

Building for Wildfire in Montana: Protecting Communities with Statewide Wildfire Safety Standards



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About Headwaters Economics

Headwaters Economics is an independent, nonprofit research group whose mission is to improve community development and land management decisions. <u>https://headwaterseconomics.org/</u>

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Building for Montana's Fiery Future:

Protecting Communities with Statewide Wildfire Safety Standards

Executive Summary

Montana's risk is increasing

Like much of the West, Montana's wildfire risk is increasing. While home construction keeps pace with surging population growth, wildfires are becoming more common, destructive, and intense. They're also lasting longer. These converging trends put more people, property, and businesses in harm's way. The number of new Montana homes in areas of moderate to high wildfire risk doubled from 1990-2020.¹ Across the state, more than 1,400 structures have been lost to wildfire in the last 15 years and countless first responders have been asked to put their lives on the line to defend them.²

Statewide wildfire safety standards are proven and cost-effective

Wildfires know no boundaries and there is no single solution. Living with wildfire requires collaboration among private residents and local, state, tribal, and federal governments. Determining how and where communities grow in areas of wildfire risk is a key piece of the equation that needs to be addressed at the state level. While Montana's legislators have limited control over the incidence, intensity, and duration of wildfires, the wave of population growth, or the factors that contribute to human desire to build near wild spaces, they have at their disposal a proven opportunity to reduce the destructive risk of wildfires: the enactment of statewide wildfire safety standards.

Also known as wildland-urban interface (WUI) codes, statewide wildfire safety standards can help direct new home development toward areas of lower risk, ensure buildings are constructed with wildfire in mind, and help develop road and water infrastructure to keep residents and first responders safe. Studies show that the cost of constructing new homes



to meet wildfire safety standards are comparable to traditional building strategies.³ In fact, at the community level, wildfire safety standards can save \$4 for every \$1 spent.⁴



Montana needs a new strategy

While Montana allows local jurisdictions to adopt a WUI code, its land use statutes and restrictions make adoption unnecessarily complicated and burdensome for cities and counties. To date, only a few jurisdictions have even considered adopting the code..

To make communities safer, Montana can:

Adopt clear, consistent, baseline standards for wildfire safety in areas of highest risk and allow local jurisdictions the option of going above and beyond minimum standards. Standards should harmonize existing subdivision, zoning, and building code regulations to provide homeowners and builders with options for wildfire resilience in new developments, including:

- Structure density and location
- Building materials and construction techniques
- Landscaping near structures
- Roads for emergency vehicle access and escape routes
- Water access and supply

Allow local entities to use statewide data in land use decisions. Maps from the recent Montana Wildfire Risk Assessment can be used to delineate areas where standards apply. Maps were developed by DNRC using the best available science and were calibrated with input from experts across the state. Maps can be further refined to incorporate local data.

Provide technical support

to local jurisdictions for implementation and enforcement. State agencies can provide staffing and expertise to aid local jurisdictions as needed, but jurisdictions can retain local control over the standards.



Building today for a fiery future

If we do not account for increasing wildfire risk in the ways we locate, design, and build Montana's housing supply, we are only delaying the inevitable cost of disasters. Wildfire safety standards are a proven method to ensure long-term public safety, and improve housing affordability and durability.



Public safety.

Wildfire safety standards can help ensure safety for first responders and residents. They can help ensure water supply, require that roads are wide enough for evacuation and first responder access, and give buildings a better chance of surviving wildfires.



Housing affordability.

Building to wildfire safety standards does not cost more than traditional building strategies and saves communities costs over the long term. Insurers are already dropping policies in Montana, but wildfire safety standards can help keep insurance policies available and affordable.



Housing durability & predictability.

Building homes to meet wildfire safety standards will help ensure the housing stock we build today is available for future generations of Montanans. Statewide standards will provide predictability and consistency for builders across the state.



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1. Lives, Property, and Infrastructure At Risk: Growth and Wildfire Risk in Montana Are Rising

This report provides a snapshot of the opportunities and solutions for reducing the financial, human, and resource costs that wildfires pose to communities throughout Montana, particularly in the wildland-urban interface (WUI), an area where housing and burnable vegetation intersect.

Construction and Wildfire Boom in the WUI: A West-Wide Perspective

Although wildfires are a natural and important ecological process in the western United States, wildfires have become more destructive and longerlasting in recent decades, devastating communities, properties, and businesses.¹ Since the 1990s, the average acreage burned in U.S. wildfires has more than doubled.² Coinciding with this jump in acreage, the wildfire season in the U.S. West has expanded; on average, it is nearly three months longer than in the 1970s.³

Long-term weather patterns are projected to exacerbate the problem in the future. Fuel aridity in the U.S. West continues to increase and is expected to expand the potential for wildfire activity. Earlier spring snowmelt also exposes areas that previously remained snow-covered into late spring, expanding the geographic and temporal extent of wildfires.⁴

WHAT IS THE WILDLAND-URBAN INTERFACE?

The Wildland-Urban Interface (WUI) is the area where communities meet and intermingle with burnable vegetation. Maps of wildfire risk can help delineate the WUI and identify where communities and proposed future development may be exposed to wildfire.



Figure 1: Montana homes in areas of wildfire hazard as of 2018.

Data Sources: Montana housing data - Montana Department of Revenue; Wildfire risk data - Wildfire Risk to Communities.²¹

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Human factors play an outsized role in fueling seasonal and spatial expansion of wildfires as well. U.S. communities – particularly in the West – experienced unprecedented housing growth in the late 20th and early 21st century.^{5, 1} Much of that growth occurred in the wildfire-prone areas, placing structures within the path of more fires that previously only burned wildland areas. Between 1990 and 2016 the average number of structures burned annually by wildfire more than tripled.⁵ Human-ignited wildfires accounted for 87% of all U.S. wildfires from 2010-2020.⁶ These factors, among others, have driven a stunning statistic: over two decades between 2000-2019, more than 2,000 U.S. communities saw wildfires of 100 acres or larger within 2 miles.⁷ As a result, more subdivisions, homes, people, and personal property have been placed at risk annually.

Due to these trends, the costs of wildfire are on the rise. From 2005 to 2022, wildfires destroyed more than 97,000 structures.⁷ From 2016 to 2020, average federal spending on fire suppression averaged \$2.5 billion per year.⁸ Federal managers estimate that 50 to 95% of suppression costs are directly related to protecting homes.⁹ Although firefighters successfully controlled most wildfires, wildfire disasters generally occur when extreme weather conditions result in rapid fire spread that overwhelms firefighting resources.

While these numbers are staggering, the true costs are even higher. Federally-funded wildfire suppression represents less than 10% of the full costs of wildfire to communities. Local jurisdictions bear nearly half of the full costs of wildfire, and a combination of local and state agencies and nongovernmental emergency response organizations cover a significant portion of the remainder.¹⁰ Long-term damages can have devastating costs, such as lost business and tax revenue, physical and mental health effects, watershed rehabilitation, and property and infrastructure repairs. Loss of human life in wildfire disasters causes immeasurable harm to families and communities.

Worryingly, these numbers represent just the tip of the iceberg. Only about 18% of the WUI has been developed in the West, meaning that 82% of developable WUI landscape does not yet have ignitable structures.^{5,1} Moreover, forecasters estimate that wildfire activity will double between now and 2050. Increased construction activity within the currently undeveloped 82% of the WUI, combined with a 100% increase in fire activity over the next 30 years, points to exponential financial, health, infrastructure, and ecosystem risk to homeowners, communities, emergency responders, and insurers.

Wildfires know no boundaries and there is no single solution. Living with wildfire requires collaboration among private residents and local, state, tribal, and federal governments. Determining how and where communities grow in areas of wildfire risk is a key piece of the equation that needs to be addressed at the state level.

Wildfire Risk in Montana

Montana is no different than the U.S. West as a whole. Since 2005, wildfires have destroyed nearly 1,400 structures in Montana.¹¹ The 10 most destructive Montana wildfires affected a dozen counties across the state in both western and eastern Montana (Table 1). Wildland fires near communities impact public health and safety, water quality, transportation infrastructure, regional economies, and quality of life.

Home development in the WUI is growing faster than in other land use types in the United States.¹² Montana is no exception. The state has experienced 8% population growth between 2010 and 2020; moreover, based on current rates the state is expected to add 250,000 new citizens by 2050, a projected growth rate of approximately 17%.¹³ A notable percentage of that growth will occur in the WUI. Across Montana, the number of homes built in areas of moderate and high wildfire hazard doubled between 1990 and 2018 (Figure 1), and nearly 120,000 homes have moderate or high wildfire risk.¹⁴

Fire Name	Year	Structures Destroyed	Counties & Tribal Areas Impacted	
Dahl	2012	223	Musselshell	
Bridger Foothills	2020	68	Gallatin	
Roaring Lion	2016	65	Ravali	
West Wind	2021	51	Fergus, Judith Basin	
BobCat	2020	48	Musselshell	
Derby Fire	2006	47	Stillwater, Sweet Grass	
Chi Chi	2007	42	Sweet Grass	
Caribou	2017	40	Lincoln	
Ash Creek	2012	39	Rosebud, Powder River, Northern Cheyenne Indian Reservation	
Nineteen Mile	2012	34	Jefferson	

Table 1. Montana's ten most destructive wildfires, 2005 - 2022

Source: National Fire and Aviation Management FAMWEB. (2022). As reported by Headwaters Economics. *Wildfires destroy thousands of structures each year*. https://headwaterseconomics.org/natural-hazards/structures-destroyed-by-wildfire/

Montana has an opportunity to learn lessons and take warnings from the varied approaches to mitigating the worst impacts of increased wildfire activity and risk in the WUI. While Montana's legislators have limited control over the incidence, intensity, and duration of wildfires, the wave of population growth, or the factors that contribute to human desire to build near wild spaces, they have at their disposal a proven opportunity to reduce the destructive risk of wildfires in the WUI.

This report outlines a promising option that legislators can exercise to reduce wildfire risk to Montanans, their property, and their infrastructure from the destructive force of wildfires while still recognizing the unique level of independence that our communities have come to expect. This option hinges on harmonizing existing subdivision, zoning, building, and land use regulations with a unified statewide WUI Code that provides structure and

guidance to local communities planning for resilience. This approach would create a baseline set of requirements for counties and cities to follow, allowing jurisdictions to build upon the baseline to control the level of community protection against wildfire risk. These proposed changes also would reduce internal and cross agency inconsistencies around structure safety, planning and permitting, and building density in areas of high wildfire risk, giving communities options for how they can best protect themselves. Finally, this approach would embed local experts within communities who have direct access to a liaison in Helena tasked with technical and financial support, expertise, and guidance. This approach enshrines certain requirements at the state level while empowering counties and local governments to craft more protective regulations that can help them mitigate or avoid the worst impacts of a more fire-prone future.

While Montana's legislators have limited control over the incidence, intensity, and duration of wildfires, the wave of population growth, or the factors that contribute to human desire to build near wild spaces, they have at their disposal a

proven opportunity to reduce the destructive risk of wildfires in the WUI: Statewide Wildfire Safety Standards.

2. How and Why Statewide Wildfire Safety Standards Work: A Primer

Statewide wildfire safety standards—also called WUI Codes—can help protect communities by informing the location of buildings and infrastructure, their relative density, and the way in which those buildings and infrastructure are constructed, maintained, and buffered from wildlands.

What Does a WUI Code Govern and Where Does it Apply?

A WUI Code regulates where and how new development and infrastructure can occur within areas designated as part of the WUI. Typically, a WUI Code only governs new construction and developments; it does not have any impact on existing structures. A WUI Code addresses considerations like structure density and location, building materials and construction techniques, landscaping around structures, emergency vehicle access and escape routes (i.e., roads), water access and supply, and fire protection measures within a development.¹⁵ Contrary to some misconceptions, a WUI Code does not address aesthetics or otherwise require structures to be built in a certain style.

A WUI Code takes effect only within areas of wildfire hazard, as delineated by a wildfire hazard assessment. Therefore, a critical component of a WUI Code is a coordinated planning effort among state and local experts to map areas where a WUI Code should apply. Armed with spatial and conceptual data, input from multiple sectors of society, and a thoughtful analysis of the contributing factors, local and state agencies can make informed decisions about the extent of a WUI to maximize public safety, protect critical infrastructure, and provide greater certainty to communities and stakeholders. Appendix A outlines some considerations for delineating the WUI area.

WHAT IS A WUI CODE?

A WUI Code is an ordinance intended to help prevent the loss of life and property from wildfire. It regulates where and how new development can occur within designated wildfire hazard areas.

WUI Codes typically govern new construction and address:

- Structure density and location;
- Building materials and construction techniques;
- Landscaping near structures;
- Roads for emergency vehicle access and escape routes; and
- Water access and supply.

Who Can Adopt a WUI Code and What Are Other States Doing?

Jurisdictions in the U.S. West have taken distinct pathways in developing WUI Codes either at the community, county, or state level – or a combination.

Over the past decade, only a few states (California, Nevada, and Utah) have attempted a statewide WUI Code along with more centralized management. For instance, California has a strong top-down approach for defining the WUI, enforcing its statewide WUI Code, regulating certain aspects of the built environment, and mandating that local jurisdictions adopt plans that reflect the statewide WUI Code.¹² Centralization adds a level of predictability for communities and unifies how emergency responders, planners, developers, and individuals can manage issues that arise in the WUI. However, because decisions occur at the state level, local jurisdictions often find it difficult to meet requirements or to keep up with policy or regulatory shifts that trigger local action or updates.¹²

Conversely, various jurisdictions have experimented with implementing local land use planning solutions when the states in which they reside have not mandated a statewide management approach. For example, Austin, TX, Santa Fe, NM, Flagstaff, AZ, and Boulder, CO, have created relatively robust municipal plans to mitigate wildfire impacts.¹⁶ Some counties across the West have undertaken similar interagency planning efforts to define the WUI,

implement a mitigation framework, and adapt their land-use planning and building codes to require specific protective measures in the WUI. Examples include Eagle and Douglas counties (Colorado), Chelan County (Washington), Teton County (Wyoming), and Ada County (Idaho).

Washington state's approach may serve as a useful model for Montana. Like Montana, Washington has adopted portions of the International WUI Code as part of the state's model building code. Unlike Montana, all Washington cities, counties, and towns are legally required to adopt the minimum requirements in the International WUI Code, though they are able to exceed the minimum standards and requirements set out in the state building code. Washington also recognized the cost of implementing state-level policies and building the needed expertise to carry out the requirements, so it authorized the Legislature to appropriate funds for financial assistance. The Legislature recently included specific line items in the annual budget that provide funding and technical assistance to counties, cities, and towns to build capacity, share learning resources, make connections, and assist in applying for federal funds (in addition to state funds). In other words, Washington has a uniform framework that cities and counties can build upon, state-funded technical expertise that supports local communities in integrating the framework locally, and direct funding assistance from the Legislature.¹³

Montana has a different approach that so far has resulted in very low WUI Code adoption. This report later examines Montana's current approach in greater depth. In short, the state has authorized a heavily modified version of the International Model WUI Code but left it to local jurisdictions to adopt and implement the code at the county or city level. While a handful of municipalities have adopted the WUI Code as authorized, no Montana county has adopted it. Missoula is perhaps the county farthest along in taking a comprehensive approach toward WUI development and has spent several years coordinating its planning department, fire departments, DNRC, and community stakeholders to address development in the WUI.³

Are WUI Codes Effective?

Numerous studies in the past decade have illustrated that enforceable WUI Codes are one of the most effective strategies for wildfire resilience in risk-prone areas. Post-fire analyses have found that homes built to modern wildfire safety standards in California were 40% less likely to be destroyed than homes built before the standards were adopted.¹⁷ Structures built to withstand the risks – including those with defensible space – more often survive fires and lower the risk of damage to neighboring properties.¹⁸

Indeed, a "spillover effect" does occur to neighboring structures as well, both positive and negative. In a 2021 study, researchers concluded that a structure built within the specifications of a WUI Code had a 40% lower chance of being destroyed in a wildfire. In addition, a structure (whether or not built with wildfire resilience in mind) located close to neighboring structures that were built to code were shown to be safer. Meanwhile, the same structure located next to neighboring structures that pre-dated the WUI Code was more likely to be destroyed.¹⁶

Absent a WUI Code, individual property owners still may choose to protect their investments and, by extension, lower the risk to their neighbors. However, voluntary mitigation measures alone do not increase community resilience to wildfires. Jurisdictions that rely solely on homeowners and developers to do the right thing leave "significant gaps and a false sense of security" in defending against wildfire because a single nonconforming structure can ignite, sustain, or create a pathway to generate additional exposure and risk.¹⁷

What is the Cost of a WUI Code?

Despite the documented benefits derived from enforceable WUI Codes, jurisdictions often fear the economic and political costs of implementation. Some leaders fear that requiring wildfire-resistant construction will increase housing costs. However, recent research has confirmed that building code adjustments that account for fire-resilient materials do not impact the construction cost of new homes. A 2018 study concluded that wildfire-

resistant materials in Montana cost 2% *less* than traditional new construction.⁸ Other studies have found slight increases in cost, ranging from a few thousand dollars and higher depending on the materials selected.¹⁹

At the community level, the costs of implementing new wildfire safety regulations varies depending on the existing personnel and capacity. Adoption and implementation typically require cross-departmental collaboration among fire, planning, and building code and enforcement personnel.

But looking at costs alone ignores the annual economic and social burden imposed on communities by wildfires. A U.S. Department of Commerce report calculates the total annual economic burden from wildfires ranges from \$71.1 billion to \$347.8 billion,²⁰ a staggering dollar figure. This figure includes direct and indirect losses from wildfires. Such losses include lost lives, economic decline in rural communities resulting in a lost tax base, structure loss, cleanup, psychological impacts, utility losses, supply chain disruptions, tightening housing markets, and economic loss from harm to timber and agricultural resources.¹⁷

Looking solely at implementation costs also ignores positive data regarding the return on investment of funds spent to mitigate the harm caused by wildfires in the WUI. Specifically, recent data from FEMA indicate that a WUI Code saves on average four dollars in avoided costs for each one dollar spent on mitigation.²¹

Although experts struggle to quantify and partition wildfire losses with full certainty, recent economic literature has been able to peg the sectors of society on which those costs and losses fall the hardest. Unsurprisingly, local and state agencies, businesses, affected property owners, and citizens at large bear approximately 64% of the total cost burden of wildfire disasters.^{9, 20} In particular, local communities are most acutely impacted by both short-term and long-term expenses stemming from wildfires; although state or federal dollars or insurance may cover short-term costs, local communities bear an overwhelming direct and indirect cost burden.^{9, 22}

In other words, mandatory WUI Codes reduce the risk of structure damage or destruction, which has substantial knock-on effects. Retrofits and code-compliant new construction lessen the burden on emergency services. They also reduce the direct and indirect losses of wildfires and increase a community's ability to survive and thrive. When viewed through this lens, avoiding those cost burdens by investing in resilient communities is great value for the money. Further, adopting building codes such as those in a WUI Code can help unlock federal grant funding through programs like FEMA's Building Resilient Infrastructure and Communities (BRIC), or the U.S. Forest Service's Community Wildfire Defense Grants (CWDG)—both of which prioritize applicants who have adopted building codes.

3. Challenges with Montana's Current Framework

Current Legal Framework: Plans and Regulations and their Gaps

Over the past several years some western states – including Montana – have sought to balance local and statewide perspectives with varying degrees of success. As discussed above, top-down requirements like those in California create predictability and certainty, but give local jurisdictions little flexibility to tailor their approach to protecting lives, livelihoods, and infrastructure. Bottom-up solutions, on the other hand, maximize flexibility but create an uneven and confusing set of rules that can confound well-intentioned attempts to harmonize a comprehensive approach to mitigating wildfire risk.

Montana's current approach acknowledges the importance of defining the WUI and understanding wildfire hazard, though it falls short of its intended goal of protecting people, property, and communities. Montana currently relies on a patchwork of regulations, incentives, and voluntary measures that constrain local governments and state-level experts from comprehensively mitigating wildfire risk. It also effectively prevents local agencies from taking advantage of state-level technical resources, or of sharing resources with other counties and cities committed to protecting lives, property, and community integrity.

A table appended to this report as Appendix B outlines the constellation of current plans, regulations, incentives, and voluntary measures that attempt to address risk within Montana's WUI. It is clear that the complexity of interagency cooperation, regulatory constraints, and voluntary incentives creates a series of half-measures that prevent local, municipal, and state governments from adequately protecting lives, livelihoods, and infrastructure.

Montana Regulations Governing Actions in the WUI

Montana law expressly establishes three types of regulations that counties can use to regulate development in the WUI: subdivision, zoning, and building codes. The operative term here is "can," as these regulations are largely advisory in nature rather than mandatory. The exception is that local governments must adopt subdivision regulations, but those regulations have little ability to meaningfully address building style and type within the WUI. Beyond the focus on voluntary or optional measures, Montana's current legal framework does not apply to any existing structures.

Taken together, Montana's regulations create a patchwork that leaves significant gaps in how communities can build wildfire resilience and mitigation into their planning. Figure 2 summarizes the gaps and opportunities in current subdivision, zoning, and building code regulations.

Taken together, Montana's regulations create a patchwork that leaves significant gaps in the how communities can build wildfire resilience and mitigation into their planning.

Figure 2: Gaps in Montana's Regulatory Framework for Wildfire Safety

	Allowed Under Current Montana Regulations			
Items that need to be regulated for wildfire safety:	Subdivision Regulations	Zoning	Montana WUI Code	
Structure density and location	Limited to new subdivisions only.	Currently included.	Missing from MT WUI Code.	
Building materials and construction techniques	Explicitly prohibited.	Explicitly prohibited.	Currently included.	
Landscaping near structures	[silent]	[silent]	Currently included.	
Roads	Wildfire considerations not explicit.	[silent]	Missing from MT WUI Code.	
Water access and supply	Wildfire considerations not explicit.	[silent]	Missing from MT WUI Code.	
Ongoing maintenance & enforcement	No oversight authority after approval.	Limited to density and land uses.	Missing from MT WUI Code.	
Additional limitations in Montana	Required by state law, but only applies to new subdivisions— not existing lots.	Adoption is voluntary and can be politically difficult.	Adoption is voluntary. Local jurisdictions cannot go beyond what DLI has adopted.	

Subdivision Regulations

The Montana Subdivision and Platting Act (MSPA) requires all cities and counties to adopt regulations governing the new subdivision of land. The MSPA includes several mandates that local jurisdictions must adopt, as well as certain restrictions that local jurisdictions are not allowed to implement in their regulations. As it relates to wildfire risk, the MSPA is internally inconsistent and haphazard to the extent that subdivision regulations cannot effectively address or mitigate risks associated with wildfire in the WUI.

On one hand, the MSPA requires subdivision regulations to "provide for the identification of areas that, because of natural or human-caused hazards, are unsuitable for subdivision development," prohibiting local jurisdictions from approving subdivisions in those areas "unless the hazards can be eliminated or overcome by approved construction techniques or other mitigation measures."²³ In addition, subdivision regulations must provide for "the avoidance of subdivisions that would involve unnecessary environmental degradation and danger of injury to health, safety, or welfare by reason of natural hazard, including but not limited to fire and wildland fire, or the lack of water, drainage, access, transportation, or other public services or that would necessitate an excessive expenditure of public funds for the supply of the services."²⁴

However, local jurisdictions have no way to meaningfully enforce these mandates. Local jurisdictions are prohibited from requiring developers to use certain building materials or adopt certain land use practices that could mitigate or minimize wildfire risks in high-hazard areas, unless the state (through the Department of Labor and Industry, or DLI) has expressly identified the practice as acceptable.²⁵

This is complicated by unclear legislative mandates that create more uncertainty. While DLI has adopted the International WUI Code—with significant limitations, as discussed below—state law contains a maddeningly

vague provision stating that any DLI building code rules regarding fire-safe construction techniques "may not be construed to be part of the state building code."²⁶

So, the question remains—are jurisdictions prevented from adopting local rules governing building materials and practices in subdivisions in order to mitigate wildfire risk in the WUI? Or are they permitted to do so because fire-resilient construction techniques are not building code requirements? And what if a county has decided it does not want to create a building code? Is it required to comply with the International WUI Code because the International WUI Code is not part of the state building code? Or can it ignore the International WUI Code because DLI has treated it as a building code since its inception?

What's more, in addition to local jurisdictions being unable to require developers to mitigate or minimize wildfire risks, the MSPA prohibits local governmental bodies from denying a proposed subdivision solely due to the subdivision being located within the WUI.²⁷ So, a county or city seeking to deny a subdivision based on its location in the WUI cannot do so. Instead, it would either have to find another reason to deny the permit or allow the subdivision to proceed even though the risks of building in that location could cost lives and money in the event of a fire in the WUI.

These factors taken together make it difficult for local entities to implement protective measures that would mitigate or minimize wildfire risk in the WUI. For example, even if a county or city government adopted the DLI-approved WUI Code with the intent to understand and mitigate risk—as it is permitted to do—it could not use its powers to ensure that new subdivisions are sited in appropriate locales. Moreover, the local jurisdiction could not use its government authority to ensure that new subdivisions use fire-safe building materials or construction practices.

Beyond these uncertainties, it bears noting that while counties and municipalities are required to develop subdivision regulations the next two sets of regulations governing infrastructure development in the WUI — zoning and building codes—are optional.

<u>Zoning</u>

Zoning generally regulates development of the land in a given jurisdiction, specifically with respect to structure density and location. Montana law authorizes - but does not require - county and municipal zoning.²⁸ If they choose to adopt zoning regulations, counties and municipalities may promulgate rules that "promot[e] public health, safety, morals, and general welfare."²⁹ Even if a jurisdiction pursues zoning to protect public health and safety in the WUI, zoning regulations can be overturned by the public because of protest provisions in municipal zoning and referendum provisions in county zoning.

Beyond their optional nature, the scope of Montana's zoning laws differs slightly at the county and municipal levels. Cities can only "regulate and restrict the height, number of stories, and size of buildings and other structures; the percentage of lot that may be occupied; the size of yards, courts, and other open spaces; the density of population; and the location and use of buildings, structures, and land for trade, industry, residence, or other purposes."³⁰ Counties, if they choose to implement countywide zoning, may establish different zones that "regulate the erection, construction, reconstruction, alteration, repair, location, or use of buildings or structures or the use of land."³¹

Where implemented, zoning regulations vary in detail and complexity, with some jurisdictions regulating lot sizes, land uses, and a host of parameters that can mitigate wildfire risk. Conversely, zoning may be very simple, regulating a very limited range of parameters like the density of development. In both cases, however, the limited planning powers granted to local governments, combined with their optional nature, both restrict these statutes' effectiveness in mitigating wildfire risks in the WUI. For example, in a 2014 decision, the Montana Supreme Court indicated that zoning cannot be used to regulate building materials (such as roofing materials) that are

expressly governed by state-adopted building codes. If a local government adopts zoning to address development in the WUI, it must avoid regulating structural elements that are included in building codes such as roofing materials, windows, and vents.³²

Without any explicit control over building materials, fire-resilient infrastructure, or landscaping, zoning codes' primary tool for wildfire risk mitigation is to reduce the structure density within the WUI. While lower density can minimize some risks, it could have several negative consequences, including: incentivizing growth further into the WUI to meet housing demand, encouraging single-family home construction on larger lots, and impacting wildlife migration. These side effects impact Montana's housing costs in a state where affordable housing has long dominated policy conversations; and also affect the state's largely intact landscapes that drive the service-based and agricultural economies.

Building Codes - Where the International WUI Code Lives

Like zoning, local jurisdictions are not required to adopt building codes. Moreover, the Montana Legislature has authorized cities, towns, and counties to locally adopt and enforce only those building codes that have been adopted by the DLI. The Uniform Building Code, International Building Code, International Residential Code, and the International WUI Code (with significant modifications) have been adopted under Title 24, Chapter 301 of the Administrative Rules of Montana and may be adopted by local governments.

When adopting the International WUI Code, however, Montana significantly diluted its provisions. It primarily addresses fire-resistant construction materials such as noncombustible roof coverings, walls, windows, vent coverings, and similar matters, and includes a wide-ranging appendix covering vegetation management and certain land use practices.³³ Yet Montana rejected significant portions of the International WUI Code, including the maintenance requirements, road standards, and water supply standards.³⁴ In the International WUI Code, water supply standards determine whether new subdivisions would be permitted in areas of hazard, so removing this provision effectively removes the ability of the WUI Code to affect housing density and location. Together, these modifications make Montana's WUI Code less comprehensive and minimize its effectiveness. Since local jurisdictions cannot adopt codes that go beyond what DLI has approved, this hamstrings any local jurisdiction interested in adopting the highest safety standards – which were created by an international council through a consensus-based process.

In practice, only a small minority of counties have adopted the state's building codes.³⁵ Montana's watered-down WUI Code, combined with the fact that the MSPA prohibits local governments from requiring new subdivisions to implement resilient construction techniques or other wildfire mitigation measures that DLI has identified as appropriate within the WUI, effectively prohibit local permitting agencies from meaningful WUI Code adoption that could protect communities. This loophole turns the state's current WUI-centric building requirements into an unenforceable set of guidelines that local governments cannot meaningfully employ in their jurisdictions to protect lives and property from increasing wildfire risk in the WUI – even if they were to adopt a local WUI Code.

Montana's watered-down WUI Code, combined with the fact that the Subdivision and Platting Act prohibits local governments from implementing resilient construction techniques, effectively prohibits local agencies from meaningful WUI Code adoption that could protect communities.

Local Planning Tools

Montana jurisdictions can take advantage of several local planning tools that the state or the federal government has authorized for the purpose of increasing community resilience. All are optional policies that can include provisions related to planning and growth within the WUI. The most prominent of these is a growth policy, which is a long-range, comprehensive city or county community development plan. A growth policy may cover all or part of a local government's jurisdictional area. A growth policy if adopted, must include: maps and text describing characteristics and features of the jurisdictional area; projections for land use, population, housing, economic



conditions, local services, natural resources, and other community development needs; goals and objectives for addressing local challenges; a description of policies, regulations and other measures to be implemented to achieve the goals and objectives, as well as a timeline for implementation; a strategy for the development, maintenance, and replacement of public infrastructure, including fire protection facilities; a statement of how the governing body will coordinate and cooperate with other jurisdictions; and a statement of how the governing body will define the primary review criteria for subdivisions, including the effect on public health and safety.³

A few issues arise. First, Montana does not require cities or counties to develop or adopt growth policies. Because WUI guidelines are embedded in a voluntary framework, local jurisdictions are under no obligation to take the WUI into account when planning for the safety and security of their communities. Conversely, the state has no control over whether and the extent to which local jurisdictions will use that information to protect communities from wildfires.

Second, in Montana a local growth policy is not a regulatory document that can stand on its own as enforceable law. It can only repeat what state statute or regulations have already authorized in terms of managing risk within the WUI. Therefore, even when a county adopts WUI guidelines, it cannot impose any conditions on land use or building permits within the WUI unless those requirements are already embedded in state law. As discussed above, because the WUI provisions of the building code are permissive rather than mandatory, a local agency is limited in actions it can take to appropriately protect communities, lives, and livelihoods.

Other local planning policies are similarly discretionary and lack a harmonized approach to addressing issues within the WUI, further fracturing Montana's approach to mitigating wildfire risk.

DNRC's WUI Mapping Authority Carries Little Weight

Montana has empowered DNRC to map the WUI. In fact, it is one of only a handful of western states to have developed a map with such detail. However, the legal framework creates little leverage for those maps to be adopted, used, and enforced by local authorities. While the state should be lauded for passing a law requiring DNRC to develop this map and DNRC should be applauded for its attempt to engage local jurisdictions in implementation and enforcement, it is difficult for counties or cities to use existing spatial data in a way that will protect communities, lives, and livelihoods.

Under state law, DNRC is required to delineate the WUI and wildfire hazards throughout the state. DNRC must identify WUI parcels, map those parcels as part of its assessment of wildfire risks, and ensure that the relevant maps and information are available to the public, local governing bodies, and governmental fire agencies.³⁶ The maps—recently updated with the best available science and calibrated with input from local experts across the state—provide a baseline WUI map for all Montana communities.³⁹

To complement its legislative mandate, in 2009 DNRC published guidelines and recommendations that local governments can incorporate into subdivision and/or zoning regulations to reflect best practices for development within the WUI. The guidelines also highlighted certain criteria for state grant and loan assistance to local governments to incentivize adoptions of best practices.^{37, 12}

However, there are a few limitations to the use of DNRC maps for WUI Code adoption. First, DNRC does not have any regulatory oversight on building codes, land use planning, or subdivision review. So, the agency's 2009 guidelines did not include any recommendations for structural elements and building recommendations that might mitigate wildfire risk. As discussed above, the manner in which DLI adopted the International WUI Code limits its scope and prohibits local jurisdictions from issuing building code regulations that would create more fire-resilient structures.¹² Second, the DNRC state-level maps may need to be refined in some locations to a finer scale to support local, parcel-level building code and zoning decisions. Finally, if disputes arise over land use decisions that are tied to the maps, local jurisdictions will need DNRC to help defend them.

An Example of Montana's Approach Illustrates the Need to Revisit the Current System

Recent efforts in Missoula County illustrate how the current patchwork approach complicates attempts to implement a workable WUI Code across Montana. Missoula is one of the few county-level jurisdictions in Montana that has adopted building codes and a coordinated permit system that involves building, environmental health, planning, and fire/disaster and emergency services. The immense local interagency cooperation required to implement and enforce its approach to mitigating wildfire risk in the WUI puts significant strain on the county's capacity. As a result, the county has struggled to corral and unify the numerous agencies required to harmonize this more robust approach to wildfire risk.^{38,3}

That it has succeeded in Missoula County turns heavily on the dedication of a staff member in the county planning department who nominally leads coordination. Karen Hughes, the Planning Department's Director of Development and Sustainability, weaves together the patchwork set of county agencies that are charged with interpreting and enforcing different stages of the process. As she has described it, the county's planning staff primarily use subdivision and zoning regulations to manage wildfire resilience for new county subdivisions. Meanwhile, the building division staff has sole jurisdiction over building codes and structure hardening. Critical questions surrounding water provisioning and emergency access (like roads and escape routes) fall to planning staff, who must also coordinate with rural fire or emergency services staff. Emergency services staff are also tasked with enforcement and education regarding vegetation management and defensible space. Planning staff often have to rely on local fire and emergency services staff to assist with code compliance because they have the expertise on issues such as defensible space, water supply, and emergency access.

All the above groundwork and interagency coordination only applies to new structures in subdivisions. New structures on existing lots and the multitude of structures that already exist in areas of high wildfire risk are not required to comply with the county's regulations. Instead, local fire departments and county emergency services lead education efforts to encourage voluntary adoption for these pre-existing structures, often going door-to-door to meet homeowners and convince them to create defensible space around their dwellings.²⁸

As Missoula County's efforts demonstrate, Montana communities must navigate a complex system that adds time and expense to adopting WUI regulations. To be effective under Montana's current process, communities need to adopt multiple codes under various authorities (building, zoning, and subdivision) and coordinate across multiple agencies (fire, building, and planning). The process requires each jurisdiction to build the expertise, capacity, and enforcement capabilities individually, without guidance from the State. In addition, it creates a potential risk for landowners who reside on or near boundaries of jurisdictions that may approach the same problem from completely different points of view. Wildfire will not adhere to the jurisdiction boundaries.

Why Does Montana Need to Update its WUI Code?

The challenges above speak to the need for Montana to update its WUI Code. Beyond the legal and practical constraints imposed by the current framework, however, there are public safety, housing affordability, community resilience, and economic reasons for revisiting Montana's current WUI Code.

Housing Pressure in the WUI is Rising

Montana's explosive growth in the WUI over the past 20 years has been driven by several factors. The state has seen steep population growth and a resultant housing boom stemming from nationwide trends of remote work, increasing home costs in urban and metropolitan areas, lifestyle changes for people seeking to live closer to nature, and an increase in secondary home ownership. These migratory shifts, in turn, place additional strain on Montana's housing stock, causing an ongoing housing affordability crisis.¹² Population growth and lack of affordable housing incentivize a rapid increase in housing stock, putting pressure on the building industry to construct swiftly and to emphasize housing density that will minimize sprawl. Increasing housing supply and density are both laudable goals, though doing so without buffers that would protect those homes from wildfire risk is short-sighted and exacerbates Montana's future challenges.

While Montana's Legislature has little control over a number of the growth drivers, it can future-proof housing supply while protecting lives, property, livelihoods, and community resilience. The most direct way to meet this responsibility is for the state to update its WUI Code to create an enforceable set of regulations that keep communities intact and give local decision-makers the capacity, funding, and expertise needed to make Montana more resilient in the face of wildfire risk.

Public Safety and Economic Savings for Communities and First Responders

The Montana Legislature has delegated to local governments control on where and how growth occurs. In some ways, this is a rational decision; local governments can thus make important local decisions that will protect public safety, increase community resilience, and minimize the economic risk of loss due to natural and human-caused disasters. However, Montana's current approach also means that the state government has delegated all the duties, responsibilities, and risk of loss to local governments and agencies without giving those entities a legal framework or access to financial resources and technical expertise. Moreover, the current legal structure actually prevents local governments from making crucial decisions about infrastructure placement, growth planning, and disaster mitigation.

As a result, Montana's first responders and firefighters must place themselves between highly combustible homes and wildfires that would otherwise remain confined to the wildlands, largely because of an outdated legislative structure that ignores the best available science around wildfire hazards and risk mitigation. Simple changes in a WUI Code to implement a fire-resilient building code, increase defensible space, provide incentives to existing homeowners to retrofit homes, and devolve code interpretation and enforcement (and any necessary enhanced measures) to local governments who have deeper knowledge and understanding of their jurisdictions would protect emergency services. These changes would reduce structure and vegetation flammability, reducing the risk of harm to public safety officers and the risk of catastrophic loss to communities as a whole.

In addition to protecting human capital, a statewide WUI Code provides additional economic benefits to communities, public agencies, health services, and infrastructure. According to a recent economic analysis of the costs and benefits of WUI Codes, two researchers concluded that:

WUI building codes likely have additional benefits that are not included in our calculations. These include reductions in public expenditures on firefighting during large wildfires, reduced demand for public assistance among fire victims, avoided emotional and mental distress, and less need for public safety power shutoffs that interrupt electricity service during high fire-risk periods.¹⁷

In short, the mental, physical, emotional, and economic well-being of the state's critical first responders and Montana's emergency services benefit from a more far-sighted and protective WUI Code.

Lowering the Risk, Decreasing Uncertainty, and Increasing Affordability

An enforceable statewide WUI Code has tangible benefits for communities as well as individuals' pocketbooks.

First, lower-risk land use practices combined with greater regulatory predictability and a focus on a smart-fromthe-start WUI Code will help prevent elevated insurance rates, and lower new building costs. Both these benefits will flow to individual structure owners and, by extension, renters or business tenants. While Montana has little control over insurance companies' decisions, most reputable nationwide insurers already have wildfire risk information and use it to set premium costs for homeowners' insurance policies. In other words, even if Montana does not implement a statewide WUI Code, underwriters and their actuaries already actively pass along their own risk calculations to Montana's citizens, hitting the pocketbooks of those who live in the WUI and raising premiums for all citizens. Montana, like other western states, is already seeing insurance companies refuse to cover structures in certain high-risk areas or charge premiums that far exceed the cost of mitigation efforts.²⁹ When insurance companies drop policies, homes become affordable only for the very wealthy—those who can self-insure and do not need a mortgage. This cycle will further exacerbate Montana's housing crisis. A welldesigned statewide WUI Code may help insurance companies continue to provide coverage in Montana. In addition, as noted above a 2018 study concluded that wildfire-resistant materials in Montana cost 2% *less* than traditional new construction.⁸ It makes economic sense to implement state regulations that increase housing affordability.

Second, developers and builders can benefit from uniform building and planning regulations and less uncertainty when applying for subdivision and building permits in different jurisdictions. As some Montana counties and cities start implementing WUI Codes in accordance with the current regulatory and statutory advice, a permitting process may vary wildly across county lines. Perversely, if some jurisdictions adopt WUI Codes and others don't, it may incentivize development in unregulated areas that are unsuited for growth, increasing commute times for homeowners, complicating transportation and infrastructure planning, straining emergency services, and leaving those residents with fewer amenities like grocery stores nearby. Redrafting a WUI Code to protect communities and empower local jurisdictions to implement and enforce uniform regulations will reduce confusion, paperwork, and lost time – encouraging developers and builders to design and build to code from the beginning rather than passing along externalized costs of harm to homeowners.

4. Building A Better Tomorrow: Assessing Potential Solutions

Montana is at a crossroads. It has taken tentative initial steps to build a frame work to make communities more resilient in the face of wildfires. However, the status quo is convoluted, hard to follow, internally inconsistent, fully decentralized, spread haphazardly through competing sets of regulations, and difficult to implement due to lack of support from the state, so few jurisdictions have undertaken such an effort.

Nonetheless, a range of potential solutions can help Montana improve its resilience in light of the growing risk that wildfires pose to humans, infrastructure, and the resilience of Montana's communities. These solutions do not have to compromise Montana's values and our desire to allow cities and counties to chart their own resilient future. Other western states have experimented with these solutions. Generally, they range from an approach that is wholly voluntary and community led to a top-down approach where the state takes a proactive – and active – approach while delegating only a few decisions to local governments.

Montana's current WUI framework relies heavily on voluntary solutions that place too much responsibility on local governments to take the technical, practical, coordinating, and economic lead without giving those officials adequate tools to protect their communities. However, Montana and its communities would have more economic, psychological, physical, and technical resilience if the state were to harmonize its approach to risk management and mitigation in areas of high wildfire hazard. Montana is unique, and rarely chooses a top-down, command-and-control approach to problem solving. Montanans trust their community leaders to have the technical expertise and local knowledge to most effectively reach solutions that prioritize community input, resilience, public safety, and risk management. When faced with a problem like increasing wildfire hazards in the WUI, however, community leaders also are searching for solutions that simplify their jobs and allow them to carry out the actions that will most likely protect their citizens.

Here we outline three potential strategies for Montana: status quo, command and control, and a blended approach. Each is summarized in Table 2.

	Status Quo	Blended Approach	Command & Control
Description	Jurisdictions may adopt WUI Code only as approved by DLI. Minimal state support for implementation.	State creates baseline required standards. Jurisdictions manage implementation and enforcement with support from state.	State adopts, implements, and enforces consistent, mandatory standards.
Implementation	Patchwork adoption by local jurisdictions. Many local jurisdictions lack the capacity to implement.	Local jurisdictions implement with technical support from state.	State agency implements the program. Minimal local involvement.
Impact to builders and homeowners	Lack of uniform regulations is confusing for consumers. Inconsistencies undermine effectiveness where jurisdictions may have different regulations.	Statewide baseline creates predictability in building process. Consistency enhances wildfire risk reduction.	Statewide regulations are uniform and consistent, enhancing wildfire risk reduction.
Effectiveness at reducing risk	Low	High	High

Table 2. Potential Solutions for Montana's Wildfire Safety Standards

Status Quo: Minimal State Involvement, Local Patchwork of Solutions

Montana's current WUI Code implementation and enforcement has been outlined previously in this report. From a legislative standpoint, the state has adopted noteworthy legislation to define the WUI and provide local governments with some tools to address development in the WUI. For example, the state has imbedded language into certain regulations and agency actions like growth policies, DNRC's WUI development guidelines, Montana DLI's model building code, and DNRC's wildfire risk maps. However, these do not represent action-forcing mechanisms that would set a baseline for community compliance. The reality on the ground illustrates this fact: there are limited examples of implementation and a continued reliance on voluntary measures across the state.

In addition, few incentives – financial, technical, or practical – exist to tempt local governments to adopt Montana's current framework. The complexities and staff expertise required to incorporate building codes, develop and implement growth policies, craft WUI regulations based on maps that identify areas of risk, and then train public awareness and enforcement officers often outstrips all but a few jurisdictions' capacities.¹²

Command and Control: The State Oversees WUI Code Management

At the far end of the spectrum is a more top-down approach to WUI Code implementation and management.¹² Centralizing rulemaking, implementation, enforcement, and funding with the state grants all authority, power, technical expertise, and money to state agencies to mitigate wildfire risk. Although this may reduce the burden on local agencies and communities to collect the expertise and resources necessary to forge their own paths, it represents more of a one-size-fits-all approach that

WHAT ABOUT RETROFITS?

A statewide WUI Code would apply only to new construction, but hundreds of thousands of Montana homes already exist in areas of wildfire hazard. To protect these properties, Montana—like other western states—could develop creative strategies to incentivize wildfire-resistant retrofits, such as:

- Securing federal grants and developing state funds to offset homeowners' retrofit expenses, prioritizing high-risk areas and communities with social and economic vulnerability.
- Creating property tax credits or other tax incentives for homeowners who undertake retrofits or fuels mitigation actions on their property.
- Working with insurance companies to create certification programs for landowners who take action to reduce risk. Such collaborations can help homeowners retain coverage and reduce the cost of policies.

does not take into account local needs and voices. Particularly in a large and diverse state like Montana where wildfire risk varies significantly on a regional basis, what works in one county will be clumsy and onerous in another. In addition, requiring all counties, cities, and towns to adopt state-level regulations that would be most protective of the highest levels of risk means that some communities would have regulatory burdens placed upon them that they would struggle to implement and enforce, while the majority of the funding would flow to areas that are deemed higher risk and therefore higher priority for risk mitigation.

The Recommended Blended Approach: Baseline Requirements with Local Autonomy

This approach blends a statewide regulatory framework with local interpretation, implementation, and enforcement bolstered by financial and technical support from state agencies. The primary components of a consistent, practical, statewide WUI framework hinge on three primary factors.

1. Adopt clear, consistent, baseline standards.

First, the state could reduce uncertainty for communities by implementing state-level baseline requirements for wildfire risk mitigation, building techniques, and land use planning tools. This will set a standard for compliance and a framework for easy adoption and implementation, but also gives flexibility for communities to exceed the baseline if they have the need, desire, and capacity.

This would involve three critical components.

- <u>Harmonize existing subdivision, zoning, and building regulations and require baseline standards in areas of risk</u>. As discussed above, Montana already has many wildfire-resilient components in place in its subdivision, zoning, and building regulations, but these are unnecessarily confusing and have internal inconsistencies. Harmonizing these tools and making them mandatory in areas of wildfire risk will give all communities in the state a common language and blueprint from which to work.
- <u>Adopt the International WUI Code without modification</u>. The unique nature of the International WUI Code means that local communities have consistency and uniformity in planning, permitting, and monitoring the relative safety and health of the population. However, Montana has adopted a diluted version of the International WUI Code, reducing its effectiveness. The International WUI Code, if adopted in its entirety and woven throughout the state's regulations in a truly integrated fashion, governs structure density and location; building materials and construction techniques; landscaping near structures; roads; water access and supply for communities that meet certain conditions, such as those that can demonstrate a lack of wildfire risk, or that cannot meet certain WUI Code provisions (e.g., water supply).
- <u>Allow local jurisdictions to exceed baseline standards</u>. Having clear and consistent baseline standards is critical, but the state could also permit local jurisdictions to exceed the minimum standards. This will allow local jurisdictions to adapt to local conditions that may necessitate creative problem solving to protect the community.

2. Allow local entities to use statewide data in land use decisions.

Second, the state could allow local entities to use statewide resources and data that already exist for planning purposes, including DNRC's statewide wildfire risk maps and forest action plan. This would give technical data that would help local planning agencies more effectively plan for their growth, aligning with Montana's long tradition of empowering local communities by creating a framework for adoption and integration to meet the local needs of a community.

Maps can be used to delineate where wildfire-resilient standards apply. Existing statewide maps of wildfire risk were developed using the best available science and were calibrated with input from experts across the state. In some parts of Montana, they may need to be further refined to be finer-scale so they can better guide regulation. Local governments will need technical support and guidance to fine-tune the maps in this way. Importantly, if communities use DNRC maps to guide the location of WUI regulations, DNRC will need to help support and defend the maps if local disputes arise.

3. Provide technical support to local communities.

Finally, the state can provide technical support and incentivization for local communities to implement and enforce standards. This may involve several components:

- <u>Create a single point of contact to lead state-level wildfire-resilient community development.</u> Neither DNRC (which is primarily a natural resource agency), nor DLI (which is responsible for upholding laws and regulations), nor Department of Commerce (which provides technical assistance for land use planning) is perfectly suited to manage a new community wildfire resilience program. Short of creating a new agency from whole cloth, which likely would simply complicate the regulatory landscape in Montana, the state could create a liaison at the state level to act as the technical expert. For example, the state could embed and empower staff at DNRC to liaise with experts at DNRC, DLI, and Department of Commerce to provide communities with the comprehensive assistance they need.
- <u>Create regional technical support offices.</u> Montana would benefit from having technical and financial expertise provided through a network of state-funded, locally embedded experts. These regional offices would need expertise in the local government regulatory landscape and could liaise with local jurisdictions to integrate WUI concepts into plans, policies, and codes. Similar to the Montana Department of Transportation, which has local contacts who understand and react to local needs, the local liaisons could provide the link to state agencies that would assist county and municipal governments to understand and interpret the statewide baseline requirements.
- <u>Appropriate funds for capacity and assistance</u>. Recognizing the cost of implementing state-level policies and building the needed expertise and capacity to carry out the requirements, Montana could appropriate funds for local financial assistance. For instance, the bi-annual budget could provide funding and technical assistance to counties, cities, and towns to build capacity, share learning resources, make connections, and assist in applying for federal funds (in addition to state funds). This could encourage local liaisons to work in concert to secure the resources they need to adequately implement critical measures to mitigate wildfire risk. As an added benefit, the state could provide financial incentives or support to jurisdictions that might lack the economic heft to implement the baseline on their own.

This approach creates a uniform framework that cities and counties can build upon, different tiers acknowledging that each county is facing different challenges, state-funded technical expertise that supports local communities in integrating the framework locally, and direct funding assistance from the Legislature.

Conclusion

Despite challenges and unknowns, the blended approach proposed here is a robust solution that gives both a statelevel baseline and the local autonomy to address the very real risk of enhanced wildfire danger in the WUI. At a minimum, these changes to Montana's current approach for addressing wildfire risk in the state will grant local communities the leverage, latitude, and guidance that they need to plan for a more fiery future. They also will ensure that the state will harmonize its approach to addressing wildfire risk, saving Montana and Montanans money, time, and peace of mind in the years to come.

The time to account for increasing wildfire risk in the ways we locate, design, and build Montana's housing supply is now. If we delay, we are exacerbating the cost of disasters. Wildfire safety standards are a proven method to ensure long-term public safety and improve housing affordability and durability.

Appendix A: Defining and Mapping the WUI

A critical component of any effective WUI Code is a definition and spatial delineation of the area to which a WUI Code applies. Yet attempts to define the WUI have invited controversy, reflecting the fact that the WUI has different impacts on – and symbolism for – state-level decision makers, local governments, fire departments, developers, homeowners, and other stakeholders.

What all the various WUI definitions have in common is a shared recognition that wildfires behave in distinct ways when confronted with differences such as vegetation type, quantity, and quality of fuel (including homes), topography, weather patterns, past fire history, and other factors. As a result, the WUI boundary depends not only on a spatial understanding but also an assessment of the conditions on the ground that may impact how a fire reacts to its circumstances.

What results is that jurisdictions – whether at the state or local level – develop their own assessment of the WUI's geographic extent based on factors that the relevant governing agency values in conducting an analysis of the WUI. Currently, the Montana Department of Natural Resources and Conservation (DNRC) is tasked with identifying and defining the WUI and wildfire hazard across the state. Under the current legislative scheme, the agency: (1) identifies and designates parcels statewide that it considers part of the WUI, either on its own or in conjunction with local governments; and (2) develops the Montana Wildfire Risk Assessment, a quantitative analysis of structures, facilities, infrastructure, and natural resource features and how they could be impacted by wildfire.¹² In 2020, DNRC completed an update of the Montana Wildfire Risk Assessment based on the best available risk science and with calibration and input from experts across the state.³⁹

Technical experts generally define the WUI as "the geographical area where human development, including structures and other infrastructure, meets or intermixes with undeveloped wildlands."¹⁷ Decision-makers typically identify three components that form the basis of the WUI and the extent of the risk within those communities that inhabit the WUI: (1) human presence, often quantified by housing density or population density (the *intermix*); (2) wildland vegetation, often quantified by percentage of land coverage; and (3) proximity to wildlands (the *interface*), often quantified as a buffer distance between wildlands and developed land or structures.¹⁷ While the federal government has attempted to create a uniform definition of at-risk communities and by extension assist in mapping the WUI,⁴⁰ local jurisdictions normally have the most accurate understanding of underlying conditions and risk factors that impact WUI boundaries.¹⁷

Given this variety, it may be most helpful to think about commonly held conceptual and spatial definitions of the WUI. According to a 2021 report from the Community Wildfire Planning Center (CWPC):

The conceptual definition of the WUI considers a <u>range of conditions which contribute to how</u> <u>structures (and other features in the built environment) ignite and burn during a wildfire event.</u> For example, the relationship between a cluster of homes, the proximity of each home to vegetation, type of vegetation, local weather conditions, the homes' location and relationship to topographical features such as ridgelines, and the type of landscaping surrounding each home can influence what happens when flames or embers reach this area and whether a fire will ignite and sustain itself. <u>In this regard, a variety of conditions and planning scenarios require practitioners</u> <u>to approach the WUI as a dynamic set of conditions, as opposed to a fixed state.</u>

Meanwhile, spatially defining and delineating the WUI with visual tools such as data layers, maps, and growth trends "[a]llows planners, land managers, and researchers to analyze and plan" for mitigation measures, planning and safety resources, and development suitability for these geographic areas.¹²

Montana recently delineated areas of wildfire risk in the *Montana Wildfire Risk Assessment*,³² developed in 2020 with calibration and input from experts across the state. This resource provides an excellent jumping off point for defining areas where statewide wildfire safety standards could apply in Montana.

Appendix B: Montana's current land use planning tools to reduce wildfire risk This table outlines plans, regulations, and voluntary measures that currently exist in Montana's land use planning toolkit.³

PLANS	Plans are nonregulatory and nonbinding, although sometimes required under state and federal law. Plans often help generate				
	collaboration and create access to funding sources, in addition to helping set foundational goals and objectives for WUI				
	development.				
Туре	Description	Advantages	Disadvantages		
Growth Policies	Provides the legal basis and rationale to create rules for WUI, but is not a regulatory document.	 State law lays out a clear path for what a growth policy must contain, including an assessment of WUI issues and needs. Can be general or specific, as determined by the community. Provides an opportunity to discuss risks and improvement projects with federal and state officials, fire districts, and landowners. Provides the legal foundation for land use decisions and regulations. 	• Does not have the weight of law (i.e., is not a regulatory document), but must be "substantially complied with."		
Neighborhood Plans	Provides basis for planning development in specific areas, including WUI.	• Can focus on specific geographic areas such as the WUI, and can focus on specific issues such as development in the WUI.	• Does not have the weight of law (i.e., is not a regulatory document), but must be "substantially complied with."		
Community Wildfire Protection Plan (CWPP)	Collaborative plan for fuels mitigation and reducing structural ignitability; opens federal funding opportunities.	 Developed collaboratively between local governments, fire districts, and state and federal agencies. Identifies fuels reduction priorities on federal and nonfederal lands and helps decide how additional federal funds may be distributed. Allows expedited federal environmental and legal review. 	 Must be updated regularly. It is a plan, not a regulation, so no consequences if the plan is not implemented. 		
Pre-Disaster Mitigation Plan	Addresses wildfire alongside other hazards; helps maintain federal funding	 Focuses on several hazards such as flood, fire, earthquake, hazardous materials, etc.—more "bang for the buck." Maintains funding eligibility for federal disaster relief. 	 Because of the broad nature of the plan, it could focus less on WUI issues. It is a plan, not a regulation, so no consequences if the plan is not implemented. 		

LAND USE REGULATIONS	Montana law explicitly authorizes three types of regulations for WUI development. Regulations can be difficult to adopt in some Montana communities and can require additional capacity for permitting and enforcement, but are guaranteed ways to manage WUI development.			
Туре	Description Advantages		Disadvantages	
Subdivision Regulations	Cities and counties are required to have subdivision regulations, and are required to address hazards to health and safety, including wildfire. Construction techniques and mitigation measures can be required.	 Can be used to set up new subdivisions in a fire-safe manner with initial fuels mitigation, a safe road network, street signs, water supplies, etc. Can include certain construction techniques to ensure homes are built in a fire-safe manner. Because every jurisdiction is required to adopt subdivision regulations, WUI issues in new subdivisions will be addressed to some degree. 	 There is no regulatory mechanism to ensure water supplies and vegetation are maintained over time. Covenants, which may not be adhered to, are necessary to ensure the construction techniques are implemented. Not comprehensive—the requirements only apply to new subdivisions while WUI development issues also include existing lots and structures. 	
Zoning	Can be adopted by local governments, with great flexibility for how much detail to include. Can be designed to address specific areas of WUI.	 Can be very detailed or relatively simple, as determined by local decision-makers. Equal treatment—the requirements could apply to all new development in the WUI. The use of zoning to address public health and safety issues is well supported by state law and case law. 	 Can be politically difficult to adopt zoning in rural Montana. Requires permit processes, staffing, and ongoing administration. County zoning cannot include items that are included in building codes (e.g., roofing materials, windows, vents, etc.). 	
Building Codes	Can be adopted by local governments to regulate ignitability of structures. Administered through a permitting process.	 Equal treatment—the requirements could apply to all new development. Addresses construction techniques such as roofing materials, windows, vents, etc. 	 Can be politically difficult to adopt building codes in rural Montana. Requires permit processes, staffing, and ongoing administration. 	

VOLUNTARY	Providing educational and cost-share (or other incentive) measures to private landowners can help reduce risk, but relies on			
IVIEASURES	willing landowner participation. Also requires capacity and dedicated resources.			
туре	Description	Advantages	Disadvantages	
Education and Outreach	Providing educational opportunities to landowners, such as free property assessments and seminars, can help landowners	 Landowners who participate are likely to take action to protect their properties. WUI education information is readily available 	 Effectiveness is reduced when some landowners take action and others don't. Not comprehensive—only a portion of WUI landowners may participate. Labor intensive—vegetation must be managed 	
	understand and mitigate risk.		on a regular basis to reduce risk.	
Incentives	Cost-sharing programs for reduction of hazardous fuels on private land can help educate landowners and fund mitigation strategies on private land.	Financial assistance to landowners.Contains an education component.	• Tax dollars to pay for incentives must come from grants or other programs.	

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