

BUILDING CODE AMENDMENTS SUMMARY

<u>AMENDMENT</u>	<u>PURPOSE</u>	<u>COST</u>
2018 INTERNATIONAL BUILDING CODE (IBC)		
<u>NEW PROPOSED AMENDMENTS</u>		
IBC 101.2.1, Appendices	Appendices are not enforceable unless specifically adopted. Amendment adopts Appendix N - Replicable Buildings. This appendix provides guidelines for replicable buildings to streamline plan review in regard to code compliance.	None
IBC 105.1.1 through 105.1.7, 105.1.7.1, Annual permits	Amend IBC language to define and detail the requirements and processes regarding Annual Permits	None
IBC Section 429, 429.1/Table 429.1, Electric Vehicle (EV) Charging	Addresses CAAP Action ID TLU-3-D. Requires EV-ready parking spaces to commercial structures with parking lots providing 20 or more parking spaces.	Varies, \$2050 - 11,400
IBC 1102.1, Design (accessibility)	This amendment clarifies that the 2017 edition of the A117.1 is the governing code for accessibility as opposed to the 2009 edition contained in the referenced standards section of the IBC.	None
IBC 1404.3.1, Vapor retarders (wall coverings)	The purpose is to remove the requirement for Class I and II vapor retarders on the interior side of framed exterior walls in Climate Zone 5. Alignment with Coconino County, see separate explanation/reason.	None
IBC 1505.4, Class C roof assemblies	Not previously amended. Existing amendment to IBC 1506.3 excludes roofing materials other than Class A or B. Class C roofing assemblies have limited effectiveness on light fire-test exposure. This amendment removes Class C roof assemblies from the code.	None
IBC 1505.5, Nonclassified roofing	Not previously amended. Existing amendment to IBC 1506.3 excludes roofing materials other than Class A or B. Nonclassified roofing assemblies have no listing for any fire-test exposure. This amendment removes nonclassified roof assemblies from the code.	None
IBC 2308.1.1 Allowable girder spans, 2308.4.2.1 Span, 2308.7.1 Ceiling joist spans, 2308.7.2 Rafter spans	This amendment adds the Western Lumber Span Tables for Floor and Ceiling Joists and Roof Rafters as additional reference to the span tables and referenced standard (American Wood Council span tables) included in the standard text. These standard references do not include tables for the locally amended 60 psf ground snow load.	None

IBC Table 1607.1, Minimum uniformly distributed live loads and minimum concentrated live loads	The amendment increases the minimum live load from 30 to 40 psf for habitable attics and sleeping rooms. These areas often occur on a floor level where other habitable spaces are designed at a minimum of 40 psf. It makes sense to maintain an consistent live load factor and it is common engineering practice.	None
<u>NEW REQUIRED AMENDMENT</u>		
IBC 1608.2, Ground snow loads	This amendment defines the ground snow load (GSL) for use in structural design. The standard code text refers to Figure 1608.2, a map where the City of Flagstaff is located in a "case study" (CS) area. The standard text explains these areas require a case study to determine GSL. A study conducted by NAU for Coconino County recommended a GSL of 70 psf for areas including the City of Flagstaff boundary. The Building and Fire Code Board of Appeals recommended a 60 psf GSL.	None
IBC 1612.3, Establishment of flood hazard areas	The IBC requires that the jurisdiction insert the date of the Flood Insurance Study / FEMA Flood Insurance Rate Map (FIRM)/ Flood Boundary and Floodway Map (FBFM).	None
<u>EXISTING AMENDMENT WITH REVISIONS</u>		
IBC 103.1, Creation of enforcement agency	To designate Building Safety Program as the regulating office. Language edited to reflect correct Section and Program names.	None
IBC 104.7, Department records	To more thoroughly define the records kept by the building official. Previous amendment contains "or" between each record and has been revised to "and" to correctly reflect the records kept by the building official.	None
IBC 105.1, Required (permits)	To include that an Over-the-Counter Permit is required for portable equipment used in public events (i.e. electrical generators over 25kW)	None
IBC 105.2, Work exempt from permit	To clarify specific items that are exempt from a building permit require Minor Improvement Permits per the Flagstaff Zoning Code. Language revised for clarity	None
IBC 105.5, Expiration	To change the expiration time periods. The language has been revised to clearly reflect time periods (example: 720 days revised to 730 days)	None

IBC 107.1, General (submittal documents)	To clarify Arizona State Statutes that govern when a registrant is required. Language has been relocated to IBC amendments (vs. previous location in administrative section of adoption document) for ease of use and reorganized for clarity.	None
IBC 109.2, Schedule of permit fees	To define the document that fees are based on. Language revised to reflect the most current city resolution and correct regulating office.	None
IBC 109.5, Related fees	has been relocated to IBC amendments (vs. previous location in administrative section of adoption document) for ease of use and	None
IBC 109.6, Refunds	To define the refund policy. Language revised to reflect that plan review fee is not refundable (services performed).	None
IBC 113.1, General (Board of Appeals)	To clarify that the Title 2 of Flagstaff City Code is the governing code for a board of appeals. Language revised to reference city code.	None
IBC Appendix J - Grading: J104.5, Stormwater requirements	This amendment has been updated by Water Services Stormwater Section to reflect the current Stormwater regulations related to building construction.	None
EXISTING AMENDMENT IN CURRENT CODE TO CARRY FORWARD		
IBC 101.2.1, Appendices	Appendices are not enforceable unless specifically adopted. Adopt Appendix C - Group U Agricultural Buildings, Appendix I - Patio Covers, Appendix J - Grading	None
IBC 109.4, Work commencing before permit issuance	To define the monetary penalty for commencing work prior to issuance of a building permit.	None
IBC 111.3, Temporary occupancy	To define that residential occupancies may not receive a temporary certificate of occupancy and exceptions.	None
IBC 1506.3, Product identification (materials, roof assemblies)	Purpose of this amendment is to exclude roofing materials other than Class A (severe) and B (moderate). Class C and nonclassified materials have limited or no effectiveness in fire-test exposure.	None
IBC 1507.8, Wood shingles	The City of Flagstaff has high potential for fire hazard. The purpose of this amendment is to exclude wood shingles as a roofing material.	None
IBC 1507.9, Wood shakes	The City of Flagstaff has high potential for fire hazard. The purpose of this amendment is to exclude wood shakes as a roofing material.	None
EXISTING AMENDMENT IN CURRENT CODE NOT CARRIED FORWARD		
IBC Section 202, Definitions	Several definitions have been addressed in the 2018 edition or have been deemed irrelevant.	None

IBC 509.1,	This amendment appears to have been incorrectly applied to Section 509 Incidental Uses. Tenant spaces are not considered incidental uses. Tenant space separation is addressed in Section 402 Covered Mall and Open Mall Buildings in both the 2012 and 2018 editions of IBC, specifically 402.4.2.1	None
IBC 1805.2, 1805.4, 1805.4.1, Table 1805.4.2, and 1805.5.2.2	These amendments appear to incorrectly reference Section 1805 Dampproofing and Waterproofing and were possibly intended for Section 1809 Shallow Foundations. These amendments revised the requirements for footing size and reinforcement , mirroring requirements for foundations in Seismic Category D.	Savings, varies on size of structure
IBC Section 3109, Swimming Pool Enclosures and Safety Devices	The amendment referenced the Arizona Revised Statutes (ARS) concerning swimming pool enclosures. This section has been revised in the 2108 edition to reference the 2018 International Swimming Pool & Spa Code (ISPSC) which the City proposes to adopt. Amendments are proposed to align with the ARS.	None
IBC Appendix B - Board of Appeals	Incorrectly and possibly inadvertently adopted. Another amendment the 2012 IBC adoption referenced a City of Flagstaff Ordinance governing the Board of Appeals.	None
2018 INTERNATIONAL RESIDENTIAL CODE (IRC)		
<u>NEW PROPOSED AMENDMENT</u>		
IRC R102.5, Appendices	Appendices are not enforceable unless specifically adopted. This amendment adopts Appendix Q - Tiny houses, Appendix R - Light straw clay construction, Appendix S - Strawbale construction, Appendix T - Solar-ready provisions. Adoption of Appendix T addresses CAAP Action ID E-2-G	None
IRC R106.1, R106.1.5	This amendment creates new subsection for Model Plans. While model plan review has been offered prior to 2018 code adoption, the amendment solidifies this policy.	None
IRC Table 301.5, Minimum uniformly distributed live loads	The amendment increases the minimum live load from 30 to 40 psf for habitable attics and sleeping rooms. These areas often occur on a floor level where other habitable spaces are designed at a minimum of 40 psf. It makes sense to maintain an consistent minimum design live load and it is common engineering practice.	None

IRC R302.13, Fire protection of floors	The section requires fire protection of floor assemblies on the underside. The amendment adds an exception for crawl spaces containing heating appliances. See additional info at end of summary.	None
IRC R303.4, Mechanical ventilation	This amendment changes the requirement of mechanical ventilation (where the air infiltration rate is 5 air changes per hour or less) from mandatory to optional. In the energy efficiency section chapter of the IRC, a dwelling in Climate Zone 5 must be tested to be not exceed than 3 air changes per hour, thereby automatically requiring all dwellings in the City of Flagstaff to require a whole-house mechanical ventilation system.	None
IRC R313.2, One- and two-family dwellings automatic fire sprinkler systems	This amendment states the Arizona Revised Statutes prohibits any jurisdiction from mandating the installation of fire sprinklers in one- and two-family dwellings. The removal of this section does not prohibit one from installing a system if desired.	None
IRC R502.3, Allowable joist spans	This amendment adds the Western Lumber Span Tables for Floor and Ceiling Joists and Roof Rafters as additional reference to the span tables and referenced standard (American Wood Council span tables) included in the standard text. These standard references do not include tables for the locally amended 60 psf ground snow load.	None
IRC R502.3.1, Sleeping areas and attic joists	This amendment coordinates with the amendment to required Table R301.5 for minimum uniformly distributed live load in sleeping areas.	None
IRC R507.5, Deck beams	This amendment adds the Western Lumber Span Tables for Floor and Ceiling Joists and Roof Rafters as additional reference to the span tables and referenced standard (American Wood Council span tables) included in the standard text. These standard references do not include tables for the locally amended 60 psf ground snow load.	None
IRC R507.6, Deck joists	This amendment adds the Western Lumber Span Tables for Floor and Ceiling Joists and Roof Rafters as additional reference to the span tables and referenced standard (American Wood Council span tables) included in the standard text. These standard references do not include tables for the updated 60 psf ground snow load.	None
IRC R507.9.2, Lateral connection	This amendment adds an exception for lateral load connectors on decks with walking surfaces under 30 inches above adjacent grade.	None

IRC R702.7, Vapor retarders (interior wall covering)	The purpose of the amendment is to remove the requirement for Class I and II vapor retarders on the interior side of framed exterior walls in Climate Zone 5. Alignment with Coconino County, see separate explanation/reason.	None
IRC R802.4.1, Rafter size	This amendment adds the Western Lumber Span Tables for Floor and Ceiling Joists and Roof Rafters as additional reference to the span tables and referenced standard (American Wood Council span tables) included in the standard text. These standard references do not include tables for the locally amended 60 psf ground snow load.	None
IRC P2602.1, General (individual water supply and sewage disposal)	This amendment clarifies that private sewage disposal systems (septic tanks) are under the jurisdiction of Coconino County Environmental Quality.	None
IRC P2903.2, Maximum flow rates and consumption for plumbing fixtures and fixture fittings	This amendment changes the water consumption value for water closets (toilets) lowering the value from 1.6 gpf to 1.3 gpf. This component of the proposed amendment appeared in the amendments to the 2012 International Plumbing Code Table 604.4. It is believed the intent was to apply the amendment to the 2012 IRC as well. The 2018 proposed amendment includes language for dual flush toilets for clarity.	None
IRC E3901.9, Basements, garage and accessory buildings (receptacle outlets)	Addresses CAAP Action ID TLU-3-D. The standard code text requires an electrical receptacle for each vehicle bay in all new attached and detached garages with electrical power. The amendment requires at least one of these required receptacles to be an electric vehicle charging outlet. An exception for additions and alterations to existing construction is also included.	\$300-500
IRC Appendix T, T101.1, General	This amendment requires new construction to comply with this appendix.	None
IRC Appendix T, T103.6, Capped roof penetration sleeve	This amendment renames the section title and changes the requirement for a capped ceiling penetration.	Varies, \$150-\$300
IRC Appendix T, T103.8, Interconnection pathway	This amendment removes the requirement for interconnection pathway to be indicated on the construction documents.	None
IRC Appendix T, T103.9, Electrical service reserved space	This amendment revises the requirement for reserved space in the electrical service panel for future solar photovoltaic installation based on feasibility.	None

<u>NEW REQUIRED AMENDMENT</u>		
IRC Table R301.2(1), Climatic and Geographic Design Criteria	Adopting jurisdictions are required to populate this table with the corresponding information from a series of resources and referenced material included in the standard text. A flood map date has been revised per the City's Stormwater Section. The standard code text refers to Figure R301.2(6), a map where the City of Flagstaff is located in a "case study" (CS) area. The standard text explains these areas require a case study to determine GSL. A study conducted by NAU for Coconino County in 2016 recommended a GSL of 70 psf for areas including the City of Flagstaff boundary. The Building and Fire Code Board of Appeals recommended a 60 psf GSL.	None
<u>EXISTING AMENDMENT WITH REVISIONS</u>		
IRC R103.1, Creation of enforcement agency	To designate Building Safety Program as the regulating office. Language edited to reflect correct Section and Program names. Language has been relocated to IRC amendments (vs. previous location in administrative section of adoption document) for ease of use.	None
IRC R104.7, Department records	To more thoroughly define the records kept by the building official. Previous amendment contains "or" between each record and has been revised to "and" to correctly reflect the records kept by the building official. Language has been relocated to IRC amendments (vs. previous location in administrative section of adoption document) for ease of use.	None
IRC R105.1, Required (permits)	To include language regarding the authority having jurisdiction over manufactured housing permits. The City of Flagstaff has an intergovernmental agreement (IGA) with the Arizona State Office of Manufactured Housing for inspection. Language has been relocated to IRC amendments (vs. previous location in administrative section of adoption document) for ease of use.	None

IRC R105.2, Work exempt from permit	To clarify specific items that are exempt from a building permit require Minor Improvement Permits per the Flagstaff Zoning Code. Language revised for clarity. Language has been relocated to IRC amendments (vs. previous location in administrative section of adoption document) for ease of use.	None
IRC R105.5, Expiration	To change the expiration time periods. The language has been revised to clearly reflect time periods and to extend permit validity for larger structures. Language has been relocated to IRC amendments (vs. previous location in administrative section of adoption document) for ease of use.	None
IRC 106.1, Submittal documents	To clarify Arizona State Statutes that govern when an Arizona Registered Design Professional (architect, engineer) is required. Language has been relocated to IRC amendments (vs. previous location in administrative section of adoption document) for ease of use and reorganized for clarity.	None
IRC R108.2, Schedule of permit fees	To define the document in which fees are based. Language revised to reflect the most current city resolution and correct regulating office. Language has been relocated to IRC amendments (vs. previous location in administrative section of adoption document) for ease of use.	None
IRC R108.5, Refunds	To define the refund policy. Language revised to reflect that plan review fee is not refundable (services performed). Language has been relocated to IRC amendments (vs. previous location in administrative section of adoption document) for ease of use.	None
IRC 112.1, General (Board of Appeals)	To clarify that the Title 2 of Flagstaff City Code is the governing code for a board of appeals. Language revised to reference city code. Language has been relocated to IRC amendments (vs. previous location in administrative section of adoption document) for ease of use.	None
IRC Section R202, Definitions	Several definitions have been addressed in the 2018 edition or have been deemed irrelevant. Definition of ADU revised to reflect its source in the Flagstaff Zoning Code.	None
IRC R401.4.1, Geotechnical evaluation	This amendment waives the requirement for a geotechnical investigation in specified circumstances and prescribes a soil bearing pressure value for a basis for foundation design.	None

IRC N1102.1.2, Insulation and fenestration criteria	This amendment adds an exterior wall insulation value for 2x4 wood framed walls and adds a footnote to make an exception for the U-value of windows used in an approved passive solar design.	None
IRC M2005.1, General (water heaters)	This amendment clarifies that water heaters shall be capable of being removed without first removing any other appliance or a permanent portion of the building. This amendment was included in the 2012 adoption with slightly different language but only amending the International Mechanical Code (IMC; 1002.1). The same section appears in 2012 IRC but was not amended. It is believed that the intent was to apply to amendment to IRC as well.	None
IRC P3103.1.1, Roof termination (vents)	This amendment revises the vent termination distance above the roof surface to 12 inches. Language was revised from previous adoption amendment for clarity.	None
<u>EXISTING AMENDMENT IN CURRENT CODE TO CARRY FORWARD</u>		
IRC R102.5, Appendices	Appendix F - Radon Control Methods, Appendix H - Patio Covers, Appendix J - Existing Buildings and Structures, Appendix M - Home Daye Care, R-3 Occupancy	None
IRC 108.4, Related fees	To include fees for re-inspection under specific circumstances. Language has been relocated to IRC amendments (vs. previous location in administrative section of adoption document) for ease of use and reorganized for clarity. IRC Section number changed from the 2012 edition.	None
IBC 108.6, Work commencing before permit issuance	To define the monetary penalty for commencing work prior to issuance of a building permit.	None
IRC R110.4, Temporary occupancy	To define that residential occupancies may not receive a temporary certificate of occupancy and exceptions.	None

IRC R309.5, Fire sprinklers (garages and carports)	The amendment deletes the requirement for fire sprinklers in residential garages and carports and is in alignment with Arizona Revised Statutes which prohibits any jurisdiction from mandating the installation of fire sprinklers in one- and two-family dwellings. However, the removal of this section does not prohibit one from installing a system if desired.	None
IRC R904.3, Material specifications and physical characteristics (materials, roof assemblies)	Purpose of this amendment is to exclude roofing materials other than Class A (severe) and B (moderate). Class C and nonclassified materials have limited or no effectiveness in fire-test exposure.	None
IRC R905.7, Wood shingles	The City of Flagstaff has high potential for fire hazard. The purpose of this amendment is to exclude wood shingles as a roofing material.	None
IRC R905.8, Wood shakes	The City of Flagstaff has high potential for fire hazard. The purpose of this amendment is to exclude wood shakes as a roofing material.	None
IRC N1103.7, Equipment sizing and efficiency rating (mandatory)	This amendment adds the requirement for 90% condensing type furnaces to all new construction.	None
IRC G2445, Unvented room heaters	This amendment deleted unvented room heaters completely, effectively prohibiting their use. Unisource, the local natural gas utility, confirmed with Building Safety staff that they will not allow service connection to a building equipped with unvented fuel-gas appliances. In addition to this, unvented room heaters are equipped with oxygen depletion sensors which are restricted to elevations lower than 5000 feet above sea level.	None
IRC P2603.5.1, Sewer depth	This amendment clarifies that private sewage disposal systems (septic tanks) are under the jurisdiction of Coconino County Environmental Quality and that building sewers connecting to City of Flagstaff sewage disposal system shall be located a minimum of 12 inches below grade.	None
IRC Appendix M, AM101.1, General (home day care)	This amendment clarifies that a Home Occupation Permit is required for this use prior to issuance of a building permit.	None
<u>EXISTING AMENDMENT IN CURRENT CODE NOT CARRIED FORWARD</u>		

IRC R403.1/Table R403.1, R403.1.1, R403.1.2, R403.1.3, R403.1.3.1, R403.3, R404.1.1, R404.1.2, R404.1.4, R404.1.8, R404.1.4, and R407.3 - pertaining to footings and foundation walls	These amendments effectively reclassified the City of Flagstaff from Seismic Category C to Seismic Category D, requiring larger footings (= more concrete), additional steel reinforcement in footings and masonry foundation stem walls, and additional anchoring hardware in foundation walls or concrete slabs.	Savings, varies per structure size, \$12,000 for a 2,600 SF single family dwelling
IRC R602.5, Interior non load bearing walls	This amendment added to specifications for ladder backing installation in interior non bearing walls.	None
IRC N1102.1.2, R-value computation	This amendment added language which revised the U-factor for windows and specified usage of low-e glazing. This is inconsistent with the concurrently adopted 2009 IECC which did not modify this U-value.	None
IRC N1105	The amendment voluntarily requested that new single family dwellings have a piping only installation for grey water system. The 2018 IPC and IRC contain provisions for (voluntary) installation of grey water (non-potable water) systems.	None
IRC M1305.1.4.3, Electrical requirements (appliances under floors)	The amendment added language to specify that furnaces are to be hard-wired with unless equipped with manufacturer supplied with cord and cap. The Section M1303 covers listing and labeling and requires installation per the listing and label. This amendment was also under underfloor appliances, making it enforceable in only these locations.	None
IRC M1307.3.1, Protection from impact	This amendment references another amendment which is not carried over. See G2408.3 below. The standard text of 2018 IRC addresses protection from impact.	None
IRC M1507.1, M1507.3	This amendment removes from the code whole-house ventilation systems as an option.	None
IRC G2408.3, Private garages	This amendment deleted the standard text which requires appliances installed in a private garage to be located a minimum of 6 feet above the floor unless the appliance is protected from vehicle damage. It was replaced with language detailing examples of vehicle damage protection. The standard text is identical in the 2012 and 2018 IFGC. Since the standard text, through an exception, addresses protection from vehicle damage the amendment is not carried forward.	None

IRC G2417.4.1	This amendment modified the specifications in which pressure testing was conducted and referenced single family dwellings. There are provisions in the fuel-gas chapter in the IRC that cover the test pressure specifications.	None
IRC G2417.4.2	This amendment modified the specifications in which the duration of pressure testing was conducted and referenced single family dwellings. There are provisions in the fuel-gas chapter in the IRC that cover the test duration specifications.	None
IRC G2439.4	This amendment seems to remove the provision for makeup air for a clothes dryer located in a closet. Intent is unclear.	None
IRC P2904, Dwelling Unit Fire Sprinkler Systems	This amendment removed the entire section which contains provisions for the installation of fire sprinkler systems. The removal of mandatory installation fire sprinkler systems (per Arizona Revised Statutes) is located in the amendment to R313.2 above. This amendment to P2904 is not carried forward to allow the use of fire sprinkler systems is one chooses or if an property owner association requires (as is the case of Pine Canyon).	None
IRC Appendix G - Swimming Pool, Spas, and Hot Tubs	This appendix has been removed from the 2018 IRC. The IRC now referenced the ISPSC.	None
IRC Appendix O - Grey Water Recycling Systems	This appendix has been relocated to the standard text of the IRC and is no longer an appendix which requires specific adoption to enforce.	None
IRC Appendix R - Strawbale Construction	The amendment originally created code provisions for strawbale construction. The 2018 IRC contains Appendix S - Strawbale Construction, removing the necessity for this amendment to be carried over.	None
2018 INTERNATIONAL EXISTING BUILDING CODE (IEBC)		
<u>NEW PROPOSED AMENDMENT</u>		
IEBC 112.1, General (Board of Appeals)	To clarify that the Title 2 of Flagstaff City Code is the governing code for a board of appeals. Language revised to reference city code.	None
IEBC 301.5, Compliance with accessibility	This amendment clarifies that the 2017 edition of the A117.1 is the governing code for accessibility as opposed to the 2009 edition contained in the referenced standards section of the IBC.	None

IEBC 408.2, Water closet replacement	This amendment changes the water consumption value for water closets (toilets) replacements, lowering the value from 1.6 gpf to 1.3 gpf.	None
NEW REQUIRED AMENDMENT		
NONE.		
EXISTING AMENDMENT WITH REVISIONS		
IEBC 105.1, Required (permits)	Amendment references 2018 IBC and IRC (as amended) for building permit requirements.	None
IEBC 105.5, Expiration, (permits)	Amendment references 2018 IBC and IRC (as amended) for permit duration.	None
IEBC 1201.2, Heritage Preservation Commission	Amendment creates section to indicate that in specific areas of the City, the City's Heritage Preservation Officer and/or Heritage Preservation Commission shall review changes to historic structures and buildings prior to issuance of a building permit for those changes. Language revised for clarity.	None
EXISTING AMENDMENT IN CURRENT CODE TO CARRY FORWARD		
NONE.		
EXISTING AMENDMENT IN CURRENT CODE NOT CARRIED FORWARD		
NONE.		
2018 INTERNATIONAL MECHANICAL CODE (IMC)		
NEWLY PROPOSED AMENDMENTS		
NONE.		
IMC 106.5.2, Fee schedule (permits)	Amendment references 2018 IBC (as amended) for building permit fees.	None
IMC 106.5.3, Fee refunds (permits)	Amendment references 2018 IBC (as amended) for building permit fee refunds.	None
IMC 108.4, Violation penalties (violations)	Amendment references 2018 IBC (as amended) for violation penalties.	None
IMC 108.5, Stop work orders (violations)	Amendment references 2018 IBC (as amended) for stop work orders.	None
EXISTING AMENDMENT WITH REVISIONS		
IMC 109.1, Application for appeal (Means of appeal)	To clarify that the Title 2 of Flagstaff City Code is the governing entity for a board of appeals. Language revised to reference city code.	None
EXISTING AMENDMENT IN CURRENT CODE TO CARRY FORWARD		

IMC 304.2, Conflicts (Installation)	This amendment determines that when there is a conflict between the code and the listing of a products manufacturer's specification, the manufacturer's specification shall apply.	None
IMC 903.3, Unvented gas log heaters (factory-built fireplaces)	This amendment states that unvented gas log heaters must obtain local gas utility approval and submission of this approval to the building official is required prior to a building permit being issued.	None
IMC 1002.1, General (Water heaters)	This amendment clarifies that water heaters shall be capable of being removed without first removing any other appliance or a permanent portion of the building.	None
<u>EXISTING AMENDMENT IN CURRENT CODE NOT CARRIED FORWARD</u>		
IMC 303.4, Protection from damage	This amendment added a reference to IFGC 305.5 for protection requirements. The amended IFGC 305.5 pertains to private garages.	None
IMC 304.6, Public garages	This amendment added provisions for appliances/equipment in private garages, yet section title is "public garages". The following section, IMC 304.7, in both 2012 and 2018 pertains to private garages.	None
IMC 306.1, Access for maintenance and replacement	This amendment added language for clarity however, the intent of the language is already captured in the standard text of this section in both 2012 and 2018 IMC.	None
IMC Section 928, 928.1 Unvented room heaters	This section did not exist in the 2012 IMC as indicated. In 2012 and 2018 IMC, Section 928 is titled Evaporative Cooling Systems. Nonetheless, the intent of this previous amendment is captured in the amendment to IMC 903.3	None
2018 INTERNATIONAL PLUMBING CODE (IPC)		
<u>NEW PROPOSED AMENDMENTS</u>		
IPC 109.1, Application for appeal, 109.2 through 109.7 (Means of Appeal)	To clarify that the Title 2 of Flagstaff City Code is the governing code for a board of appeals. Language revised to reference city code.	None
<u>NEW REQUIRED AMENDMENT</u>		
IPC 106.6.2, Fee schedule	Amendment references 2018 IBC (as amended) for building permit fees.	None
IPC 106.6.3, Fee refunds	Amendment references 2018 IBC (as amended) for building permit fee refunds.	None

IPC 305.4.1, Sewer depth	This amendment requires jurisdiction to determine the sewer depth for private sewage disposal systems (septic tank) and sewage disposal systems connecting to City's system. Language is included for private systems require Coconino County approval, as this jurisdiction determines depth.	None
IPC 903.1, Roof termination	This amendment requires jurisdiction to determine the vent termination distance above the roof surface. For City of Flagstaff this is 12 inches.	None
EXISTING AMENDMENT WITH REVISIONS		
IPC Table 604.4, Maximum flow rates and consumption for plumbing fixtures and fixture fittings	This existing amendment changed the water consumption value for water closets (toilets) lowering the value from 1.6 gpf to 1.3 gpf. Conflicting language in the online versions of the 2012 adoption/amendment document regarding urinals that appeared in an amendment to another section (see IPC 419.4) has been relocated to this amendment and clarified. Language added for dual flush toilets added for clarity even though referenced standards for dual flush toilets are included in the standard text.	None
EXISTING AMENDMENT IN CURRENT CODE TO CARRY FORWARD		
IPC 301.7, Conflicts	This amendment determines that when there is a conflict between the code and the listing of a products manufacturer's specification, the manufacturer's specification shall apply.	None
IPC 305.4, Freezing	This amendment revises the distance below grade in which plumbing pipes shall be located for freeze protection.	None
IPC 312.1, Required tests	This amendment removes "for piping systems other than plastic" from the fourth sentence to allow any type of pipe, regardless of material, to be tested with air. This is to allow testing to be done using air particularly in winter where testing with water may not be possible due to freezing temperatures.	None
IPC 312.3, Drainage and vent air test	This amendment deletes the first sentence: "Plastic piping shall not be tested using air." This is to allow testing to be done using air on all systems, including plastic, particularly in winter where testing with water may not be possible due to freezing temperatures. Standard practice for cold climates.	None

IPC 312.6, Gravity sewer test	This amendment removes the requirement for this test. This test has historically NOT been performed in Flagstaff and is difficult to achieve.	None
IPC 312.7, Forced sewer test	This amendment removes the requirement for this test. This test has historically NOT been performed in Flagstaff and is difficult to achieve.	None
IPC 703.7, Building sewer locating means	This amendment requires non-metallic sewer piping to be installed with tracer wire.	None
EXISTING AMENDMENT IN CURRENT CODE NOT CARRIED FORWARD		
IPC 301.3, Connections to drainage system	It appears that this amendment was not necessary as the language of the standard text of 2012 IPC is the same as the amendment. The 2018 IPC standard text is the same, with the exception of grey water and subsurface landscape irrigation are now referred to as "Chapters 13 and 14" where they are covered.	None
IPC 312.4, Drainage and vent final test	This amendment removed the requirement for this test. It is believed it was amended out because of the smoke text language. The smoke text language is included in the vent it is opted, it is not required. A visual tes, as indicated in the first sentence of the section, is required and has been taking place in the field.	None
IPC 419.4, Urinals	The language of this amendment, to apply a maximum of one pint per flush for urinals, has been relocated to the appropriate section. See proposed amendment to IPC Table 604.4.	None
IPC 607.2, Hot or tempered water supply to fixtures	This amendment removed the limit on the developed length of water supply systems of hot or tempered water to 50 feet and requirement for a recirculation pump for systems over 50 feet in developed length. In 2018 IPC standard code text remains the same. For purposes of water conservation, this amendment has been not carried forward.	None
IPC Section 610 Disinfection of potable water system	This amendment removed the requirement for new and repaired potable water systems to be flushed ("purged of deleterious matter") and disinfected. As a matter of public health and safety, this amendment has not been carried forward.	None
IPC Appendix C - Grey water recycling systems	It appears that this amendment was not necessary in 2012 nor is it in 2018. In the 2012 and 2018 IPC, grey water recycling systems are included in Chapter 13, not as an appendix which requires a local amendment to adopt.	None
2018 INTERNATIONAL FUEL GAS CODE (IFGC)		

NEW PROPOSED AMENDMENTS		
IFGC 109.1, Application for appeal 109.2 through 109.7 (Means of Appeal)	To clarify that the Title 2 of Flagstaff City Code is the governing code for a board of appeals. Language revised to reference city code.	None
NEW REQUIRED AMENDMENT		
IFGC 106.6.2, Fee schedule	Amendment references 2018 IBC (as amended) for building permit fees.	None
IFGC 106.6.3, Fee refunds	Amendment references 2018 IBC (as amended) for building permit fee refunds.	None
EXISTING AMENDMENT WITH REVISIONS		
NONE.		
EXISTING AMENDMENT IN CURRENT CODE TO CARRY FORWARD		
IFGC 303.3, Prohibited locations	This amendment removes two exceptions to prohibited locations. These two exceptions contain provisions for unvented room heaters which are not permissible by the local gas utility. See amend to IFGC Section 621 below.	None
IFGC 403.4.3, Copper and copper alloy	This amendment prohibits the use of copper, copper, alloys in fuel-gas piping installations.	None
IFGC Section 621 Unvented room heaters	This amendment deletes unvented room heaters completely, effectively prohibiting their use. Unisource, the local natural gas utility, confirmed with Building Safety staff that they will not allow service connection to a building equipped with unvented fuel-gas appliances. In addition to this, unvented room heaters are equipped with oxygen depletion sensors which are restricted to elevations lower than 5000 feet above sea level.	None
EXISTING AMENDMENT IN CURRENT CODE NOT CARRIED FORWARD		
IFGC 305.5, Private garages	This amendment deleted the standard text which requires appliances installed in a private garage to be located a minimum of 6 feet above the floor unless the appliance is protected from vehicle damage. It was replaced with language detailing examples of vehicle damage protection. The standard text is identical in the 2012 and 2018 IFGC. Since the standard text, through an exception, addresses protection from vehicle damage the amendment is not carried forward.	None

IFGC 406.4.1, Test pressure	This amendment modified the specifications in which pressure testing was conducted and referenced single family dwellings. There are provisions in the fuel-gas chapter in the IRC that cover the test pressure specifications.	None
IFGC 406.4.2, Test duration	This amendment modified the specifications in which the duration of pressure testing was conducted and referenced single family dwellings. There are provisions in the fuel-gas chapter in the IRC that cover the test duration specifications.	None
IFGC 614.5, Makeup air (clothes dryer exhaust)	This amendment removed the requirement for makeup air to be provided when an installation exhausting more than 200 cfm, leaving only the standard text which addresses installations in a closet. This seems to ignore installations in commercial laundromats and shared/common laundry rooms in hotels or apartment developments where multiple clothes dryers are likely to be installed.	None
2018 INTERNATIONAL ENERGY CODE (IECC)		
NEW PROPOSED AMENDMENTS		
IECC C101.2.1, Appendices	This amendment creates the typical Appendices section appearing in the other International Codes. The amendment also adopts Appendix CA - Solar Ready Zone - Commercial. Adoption of Appendix CA addresses CAAP Action ID E-2-G	None
IECC C109.1, General (Board of Appeals), C109.3	To clarify that the Title 2 of Flagstaff City Code is the governing code for a board of appeals. Language revised to reference city code.	None
IECC C202 General definitions	This amendment revises the definition of "residential building" to include R-2, R-3, and R-4 buildings three stories above concrete podium and without interior conditioned common entry/exit corridors. The revised definition also clarifies that when a residential building contains accessory common and/or commercial uses those portions are to comply with the commercial provisions of the IECC.	None
IECC CA101.1, General	This amendment requires new construction is to comply with this appendix.	None

IECC R101.2.1, Appendices	This amendment creates the typical Appendices section appearing in the other International Codes. The amendment also adopts Appendix RA - Solar Ready Zone - Residential. Adoption of Appendix RA addresses CAAP Action ID E-2-G	None
IECC R109.1, General (Board of Appeals), R109.3	To clarify that the Title 2 of Flagstaff City Code is the governing code for a board of appeals. Language revised to reference city code.	None
IECC R202, General Definitions	This amendment revises the definition of "residential building" to include R-2, R-3, and R-4 buildings three stories above concrete podium and without interior conditioned common entry/exit corridors. The revised definition also clarifies that when a residential building contains accessory common and/or commercial uses those portions are to comply with the commercial provisions of the IECC.	None
IECC RA101.1, General	This amendment requires new construction is to comply with this appendix.	None
IECC RA103.6, Interconnection pathway	This amendment deletes the standard language for interconnection pathway, renames the section "Capped roof sleeve penetration" and defines the requirements for this building element in accordance with IRC Appendix T amendments.	Varies, \$150-\$300
IECC RA103.7, Electrical service reserved space	This amendment revises the requirement for reserved space in the electrical service panel for future solar photovoltaic installation based on feasibility.	None
<u>NEW REQUIRED AMENDMENT</u>		
NONE.		
<u>EXISTING AMENDMENT WITH REVISIONS</u>		
IECC R402.1.1, Insulation and fenestration criteria	This amendment adds an exterior wall insulation value for 2x4 wood framed walls and adds a footnote to make an exception for the U-value of windows used in an approved passive solar design.	None
<u>EXISTING AMENDMENT IN CURRENT CODE TO CARRY FORWARD</u>		
IECC R403.7, Equipment sizing and efficiency rating (mandatory)	This amendment adds the requirement for 90% condensing type furnaces to all new construction.	None
<u>EXISTING AMENDMENT IN CURRENT CODE NOT CARRIED FORWARD</u>		

C101.2 and R101.2, Scope	The section numbers cited in the amendment do not exist in the 2009 IECC. This amendment created an exception to allow R-2 occupancies (which include uses such as apartment buildings and hotels) to comply with either the commercial or residential provisions of the IECC. The 2009 and 2018 IECC definition of "residential building" includes R-2 occupancies three stories or less in height.	None
403.1.2	This amendment required the installation of programmable thermostats in new construction and replacement heating units. The use of programmable thermostats is mandatory in the 2018 IECC residential provisions.	None
403.11	This amendment required the installation of height efficiency toilets with a maximum 1.3 gpf. There are current amendments to the 2012 edition and proposed amendments to the 2018 IPC and IRC specifying this water consumption limit.	None
N1105.10	The section number cited does not exist in the 2009 IECC. The amendment voluntarily requested that new single family dwellings have a piping only installation for grey water system. The 2018 IPC and IRC contain provisions for (voluntary) installation of grey water (non-potable water) systems.	None
505.5, Interior lighting power requirements (prescriptive; commercial)	This amendment deleted this section.	None
505.6.1 and 505.6.2, Exterior lighting power	The amendment deleted this standard text and replaced with a reference to the City's dark sky ordinance, thereby removing any power consumption standards. Removal of the dark sky ordinance does not remove its requirement as it is contained within the Flagstaff Zoning Code. All commercial projects are reviewed by Current Planning at the time of building permit application/plan review for compliance with the dark sky lighting ordinance.	None
2018 INTERNATIONAL SOLAR ENERGY PROVISIONS (ISEP)		
NEW PROPOSED AMENDMENTS		

Note: The 2018 ISEP is a compilation of all solar energy provisions found throughout the 2018 International Codes (IBC, IRC, IECC, IMC, IPC, IFC, and ISPSC). As such, each code section contained within this document is also identified by its corresponding section number from the original International Code source. Amendments to any section from the source codes, including the 2018 International Fire Code (IFC) as adopted under Flagstaff City Code, Title 5, shall apply to the 2018 ISEP.		N/A
<u>NEW REQUIRED AMENDMENT</u>		
See note above, under "new proposed amendments".		N/A
<u>EXISTING AMENDMENT WITH REVISIONS</u>		
NONE. NOT APPLICABLE.		N/A
<u>EXISTING AMENDMENT IN CURRENT CODE TO CARRY FORWARD</u>		
NONE. NOT APPLICABLE.		N/A
<u>EXISTING AMENDMENT IN CURRENT CODE NOT CARRIED FORWARD</u>		
NONE. NOT APPLICABLE.		N/A
2018 INTERNATIONAL SWIMMING POOL AND SPA CODE (ISPSC)		
<u>NEW PROPOSED AMENDMENTS</u>		
ISPSC 108.1, Application for appeal (Means of Appeal)	To clarify that the Title 2 of Flagstaff City Code is the governing code for a board of appeals. Language revised to reference city code.	None
ISPSC 202, Definitions	This amendment revises the definition of "residential swimming pool" in accordance with the Arizona Revised Statutes definition (18 inch depth compared to 24 inch depth)	None
ISPSC 305.2.1, Barrier height and clearances	This amendment revises the barrier height requirement in accordance with the Arizona Revised Statutes definition (48 inch height compared to 60 inch height)	None
<u>NEW REQUIRED AMENDMENT</u>		
NONE.		N/A
<u>EXISTING AMENDMENT WITH REVISIONS</u>		
NONE. NOT APPLICABLE.		N/A
<u>EXISTING AMENDMENT IN CURRENT CODE TO CARRY FORWARD</u>		
NONE. NOT APPLICABLE.		N/A

<u>EXISTING AMENDMENT IN CURRENT CODE NOT CARRIED FORWARD</u>		
NONE. NOT APPLICABLE.		N/A
2017 NATIONAL ELECTRICAL CODE (NEC)		
<u>NEW PROPOSED AMENDMENTS</u>		
NONE.		N/A
<u>NEW REQUIRED AMENDMENT</u>		
NONE.		N/A
<u>EXISTING AMENDMENT WITH REVISIONS</u>		
NONE.		N/A
<u>EXISTING AMENDMENT IN CURRENT CODE TO CARRY FORWARD</u>		
NEC Article 110.5, Conductors	This amendment specifies the use of copper for conductors carrying current and places limitations on the use of aluminum wire.	None
NEC Article 110.7, Wiring integrity	This amendment adds the requirement for high-potential (hi-pot) voltage testing on installation of 1000 amperes and greater.	None
NEC Article 210.5, Identification of branch circuits	This amendment specifies a wiring identification method based on common industry practice. The NEC does not specify color coding for different voltage systems.	None
<u>EXISTING AMENDMENT IN CURRENT CODE NOT CARRIED FORWARD</u>		
NEC Article 110.2	This amendment required that all electrical conductors, components, material, and equipment to be listed and labeled (for their use). The 2017 NEC contains standard language requiring listing and labeling.	None

Additional information:

IBC 1404.3.1: Class I vapor retarders include polyethylene and the standard is 4-mil poly. This material does qualify as not exceeding 1 perm (permeability) but only in a gaseous state. Once the vapor (gas) is transmitted from the cold to the warm side (insulated wall) the gas vapor condenses to liquid (water), which causes mold and rot. Class II vapor retarders include kraft-faced fiberglass batt insulation and we mainly experience un-faced batt insulation or spray-foam insulation being used in the county. A Class III vapor retarder can be used in lieu of Class I and II when continuous insulation is used in the wall cavity. This is required by code so in essence only Class III vapor retarders should be required on the warm in winter side. The most common Class III vapor retarder is latex or enamel paint.

IRC R302.13: This code section does not differentiate between basements or crawl spaces and the different hazards associated between the two. During the 2007 Minneapolis Code Hearings this code proposal was presented by the Fire Service and the entire presentation represented structures with full basements with open web floor trusses. Basements are quite different from crawl spaces and even though this code section includes crawl spaces that contain fuel-fired or electric-powered furnaces the dangers to firefighting personnel is not the same. The City of Flagstaff, along with Coconino County, would like to exempt crawl spaces that do not exceed 48-inches from grade to underside of floor with having to have gypsum board (or other material permitted as defined in code section) applied to the floor system. The other determining factor that is overlooked is that basements do not receive insulation in the joist cavities whereas crawl spaces do. A trade off option of the gypsum board in this section of code allows mineral wool to be placed along the webs of joists to protect it from fire degradation. Joist cavities that are fully insulated would provide even better fire protection of the floor support system.

IRC R507.9.2: This code provision, which requires a minimum of (2) 1,500lb lateral hold-down connections within 24-inches of each end of the deck, relates to the hazards of deck collapses associated with unanticipated lateral loads. There is a potential danger to decks with walking surface 30 inches and greater above grade (walking surfaces adjacent to grade changes 30 inches or greater do not require fall protection in the form of guards and are exempt from building permits) so proposes to exempt the (2) lateral connections on decks with walking surfaces that do not exceed 30 inches above grade. This proposed exemption does not prohibit the installation of lateral load connections if one chooses.