

Regulating the Wildland-Urban Interface in Colorado

***Three Case Studies:
Colorado Springs, Eagle County, Ouray County***



Prepared By:
Community Wildfire Planning Center
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The Community Wildfire Planning Center (CWPC) is a 501(c)3 non-profit organization dedicated to helping communities prepare for, adapt to, and recover from wildfires. More information about CWPC is available at: www.communitywildfire.org

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Acronyms

Note that some acronyms listed below are unique to each case study, as specified throughout the report.

BLM	Bureau of Land Management
BOCC	Board of County Commissioners
CNO	Council of Neighbors and Organizations
CO-WRAP	Colorado Wildfire Risk Assessment Portal
CSFD	Colorado Springs Fire Department
CSFS	Colorado State Forest Service
CWPC	Community Wildfire Planning Center
CWPP	Community Wildfire Protection Plan
CSS	Construction Services Section
HBA	Housing and Building Association
HOA	Homeowners' Association
ICC	International Code Council
IWUIC	International Wildland-Urban interface Code
I-70	Interstate 70
NFPA	National Fire Protection Association
PUD	Planned Unit Development
USFS	United States Forest Service
WRWC	West Region Wildfire Council
WUI	Wildland-Urban Interface



OVERVIEW

*Neighborhood destroyed by the 2021 Marshall Fire;
Image credit: CWPC*

OVERVIEW

Introduction

On December 30, 2021, the Marshall Fire ignited in Boulder County, Colorado and raced through the suburban communities of Louisville and Superior. The fire's ferocity and devastation took many residents, emergency responders, elected officials, scientists, and others by surprise. The Marshall Fire soon became the most devastating wildfire in Colorado's history, [destroying or damaging more than 1,000 homes](#) and over 30 commercial structures.

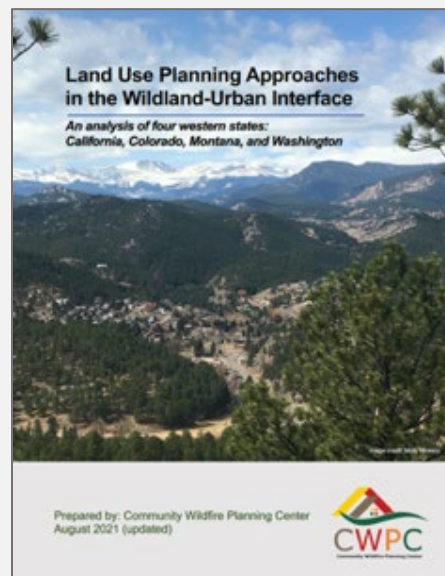
While Colorado is no stranger to wildfires, the Marshall Fire served as a catalyst for renewed interest in wildfire regulations and mitigation activities at both state and local levels. As the Town of Superior, City of Louisville, and Boulder County have engaged in the long-term recovery process, elected officials have considered how wildfire regulations can increase resilience in the built environment. In May 2022, Boulder County Commissioners [unanimously adopted fire-resistant building regulations](#) that will apply to residents in the eastern grassland area of unincorporated Boulder County as a response to the Marshall Fire. In the spring of 2022, the Town of Superior Board of Trustees also considered a new town-wide wildland-urban interface (WUI) ordinance, and ultimately approved a more limited version that [requires construction standards](#) for homes affected in the Sagamore neighborhood destroyed by the Marshall Fire.

At the state level, the Colorado Fire Commission's [Wildland-Urban Interface \(WUI\) Subcommittee](#) also developed [a proposal](#) to create a WUI Code Board that would oversee statewide wildfire-related building and land-use standards for areas in the WUI. The proposal was endorsed by the Fire Commission and included as an amendment to an existing Senate Bill (SB22-206) in the spring 2022 legislative session. Although the amendment was later removed prior to final vote, [similar legislation may be introduced](#) in the future.

Land Use Planning Approaches in the Wildland-Urban Interface

In 2021, the Community Wildfire Planning Center released a report, [Land Use Planning Approaches in the Wildland-Urban Interface](#), that analyzed four western states: California, Colorado, Montana, and Washington. The analysis provided a general discussion on the WUI in terms of how it is defined, growth trends, and how each state's land use planning framework addresses the WUI. The report also identified state-specific challenges and opportunities facing communities and offered solutions to improve land use planning outcomes.

The information and case studies presented in this report builds on Colorado content presented in the Land Use Planning Approaches in the WUI report. Readers are encouraged to review that report to gain a more in-depth understanding of the planning and regulatory framework in Colorado.



Options for Regulating the WUI

Local jurisdictions in Colorado need not wait for devastating fires to consider strategies and tools that address wildfire hazard in the area known as the “wildland-urban interface” (WUI). The WUI is conceptually identified as any developed area where conditions affecting the combustibility of wildland fuels (landscaping, vegetation) and built fuels (structures, infrastructure) allow for the ignition and spread of fire through these combined fuels. Many communities will spatially define their WUI based on factors such as structure density, vegetation type, location, and proximity to structures.

Broadly speaking, codes and regulations provide an opportunity to bring plans and policies into action. They also supplement voluntary mitigation efforts by creating a consistent baseline to which all applicable development must adhere to in terms of minimum wildfire safety and construction requirements.

Codes and regulations targeting the WUI can address a range of building, land use, and life safety topics, such as ignition-resistant construction materials, minimum fire protection standards for ingress, egress, and water supply, and landscaping or defensible space standards. These requirements can be adopted in a fire code, building code, subdivision regulations, land use code, WUI code, standalone ordinance, or a combination of the above.

In Colorado, unlike other western states including Oregon, Washington, and California, there is currently no statewide code that requires local jurisdictions to adopt minimum regulations for structures or other development in wildfire-prone areas. Further, Colorado jurisdictions have significant latitude, both statutorily and through broad “Home Rule” powers, to plan for and regulate the use and development of land under their jurisdiction, including the WUI. As a result, communities across the state have taken different approaches to crafting and adopting WUI regulations, including:

- Using a model code or standards, such as the International Code Council (ICC) International Wildland-Urban Interface Code (IWUIC) or National Fire Protection Association (NFPA) standards, as the basis of developing regulations. Communities may adopt a model code or standards by reference and make local amendments.
- Developing and adopting development standards within a Land Use and Development Code that address development in a designated WUI and/or wildfire hazard area.
- Developing and adopting a standalone ordinance that targets a specific aspect of the WUI, such as hazardous vegetation or defensible space. These are typically incorporated into a chapter of a county or municipal code.

Three Colorado Case Studies

This report was produced to showcase how three jurisdictions in Colorado—the City of Colorado Springs, Eagle County, and Ouray County—have taken different yet successful approaches to local adoption of wildfire regulations. Each case study provides an overview of the community’s wildfire regulations, and how they are administered and enforced. Regulations focus primarily on requirements for structure hardening, vegetation management, and minimum fire protection standards. In addition, each case study mentions additional voluntary mitigation activities that supplement the community’s overall approach to wildfire risk reduction. Case studies are based on research, a review of each community’s regulations, and case study interviews with community members who have been directly engaged in the adoption and/or implementation of the applicable regulations. A summary of key takeaways is provided at the end of this report that synthesizes insights from all three case studies.



COLORADO SPRINGS

Image credit: CWPC

COLORADO SPRINGS: BUILDING ON INCREMENTAL CHANGE AND PARTNERSHIPS FOR LONG-TERM SUCCESS

Introduction

The City of Colorado Springs sits at the foot of the eastern Rocky Mountains, with the mountains to the west, grasslands and plains to the east, desert to the south, and the Palmer Divide to the north. According to the [2021 Colorado Springs Community Wildfire Protection Plan \(CWPP\)](#), the City's 32,655 acre WUI is one of the largest in the United States, and 20% of the City's population resides in the WUI with a moderate to high risk of wildfire.

Even before the Waldo Canyon Fire of 2012 burned through densely populated City neighborhoods, Colorado Springs had a 20+ year history of adopting regulations and mitigation programs to address wildfire risk, [many of which are credited](#) with preventing the Waldo Canyon Fire from encroaching into additional neighborhoods. Since 1993, the City has taken an incremental approach to wildfire mitigation, continually preparing and gauging the right time to advance additional wildfire regulations. Under the strong leadership of [Colorado Spring Fire Department \(CSFD\)](#) Fire Marshal Brett Lacey and key staff such as Wildfire Mitigation Program Administrator Ashley Whitworth, the CSFD has also successfully partnered with such organizations as the Housing and Building Association (HBA) and residents to create realistic and attainable solutions.

This case study highlights how a collaborative approach, coupled with a willingness to take small bites at the right time, can result in the successful advancement of wildfire regulations.

Regulation History

Each property within Colorado Springs is part of a zone district, which is an area designated by the City that is governed by specific land use and development standards. In addition, the City has adopted several [overlay zone districts](#) that bring additional requirements to some properties (beyond those requirements specified by the base zone in which they are located). The Hillside Overlay is one of the City's overlay zone districts, and it includes areas that have significant natural features such as ridgelines, bluffs, rock outcroppings, slopes, and natural drainageways. The Hillside Overlay was created in the early 1960s with the intent to preserve natural landscapes and features and protect public health and safety.

The City's first Fire Mitigation Ordinance, adopted in 1993, was applied to the Hillside Overlay. The ordinance was the result of work by a Wildfire Task Force, composed of fire department members and residents that were commissioned by the City Council to address wildfire risk in Colorado Springs. The original ordinance specified a 30-foot safety zone around all residential structures and monitored alarms or sprinkler systems for homes on dead end roadways over 1,000 feet in length in the Hillside Overlay.

Colorado Springs, CO

Location: East Central Colorado, approximately 60 miles south of Denver

Population: 478, 961

Area: 195 square miles



Sources: US Census Bureau, 2020 (statistics); Wikimedia Commons (map)

In 2002, the Hayman Fire ignited about 35 miles northwest of Colorado Springs. The fire, which eventually scorched over 138,000 acres and became the largest fire in Colorado history at that time, did not directly affect the City, but residents did experience the resulting smoke and ash. Soon after, a working committee consisting of representatives from CSFD, Council of Neighbors and Organizations (CNO), local builders and roofing contractors, the HBA, and various regulatory agencies researched and developed recommendations for banning wood shake roofs and requiring Class A roofing assemblies for all new residential construction. With tremendous support from key stakeholders, the City Council passed a citywide Class A residential roofing ordinance for new construction, re-roofing, and repairs greater than 25% of the total roof area.

On June 23, 2012, the most devastating fire in Colorado Springs history, the Waldo Canyon Fire, began just three miles west of Colorado Springs in the Pike National Forest. The City's [Final After Action Report](#) describes the scope of the fire's impact before it was contained on July 10, 2012, including 18,247 acres burned, 347 homes destroyed, and two civilian deaths. In the immediate wake of the fire, Fire Marshal Lacey and his colleagues recognized that there was an opportunity to further improve fire construction safety through updates to the City's existing wildfire regulations. They began collaboration with the HBA and a group of homeowners to create the WUI Mitigation Requirements for the Hillside Overlay Zone, which became [Appendix K](#) in The City of Colorado Springs Fire Prevention Code and Standards. In addition to tightening and expanding the 1993 Hillside Fire Mitigation Ordinance vegetation management requirements, the 2012 ordinance added fire protection systems and ignition resistant materials requirements for all new or reconstructed homes in the Hillside Overlay Zone. The CSFD also published an accompanying [Ignition Resistant Construction Design Manual](#) that provides guidance for optimum ignition resistant construction and vegetation management.

An additional update to the applicability of the regulations occurred in 2018. Since 1993, the City had implemented their WUI regulations in the Hillside Overlay zone. In 2018, however, the City leveraged advances in spatial technology to refine its definition of the WUI based on topography and vegetation. The resulting [City of Colorado Springs WUI](#) was smaller than the Hillside Overlay by about 1,000 addresses. The City revised Appendix K to apply to the new WUI instead of the Hillside Overlay, enabling the regulations to apply more precisely to the areas at greatest risk.

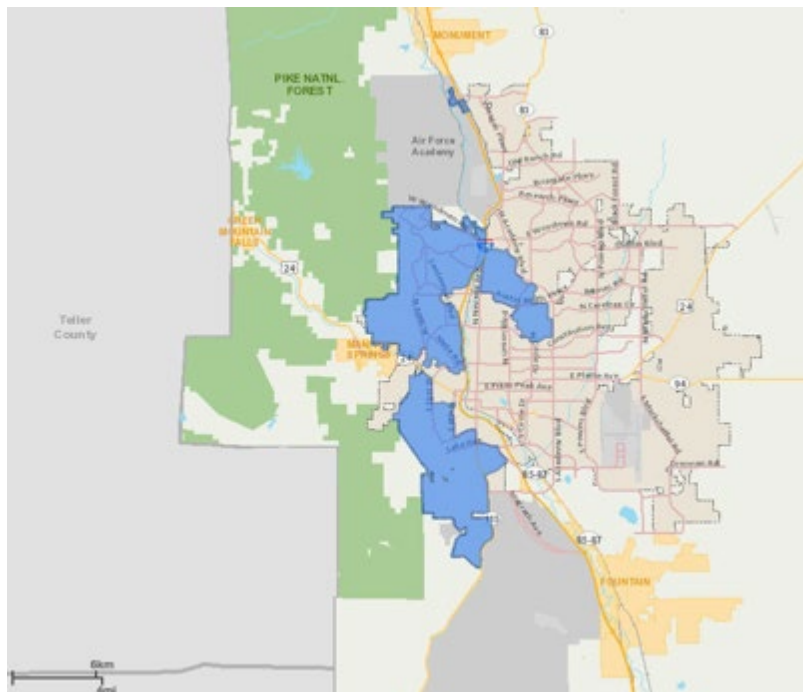


Figure 1. All properties in the City of Colorado Springs WUI (in blue) must comply with Appendix K wildfire requirements for construction and landscaping.

Source: [City of Colorado Springs Wildfire Risk Assessment Site](#)



Figure 2. Homes in a neighborhood that were rebuilt after the Waldo Canyon Fire in compliance with the Colorado Springs wildfire requirements (Appendix K).

Photo credit: CWPC

Regulation Administration and Enforcement

The City's Planning and Development Department and Fire Department work together to administer wildfire regulations. The CSFD Division of the Fire Marshal Construction Services Section (CSS) has responsibility for reviewing and approving all new residential building permit applications in the WUI. As part of their review, the CSS conducts a pre-framing inspection to confirm proper building techniques and the use of ignition-resistant materials. The Planning and Development Department assists the process by reviewing the plot and site plans, and the CSFD Wildfire Mitigation Section inspects for vegetation compliance.

Should a vegetation code violation occur after the Certificate of Occupancy is issued, Whitworth or her staff meets one-on-one with the homeowner to discuss the offense and issue a written warning. After 30-90 days, the Fire Marshal Code Services Section will inspect the property for compliance. Typically, the homeowner then corrects the violation with no further action needed. However, if the homeowner continues to violate the code, the Fire Marshal Code Services Section initiates a summons to court.

Additional Mitigation Activities

While the City's sustained efforts to adopt and update regulations have been successful, they recognize that additional efforts are critical to engaging residents and achieving mitigation goals. This is especially important because only those homes in the WUI that are built after a specific date are subject to regulations. As a result, outreach and voluntary engagement becomes important to create consistency across neighborhoods.

Sharing the Responsibility

"Sharing the Responsibility" is Colorado Springs' wildfire mitigation campaign motto that captures the spirit of collaboration between the City, industry organizations, and residents. A CSFD Firewise Coordinator was first hired in 2001, and as of 2022, the coordinator position actively engages with 25 recognized Firewise USA® communities across the City. Strong homeowner engagement and dedication of City resources have enabled Colorado Springs to implement voluntary mitigation programs that help supplement regulations, including:

- a free program for chipping and disposing of branches, logs, and small trees, funded through a Public Safety Sales Tax, that services 120 neighborhoods;
- free voluntary parcel-level wildfire risk assessments;
- the Wildfire Mitigation Cost Share program; and
- fuels management projects through agreements between CSFD and private and public property owners.

Additional steps CSFD takes to educate homeowners about wildfire risk and empower them to take action include:

- annual meetings with over 140 homeowner associations to discuss issues and formulate targeted recommendations;
- town hall meetings to raise wildfire risk awareness; and
- [accessible information on the CSFD website](#), including a vegetation management guide, chipping guidelines, a list of licensed tree removal providers, and a [wildfire risk map](#).

Voter-Approved Funding for Wildfire Mitigation and Prevention

In 2021, in an extraordinary demonstration of confidence in and support for CSFD, residents voted to allow the City to retain and spend up to \$20M for CSFD to manage a [citywide and regional wildfire mitigation and prevention program](#). With oversight from a newly formed mayor-appointed [Wildfire Mitigation Advisory Committee](#), CSFD will use the funds for such line items as an additional chipping crew, an administrative assistant position to help field requests, replacements for aging equipment, an up-to-\$500 stipend match for residential vegetation removal costs, project work within neighborhoods, and evacuation planning education.

Learning Insights

The City of Colorado Springs' approach to creating and adopting wildfire regulations reveals the following key insights:

Strong partnerships bring results

Fire Marshal Lacey attributes the success of adopting and updating WUI regulations in Colorado Springs to the strong relationships that exist between the City and community members and groups. The City works directly with residents and local organizations to address specific needs when designing codes and voluntary programs, resulting in regulations that are both realistic and attainable. Taking the time to educate homeowners means residents now understand the science and can apply it to recommendations they make to the Council. Additionally, Ashley Whitworth works closely with Planning and Development staff so that all messages related to fire mitigation are consistent across city departments. Colorado Springs demonstrates that “sharing the responsibility” can contribute to the development of comprehensive and effective wildfire mitigation regulation and programs.

Small incremental changes can be effective

Instead of introducing sweeping regulations that cover the full suite of wildfire mitigation strategies, Colorado Springs has made consistent gains over the last 30 years by proposing incremental code changes when the political climate is ready to pass them. The City can then build on those codes the next time around. “This makes it easier,” Lacey says, “to sprinkle in different little elements. You’re not having to take that big bite.”

Proactive preparation increases the likelihood of regulation adoption

Some events, such as a wildfire or a revealing study, can become a huge catalyst for change. Building on their step-by-step approach, CSFD leadership and staff continually plan for the next opportunity to present recommendations by staying informed of recent scientific research and best practices on wildfire mitigation and ensuring that their residents are educated and informed. When the next opportunity presents, they are ready to answer the question of how to best protect their communities.



EAGLE COUNTY

Image credit: Eagle County

EAGLE COUNTY: CREATING CONSISTENCY, CREATIVITY, AND COLLABORATION IN THE WUI

Introduction

Eagle County, CO, located on the western slope of the central Rocky Mountains, has elevations ranging from 6,128 to 14,011 feet above sea level. The County encompasses several incorporated and unincorporated communities, including Gypsum, Eagle, Vail, Avon, Minturn, Red Cliff, Basalt, and Edwards. About 80% of the County's land is managed by the USDA Forest Service (USFS) and the Bureau of Land Management (BLM), and the remaining private land is primarily concentrated along the easiest-to-build locations, namely the Interstate 70 (I-70) travel corridor and adjacent valleys and canyons.

Eagle County's [Wildfire Map Viewer](#) shows a range of hazard ratings across the County, and recent wildfire history in the region serves as a reminder of local wildfire threat:

- In July 2016, the Lake Christine Fire was started at shooting range in Basalt, and quickly became a wildfire that burned over 12,500 acres and three homes, forced the evacuation of hundreds of residents, and subsequently [created a potential flood risk for approximately 670 homes](#).
- The Grizzly Creek Fire in October 2020 burned over 32,000 acres along I-70 and left a fire scar that was vulnerable to debris flow and flooding. A series of storms in 2021 resulted in mudslides that damaged and temporarily closed I-70, a major railroad, and the popular Hanging Lake hiking trail.
- The lightning-caused Sylvan Fire in June 2021 consumed nearly 4,000 acres of the White River National Forest, demonstrating extreme fire behavior and forcing the evacuation of Sylvan Lake Park tourists and neighboring communities.
- In April 2022, the Duck Pond Fire again caused the shutdown of I-70 and multiple mandatory evacuations, even though the fire was less than 100 acres in size.

Eagle County's Community Mitigation Manager, Eric Lovgren, is at the helm of the County's efforts to minimize the catastrophic effects of wildfire using a combination of regulations and voluntary programs. Originally hired as a Wildfire Mitigation Specialist in 2006, Lovgren's responsibilities, title, and department have evolved and expanded as the County has refined its approach to wildfire risk over the years. In 2021, Lovgren hired Wildfire Mitigation Specialist Katie Jenkins to work with him in the administration of Eagle County's wildfire regulations and programs.

This case study illustrates how the County builds partnerships, incorporates voluntary supplemental programs, and maintains a consistent process to successfully administer wildfire regulations.

Eagle County, CO

Location: Northwest Colorado

Population: 55,731

Area: 1,684 square miles



Sources: US Census Bureau, 2020 (statistics); Wikimedia Commons (map)

Regulation History

Motivated by the 2002 Hayman Fire in Colorado, Eagle County proposed the addition of wildfire regulations to the County's Land Use Regulations. After several reviews and public hearings, the County adopted [new wildfire regulations](#) in 2003. The regulations applied to both individual homes and large development applications, such as subdivisions and planned unit developments (PUDs). For individual homes, the new requirements specified [minimum defensible space and construction standards](#) for all new construction, exterior modifications, and structure additions. Subdivisions, PUDs, and Special Use Permit applications were also required to comply with minimum standards for water supply, separate ingress and egress routes into proposed developments, and additional roadway standards such as emergency vehicle turnarounds for dead end roads exceeding 1,000 feet in length.

The defensible space standards are determined by a wildfire hazard rating based on topography, fuel, and available water. To further aid in implementation of the regulations, the County hired a consultant in 2014 to map the wildfire hazards on all private lands and 200 meters into public lands adjacent to private property. Additionally, the consultant developed and applied a wildfire hazard index so that each hazard on the map has a corresponding rating in one of four categories: low, moderate, high, and extreme. An update to the map occurred in 2017 and continues to be used as an implementation tool.

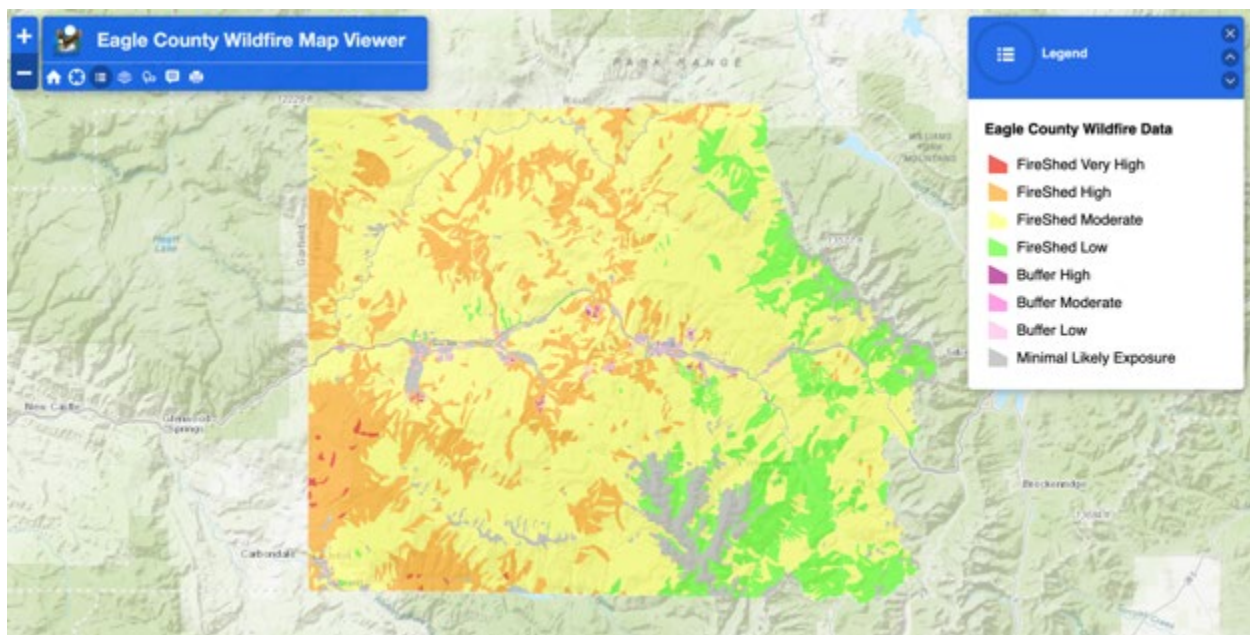


Figure 3. Eagle County's [Wildfire Map Viewer](#) provides residents with the ability to generally see which wildfire hazard category their property is in. The map serves as a tool for implementing the County's wildfire regulations and helps to prioritize mitigation projects.

Source: Eagle County

Regulation Administration and Enforcement

Lovgren's role was created to handle administration and enforcement through the Planning Department. Later, his position moved to the Sustainable Communities Department, and today it resides within Emergency Management. There are two full-time employees in the Community Mitigation department handling all permits, assessments, and inspections in areas with a moderate, high, or extreme wildfire hazard rating.

Eagle County's wildfire regulations have largely remained unchanged since their first adoption. However, improvements have been made to the on-site assessment process to incorporate technological efficiencies. Anyone wanting to apply for a building permit can access an online version of the Wildfire Hazards Map to learn if their project is subject to wildfire regulations and requires a meeting with the Community Mitigation Department. During the assessment, Lovgren and Jenkins use a Google form that they created to input data and obtain a site-specific hazard rating. Next, the applicant receives a report that provides:

- a rating of low, moderate, high, or extreme, based on information about hazards (e.g., vegetation, slope, hazards) and any applicable mitigations that may reduce wildfire risk to the property (e.g., improved access, ignition-resistant building materials, defensible space);
- a snapshot of the property on the Wildfire Hazard Map;
- defensible space requirements;
- construction guidelines; and
- an outline of the County building inspection process.



Figure 4. Community Mitigation Manager Eric Lovgren conducts on-site assessments to determine site-specific hazard ratings for compliance with permit applications. Staff will also conduct voluntary assessments for any resident interested in property mitigation.

Photo credit: CWPC

The inspection process includes several inspections, along with a \$200 fee that helps fund the Community Mitigation Department's operating costs. During the initial site inspection, Lovgren's team outlines the defensible space parameters prior to footing or foundation inspection. A second site inspection may be required during the building process to confirm the vegetation marked for removal in the initial visit has been removed. In the final wildfire inspection, Lovgren's team determines if the project is approved for issuance of a Certificate of Occupancy.

Additional Mitigation Activities

Lovgren notes that the landscaping that occurs after a Certificate of Occupancy is issued can be a challenge to address. For example, homeowners may plant junipers or other large shrubs and hedges in their defensible space to hide air conditioning units or serve as privacy screens. Eagle County employs voluntary approaches and partnerships to help address these issues. Eagle County's collaborative and voluntary mitigation activities also help build partnerships and engage residents and other local organizations and agencies in mitigation activities.

REALFire® Program

In 2014, Eagle County collaborated with the Vail Board of REALTORS® and CWPC to develop and offer the [REALFire® Program](#), which provides property owners with the opportunity to request an on-site assessment of their home and surroundings (i.e., the "Home Ignition Zone") to determine wildfire vulnerabilities. Lovgren believes this voluntary, free program complements the County's regulations by offering residents alternative ways to receive targeted mitigation

recommendations without relying only on the permit process. The program also incentivizes voluntary mitigation by providing a certificate of recognition upon successful completion. Some homeowners have shared this certificate with their local insurance provider to successfully maintain insurance coverage. This program model is similar to other programs throughout the state, including the Wildfire Prepared Home Assessment Program offered by multiple fire protection districts near Conifer and Evergreen and Boulder County's Wildfire Partners program. Participants in the REALFire® program may also be eligible for a cost share assistance program, depending on available funds.

Eagle County Wildfire Collaborative, Roaring Fork Valley Wildfire Collaborative, and Eagle Mountain Wildland

The County takes an inclusive approach to addressing wildfire risk by forming partnerships with local agencies. The Eagle County Wildfire Collaborative, composed of the County and local fire departments, implements cross-boundary fuels reduction projects and educational campaigns. The Roaring Fork Valley Wildfire Collaborative, created in 2021, is also focused on creating fire-adapted communities and landscapes across Eagle, Garfield, and Pitkin counties. Through Eagle Mountain Wildland, the County partners with Greater Eagle, Eagle River, and Gypsum Fire Protection Districts to build capacity, write grants, and conduct mitigation work.

Wildfire Preparedness Month

In 2022, the Eagle County Board of Commissioners approved a resolution designating May as [Wildfire Preparedness Month](#) to encourage homeowner accountability and responsibility for wildfire readiness. Each week in May, the County proposes a task for residents to undertake to prepare for wildfires, such as signing up for the local emergency alert system and requesting a REALFire® assessment.

Learning Insights

Eagle County demonstrates a consistent and collaborative approach to addressing wildfire risk through regulations and other activities, offering the following learning insights:

Mitigation regulations need an assist from residents and HOAs

Regulation has limitations—once the County issues a Certificate of Occupancy, there is no follow up enforcement. Voluntary programs can pick up where regulatory enforcement ends to encourage residents to understand wildfire risk and make the choice to perform mitigation on their private property. Additionally, Lovgren advocates for engaging with HOAs in the outreach and enforcement process. He also recommends HOAs revise their design standards to include science-backed mitigation principles and conduct annual enforcement.

Consistency is important

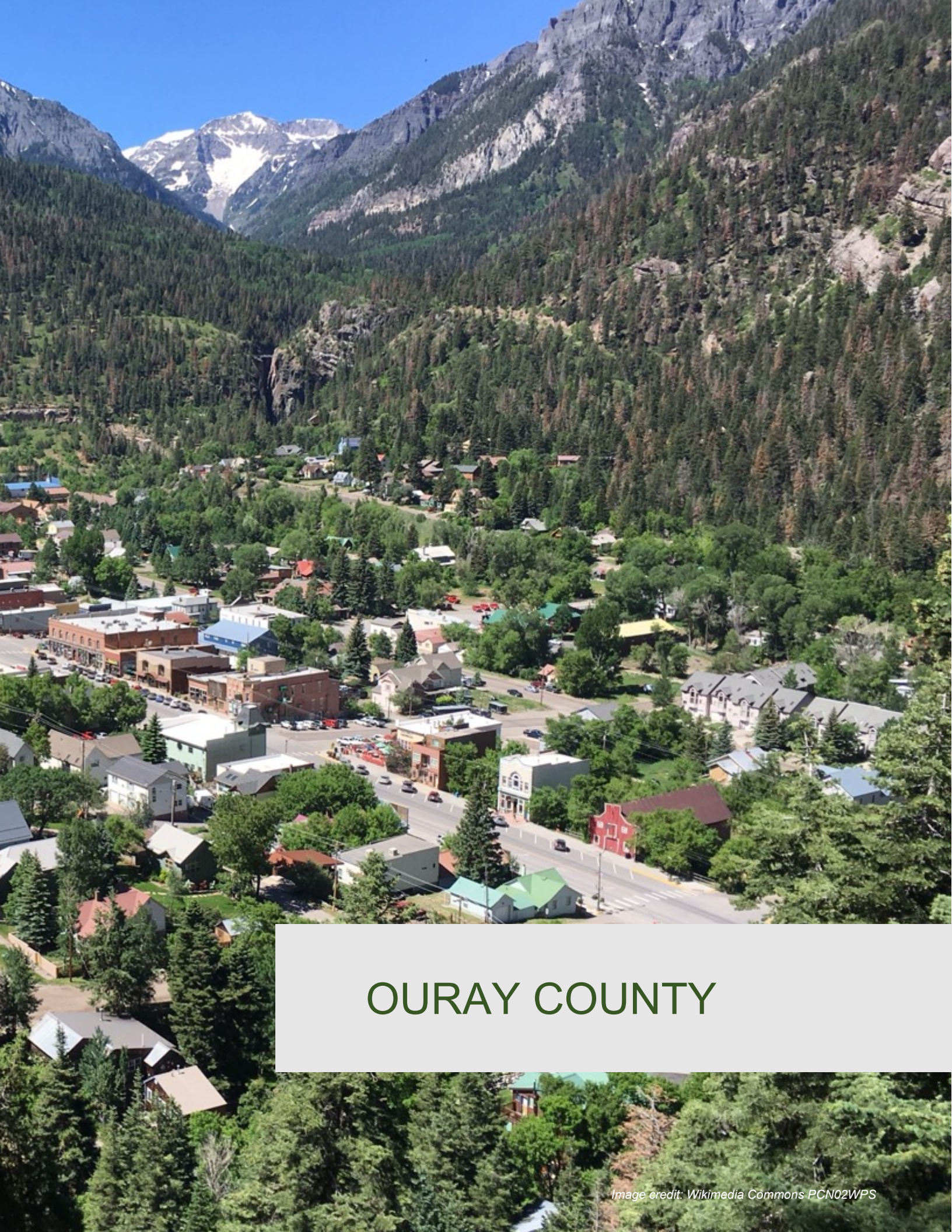
While some nuances have changed, such as the definition of defensible space zones and ignition-resistant construction techniques, the County's wildfire regulations have largely remained the same since they were adopted in 2003. Consistency in regulation implementation results in stakeholders being used to a systemized process, thereby enforcing rules and removing uncertainty. Lovgren observes that wildfire regulations initially considered “draconian” or as additional “red tape” are now simply part of a standard process that builders and homeowners have come to expect.

Partnerships help get things done

Eagle County has formed multiple collaborations across government agencies, towns, fire districts, HOAs, and citizen groups. These coalitions help build support for regulation by sending clear, consistent messages around wildfire mitigation, which can be effective when facing opposition. The County also engages in projects that cultivate teamwork and shared responsibility; for example, the County sponsors three wildland firefighter positions and implemented its citizen-focused preparedness campaign.

Kindness goes a long way

Lovgren has learned that it helps to be nice when it comes to regulation enforcement. Being nice does not have to equate to “caving in.” Rather, being nice means taking the extra time to help builders and homeowners understand the “why,” explaining the desired outcome, and letting homeowners have a voice in how that outcome is achieved. Lovgren has found his interactions run much smoother when he “walks softly” and focuses on cultivating buy-in rather than on forcing compliance.



OURAY COUNTY

OURAY COUNTY: EMBRACING EDUCATION AND INNOVATION TO REGULATE THE WUI

Introduction

Ouray County is a low-density, mostly rural area with two city centers, the City of Ouray (pop. 1,046 in 2020) and the Town of Ridgeway (pop. 1,142 in 2020). Dubbed the “Switzerland of America” due to its rugged mountains and high peaks, Ouray County has a varied terrain that includes mesas, valleys, rivers, and hot springs. About half of the land is privately owned, with most residents living in forested areas. The remaining land is under the management of the USFS and BLM. [The Ouray County CWPP \(2011\)](#) states nearly all of the County is in the WUI, with fire risk ranging from moderate to very high.

The landscape that draws tourists to Ouray County has been affected by the fir engraver beetles that are gradually killing the County’s prolific white fir trees. On a dying white fir, the blue-green needles turn a deep maroon-red color that stand out against the remaining healthy evergreen trees. It was the sight of this stark color contrast that got Ouray County Commissioner Ben Tisdell thinking about the health of the County’s forest and what the local government could do to protect it. He started getting involved with local forest health initiatives, which led him into conversations about wildfire mitigation with the [West Region Wildfire Council](#) (WRWC), an organization that works to reduce fire risk in six western slope counties, including Ouray County. Tisdell leveraged his passion for healthy forests and education in wildfire mitigation to collaborate with fellow elected officials, County planners, WRWC, the Colorado State Forest Service (CSFS), and other stakeholders to adopt updated wildfire regulations to increase wildfire resilience in the WUI.

This case study highlights the importance of elected officials’ engagement in wildfire education and regulations, leveraging state and local resources for administering wildfire regulation, and using feedback to strengthen regulation effectiveness.

Regulation History

Ouray County first adopted wildfire regulations in the late 1990s that applied to all new planned unit developments (PUDs), new residential structures, and additions that increased a residential structure’s total square footage by 50% or more. The regulations established a fire rating system in which projects had to meet minimum points required for Preliminary Plan approval or a Certificate of Occupancy. For PUDs, the points were assessed based on a parcel vegetation assessment, fire hydrant locations, and emergency vehicle access. Residential construction points were determined by numerous criteria, including topography, interior sprinkler systems, roof material, buried or overhead electrical lines, driveway standards, and water supply.

Over time, however, County planners recognized that those regulations were not fully meeting the intended objectives of wildfire risk reduction and improving public and first responder safety.

Ouray County, CO

Location: Southwest Colorado

Population: 4,874

Area: 541 square miles



Sources: US Census Bureau, 2020 (statistics); Wikimedia Commons (map)

For example, provisions such as requiring water cisterns for certain homes proved to be impractical or not useful to local fire departments. Moreover, concerns about climate change, drought, and insect infestations prompted the County to consider revising the wildfire regulations to better meet the growing threats facing the community.

In 2015, Ouray County Commissioner Ben Tisdal attended the annual Colorado Wildland Fire Conference. There, he met experts in the field and learned about building wildfire resilient communities in the WUI. In 2018, the other two County Commissioners and the entire Planning Commission accompanied Commissioner Tisdal to the conference to expand their understanding of wildfire regulations. The group left the conference with a greater understanding of the latest wildfire mitigation science and ideas for applying it to the County's regulations.



Figure 5. County Commissioner Ben Tisdal (fourth from left), Planning Director Mark Castrodale (third from right), and members of the Ouray County Planning Commission attended the Colorado Wildland Fire Conference in 2018 to learn about wildfire issues.

Image credit: Ouray County

Soon after, the Planning Commission and County Commissioners teamed up with the County Land Use Department, local fire districts, and stakeholders to overhaul the County's existing wildfire regulations. Incorporating mitigation principles learned at the conference, and expertise provided by CSFS and WRWC, the County revised the [Wildfire Mitigation Regulations](#) (Section 16 of the Land Use Code) with a science-based, robust set of requirements for new dwelling units, additions and exterior remodels, replacements, accessory structures, PUDs, subdivisions, and resort/conference centers.

Like other communities that have adopted wildfire regulations, Ouray County's updated regulations were adopted soon after a local wildfire occurred in the area, bringing the risk of living in the WUI into everyday discussions.

The Cow Creek Fire erupted on USFS land about nine miles east of Ridgway in October 2019, burning 859 acres before snow showers helped to extinguish it. The vote to adopt the revised regulations occurred just a few months later with no significant opposition.

Regulation Administration and Enforcement

The Ouray County Land Use Department currently consists of two planners, a permit tech, and a building inspector, and processes all building permits for the County; in 2021, they issued 108 building permits valuing \$43.3 million in construction. The Department plans to hire two additional employees to help handle the increase in permit requests, and one of those new positions will focus on enforcement. In 2021, the County also established [new fees](#) for processing Wildfire Mitigations Regulations applications.

Each application subject to the Wildfire Mitigation Regulations has a corresponding wildfire mitigation worksheet that identifies mandatory elements with a corresponding pass/fail rating. For example, [requirements for new dwelling units](#) include Class A roofing, ignition-resistant siding or a non-combustible foundation, defensible space plan, vents with screening, five-foot "hardened zone", emergency access standards for driveways and address signage, requirements for decks and fencing, and other attachments. Worksheets also contain other considerations that are for educational purposes only, such as the influence of topographic features and proximity to forests on fire behavior.

Initially, worksheets included two categories of required elements: Category A, which was based on a pass/fail system, while Category B was based on a point system (e.g., 60 points added for a home being built in a moderately dense forest). After field testing the worksheets and receiving feedback that Category B's point system was difficult to explain and implement in the field, the County simplified Category B elements to also score on a pass/fail basis.

There is some flexibility in the implementation of Wildfire Mitigation Regulations. For example, if a proposed project such as a new residential dwelling unit has combustible siding, construction drawings must show detailed plans for meeting six inches of non-combustible material at the base of exterior walls and decks, rooflines, and other structural projects, and must also have 100 feet of defensible space surrounding the entire dwelling unit. The County partners with WRWC to conduct the defensible space assessments and inspect them before the Certificate of Occupancy is issued. The County provides an annual contribution to help cover WRWC's costs associated with this work.

Another issue the County encountered in implementation of the updated wildfire mitigation regulations was that home construction would often be completed prior to defensible space. Restrictions on tree thinning and cutting due to beetle flight cycles also limited when homeowners could conduct their defensible space. The County tried issuing a temporary Certificate of Occupancy but homeowners found this complicated financial lending agreements. To help avoid these situations, the County changed its process. The County now issues a Certificate of Occupancy upon completion of a home to satisfy financial lender requirements but requires the applicant to sign an affidavit that they will develop a defensible space plan (per mitigation requirements) within one year of the Certificate of Occupancy. The County collects a deposit equal to 1% of the project valuation that is refundable once defensible space requirements are met and proof of compliance has been submitted.

Additional Mitigation Activities

The County's wildfire regulations are just one component of a comprehensive approach to addressing wildfire risk. The County actively works with state and local agencies to reduce fuels, educate the public, and offer voluntary programs that help support regulations administration.

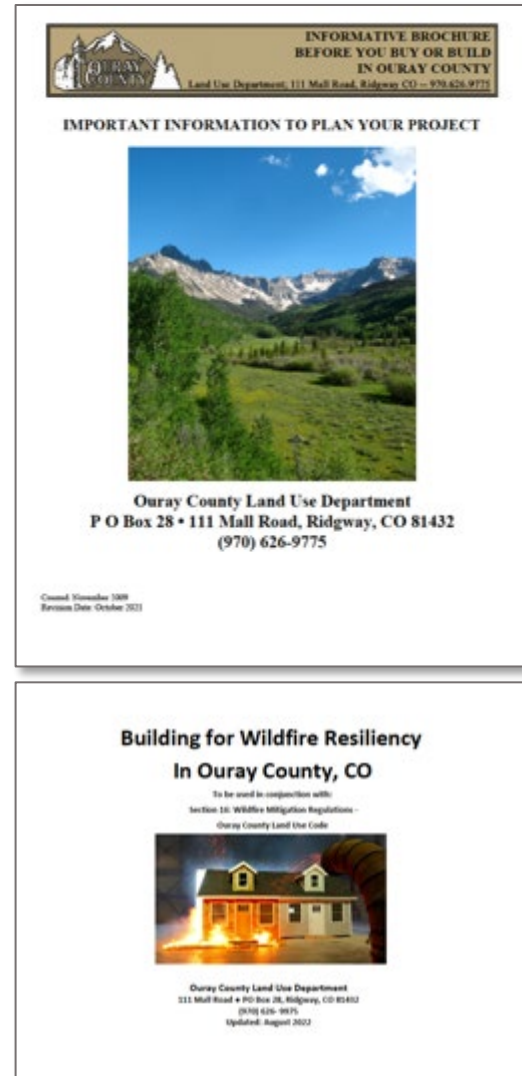


Figure 6. The County provides several resources to help prospective homebuyers and builders plan their projects, including the 28-page “[Before You Buy or Build](#)” informative brochure (top) and the “[Building for Wildfire Resiliency](#)” guide (bottom) for use in conjunction with the Wildfire Mitigation Regulations.

Source: Ouray County Land Use Department

Partnerships with CSFS and WRWC

Ouray County leverages partnerships with local organizations and state agencies to supplement regulations with other mitigation programs. For example, WRWC provides free, voluntary wildfire mitigation [site visits](#) through their MyWildfireRisk program to all residents within its service area, including Ouray County. Through the program, homeowners can learn about home hardening and vegetation management actions tailored to address risks specific to their property. WRWC and Ouray County also partner to implement such projects as fuel breaks and forest management activities. Although discontinued in 2021, WRWC had also previously administered a community chipping program. Additionally, Ouray County residents can benefit from WRWC's Vegetation Management cost-share program that provides funding for vegetation management, technical assistance from CSFS, and project management from either WRWC or CSFS.

Participation at the State Level

Commissioner Tisdell has been active at the state level, representing Western Slope counties on the [Colorado Fire Commission](#). The commission evaluates how the State manages fire and develops broad recommendations. Tisdell also sits on the Fire Commission's [WUI Subcommittee](#), which provided a proposal in 2022 to the Fire Commission on developing statewide minimum standards for development in the WUI.

Learning Insights

Ouray County demonstrates a proactive approach to wildfire regulations that emphasizes education, engagement with local partners, and responsiveness to feedback, offering the following learning insights:

Educating elected officials helps foster support for regulations

Ouray County's Board of County Commissioners and Planning Commission attended the Colorado Wildland Fire Conference, helping to educate local officials on the latest wildfire mitigation science and best practices. They also saw examples from across the State, which helped the County have a smooth process for developing robust regulations.

Outside organizations can help administer regulations

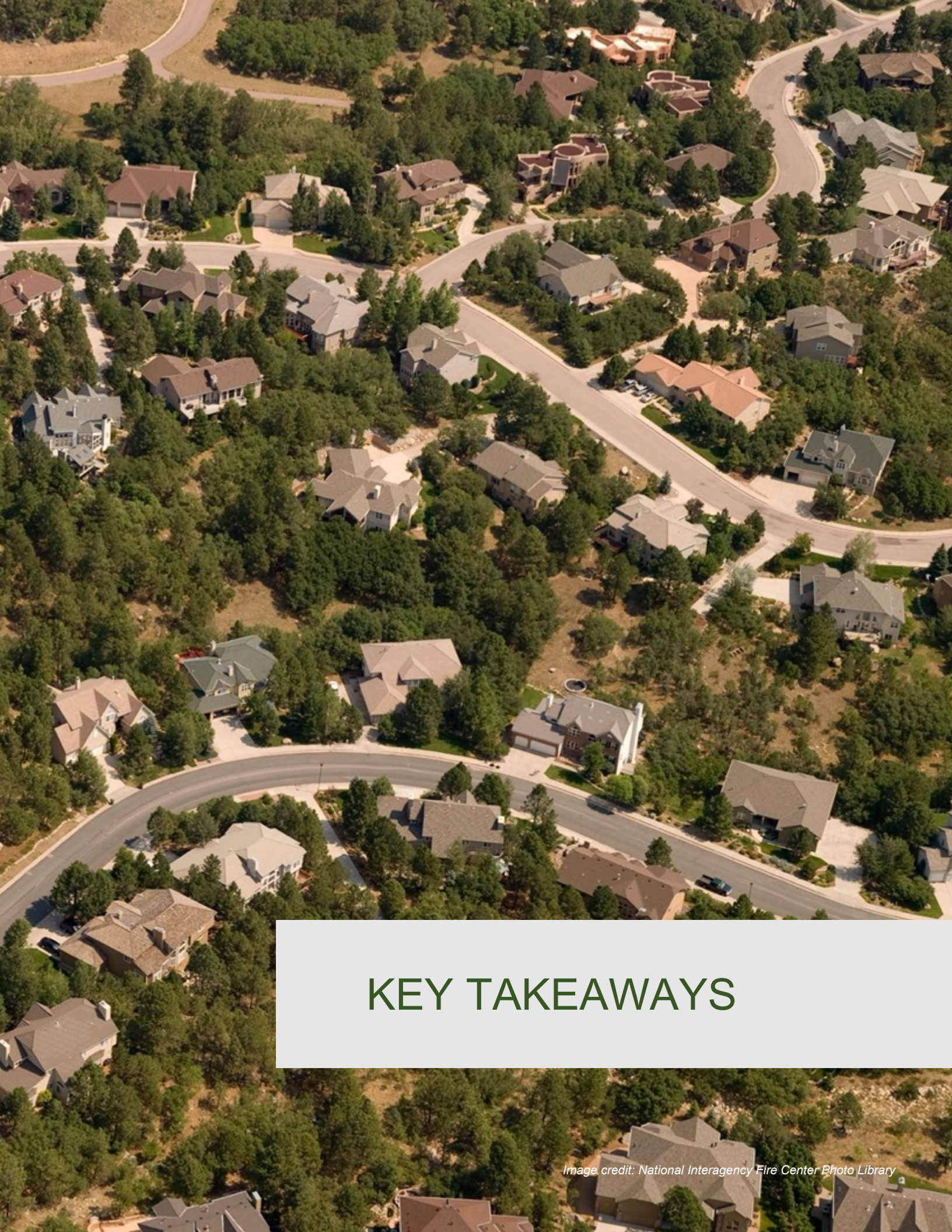
Partnering with CSFS and WRWC helped the County receive up-to-date information and data. Bryan Sampson, Senior Planner for Ouray County, describes these partners as integral and essential for the progress that has been made. Both WRWC and CSFS were instrumental in the development of the 2019 wildfire regulations. "We couldn't have done it without them," says Sampson. Commissioner Tisdell also noted that while it may be less conventional to rely on an outside organization for assisting with administering County regulations, WRWC provides the capacity and expertise that a small county like Ouray does not maintain in-house.

Anticipate roadblocks with data

One concern the County initially had about implementing the new regulations was the impact it might have on building costs. They feared the requirement to use ignition-resistant materials would result in prohibitive pricing for the typical large homes being built in the area. However, an analysis by the County's building inspector found prices did not significantly rise, and in fact many of the custom homes already included a lot of the requirements being considered for adoption.

Flexibility helps create regulations that are realistic and attainable

By changing their wildfire vulnerability rating system and how they handle lagging defensible space implementation, Ouray County demonstrated a willingness to adapt to feedback and find creative solutions that better serve the public while meeting the intent of the regulations.



KEY TAKEAWAYS

KEY TAKEAWAYS

Wildfire regulations are a powerful tool for communities to consider as part of their approach to risk reduction and resilience in the WUI. The three Colorado case studies in this report illustrate different yet successful approaches to adopting and implementing wildfire regulations. Key takeaways that emerged from the set of case studies highlight:

- **Regulations are not static.** Case studies help show that regulations can be adjusted over time to improve usability, clarify terms, refine applicability, expand their scope, or incorporate additional tools for site assessments. These changes can be done as major updates or as incremental tweaks based on factors such as need and political will.
- **Regulations are complementary to other strategies.** Voluntary efforts, such as sponsoring homeowner education and outreach programs, administering local chipping programs, encouraging participation in national programs, coordinating wildfire councils or committees, and offering Home Ignition Zone assessments, are all important strategies that supplement regulations and incentivize mitigation at the parcel scale. This is particularly useful in recognizing that regulations often do not apply to existing development unless additions or renovations above a specified threshold are proposed, and these additional voluntary activities are necessary to complement regulations.
- **Political and public support is essential.** Each case study relied heavily on partnerships with HOAs, engagement with local professionals and non-profits, and educating elected officials on wildfire risk to build support for adopting new regulations or updating existing ones. These partnerships also provided a smoother process for administering and enforcing regulations once they were adopted.
- **Timing can be both proactive and reactive.** Each case study took a proactive approach to their initial adoption of regulations, catalyzed by other fires in the state. However, these three communities and others in Colorado have also leveraged opportunities to improve their regulations following destructive fires that affected their local community. In this sense, the case studies showed that adopting new or updating existing regulations can be proactive or reactive, depending on the circumstances.
- **Administration is flexible.** The responsibility of administering regulations is flexible for what works best within a jurisdiction's structure. The case studies showed how regulations can be administered by a fire department, planning department, or emergency management / wildfire mitigation department. In addition, one case study relied on an external organization to boost their capacity in conducting defensible space inspections.

Colorado currently does not have a statewide minimum code that regulates building or development activity in the WUI. As a result, communities across the State have significant latitude to plan for and regulate the use and development of land under their jurisdiction. The case studies in this report can serve as successful examples for other communities interested in adopting and implementing wildfire regulations to address risk in the WUI.