

Utah Division of Forestry, Fire and State Lands



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2026



"The Heat Is On: What's Up with Wildfire Risk in the WUI?"

Wildfire risk is no longer just a suppression issue, it is a land use, building standards, and public policy challenge. This session will explore how wildfire hazard mapping, WUI code zones, boundaries and standards, and recent legislation, aimed at high-risk areas, are reshaping how we build, plan and live in fire-prone landscapes. We will be connecting the dots between science, standards and statutes.



Utah Division of Forestry, Fire & State Lands

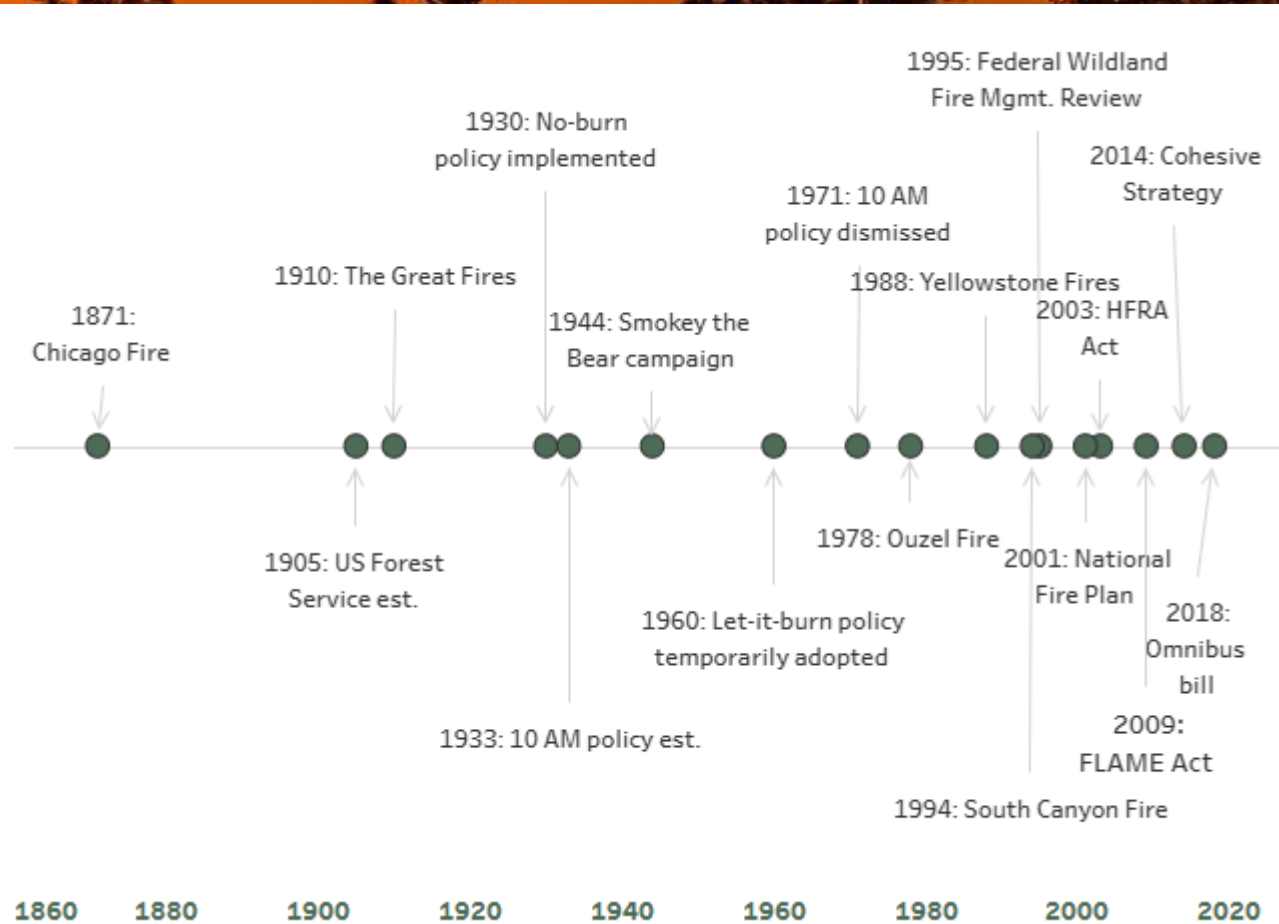
ffsl.utah.gov

Outline

- History and The BIG Why
- What is the WUI?
- What is the difference between WUI Zone and WUI Boundary?
- High-Risk Legislation 2024-2025
 - Reason/History/What is it?
 - Triage Levels
 - Certification of Staff
 - Lot Assessment Software
 - Methodology
 - Boundary Map
- 2026 - HB41, HB215
- WUI Code Standards vs NFPA Home Hardening vs Building Code
- Ways Planners Can Help
- Proof of Concept (Monroe Canyon)



Federal Wildfire Policy Timeline



The BIG Why

The National Cohesive Wildfire Management Strategy

The strategy was formed because wildfire risk in the US had grown beyond what existing fire management could handle. A series of severe fire seasons in the late 1990's and early 2000's showed that the country needed a coordinated national approach rather than separate efforts by individual agencies.

Thus we strive to coordinate wildfire mitigation, legislation, policies, and local ordinances to align with these tenets.

1. Restore and Maintain Resilient Landscapes
2. Build Fire Adapted Communities
3. Safe and Effective Wildfire Response

Why is everyone talking about wildfire risk in the WUI?

To put it **simply**, the Wildland Urban Interface is where wildfire and people intersect most directly and therefore where it costs the most to suppress wildfires and the largest losses and safety risks occur.

So what exactly is the WUI?... ↘



What is “the WUI”?



The Wildland Urban Interface (WUI) is the zone where structures and other human development meets, or intermingles with, undeveloped wildland.

What is the difference between the local entity's WUI Zone and FFSL's High-Risk WUI Boundary?



*In the words of Elyse
“Great question I
would love to tell you.”*

County or Municipality WUI Zone

WUI Zone is defined in Utah code as: The line, area or zone where structures or other human development (including critical infrastructure that if destroyed would result in hardship to communities) meet or intermingle with undeveloped wildland or vegetative fuel.

This is where Utah's WUI Code (UWUIC) is applicable and enforceable by the county or municipality.

Typically it is designed by the **local agency** and determined by analyzing findings of fact like distance to wildlands, presence and density of flammable vegetation, weather patterns in the area, slope, road access, density of structures etc.-

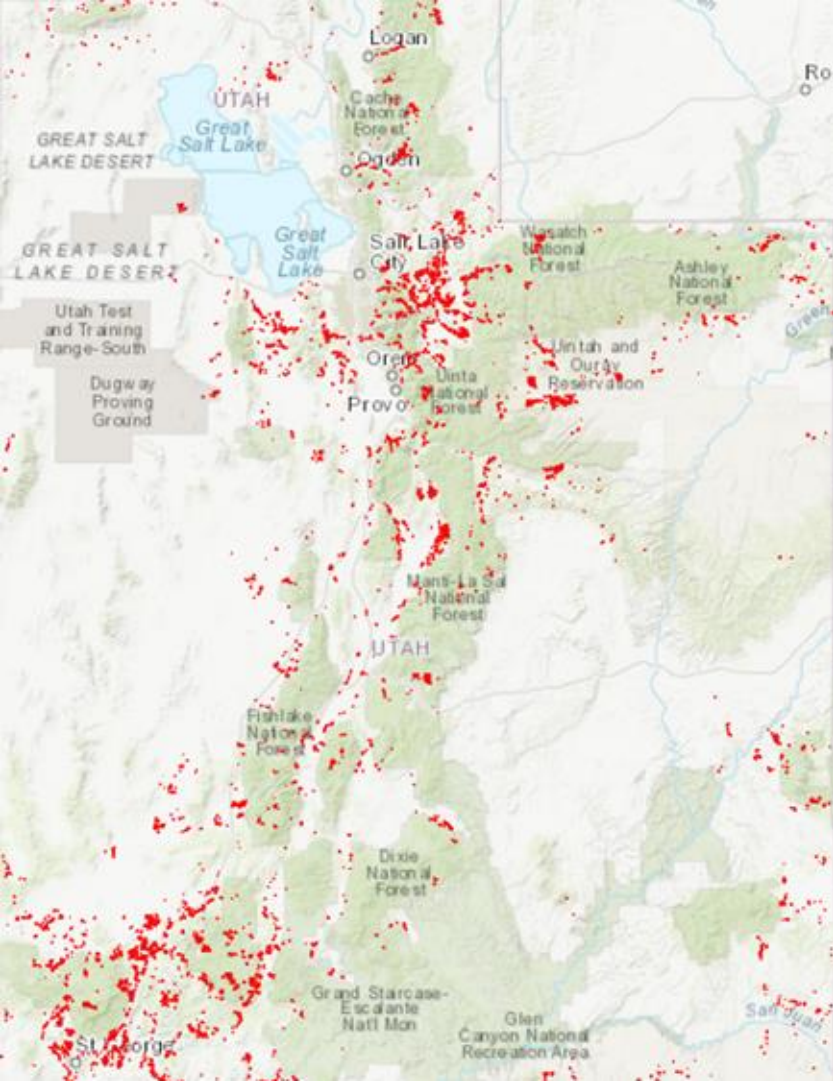


County or Municipality WUI Zone (cont.)

Forestry, Fire and State Land (FFSL) recommendations include:

- Review risk levels and map layers in the “Themes” section of Utah’s Wildfire Risk Assessment Portal (UWRAP)
 - Theme layers include: Wildfire Hazard Potential, Risk to Drinking Watersheds and Population, Burn Probability, Damage Potential, Smoothed Structure Exposure Score (SES), and the location of High Risk WUI Properties.
- UWRAP Structure Exposure Score (SES) theme layer -where the SES is categorized as 5 or higher is mandatory to consider when determining a local WUI Zone. (HB41)
- SES score takes into account burn probability, damage potential, and also includes ember loading.





FFSL's High-Risk WUI Boundary

The Division of Forestry, Fire & State Land's (FFSL) high-risk WUI boundary specifically identifies WUI areas that present an elevated risk of wildfire. This high-risk boundary is a refined assessment and is determined by:

Areas where there is an SES of 7+ combined with structure density and **refined by local subject matter experts, as determined by the division.**

FFSL's High-Risk WUI Boundary (cont.)

Identifying the high-risk WUI boundary is required of the division by 2025's House Bill 48. Properties with structures within the high-risk WUI boundary will be assessed an annual fee and encouraged to have a certified WUI lot assessment. These assessments identify ways in which the property owner can reduce their wildfire risk through improving their defensible space and ignition resistant construction.



History of the High-Risk WUI Boundary

2024: LEGISLATIVE DIRECTION & ANALYSIS



- House Bill 437 directed FFSL to analyze a new high-risk category.
- Scientific assessment focused on risk to dwellings within the WUI.

STUDY OUTCOME: SES DATASET



Produced a susceptibility dataset: the Structure Exposure Score (SES).

RECOMMENDATIONS & FUTURE STEPS



- Use SES of 5, 6, or 7.
- Develop new mapping & dataset process.
- Ground-truth models & add home hardening data.








What prompted High Risk WUI Legislation?

Increased frequency and severity of wildfires

- 🔥 **Marshal Fire (CO), 2021:** 2 deaths | 1,084 structures
- 🔥 **Lahaina Fire (HI), 2023:** 102 deaths | 2,207 structures
- 🔥 **Eaton Fire (CA), 2025:** 19 deaths | 9,418 structures
- 🔥 **Palisades Fire (CA), 2025:** 12 deaths | 6,837 structures



Avoid Catastrophic Wildfires

-  Loss of life, property, income, resources
-  Soil erosion, flooding, and damage to municipal water supply
-  Pollution of air quality and water quality leading to health concerns
-  Destruction of wildlife habitat and natural resources
-  Disruption to critical infrastructure like communications and power

2025 Wildfire Suppression Costs



Federal

\$160,571,157.73



County

\$24,930,611.72



City

\$1,131,432.23



State

\$5,197,950.32

**Total Non-Federal
\$31,259,994.27**

**Total suppression cost
\$191.8 million**

2025 wildfire cost figures are preliminary and subject to change pending consolidated billing, which is expected to be completed in May.

2025's HB 48 “Wildland Urban Interface Modifications”



Major Elements of HB 48

1



High Risk
WUI boundary

2



Structures
assessed a fee

3



Lot
assessments

4



WUI Code
adoption

5



Insurance
requirements



High Risk WUI Boundary

- Where the fees will be assessed (on taxable structures and by square footage)
- Finalized January 1, 2026
- Scientific analysis of:
 - Fire likelihood & intensity
 - Ember load & structure density
- Boundary will be updated annually



Lot Assessments

- Assessments may be requested by the property owner.
- Assessments will use a prescribed standard methodology currently being developed by FFSL
- Must be completed by a certified lot assessor (certified by FFSL)



Lot Assessments (cont.)

- Lot Assessments will produce a triage scale based on the WUI code
- Property owners receive a full lot assessment report with recommended actions to reduce wildfire risk based on:



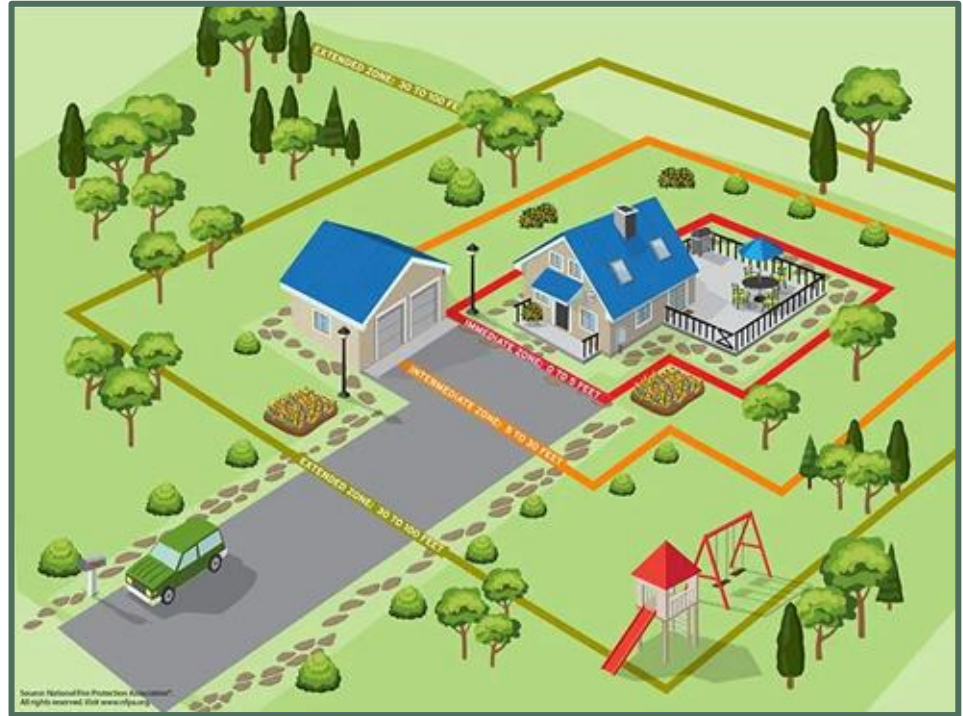
FIREWISE USA[®]
Residents Reducing Wildfire Risks




Lot Assessments (cont.)


Survivable Space
(defensible space)


Home Hardening





Fee Amount


 Purpose of fee is to pay for High Risk WUI program.

 **2027** = flat fee between **\$20 and \$100**

 **2028 onward** = fees based on:

 **Square footage** of structure

 **Triage score** from the lot assessment

 **Costs** to state and county to operate program



WUI Code Adoption



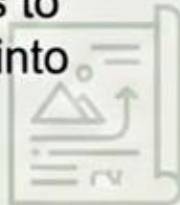
Current Requirement: 2006 WUI Code

Counties and municipalities that participate in the Cooperative Wildfire System (“CWS”) are now required to adopt and enforce Utah’s 2006 WUI code, which addresses vegetation management around structures and ignition-resistant new construction in wildfire-risk areas.



Future Requirement: 2024 IWUIC

Now that the 2024 IWUIC has been adopted by the Utah Legislature (law takes effect Jan 1, 2027), Counties and Municipalities have 2 years to adopt the new 2024 Code into their local ordinances.



Effects on Insurance



Insurers must use the Division's **new high risk WUI Boundary** when labelling a structure "High Risk" for wildfire



Insurers are **not restricted** from using **other data sources** to measure risk



If requested by the property owner, insurers must **disclose their rationale** to property owners when premiums rise >20% or when coverage is discontinued due to risks of wildfire



The Division must **share the triage level** determined from lot assessments with insurers



What is the High Risk WUI Program?

- The primary intent is to increase awareness of wildfire risk.
- Encourage property owners to share responsibility for risk reduction in the WUI.
- Property owners in the high-risk WUI may request a lot assessment for personalized risk mitigation strategies.
- The property fee supports these assessments.



Utah Division of Forestry, Fire and State Lands Implementation

- 🍃 Creates the high-risk WUI map
- 🍃 Sets the fees for structures in the high-risk WUI
- 🍃 Sets triage standards for lot assessments
- 🍃 Develops administrative rules
- 🍃 Maintains the UWRAP portal and database, where the high-risk boundary is viewable.
- 🍃 Conducts lot assessments as requested by property owners

Municipal Implementation

- Adopt & enforce the WUI Code
 - If in Cooperative Wildfire System
- Define and map local WUI zones in coordination with counties



County Implementation

- 🍃 Collect fees based on a statewide assessment of high-risk WUI properties.
- 🍃 Adopt/enforce the WUI Code
- 🍃 Define and map local WUI zones
- 🍃 May conduct lot assessments as agreed with the state
- 🍃 Participate in CWS if there is a high-risk WUI in the county

Potential Impact of the High-Risk WUI Program

When property owners reduce their wildfire risk:

- **Structure Survivability** increases, and
- Likelihood of **Urban Conflagration** reduces.



How Did the Division Determine the Risk?

- The new “high-risk” WUI map was developed by a firm that brought international expertise in wildland fire behavior and risk analysis.
- The map calculates risk by looking at severity x probability x exposure, whereas fire behavior is quantified as fuels x weather x topography. Ember production from these fuels is a key component of assigning an exposure score.
- These risk models, combined with structure density, helped define the high-risk WUI area.
- For a full technical breakdown ask FFSL’s SME.

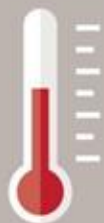


RISK

HAZARD



LIKELIHOOD
the probability of
wildfire starting
and spreading



INTENSITY
the energy released
by a wildfire

X

VULNERABILITY

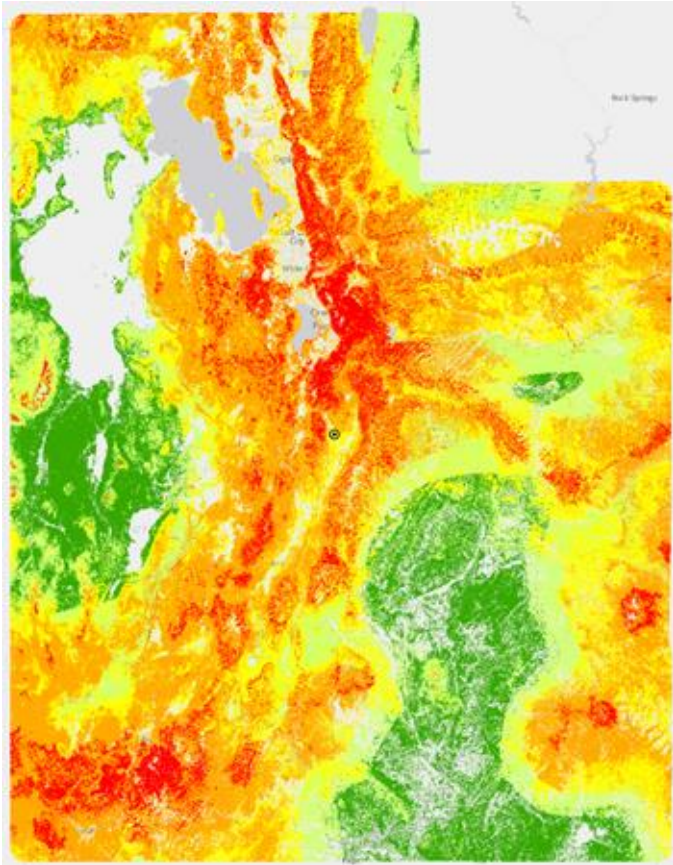


EXPOSURE
the spatial overlap
of wildfire and
communities



SUSCEPTIBILITY
whether a
community may be
harmed by wildfire





Utah Wildfire Risk Explorer



wildfirerisk.utah.gov



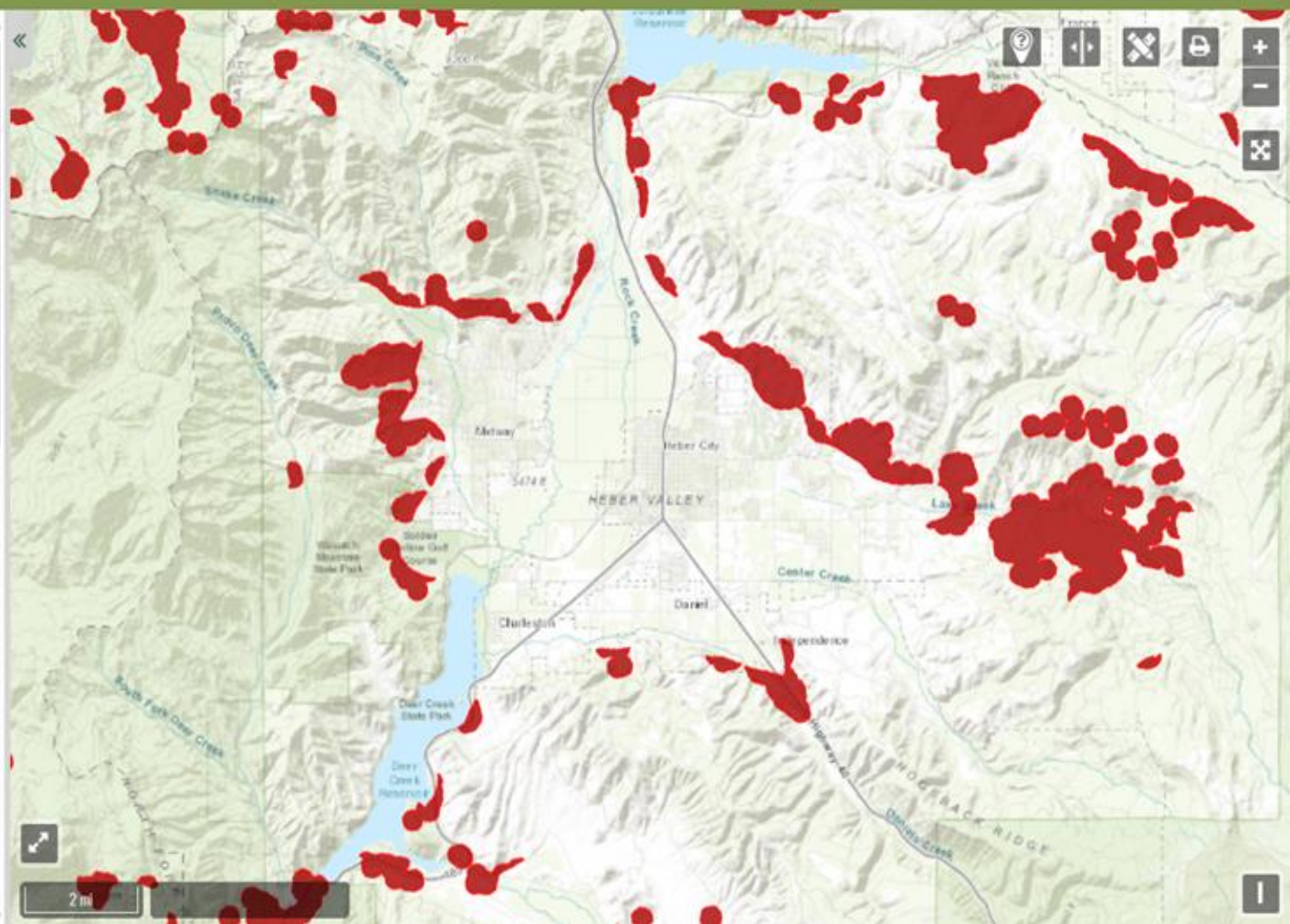
LAYERS

- Wildfire Hazard
- High Risk WUI Properties i
- Smoothed Structure Exposure Score i
- Structure Exposure Score i
- Wildfire Hazard Potential i
- Risk to Drinking Watersheds and Population i
- Burn Probability i
- Damage Potential i
- Conditional Risk to Potential Structures i
- Risk to Potential Structures i

- Challenges to Fire Operations
- Flame Front Characteristics
- Ember Characteristics
- Boundaries

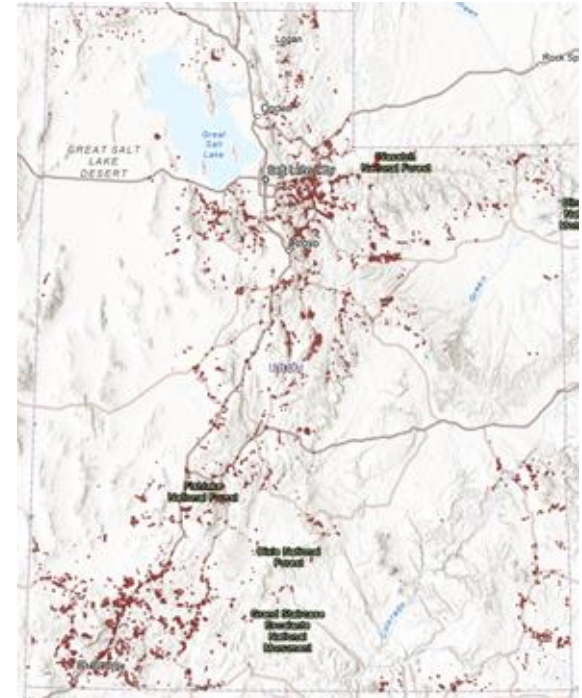
BASEMAPS

- Light Gray i
- Aerial i
- Streets i
- Topo i



High Risk WUI Properties Map

- High Risk WUI fee
- Certified lot assessments
- Insurance requirements
- Developed by State (FFSL)
- Density of **existing** structures
- Top 5% of wildfire risk



2026 HB 41

- Adopted the 2024 International Wildland-Urban Interface Code with Two amendments;
 - **Deletion of Section 602(Residential Fire Sprinkler Requirements)**
 - **Unless approved by the Division of FFSL no designated WUI areas shall be below the risk category 5 threshold of the smoothed SES map found on the UWRAP website.**
- High Risk WUI fee is postponed another year. (Jan 1, 2027 instead of Jan 1, 2026)
- Formalizes appeals of the High Risk WUI map by a county.

2026 HB215 - Landscaping in the WUI

Restricts a county, municipality, or homeowner association from prohibiting a property owner from removing vegetation on property located in a wildland-urban interface area in order to comply with the WUI Code.

- “(6)A municipality may not enact or enforce a land use regulation, or adopt or enforce a policy, that prohibits, or has the effect of prohibiting, a property owner from removing vegetation from a portion of the property owner's property:
 - (a)that is within a designated wildland-urban interface area; and
 - (b)where removal is required to comply with the defensible space requirements of the edition of the International Wildland Urban Interface Code adopted under Section 15A-2-103”

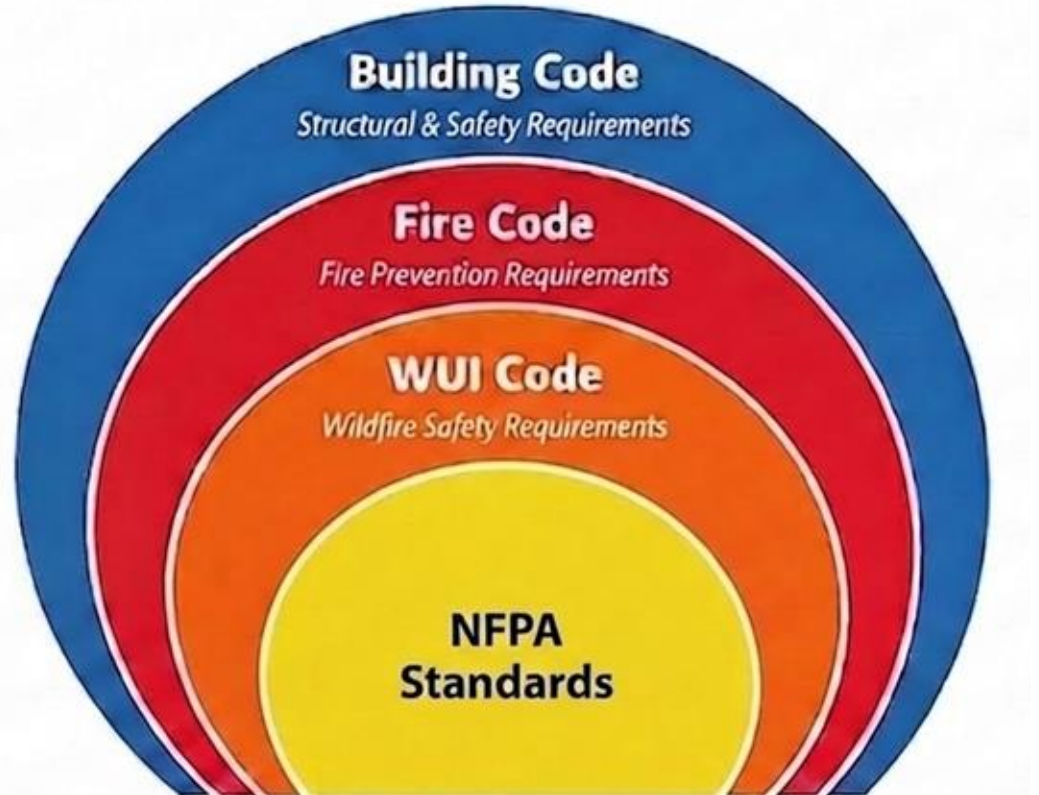
NFPA / Firewise / WUI Code / Fire & Building Codes



Relationships of Codes and Standards

NFPA standards strongly influence the development of the International Wildland-Urban Interface Code (IWUIC) but they are not directly adopted into it.

They serve as technical foundations and reference material that the International Code Council (ICC) uses when developing the IWUIC.



NFPA Standards

What it is:

- “NFPA develops roughly 300 codes and standards that serve as the foundation for fire, electrical, and life safety across the globe.”

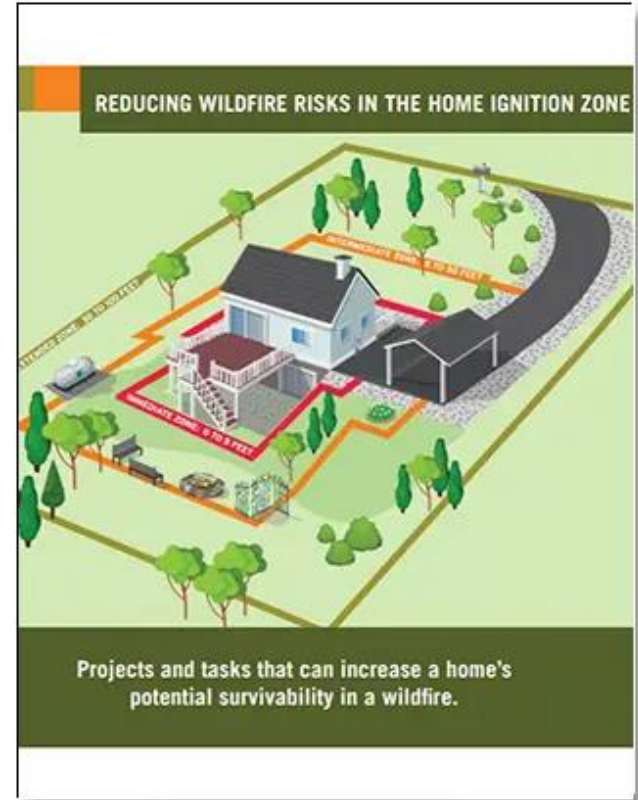
Authority:

- Not a building code - instead it is a national standard based on scientific research, fire investigations and field observations, and is widely accepted as a set of best practices.
- NFPA serves as a key building block of WUI, fire and building codes.

NFPA Firewise USA®

What it is:

- “The Firewise USA® program provides simple, effective steps to help communities reduce the risk of destruction from wildfire.”
- Provides actionable information to homeowners on how to reduce their risk of wildfire by addressing **home-hardening** and **defensible space**.



NFPA Firewise USA® cont.

Common home-hardening actions include:

- Class A fire-rated roofing
- Ember-resistant screens on vents
- Enclosed eaves and soffits
- Non-combustible siding or skirting
- Deck retrofits

Common defensible space actions include:

- Clearing flammable material out to 5' around the house.
- Tree pruning and spacing
- Plant fire-resistant vegetation

Utah's Wildland-Urban Interface Code (UWUIC)

What is it?

- The International Wildland-Urban Interface Code(IWUIC) is written and published by the International Code Council(ICC)
- The Utah legislature adopts and amends the IWUIC through Utah State Construction Code Title 15A, creating the Utah Wildland Urban Interface Code.
- Utah's WUI Code is a complementary code to the Utah State Building, Residential and Fire Codes, administered through the Unified Code Analysis Council and the Uniform Building Code Commission(UBCC).
- Enforced locally by the county or municipality

Utah's Wildland-Urban Interface Code (UWUIC) cont.

What it does:

- Establishes minimum standards for **ignition-resistant construction** and **vegetation management** (levels of ignition resistant construction: IR1, IR2, IR3)
- Focuses on reducing structure ignition.
- Structural requirements applies primarily to **new** construction and substantial **remodels** in designated WUI areas
- Vegetation management requirements apply to new construction and **retroactively** to all homes located within the local WUI zones.

Utah's Wildland-Urban Interface Code (UWUIC) cont.

Where it is:

- Like other building codes, the county or municipality must identify a “WUI zone” where the WUI code will apply.
- Typically the fire department and/or county fire warden will assist the local planning and zoning department to develop the WUI boundary.
- The WUI zone must fall within the state's Smoothed Structure Exposure Score of 5 or higher, unless granted an exception.

Fire & Building Codes

What are they?

- Written and published by the ICC, Nationally recognized set of Construction Codes adopted and amended by our Legislature under the Utah Construction Code Title 15A.
- Adopted by local counties and municipalities.
- Local ordinances must meet or exceed the Residential & Building Code, local amendments must be approved through the UBCC.

Fire & Building Codes cont.

What it does:

- Establishes how homes must be constructed in Utah.
- Sets a baseline for structural integrity.
- Sets baseline for building materials.

Who it applies to:

- New construction, additions and remodels ect.

Some Ways Planners Can Help (1/3)

- Adopt the WUI code
 - Declare WUI Zones in your jurisdiction via mapping overlay.
 - Ensure enforcement through building permits, subdivision review, site plan approvals and vegetation plan inspections.
- Land Use Planning
 - Use UWRAP and other findings of fact to guide zoning and density decisions

Some Ways Planners Can Help (2/3)

- Subdivision and Infrastructure Design
 - Multiple access and evacuation routes
 - Adequate road widths and turnaround space
 - Clearly marked addressing and signage
 - **Adequate water supply and hydrant signage**
 - Consider leaving strategic fuel breaks
 - Utilize Ignition Resistant Construction depending on Hazard Severity

Some Ways Planners Can Help (3/3)

- Support National and Local Wildfire Initiatives
 - FireWise
 - Ready, Set, Go
 - Fire Sense / Living With Fire
- Vegetation
 - Encourage Firewise/Waterwise Landscaping
 - Support RX's and Landscape Level Fuels Treatments

Proof of Concept (Monroe Canyon)

https://drive.google.com/file/d/17gv56k86dA6MBTL7ubnn3CuNE1R5BBUT/view?usp=drive_link

Started on July 13, 2025. Burned 73,721 acres burned and 10 residential structures were destroyed, but it could have been much worse.

The Monroe Canyon Fire intensity moderated due to fuels treatments. The reduced intensity allowed firefighters to make many tactical decisions because they had extra time, could use treatments as anchor points, or it helped halt the advance of a high-intensity wildfire during the worst imaginable weather conditions.



Questions?

For More Information Contact:

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