on a roof. The capped ceiling penetration conduit shall be sized to accommodate the future photovoltaic system conduit but shall have an inside diameter of not less than 3/4 inches.

Delete: Section T103.8

T103.9 Electrical service reserved space.

Change Text: When feasible the main electrical service panel shall have a reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled “For Future Solar Electric.” The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

PART XI. REFERENCED STANDARDS

SECTION 102.7 REFERENCED STANDARDS

New Section: The standards referenced in this Ordinance shall be part of the requirements of the code to the prescribed extent of each such reference.

NFPA 30-18 Flammable and Combustible Liquids Code

NFPA 58-17 Liquefied Petroleum Gas Code

PART XII. ADDITIONAL AMENDMENTS TO THE INTERNATIONAL RESIDENTIAL CODE (IRC)

CHAPTER 26 GENERAL PLUMBING REQUIREMENTS

Add New Section: SECTION P2602.1 EXCEPTION 2: MANDATORY GRAY WATER STUB OUT

EXCEPTION 2: MANDATORY GRAY WATER STUB OUT

Waste discharge from clothes washers (Gray Water) common to the exterior of the structure shall be connected to an accessible diverter valve to allow discharge to either a piping system for direct irrigation, or to the laundry tray or standpipe drain. At a minimum, there shall be piping from the diverter valve to a capped stub out terminating at the exterior of the building. When feasible, at least one bathtub or shower (Gray Water) shall be connected to an accessible diverter valve to allow discharge to either a piping system for direct irrigation, or to the building drain.

All Gray Water systems shall be designed and operated according to the provisions of the applicable permit authorized by ADEQ under the Arizona Administrative Code, Title 18, Chapter 9. R18-9-711. Type 1 Reclaimed Water General Permit For Gray Water.

P2910.3 Signage required. Nonpotable water outlets such as hose connections, open-ended pipes and faucets shall be identified at the point of use for each outlet with signage that reads as follows: “Nonpotable water is utilized for subsurface irrigation. CAUTION: NONPOTABLE WATER. DO NOT DRINK.” The words shall be legibly and indelibly printed on a tag or sign constructed of corrosion-resistant, waterproof material or shall be indelibly printed on the fixture. The letters of the words shall be not less than 0.5 inches (12.7 mm) in height and in colors contrasting the background on which they are applied. In addition to the required wordage, the pictograph shown in Figure P2910.3 shall appear on the signage required by this section.



CHAPTER 29 WATER SUPPLY AND DISTRIBUTION

Add New Section: SECTION P2914 POTABLE RAINWATER COLLECTION AND DISTRIBUTION SYSTEMS

P2914.1 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 potable applications, as permitted by Coconino County.

P2914.2 Collection surface.

Rainwater shall be collected only from above-ground impervious roofing surfaces constructed from *approved* materials. Collection of water from vehicular parking or pedestrian walkway surfaces shall be prohibited except where the water is used exclusively for landscape irrigation. Overflow and bleed-off pipes from roof-mounted *appliances* including, but not limited to, evaporative coolers, water heaters and solar water heaters shall not discharge onto rainwater collection surfaces. Where asphalt shingles or galvanized metal roofing are used as part of the collection surface, the water shall be tested for potability by a laboratory licensed by the Arizona Department of Health Services. Laboratory results shall be provided to the Coconino County Building Division before the water can be used for potable purposes.

P2914.3 Debris excluders.

Downspouts and leaders shall be connected to a roofwasher and shall be equipped with a debris excluder or equivalent device to prevent the contamination of collected rainwater with leaves, sticks, pine needles and similar material. Debris excluders and equivalent devices shall be self-cleaning. Exhibit 1. Example of a Debris Excluder.

P2914.4 Roofwasher.

An amount of rainwater shall be diverted at the beginning of each rain event, and not allowed to enter the storage tank, to wash accumulated debris from the collection surface. The amount of rainfall to be diverted shall be field adjustable as necessary to minimize storage tank water contamination. The roofwasher shall not rely on manually operated valves or devices and shall operate automatically. Diverted rainwater shall not be drained to the roof surface and shall be discharged in a manner consistent with the storm water runoff requirements of the *County*. Roofwashers shall be accessible for maintenance, service and drainage. Exhibit 2. Example of a RoofWasher

P2914.5 Roof gutters and downspouts.

Gutters and downspouts shall be constructed of materials that are compatible with the collection surface and the rainwater quality for the desired end use. Joints shall be water tight.

P2914.5.1 Slope.

Roof gutters, leaders and rainwater collection piping shall slope continuously toward collection inlets and shall be free of leaks. Gutters and downspouts shall have a slope of not less than $\frac{1}{8}$ inch per foot (10.4 mm/m) along their entire length. Gutters and downspouts shall be installed so that water does not pool at any point.

P2914.5.2 Cleanouts.

Cleanouts shall be provided in the water conveyance system to allow access to filters, flushes, pipes and downspouts.

P2914.6 Collection pipe.

Rainwater collection and conveyance systems shall utilize drainage piping *approved* for use within plumbing drainage systems to collect and convey captured rainwater. Vent piping *approved* for use within plumbing venting systems shall be utilized for vents within the rainwater system. Collection and vent piping materials shall comply with Section P3002.

P2914.6.1 Installation.

Collection piping conveying captured rainwater shall be installed in accordance with Section P3005.3.

P2914.6.2 Joints.

Collection piping conveying captured rainwater shall utilize joints *approved* for use with the distribution piping and appropriate for the intended applications as specified in Section P3003.

P2914.6.3 Size.

Collection piping conveying captured rainwater shall be sized in accordance with drainage-sizing requirements specified in Section P3005.4.

P2914.7 Filtration.

Collected rainwater shall be filtered as required for the intended end use. Filters shall be accessible for inspection and maintenance. Filters shall utilize a pressure gauge or other *approved* method to provide indication when a filter requires servicing or replacement. Filters shall be installed with shutoff valves installed immediately upstream and downstream to allow for isolation during maintenance. Exhibit 3. Example of a Filtration and Disinfection system.

P2914.8 Disinfection.

Where the intended application for rainwater requires disinfection or other treatment or both, it shall be disinfected as needed to ensure that the required water quality is delivered at the point of use. Exhibit 3. Shows a representative Filtration and Disinfection system.

P2914.9 Storage tanks.

Storage tanks utilized in potable rainwater collection and conveyance systems shall comply with Section P2915.

P2914.9.1 Location.

Storage tanks shall be located with a minimum horizontal distance between various elements as indicated in Table P2914.9.1.

**TABLE P2914.9.1
LOCATION OF RAINWATER STORAGE TANKS**

ELEMENT	MINIMUM HORIZONTAL DISTANCE FROM STORAGE TANK (feet)
Critical root zone (CRZ) of protected trees	2
Lot line adjoining private lots	5
Seepage pits	5
Septic tanks	5

For SI: 1 foot = 304.8 mm

P2914.9.2 Inlets.

Storage tank inlets shall be designed to introduce collected rainwater into the tank with minimum turbulence and shall be located and designed to avoid agitating the contents of the storage tank.

P2914.9.3 Outlets.

Outlets shall be located not less than 2 inches (51 mm) above the bottom of the storage tank and shall not skim water from the surface.

P2914.10 Influent diversion.

A means shall be provided to divert storage tank influent to allow for maintenance and repair of the storage tank system.

P2914.10.1 Backwater valve.

Backwater valves or air gaps shall be installed on each overflow and tank drain pipe. Backwater valves shall be in accordance with Section P3008.

P2914.11 Pumping and control system.

Mechanical equipment including pumps, valves and filters shall be easily accessible and removable in order to perform repair, maintenance and cleaning. The minimum flow rate and flow pressure delivered by the pumping system shall be appropriate for the application and in accordance with Section P2903.

P2914.12 Water pressure-reducing valve or regulator.

Where the water pressure supplied by the pumping system exceeds 80 psi (552 kPa) static, a pressure-reducing valve shall be installed to reduce the pressure in the rainwater distribution system piping to 80 psi (552 kPa) static or less. Pressure-reducing valves shall be specified and installed in accordance with Section P2903.3.1.

P2914.13. Materials, joints and connections.

Distribution piping shall conform to the standards and requirements specified in Section P2906 for potable water.

P2914.13.1 Design.

Distribution piping systems shall be designed and sized in accordance with the Section P2903 for the intended application.

P2914.14 Roof gutter inspection and test.

Roof gutters shall be inspected to verify that the installation and slope is in accordance with Section P2914.5.1. Gutters shall be tested by pouring not less than 1 gallon of water (3.8 L) into the end of the gutter opposite the collection point. The gutter being tested shall not leak and shall not retain standing water.

P2914.14.1 Roofwasher test.

Roofwashers shall be tested by introducing water into the gutters. Proper diversion of the first quantity of water in accordance with the requirements of Section P2914.4 shall be verified.

P2914.14.2 Collection pipe and vent test.

Drain, waste and vent piping used for rainwater collection and conveyance systems shall be tested in accordance with Section P2503.

P2914.14.3 Storage tank test.

Storage tanks shall be tested in accordance with the Section P2915.7

P2914.14.4 Water supply system test.

The testing of makeup water supply piping and distribution piping shall be conducted in accordance with Section P2503.7.

P2914.14.5 Inspection and testing of backflow prevention assemblies.

The testing of backflow preventers and backwater valves shall be conducted in accordance with Section P2503.8.

P2914.14.6 Inspection of vermin and insect protection.

Inlets and vents to the system shall be inspected to verify that each is protected to prevent the entrance of insects and vermin into the storage tank and piping systems in accordance with Section P2915.2

P2914.14.7 Water quality test.

The quality of the water for the intended application shall be verified at the point of use in accordance with the requirements of the *jurisdiction*. If testing is required, the water shall be tested for potability by a laboratory licensed by the Arizona Department of Health Services. Approved roofing material such as tile, metal, slate, concrete, fiberglass, or other approved material shall not be subject to testing. Water shall be tested if collected off asphalt shingles or galvanized metal roofing.

Add New Section: SECTION P2915 POTABLE WATER STORAGE TANKS

P2915.1 Approved components and materials.

Piping, plumbing components and materials used in collection and conveyance systems shall be manufactured of material *approved* for the intended application and compatible with any disinfection and treatment systems used.

P2915.2 Insect and vermin control.

The system shall be protected to prevent the entrance of insects and vermin into storage tanks and piping systems. Screen materials shall be compatible with contacting system components and shall not accelerate the corrosion of system components.

P2915.3 Freeze protection.

Where sustained freezing temperatures occur, provisions shall be made to keep storage tanks and the related piping from freezing.

P2915.4 Sizing.

The holding capacity of the storage tank shall be sized in accordance with the anticipated demand.

P2915.5 Location.

Storage tanks shall be installed above or below grade. Above-grade storage tanks shall be protected from direct sunlight and shall be constructed using opaque, UV-resistant materials such as, but not limited to, heavily tinted plastic, lined metal, concrete and wood; or painted to prevent algae growth; or shall have specially constructed sun barriers including, but not limited to, installation in garages, crawl spaces or sheds. Storage tanks and their manholes shall not be located directly under any soil piping, waste piping or any source of contamination.

P2915.6 Materials.

Where collected on site, water shall be collected in an *approved* tank constructed of durable, nonabsorbent and corrosion-resistant materials. The storage tank shall be constructed of materials compatible with any disinfection systems used to treat water upstream of the tank and with any systems used to maintain water quality within the tank. Wooden storage tanks that are not equipped with a makeup water source shall be provided with a flexible liner.

P2915.6.1 Foundation and supports.

Storage tanks shall be supported on a firm base capable of withstanding the weight of the storage tank when filled to capacity. Storage tanks shall be supported in accordance with this code.

P2915.6.2 Ballast.

Where the soil can become saturated, an underground storage tank shall be ballasted or otherwise secured to prevent the tank from floating out of the ground when empty. The combined weight of the tank and hold-down ballast shall meet or exceed the buoyancy force of the tank. Where the installation requires a foundation, the foundation shall be flat and shall be designed to support the storage tank weight when full, consistent with the bearing capability of adjacent soil.

P2915.6.3 Structural support.

Where installed below grade, storage tank installations shall be designed to withstand earth and surface structural loads without damage and with minimal deformation when empty or filled with water.

P2915.6.4 Overflow.

The storage tank shall be equipped with an overflow pipe having a diameter not less than the inlet pipe. The overflow outlet shall discharge at a point not less than 6 inches (152 mm) above the roof or roof drain; floor or floor drain; or over an open water-supplied fixture. The overflow outlet shall be covered with a corrosion-resistant screen of not less than 16 by 20 mesh per inch (630 by 787 mesh per m) and by 1/4-inch (6.4 mm) hardware cloth or shall terminate in a horizontal angle seat check valve. Drainage from overflow pipes shall be directed to prevent freezing on roof walks. The overflow drain shall not be equipped with a shutoff valve. Not less than one cleanout shall be provided on each overflow pipe in accordance with Section P3005.2.

P2915.6.5 Access.

Not less than one access opening shall be provided to allow inspection and cleaning of the tank interior. Access openings shall have an *approved* locking device or other *approved* method of securing access. Below-grade storage tanks, located outside of the building, shall be provided with a manhole either not less than 24 inches (610 mm) square or with an inside diameter not less than 24 inches (610 mm). Manholes shall extend not less than 4 inches (102 mm) above ground or shall be designed to prevent water infiltration. Finished grade shall be sloped away from the manhole to divert surface water. Manhole covers shall be secured to prevent unauthorized access. Service ports in manhole covers shall be not less than 8 inches (203 mm) in diameter and shall be not less than 4 inches (102 mm) above the finished grade level. The service port shall be secured to prevent unauthorized access.

Exception: Storage tanks under 800 gallons (3028 L) in volume installed below grade shall not be required to be equipped with a manhole but shall have a service port not less than 8 inches (203 mm) in diameter.

P2915.6.6 Venting.

Storage tanks shall be provided with a vent sized in accordance with Chapter 31 and based on the aggregate diameter of all tank influent pipes. The reservoir vent shall not be connected to sanitary drainage system vents. Vents shall be protected from contamination by means of an *approved* cap or a U-bend installed with the opening directed downward. Vent outlets shall extend not less than 4 inches (102 mm) above grade, or as necessary to prevent surface water from entering the storage tank. Vent openings shall be protected against the entrance of vermin and insects in accordance with the requirements of Section P2915.2.

P2915.6.7 Drain.

A drain shall be located at the lowest point of the storage tank. The tank drain pipe shall discharge as required for overflow pipes. Not less than one cleanout shall be provided on each drain pipe in accordance with Section P3005.2.

P2915.7 Storage tank tests.

Storage tanks shall be tested in accordance with the following:

1. Storage tanks shall be filled with water to the overflow line prior to and during inspection. Seams and joints shall be left exposed and the tank shall remain water tight without leakage for a period of 24 hours.
2. After 24 hours, supplemental water shall be introduced for a period of 15 minutes to verify proper drainage of the overflow system and leaks do not exist.
3. Following a successful test of the overflow, the water level in the tank shall be reduced to a level that is 2 inches (51 mm) below the makeup water trigger point by using the tank drain. The tank drain shall be observed for proper operation. The makeup water system shall be observed for proper operation, and successful automatic shutoff of the system at the refill threshold shall be verified. Water shall not be drained from the overflow at any time during the refill test.

Add New Amendment: INNOVATIVE MATERIALS AND SYSTEMS PILOT PROGRAM

Section 1- Name.

This Amendment to the Coconino County Building Safety Code shall be known as the Innovative Materials and Systems Pilot Program Amendment and is hereinafter referred to as the “Amendment.”

Section 2- Purpose and Intent.

The purpose of this Amendment is to allow a Rural Residential Owner-Builder, under the circumstances set forth herein, the option to seek an exemption from the application of the currently adopted version of the Coconino County Building Safety Code, including any requirement for construction plan review and/or inspection set forth in that Code. This option is only available where the property upon which the construction will take place is located in either zoning district General (G) or Agriculture Residential (AR), and has a minimum parcel size of two and one-half (2 1/2) acres or more. Only one dwelling unit can be constructed on the parcel. This option is only available for new residential owner-occupied construction projects with no more than one (1) story and with a total construction area of 600 square feet or less. This option to seek exemption is intended to apply only to property located in an area defined as “rural” or “unclassified” pursuant to ARS Section 11-861 (A), and which meet the other criteria set forth in this amendment. The further purpose of this Amendment is to encourage sustainability concepts through allowing the use of alternative materials and designs for small residential structures in rural settings.

The exemption available pursuant to this Amendment does not exempt owner-builders from compliance with statewide codes, county, or fire-district adopted fire codes and regulations nor does it exempt owner-builders from health regulations regarding wastewater treatment systems. In addition, and in lieu of plan review and inspections, an Owner-Builder shall provide affidavits affirmatively attesting that he/she has complied with the electrical, mechanical and plumbing elements of the Coconino County Building Code upon completion of their project.

Section 3 - Application.

This Amendment shall apply only to proposed new construction that meets all of the following criteria:

The property upon which the construction is proposed is characterized as “rural” for the purposes of this Amendment, is located within a Zoning District with a maximum density of one dwelling unit per two and one-half (2 1/2) acres or larger, and the subject parcel is of a size and configuration that conforms to the Zoning District in which it is located. In addition, the property shall be located within either the General (G) zoning district or the Agriculture Residential (AR) zoning district.

Acceptance into the Pilot Program is contingent upon the use of alternative building methods, materials, systems or design in the project.

The proposed new construction is for a one rural residential dwelling and is limited to no more than one (1) story and with a total construction area of no more 600 feet or less.

The proposed new construction meets the intent of the Pilot Program, which is to support innovative and sustainable building methods and materials that are identified as challenging to permit through the Building Code due to needed engineering or testing.

The proposed construction is to be used solely for the purpose of occupancy by the Owner-Builder and shall not be sold or rented any time during construction and for a period of one (1) year from the date of the completion of the building permit acquired pursuant to this Amendment.

Section 4 - Definitions.

For the purpose of this Amendment the following definitions shall apply:

Rural Residential Dwelling: Any site built residential structure consisting of no more than one story and one or more habitable rooms intended or designed to be occupied by one family with facilities for living and sleeping, with the use restricted to rural areas that fulfill the requirements of this amendment.

Owner-Builder: Owners of property who build new residential structures on such property and who do the work themselves, with their own employees or with duly licensed contractors, if the structure is intended solely for owner occupancy, as defined below and are not intended for occupancy by members of the public, the owner's employees or business visitors and the structures are not intended for sale or for rent.

Owner Occupancy, and Occupancy by the Owner: For the purpose of this regulation only, the terms "owner occupancy" and occupancy by the owner" include use of the proposed construction for the residency of the owner-builder or members of the owner-builder's immediate family.

Rural: For the purpose of this regulation only, the term "rural" shall mean those unincorporated areas of the county eligible for the application of this regulation and as described in Section 3 (1).

Section 5 - Regulation of Use.

Any dwelling constructed pursuant to a building permit issued pursuant to this Amendment is to be used solely for the purpose of occupancy by the Owner-Builder and shall not be sold or rented any time during construction and for a period of one (1) year from the date of completion of the permit. For the purposes of this Amendment, proof of the sale or rent or the offering for sale or rent of any such structure by the owner-builder within one year after completion is prima facie evidence that such project was undertaken for the purpose of sale or rent. As used in this paragraph "sale" or "rent" includes any arrangement by which the owner receives compensation in money, other items of value or labor from the occupancy or transfer of the property or the structures on the property.

In the event that an Owner-Builder or any subsequent owner makes a structure constructed pursuant to this Amendment available for rental after the expiration of the one-year period, above, the owner of the structure at that time shall be responsible for notifying potential renters of the use of this Amendment during construction of the structure and providing such potential renters a copy of the recorded Notice required by Section 7, below. Failure to provide such notification shall be a violation of this Amendment.

The Owner-Builder in selecting to use this Amendment will be encouraged to take advantage of the best water and energy conservation practices available at the time of construction.

Section 6 - Exemption Option.

Under this Amendment, an Owner-Builder may opt to have a building permit issued that contains an exception to the application of the Coconino County Building Safety Code, including any requirement for construction plan review and inspection set forth in the Code. In lieu of plan review and inspections, an Owner-Builder shall provide affidavits affirmatively attesting that he/she has complied with the electrical, mechanical, plumbing and fire elements of the Coconino County Building Code, prior to the completion of the permit issued pursuant to this Amendment. No Certificate of Occupancy shall be issued by Coconino County for a dwelling constructed pursuant to the Pilot Program Permit issued pursuant to this Amendment.

Section 7 - Recording.

Each time a building permit is issued pursuant to this Amendment for a residential dwelling, a Notice that such a permit has been issued pursuant to the provisions of this Amendment shall be recorded with the Coconino County Recorder by the Coconino County Community Development office. The form of this Notice shall be provided by the Coconino County Community Development office and shall contain information concerning the issued building permit, including but not limited to: a description of the proposed construction, the legal description of the property upon which the construction will take place, the fact that no Certificate of Occupancy will be issued upon completion of the permit and that the Owner-Builder will not sell or rent the building or structure for a period of one (1) year from the date of completion of the building permit. This Notice shall be executed by the Owner-Builder prior to recording.

Section 8 - Permits.

This Amendment does not affect the requirement that prior to construction the Rural Residential Owner- Builder must obtain all permits required under State law and County ordinances, including a Pilot Program Permit issued pursuant to Section 9 of this Amendment, below.

Section 9 - Application Process.

To obtain a permit, the applicant shall first file an application with the Sustainable Building Division. Permit applications shall contain the following information:

- 1) Name and mailing address of the owner(s) of record;
- 2) Address and location of the proposed structure;
- 3) A general description of the proposed structure, including a statement that the structure will not exceed one-story and will have a total construction area of 600 square feet or less;
- 4) A site plan conforming to the requirements of Section 2.1 of the Coconino County Zoning Regulations; Setback information from the proposed structure to the property lines in all directions shall be mandatory for consideration of eligibility for the Pilot Program Permit.
- 5) The signature of the owner of record or authorized agent;
- 6) Any other data or information as may be required by statute or regulation; and

- 7) A stipulation by the owner of record or authorized agent that the building or structure is to be constructed by the owner, or by licensed contractors with the Owner-Builder acting as the General Contractor, and that the building or structure is being built solely for occupancy by the owner, and that the building or structure constructed pursuant to this permit will not be sold or rented for a period of one (1) year from the date of completion of the building permit.

Section 10 - Availability.

This Amendment is limited to use by the Owner-Builder once in every five years for the construction of a residential dwelling.

Section 11 - Waiver of Plans.

No plans, other than a site plan and floor plan, must be submitted as part of this Pilot Program.

Section 12 - Permit Expiration.

Any building permit issued under this Amendment shall be valid, without renewal, for a maximum period of 36 months for the Owner-Builder to show compliance with all County zoning regulations, setback requirements, and all state and local code requirements for which exemption does not apply as noted in Section 2, and to file all affidavits required pursuant to Section 6; however, the County may, upon written request of the permittee, extend the time limit for the permit once for an additional 12 months.

Section 13- Inspections.

Inspections will be required for compliance with all other laws, ordinances, and regulations for which the exemption does not apply as noted in Section 2.

Section 14 - Inspection Requests and Notice.

It shall be the duty of the applicant to notify the applicable Department that the construction is ready for inspection and to provide access to the premises when applicable. Inspections shall be requested by the applicant at least twenty-four (24) hours in advance of the intended inspection.

Section 15 - No Certificate of Occupancy.

By opting to obtain a building permit under the provisions of this Amendment, the Owner-Builder agrees and understands that no Certificate of Occupancy will be issued for the residential dwelling at the completion of the permit.

Section 16 – Fees.

Fees shall be required and collected by the Community Development Department to provide for the cost of administering the provisions of this Amendment as adopted by the Board of Supervisors. It is the intent of this amendment that a permit processing fee schedule be established to reflect the actual administrative costs resulting from the application of the Amendment.

Section 17 - General Requirements.

Each structure shall be built and maintained in a sound structural condition to be safe, sanitary, and to shelter the occupants from the elements.

Section 18 - Electrical Requirements.

Where electrical wiring or appliances are installed, the installation shall be in accordance with the provisions contained in the currently adopted Coconino County Building Safety Code.

Section 19 - Mechanical Requirements.

Where mechanical equipment or appliances are installed, the installation shall be in accordance with the provisions contained in the currently adopted Coconino County Building Safety Code.

Section 20 - Plumbing Requirements.

Plumbing equipment, systems and installation shall be in accordance with the requirements contained in the Coconino County Building Safety Code and the Coconino County Health Department regulations. Alternative materials and methods shall be permitted provided that the design complies with the intent of the County codes and regulations. Potable water shall be available to the dwelling.

Section 21 - Fire Prevention Requirements.

Residential Smoke Detectors and Carbon Monoxide Detectors shall be provided in accordance with the requirements contained in the Coconino County Building Safety Code.

Section 22 - Sanitation Requirements.

Sanitation facilities, including the type, design, and number of facilities, as required and approved by the Environmental Engineering Supervisor, shall be provided to the dwelling site.

Section 23 - Violations.

The critical concern in the promulgation of this Amendment is to provide for health and safety while maintaining respect for the law and voluntary compliance with the provisions of this Amendment, and therefore, in the event that an order to correct a substandard condition is ignored, or any other violation of this Amendment occurs, it is the intent of this section that the adopted County Hearing Officer Rules of Procedure for violations be followed.

Section 24 - Petitions for Appeals.

When applicable the adopted appeals process contained in the Coconino County Zoning Regulations or the Coconino County Building Safety Code shall be followed to hear and decide appeals dealing with issues concerning the application of this Amendment. The department shall keep a record of the decisions on appeals.

Section 25 - Rezoning and Change of Use.

If a structure on a property has been built under the relief granted by this Amendment, this would be considered a factor against a rezoning to a higher density, a conditional use permit or any other change of use if this action diminishes the parcel size to less than one dwelling unit per two and one-half (2-1/2) acres. Any change of use from a residential dwelling to a commercial use shall require certification by a registered design professional that the building complies with the currently adopted Coconino County Building Code.

Section 26 – Notice and Disclosure Statement.

See attached Notice and Disclosure form.

Section 27 – Affidavit Forms.

See attached Coconino County Electrical Installation Affidavit form.
See attached Coconino County Fire Safety Installation Affidavit form.
See attached Coconino County Mechanical Installation Affidavit form.
See attached Coconino County Plumbing Installation Affidavit form.

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