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Agenda

- Why Code adoption is important
- Proposed amendments relating to energy code code requirements to the 2024 International Residential Code, International Energy Conservation Code, International Wildland Urban Interface Code and International Fire Code

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Why Update the Building Codes?

The International Codes are updated every 3 years to incorporate:

- Advances in building safety
- Lessons learned from failures and disasters
- New construction technologies and materials
- Improved energy efficiency and building performance
- Modern industry standards and best practices

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What the Building Codes Help Protect

Life Safety

- Structural integrity
- Fire protection
- Safe exiting during emergencies
- Electrical and mechanical safety

Public Health

- Indoor air quality
- Plumbing sanitation
- Moisture and mold prevention
- Safe fuel gas systems

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What the Building Codes Help Protect

Property Protection

- Stronger buildings
- Better resilience to snow, wind, and environmental conditions
- Reduced long-term maintenance issues

Energy Efficiency

- Lower energy consumption
- Improved insulation and HVAC performance
- Reduced utility costs over the life of the building

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Why It Is Important for Flagstaff

Flagstaff experiences:

- Heavy snow loads
- Freeze/thaw cycles
- Cold winter temperatures
- High elevation climate conditions

Updated codes help ensure buildings are designed appropriately for these conditions.

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Why It Is Important for Flagstaff

Consistency With Modern Construction Practices

Updating the codes:

- Aligns Flagstaff with current national standards
- Helps designers and contractors work from current code language
- Improves consistency with neighboring jurisdictions

Support for Long-Term Sustainability

Modern codes promote:

- More durable buildings
- Reduced energy demand
- Improved building performance over time

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Why Local Amendments Are Proposed

The City is proposing local amendments to:

- Address Flagstaff-specific climate conditions
- Maintain practical construction methods
- Reduce unnecessary cost increases
- Balance safety, efficiency, affordability, and constructability

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Proposed IECC Wall Insulation Amendment

Maintaining Affordability & Constructability in Flagstaff

- 2024 IECC Prescriptive Requirement (Climate Zone 5B)
- The 2024 IECC increases wall insulation requirements for wood-framed exterior walls in Climate Zone 5B (Flagstaff) to approximately **R-30 equivalent wall assemblies**.
- This higher requirement typically results in:
 - Thicker wall assemblies
 - Exterior continuous insulation
 - More complex detailing
 - Increased construction costs
 - Reduced design flexibility

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Proposed Flagstaff Amendment

The proposed amendment would allow:

Residential (IRC)

- **R-21 cavity insulation**
- **OR R-13 + R-5 continuous insulation**
- **OR R-15 continuous insulation**

Commercial / Multifamily (IECC)

- **R-21**
- **OR R-20 + R-3.8 continuous insulation**
- **OR equivalent assemblies**

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Why Staff is Proposing This Amendment

Maintain Standard 2x6 Wall Construction

- Allows builders to continue using conventional 2x6 framing
- Reduces complexity in wall assemblies
- Simplifies construction methods and inspections

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Why Staff is Proposing This Amendment

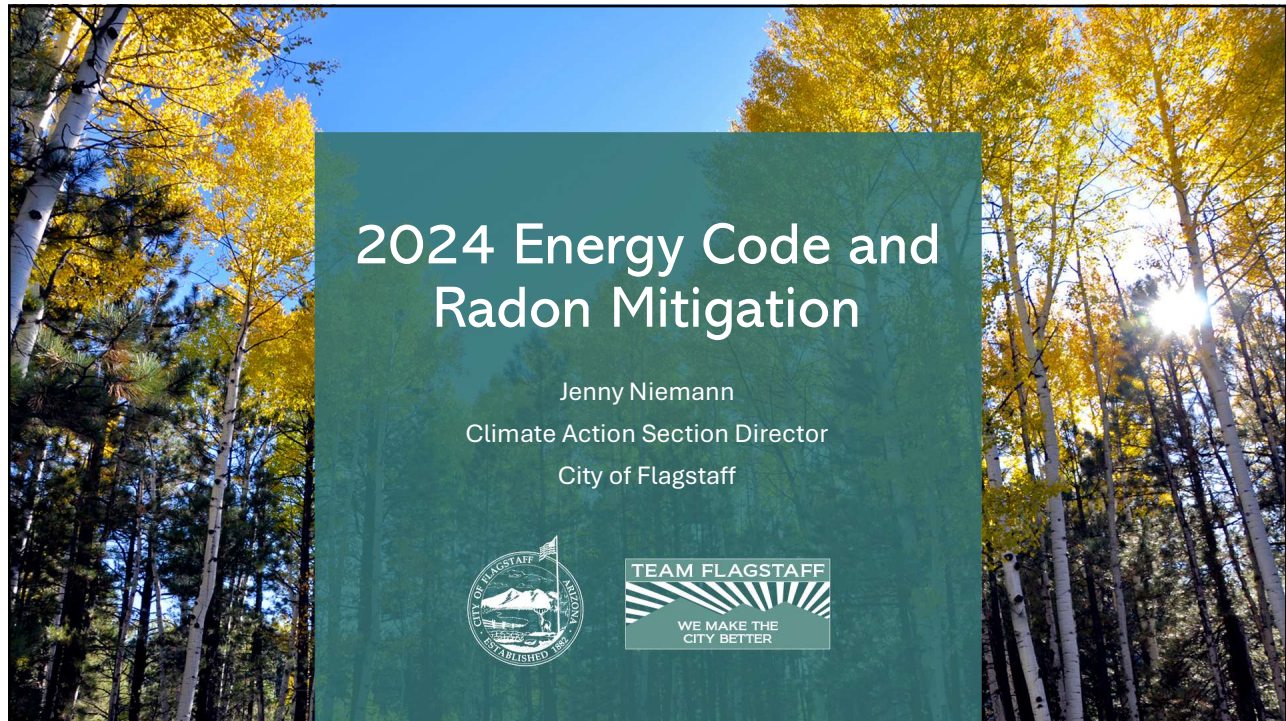
Help Reduce Construction Costs

- Minimizes material and labor increases
- Reduces impacts to housing affordability
- Avoids widespread use of thick exterior continuous insulation systems

Maintain Energy Efficiency

- R-21 walls still provide strong thermal performance for Flagstaff's climate
- Alternative compliance paths remain available
- Balances efficiency goals with practical construction realities

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Agenda

1. Energy code overview
2. Proposed approach
3. Benefits
4. What other cities have adopted
5. Draft amendments
6. Cost and savings estimates
7. Engagement and feedback
8. Summary

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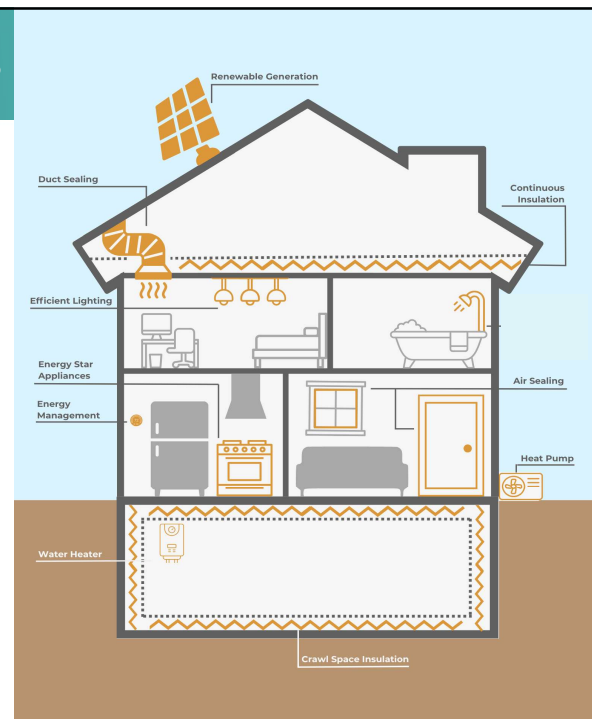
The 2024 Energy Code...

- Is a technical code developed by thousands of national **building science experts** over a **rigorous 3-year process**
- Sets **minimum energy efficiency standards** in new buildings
- Incorporates advancements in technology, sustainability, and construction practices to **enhance safety, efficiency, and resilience**
- Has a residential and commercial component:
 - **Residential:** single-family homes, duplexes, townhomes, and residential buildings < three stories in height
 - **Commercial:** all other buildings, including multifamily residential > 3 stories

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What the Energy Code Regulates

1. Insulation amount and location
2. Window and skylight efficiency
3. Ductwork design and requirements
4. Duct and building envelope testing
5. Appliances and mechanical systems
6. Lighting and electrical outlets
7. Gas fireplaces and heaters
8. Pumps, piping, circulation systems
9. Other energy-using equipment
- 10. Many more features**



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The 2024 Energy Code...

- Is designed to be **broadly adopted** by cities, states, and counties across the U.S., often with local amendments
- Has already been **adopted by many jurisdictions**:
 - AZ cities: Avondale, Chandler, Glendale, Mesa, Phoenix, Tucson
 - Other cities: Austin, TX, Nashville, TN
 - Statewide codes: Colorado, Delaware, Illinois, Nevada, New York, North Dakota, Rhode Island
- It **applies to**:
 - New buildings, additions, major alterations, changes of occupancy, and going from an unconditioned space to a conditioned space
- It **does not apply to**:
 - Repairs, routine maintenance, and existing buildings (unless they undergo the new construction types listed above)

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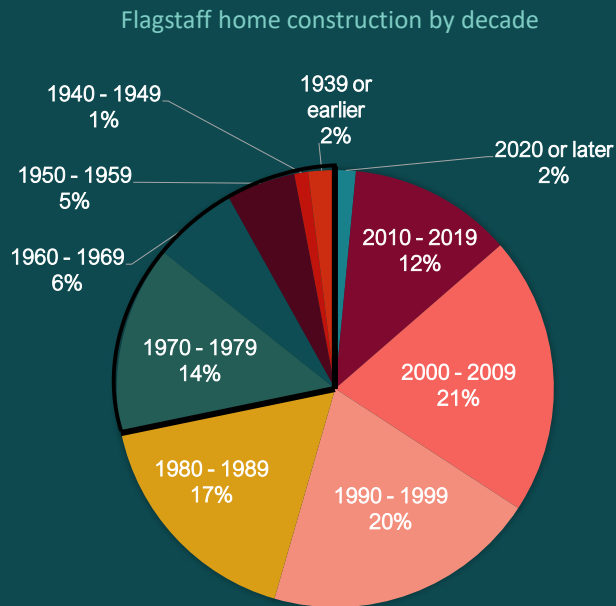
We are building for the future

- The homes we build today will last 50-100+ years
 - *How* we build impacts operational costs throughout the life of the home
- New construction is the least expensive way to improve energy efficiency
 - Future retrofits can be very costly and disruptive
- Durable, well-built housing can serve multiple generations of homeowners and renters
 - We can build homes today that meet the needs of future generations

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28% of Flagstaff homes were built before 1979

- These homes have housed multiple generations of Flagstaff residents
- How many generations will live in the homes we build tomorrow?



Source: U.S. Census Bureau. "Comparative Housing Characteristics." *American Community Survey, ACS 5-Year Estimates Comparison Profiles, Table CP04*, <https://data.census.gov/table/ACSCPSY2024.CP04?q=Flagstaff+city,+Arizona&t=Housing:Housing+Units>. Accessed on 4 Mar 2026.

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The 2024 energy code can provide substantial energy efficiency and utility cost savings

On average, and compared to Flagstaff's current code, adopting the 2024 residential energy code in Flagstaff's climate zone is estimated to:

- ✓ Improve energy efficiency by 15.2%
- ✓ Reduce energy costs by 12.6%

Source: Pacific Northwest National Laboratory (PNNL).

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Utility costs are expected to increase

- Arizona's average utility rates are already higher than the U.S. average and most western states
- In the near term, electricity and natural gas rates are projected to increase faster than historical averages
 - In March 2026, the Arizona Corporation Commission (ACC) approved a UniSource average rate increase of 13.7% + ability to increase rates using an Annual Rate Adjustment Mechanism (ARAM)
 - APS has requested a 13.99% residential base rate increase + ability to increase rates annually for up to five years before filing a new general rate case with the ACC
- For more information, see: <https://efiling.azcc.gov/> (DOCKET no. E-01345A-25-0105 (APS) and DOCKET no. G-04204A-24-0237 (UniSource))

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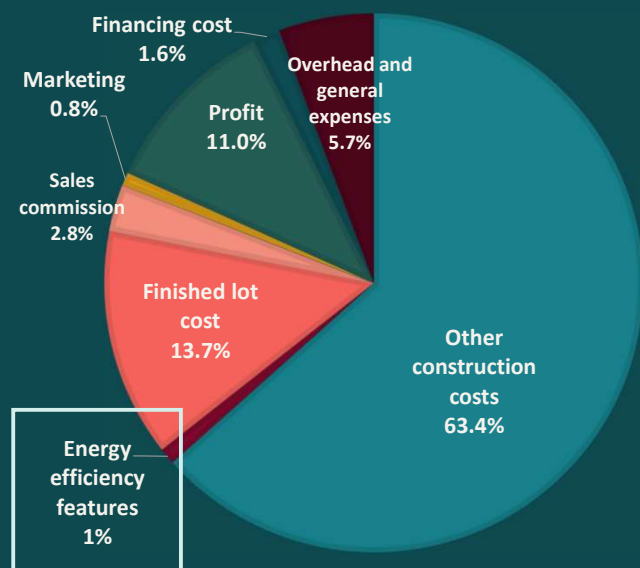
Energy efficiency and lower monthly utility costs can help with affordability

- It is important to consider monthly housing costs holistically
 - Cost of living includes monthly mortgage or rent, utilities, and maintenance costs.
- Energy-efficient buildings can lower monthly utility costs
 - Residents can benefit from lower utility bills every month of the building's life (900 months over 75 years), saving thousands of dollars
 - Energy efficiency is especially beneficial to low-income households, who can pay more than 15% of their income on energy costs

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Energy efficiency features are 1% of a home's sales price

- The average cost of energy efficiency features is approximately 1% of the average sales price of a new single-family home
- Average sales price for a new single-family home in Flagstaff: \$ 911,037 (December 2025)



Sources: Realtor.com (2025), Cost breakdown: National Association of Home Builders (2025), City of Flagstaff energy cost estimates (2026)

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The energy code helps improve safety

- Well-insulated, energy-efficient homes are more comfortable and protect occupants from extreme weather and utility outages
 - The Federal Emergency Management Agency (FEMA) sees the adoption of current building codes, including the energy code, as a key tool in building natural hazard-resistance
 - Energy-efficient homes stay comfortable longer during utility outages
- Energy-efficient homes enhance passive survivability—how long a resident can stay in their home when the power goes out

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Energy efficient homes are healthier and more comfortable

- The energy code can provide long-term benefits for building occupants, including improved health outcomes
 - Well-insulated homes help reduce exposure to harmful pollutants, including wildfire smoke
 - Mechanical ventilation systems and radon mitigation help improve indoor air quality
- Well-insulated homes tend to be more comfortable: they are warmer in the winter, and cooler in the summer



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Stronger energy codes are a key climate action tool

- Energy codes are the best tool to impact our built environment starting at construction – retrofits are incredibly costly and difficult.
- A stronger energy code makes progress on many of Flagstaff’s adopted climate goals, including:
 - Reduced energy use in new buildings and getting to net-zero energy residential construction
 - The 2024 IECC is estimated to reduce greenhouse gas emissions by 12% over Flagstaff’s current code
 - Housing for all
 - Improved safety
 - Enhanced resilience to extreme weather and utility outages

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Healthy, more efficient buildings can benefit everyone

- Everyone who lives in a new building will benefit from improved energy efficiency, safety, comfort, and health outcomes, and lower utility costs.
- The benefits from more efficient homes will accrue for generations – as homes last far beyond their occupants.

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2024 Residential Energy Code

15% improvement in energy efficiency, 13% energy cost savings

Adopt the 2024 base code with amendments

- *Add* efficiency standards for gas furnaces & heat pumps (new construction)
- *Lower* minimum insulation standard (prescriptive path only)
- *Delete* requirements for automatic light switches

Adopt these 2024 readiness appendices

- **Solar-ready**
- **Electric vehicle charging**
- **Electric-ready**

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Residential energy code amendments to reduce costs

Code section	Amendment	Impact
R202 General Definitions	Expand definition of “residential building” to allow apartment buildings > 3 stories to use the residential energy code	These changes reduce design, construction, and operational costs
R404 Lighting controls	Delete requirements for dimmer switches or other automatic features for indoor and outdoor lighting	
R402.1.3 Minimum R-Values and Fenestration Requirements by Components	Reduce insulation amount for wood-framed homes from 30 to 21, or 13+5ci (continuous insulation) or 0+15ci (prescriptive path only)	

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Solar-Ready Provisions

Appendix RB: Detached One- and Two-Family Dwellings and Townhouses
Appendix RL: Renewable Energy Infrastructure – for larger buildings

- **Prepares detached one- and two-family dwellings and townhouses for future solar PV and/or solar thermal**
 - This is already in Flagstaff's energy code for 1-2 family dwellings
 - This is not currently required for apartments.
- **Requirements:**
 - show solar-readiness on construction plans
 - electrical service reserved space
- **Proposed amendments:**
 - Delete requirements for capped roof penetrations
- **Cost estimate: \$119**
 - Retrofit cost: \$1,000's

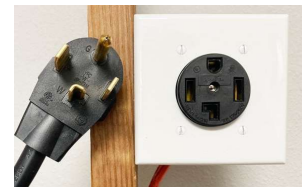


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Electric-Ready Construction

Appendix RK

- **Enhances customer choice: Makes it easier to switch from natural gas to electric appliances in the future** (new standard)
- Requirements (natural gas/electric homes only):
 - Outlets close to the dryer, stove, and water heater
- Cost estimates
 - **New construction: \$1071 - \$1,200 total**
 - Water heater: \$251 - \$300
 - Dryer: \$309 - \$450
 - Stove: \$371 - \$450
 - **Retrofit costs: \$4,500+ total**
 - \$1,500+ per outlet



Cost estimate sources: Flagstaff builders and electricians, National Association of Home Builders


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Why include EV infrastructure


- **EV adoption is growing**
 - EVs in Flagstaff < 1% of all vehicles, but EV adoption is exponential (doubles every 2 years)
 - EV registrations in Flagstaff grew by 57% from 2022 – 2024
 - ADOT’s “moderate” EV uptake scenario predicts 1,067,000 EVs in AZ by 2030
 - 65% of users of the City’s public chargers are from outside Flagstaff
 - Flagstaff receives 5M visitors a year, and more will rely on public chargers as time goes on
- **90% of charging occurs at home**
 - The least costly way to charge
 - Provides multifamily residents with access to a less costly fuel source (currently, they have less access to at-home charging than single-family residents)
- Installing EV infrastructure now **saves thousands** on costly and difficult retrofits

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Electric-Vehicle Charging Infrastructure



EV CAPABLE



EV READY



EV INSTALLED

EV capable: supports future electrical charging infrastructure

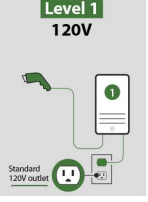
- Electrical infrastructure is present (in the wall or ground), but the outlet is not installed

- **EV ready:** electrical infrastructure installed near the parking space – but no dedicated EV charger is present.
 - Garages: 240-volt outlet. Can be used for other high-electricity appliances

- **EVSE (electric vehicle supply equipment):** EV charger fully installed.

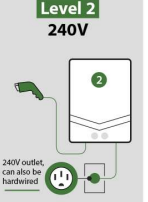
Chargers that can be used at this level:

Level 1
120V



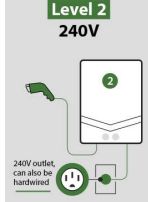
Standard 120V outlet

Level 2
240V



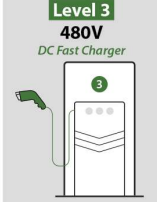
240V outlet, can also be hardwired

Level 2
240V



240V outlet, can also be hardwired

Level 3
480V
DC Fast Charger



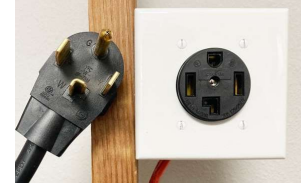
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Electric-Vehicle Charging Infrastructure

Appendix RE/NE

- **Requires the installation of EV charging infrastructure**
- **Comparison to current code:**
 - Very similar for single-family (EV ready space: 240v outlet)
 - Slightly higher requirements for multifamily (3+ units)
- **Cost estimate:**
 - Single-family: \$607 (source: NAHB)
 - Multi-family:
 - EV capable: \$300
 - EV ready: \$600 - \$3,300
 - Level 2 EV charger: \$3,000 - \$12,000
 - EV infrastructure can serve multiple spaces through power sharing
 - Retrofit costs estimated at \$5,500 per space



Multifamily cost estimates are from Energy Star, GreenLancer, and Smart Charge America

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Electric Vehicle Charging Infrastructure

Proposed EV charging requirements* by building type:

Building Type	Level 2 EVSE spaces	EV capable spaces
Apartments three stories or less with 15 or fewer parking spaces	0%	20%
Apartments three stories or less with more than 15 parking spaces	5%	15%
Apartments taller than three stories	5%	25%
Group homes three stories or less with more than 15 parking spaces	0%	7%

*Original Appendix RE/NE requires 40% of spaces to have EV infrastructure. Staff-proposed reductions are above.

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EV Charging: Options for Flexibility

- The proposed code allows substitutions in EV infrastructure, to provide greater flexibility to developers
 - 1 DCFC space = 10 Level 2 EVSE or EV capable spaces
 - 3 Level 1 spaces = 1 Level 2 EVSE or EV capable space
 - 1 excess Level 2 EVSE space = 1 EV ready space
 - 1 excess EV ready space = 1 EV capable space
- Proposed exceptions:
 - EV infrastructure will not be required if local electric distribution entity certifies it cannot provide 100% of the electric distribution capacity within 2 years
 - EV infrastructure will not be required if EV infrastructure design requirements are greater than \$450 per unit on the utility side of the meter

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2024 Commercial Energy Code

Adopt the 2024 base code with amendments

- *Allow* apartment buildings > 3 stories to use the Residential Energy Code
- *Lower* minimum insulation standard (prescriptive path only)
- *Delete* requirements for automatic outlets
- Make energy monitoring requirements *optional*
- Make renewable energy requirements *optional*

Adopt these 2024 readiness appendices

- **Solar-ready**
- **Electric vehicle charging**
- **Electric-ready**
- **Demand responsive controls**

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Proposed amendments to reduce costs

Code section	Amendment	Impact
C101.2 Scope C101.4 Compliance C202 General Definitions	Expand definition of “residential building” to allow apartment buildings > 3 stories to use the residential energy code	These changes reduce design, construction, and operational costs
Table C402.1.3 Opaque Building Thermal Envelope Insulation Component Minimum Requirements	Reduce insulation amount for wood-framed buildings from R30 to R21, 0+16ci, R13+7.5ci, or R20+R3.8 (prescriptive path only)	
C405.12 Automatic Receptacle Control	Delete requirements for outlets that shut off automatically	
R405.13 Energy Monitoring	Make it optional for buildings > 10,000 sf to provide energy monitoring equipment	
R405.15 Renewable Energy	Make it optional for buildings to provide renewable energy (solar)	

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Radon: the leading cause of lung cancer in non-smokers

- **Radon is a colorless, odorless radioactive gas from the breakdown of uranium**

- It concentrates in buildings without radon-resistant features

- There is **no safe level of radon**

- EPA maximum recommended level of 4.0 pCi/L is the equivalent of 200 chest x-rays annually
- EPA estimates 21,000 people die annually in the U.S. from lung cancer caused by radon levels of 1.2 pCi/L or less

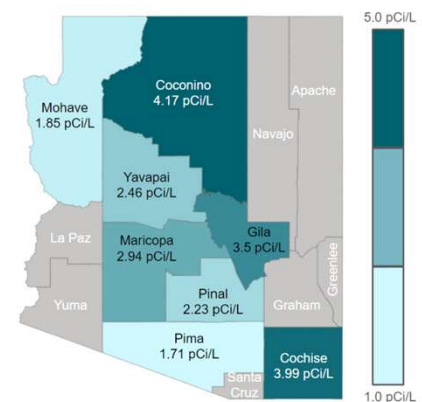
- In **Coconino County**

- The average indoor radon level is 4.17 pCi/L
- 35% of homes test > 4 pCi/L

- In **Flagstaff**

- Local radon testers estimate > 70% of homes test above 2 pCi/L and 45% > 4 pCi/L
- Frequently find radon at much higher levels

Average Radon Test Result by AZ County



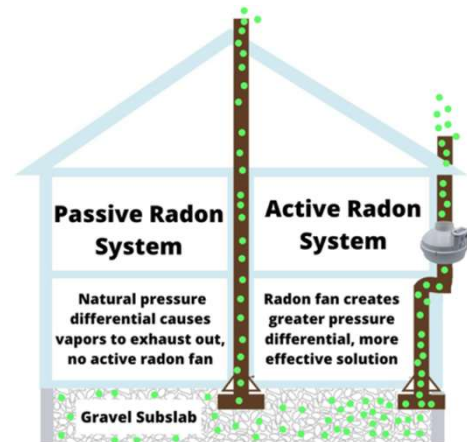
Sources:

- [Health Risk of Radon | US EPA](#)
- [Arizona Department of Health Services Indoor Radon Surveillance - Indoor Radon Data](#)
- [Colorado Department of Public Health and Environment](#)

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Benefits of radon mitigation during construction

- **Passive mitigation at construction:** most effective way to reduce radon
 - **Easier/less costly**
 - Installation cost estimate: \$350 - \$500 (national average)
 - \$135 - \$170 per radon test in Flagstaff (less costly in bulk)
- **Active mitigation (retrofit) after construction:** less effective
 - **More costly and difficult**
 - **\$200 per radon test** in Flagstaff (more costly as a one-off test)
 - Radon fan costs **\$2,300** to install in Flagstaff
- For existing construction: free radon tests are available to check out at the Flagstaff Library and through the [Arizona State Department of Health](#)



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Radon mitigation in the building code

IRC Appendix BE: Radon Control Methods

- **Adopt this appendix as part of the 2024 IRC**
 - Amendment to make radon mitigation standards required (Flagstaff adopted this appendix in 2018, but standards were optional)
- **Requires passive mitigation**
 - Material under floor systems is permeable
 - Vapor barrier in the floor
 - Sealing potential radon entry routes
 - Passive vents in crawl spaces
 - Electrical circuit to support a future radon fan
- **Post-construction testing**
- **Installation of a radon fan if the unit tests > 4 pCi/L**

Also adopt radon amendments to the 2024 International Mechanical Code – to apply to commercial buildings.

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More Information on Costs Estimates

- Estimates are based on:
 - Available data from local & national sources
 - The prescriptive compliance path (often the most expensive way to meet energy code standards)
 - Other compliance paths (Performance and Energy Rating Index) offer greater flexibility and opportunities for builders to reduce costs
- Represent a **ballpark estimate**, due to large variation in:
 - Building type, heating and cooling system type, building occupant behavior, how long someone stays in their home, etc.
- Estimates change if inputs increase or decrease, especially for:
 - Initial costs (construction and builder markup)
 - Actual utility rate increases
 - Actual energy use and savings from energy efficiency measures

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Cost estimate data sources

- American Gas Association
- Arizona Public Service
- Arizona State Office of Resiliency
- Bipartisan Policy Center
- [Flagstaff Energy Efficiency & Electrification Study](#)
- Freddie Mac
- Local Flagstaff builders
- National Association of Homebuilders: [NAHB 2024 IECC Cost Analysis for Single-Family Homes](#) (prescriptive path)
- National Association of Realtors
- Nerd Wallet
- Realtor.com
- Rocky Mountain Institute
- Uns Gas (UniSource)
- U.S. Bureau of Labor Statistics
- U.S. Department of Energy
 - Energy Information Administration
 - Pacific Northwest National Laboratory (prescriptive path)
 - 2018 - 2021 IECC: [National Cost Effectiveness of the Residential Provisions of the 2021 IECC](#)
 - 2021 - 2024 IECC: [National Cost Effectiveness of the Residential Provisions of the 2024 IECC](#)
 - Lawrence Berkeley National Laboratory
 - National Renewable Energy Laboratory (NREL) Building Energy Optimization Tool (BEopt)
- Utility Dive
- Zillow.com

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Cost Estimate Assumptions

- Home size:
 - Single family: 2,000 – 2,500 sq ft | Multifamily: 1,000 – 1,300 sq ft
- Utility costs based on Flagstaff weather patterns, local utility rates, modeled energy usage
 - Assumes a **4.39% annual energy cost increase** based on inflation and energy cost increases from the past 10 years
 - Natural gas: includes \$5 increase for 2026 (UniSource increased rates in March 2026)
 - Electricity: does not include APS' proposed 13.99% residential rate increase because it is not approved yet
- Average energy and cost savings for Flagstaff's climate zone (5B)
 - 15.20% energy use savings, **12.56% average energy cost savings**
- Mortgage costs
 - **5.12% interest rate** (average national since Flagstaff's building code was adopted 7 years ago)
 - **18.50% downpayment** (National Association of Realtors data 2023 - 2025)
- Payback period
 - How long for utility savings from energy efficiency to offset additional construction costs

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2024 IECC + appendices cost estimates: single-family

Code Section	Upfront Cost	Cost Savings
2024 Residential IECC Base Code includes high-efficiency furnace and heat pump amendments	\$3,910 - \$13,018 (\$8,400 average)	12.56% estimated reduction in energy costs
Electric-ready appendix	\$1,072	Helps avoid costly retrofits (estimated at \$1,500+ per appliance; \$4,500+ total)

Included in the current code:

Solar-ready appendix	\$137	- Helps avoid costly retrofits
EV charging appendix	\$698	- Helps avoid costly retrofits (estimated \$1,500+)

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2024 IECC estimated costs/savings (single-family)

Energy savings	12.6%
Average additional up-front cost	\$8,400

	Monthly	Annual	Over 30 years
Average additional mortgage cost	\$37	\$447	\$13,411
Average utility savings	\$44	\$527	\$15,805

	With mortgage	Without mortgage
Savings over 30 years	\$2,394	\$7,405
ROI	18%	116%
Payback period	31.0 years	19.7 years

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2024 IECC + appendices cost estimates: multi-family

Code Section	Upfront Cost Per Housing Unit	Cost Savings
2024 Residential IECC Base Code	\$1,690 - \$3,000 (\$3,255 average)	12.6% estimated reduction in energy costs
Electric-ready appendix	\$1,380	Helps avoid costly retrofits (estimated \$1,500+ per appliance; \$4,500+ total).
Solar-ready appendix	\$137	Helps avoid costly retrofits
EV charging appendix (cost per housing unit)	\$40 - \$975	Helps avoid costly retrofits (estimated at \$5,500+ per parking space).

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2024 IECC estimated costs/savings (multi-family)

Energy savings	12.6%
Average additional up-front cost	\$3,255

	Monthly	Annual	Over 30 years
Average additional mortgage cost	\$14	\$173	\$5,197
Average utility savings	\$23	\$272	\$8,169

	With mortgage	Without mortgage
Savings over 30 years	\$2,971	\$4,914
ROI	60%	194%
Payback period	20.1 years	15.2 years

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Radon mitigation cost estimates

Code Section	Upfront Cost Per Housing Unit	Cost Savings
Passive radon mitigation	\$300 - \$500	- Minimizes the need to install a radon fan later
Radon testing	\$135 - \$170 per test	- Testing at construction is less costly
Radon fan installation (only if needed)	\$2,200 - \$2,300	
Radon fan operation	\$3 per month in electricity costs	
Radon fan replacement cost	\$145-300	Radon fan expected life span: 11 years

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Benefits of updated energy codes

- The 2024 energy code reduces overall costs
 - While there are higher costs upfront at construction, this investment leads to lower energy bills – with a return on investment
 - Lower energy bills will provide ongoing benefits - for up to 100 years
- Building better homes up front pays off
 - Retrofitting homes is expensive and difficult
 - Building codes are the best way to lock-in energy efficiency and cost savings
- Improved comfort and health
- Improved safety
- Everyone who lives or works in these buildings will benefit over the life of the building

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Intent

- •Adopt the 2024 International Wildland Urban Interface Code to create a more fire adapted community while reducing risk of urban conflagration
- •Draft amendments based on local wildfire risk and heat transfer science
 - 1.Embers
 - 2.Radiant Heat
 - 3.Direct Flame
- •Simplify Construction Requirements
- •Align with City of Flagstaff Zoning Code and Forest Management Plan
- •Align with Insurance Institute for Business and Home Safety's Wildfire Prepared Home Plus and Wildfire Prepared Home Neighborhood Standards

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Significant Updates

- Section 5 Construction Regulations:
- Deconflict three construction standards to just one standard
- Eliminate uncertainty with fire hazard severity and defensible space calculations
- Move from ignition resistant to non-combustible construction

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City of Flagstaff – Flagstaff Fire Department

2024 IWUIC Significant Changes & Cost Impacts (Condensed Summary)

2024 IWUIC changes focus on transitioning from ignition-resistant construction toward noncombustible construction materials. Cost impacts below are estimated based on a typical 1,800 square foot single-family residence.

Key Change	Impact / Cost
Exterior Walls	Transition to noncombustible siding. Estimated material increase: < \$40 for 1,800 sq ft home.
Eaves / Soffits	Transition to noncombustible soffit materials. Estimated increase: < \$1,680 depending on material selection.
Covered Gutters	New gutter cover requirements. Estimated increase: ~\$500.
0-5 Foot Noncombustible Zone	Transition from mulch/wood fencing to gravel/metal fencing. Estimated increase: ~\$2,500.
Windows	No major change. Requires minimum 20-minute fire-resistance-rated glazing per NFPA 257.
Roof Assemblies	No major change. Requires Class A roof assembly.
Doors	No major change. Requires noncombustible or solid-core wood doors.
Gutters	No major change. Requires noncombustible metal gutters.
Vents	No Major Change: 1/8" screening required.
Decks	Transition to noncombustible deck materials may increase costs depending on design.

WHEN COSTS ARE TRIGGERED (IWUIC)

- Material Selection → Noncombustible siding, soffits, and fencing increase cost
- Site Design → Larger defensible space areas increase landscape and fencing costs
- Roof & Deck Design → Specialty noncombustible systems increase cost
- Home Configuration → Larger homes with complex roof/eave systems increase costs
- Voluntary Wildfire Hardening → Enhanced wildfire mitigation systems increase upfront cost

Total Project Impact: Research indicates upgrading to noncombustible materials typically increases total construction costs by approximately 1–2% for a typical 1,800 sq ft residence.

Long-Term Value: Noncombustible materials generally last longer, require less maintenance, may reduce insurance premiums, and improve wildfire survivability.

Avoided Costs: Research indicates every \$1 invested in wildfire-resistant construction may save approximately \$210 in avoided future wildfire losses.

IBHS Wildfire Prepared Home: Voluntary wildfire mitigation certification programs are now available to Arizona residents.

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Major Code Impacts: 2018–2024 IFC

- •Lithium-ion battery and ESS requirements
- •This is one of the biggest themes of the 2024 IFC
- •Additive Manufacturing (3D Printing)
- •Emergency Responder Communication Systems (ERRCS/ERCES)
- •Upholstered Furniture & Mattress Storage
- •Hazardous Materials / Control Areas Coordination
- •Electric Vehicle Infrastructure Coordination
- •Enhanced Hazardous Materials Provisions
- •Carbon Monoxide Detection

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