

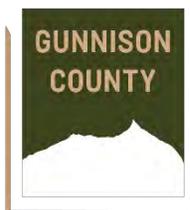
Gunnison County | 2025

# Community Wildfire Protection Plan



# Prepared By

Gunnison County Colorado Forest Restoration Institute JEO Consulting Group



COLORADO FOREST  
RESTORATION INSTITUTE  
COLORADO STATE UNIVERSITY



**Thank you to the Upper Gunnison Shared Stewardship Council members who participated in the plan development and planning process.**

Arrowhead Fire Protection District  
Bureau of Land Management  
Bureau of Reclamation  
Carbondale & Rural Fire Protection District  
City of Gunnison  
Colorado Division of Fire Protection and Control  
Colorado Division of Homeland Security and Emergency Management  
Colorado Parks and Wildlife  
Colorado State Extension  
Colorado State Forest Service  
Crested Butte Fire Protection District  
Crested Butte Mountain Resort  
Gunnison County Electric Association  
Gunnison Volunteer Fire Department  
High Country Conservation Advocates  
Intermountain Forest Association and Colorado Timber Association  
Lawrence Berkely National Laboratory

Montrose Forest Products  
Mule Deer Foundation  
National Forest Foundation  
National Park Service  
National Weather Service  
Natural Resources Conservation Service  
Rocky Mountain Elk Foundation  
Spring Branch Forestry  
Town of Crested Butte  
Town of Marble  
Town of Mount Crested Butte  
Trout Unlimited  
Upper Gunnison River Water Conservancy District  
U.S. Forest Service  
West Region Wildfire Council  
Western Colorado University  
Wet Meadows Restoration Group  
White River National Forest  
Wild Turkey Federation

# Certification

The Gunnison County Community Wildfire Protection Plan was developed in accordance with the guidelines set forth by the Healthy Forests Restoration Act (2003) and the Colorado State Forest Service’s Minimum Standards for Developing Community Wildfire Protection Plans (2022).

- This plan was collaboratively developed through planning meetings with representatives from the fire protection districts, Gunnison County, federal agencies, state agencies, communities, and other organizations invited to participate.
- This plan identifies and prioritizes areas for vegetation-fuel reduction treatments to reduce the wildfire threat to human welfare and economic values at risk in the county.
- This plan recommends measures to reduce the ignitability of structures and loss of life.
- This plan provides recommendations on ways to improve wildfire response capabilities.

The following entities mutually agree with the contents of the Gunnison County Community Wildfire Protection Plan:

*Scott Morrill*

---

Scott Morrill, Gunnison County

*Adam W. Murdie*

Adam W. Murdie (May 14, 2025 14:49 MDT)

---

Adam Murdie, Gunnison County Sheriff

*Jennifer Bonner*

Jennifer Bonner (May 13, 2025 17:04 MDT)

---

Jennifer Bonner, Arrowhead Fire Protection District

*Karl Oliver*

Karl Oliver (May 15, 2025 11:06 MDT)

---

Karl Oliver, Carbondale & Rural Fire Protection District

*Robert Weisbaum*

---

Robert Weisbaum, Crested Butte Fire Protection District

*Blake Kinser*

---

Blake Kinser (May 13, 2025 11:51 MDT)

---

Blake Kinser, Delta County Fire Protection District 2

*Hugo Ferchau*

---

Hugo Ferchau (May 15, 2025 15:24 MDT)

---

Hugo Ferchau, Gunnison County Fire Protection District

*Bj Hockenberry*

---

Bj Hockenberry (May 13, 2025 18:48 MDT)

---

BJ Hockenberry, Ragged Mountain Fire Protection District

*Mike Tarantino*

---

Mike Tarantino (May 19, 2025 10:01 MDT)

---

Mike Tarantino, Colorado State Forest Service

*Luke Odom*

---

Luke Odom, Colorado Division of Fire Prevention and Control

*Dayle Funke*

---

Dayle Funke (May 15, 2025 18:30 MDT)

---

Dayle Funke, U.S. Forest Service

*Jon Kaminsky*

---

Jon Kaminsky (May 22, 2025 11:13 MDT)

---

Jon Kaminsky, Bureau of Land Management

*Aaron Johnson*

---

Aaron Johnson, West Region Wildfire Council

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# List of Acronyms

BCR – Benefit-Cost Ratio

BLM – Bureau of Land Management

CDC – Centers for Disease Control and Prevention

CFRI – Colorado Forest Restoration Institute

cNVC – Conditional Net Value Change

CSFS – Colorado State Forest Service

CWPP – Community Wildfire Protection Plan

EMS – Emergency Medical Services

eNVC – Expected Net Value Change

FIL – Fire Intensity Level

FPD – Fire Protection District

HVRAs – Highly Valued Resources and Assets

NEPA – National Environmental Policy Act

PCL – Potential Control Location Suitability

PODs – Potential Operational Delineations

PPE – Personal Protection Equipment

RADS – Risk Assessment and Decision Support

RAWS – Remote Automatic Weather Stations

RFVWC – Roaring Fork Valley Wildfire Collaborative

SDI – Suppression Difficulty Index

UGRWCD – Upper Gunnison River Water Conservancy District

UGSSC – Upper Gunnison Shared Stewardship Council

USFS – U.S. Forest Service

WRAP – Wildfire Ready Action Plan

WRWC – West Region Wildfire Council

WUI – Wildland-Urban Interface

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# Executive Summary

## The Need and Purpose

Wildfires are an essential component of landscapes across the West, yet they are a growing threat across the U.S. and Colorado, endangering lives, property, infrastructure, and ecosystems. Climate change and prolonged droughts increase the frequency and intensity of wildfires, making communities more vulnerable. Past fire suppression policies, though well-intended, have led to hazardous fuel buildup, disrupting natural fire cycles. In Gunnison County, the question is not if a wildfire will occur but when and what the impacts will be.

The Gunnison County Community Wildfire Protection Plan (CWPP) identifies wildfire risks and outlines a plan to reduce those risks and enhance preparedness. Developed through broad stakeholder input and collaboration with agencies like the Bureau of Land Management (BLM), U.S. Forest Service (USFS), Colorado State Forest Service (CSFS), and local fire districts, the CWPP identifies the need for funding fuel management and mitigation projects. It also defines the wildland-urban interface (WUI), identifies locations where vegetation management should occur first, and discusses possible wildfire mitigation actions to help residents and visitors live with wildfire. Living with wildfire means recognizing that fire is a natural and unavoidable part of many landscapes and adjusting how people build, live, and manage land to reduce risk and coexist with fire rather than trying to eliminate it. In many instances, wildfires can benefit natural ecosystems and environments. Below is the roadmap used to prepare the Gunnison County CWPP.

## Gunnison County CWPP Road Map



Source: CFRI

## Executive Summary

### CWPP Planning Area

The CWPP planning area encompasses all of Gunnison County and portions of Hinsdale and Saguache counties within the Upper Gunnison River Watershed. This expanded coverage was established in response to watershed concerns raised after the 2020 wildfire season.

### **CWPP Goals**

Goals are crucial to providing a clear direction and focus for the CWPP. They outline what the county aims to achieve, ensuring efforts align with local priorities, resources, and capabilities. Below are the goals of the Gunnison County CWPP.

#### **Goal 1: Fire Resilient Landscapes**

Develop and maintain landscapes across the county that are resilient to wildfire, mitigate undesirable fire outcomes, and protect highly valued resources and assets.

#### **Goal 2: Fire-Adapted Communities**

Empower the county and its residents to “live with wildfire” including being prepared to withstand, respond to, and recover from wildfires.

#### **Goal 3: Safe and Effective Wildfire Response**

Enable safe and efficient wildfire response through improved planning, coordination, and education.

### **Planning Process**

The development of the Gunnison County CWPP required multiple steps and involvement from individuals across various groups and organizations. The first step in the process was creating a Leads Team to serve as the decision-making committee for the plan. This team consisted of representatives from Gunnison County, Crested Butte Fire Protection District, Gunnison Volunteer Fire Department, Upper Gunnison River Water Conservancy District, BLM, USFS, CSFS, West Region Wildfire Council, and consultants from the Colorado Forest Restoration Institute and JEO Consulting Group (Table 1). Members of the Leads Team met regularly during the plan development to discuss plan components, review data, and plan upcoming activities.

**Table 1: Gunnison County CWPP Leads Team Members**

<b>Name</b>	<b>Agency/Jurisdiction</b>
Scott Morrill	Gunnison County Emergency Management
Lisa Bickford	Gunnison County Emergency Management
Ryan White	Gunnison County Emergency Management
Rob Weisbaum	Crested Butte Fire Protection District
Hugo Ferchau	Gunnison Volunteer Fire Department
Sonja Chavez	Upper Gunnison River Water Conservancy District
Mike Tarantino	Colorado State Forest Service
Todd Loubsky	Colorado State Forest Service
James Savage	Bureau of Land Management
Levi Broyles	U.S. Forest Service
David Carr	U.S. Forest Service
Jamie Gomez	West Region Wildfire Council
Leigh Robertson	West Region Wildfire Council
Brett Wolk*	Colorado Forest Restoration Institute
Jarod Dunn*	Colorado Forest Restoration Institute
Jackie Edinger*	Colorado Forest Restoration Institute
Phil Luebbert*	JEO Consulting Group
Karl Dietrich*	JEO Consulting Group

\*Served in a consultant/advisory role.

Actively engaging stakeholders was essential to ensuring the plan's success. The Upper Gunnison Shared Stewardship Council (UGSSC) meetings provided an excellent way for the Leads Team to work with local stakeholder groups. The UGSSC comprises local government officials, CFSF, USFS, fire protection districts, water and electrical utilities, non-profit organizations, and community members. During the UGSSC's bimonthly meetings, the Leads Team could provide project updates and receive member input.

Other stakeholder engagements include a CWPP public survey, community map walk events, and a project website. The CWPP public survey received 119 responses (Appendix A: Community Survey Summary Report) and helped the Leads Team better understand community values, wildfire knowledge, and support for different wildfire mitigation options. Two community map walk events were held at the mid-point of the planning process. These events allowed the public to engage with Leads Team members, get an update on the project, and provide feedback on draft maps that had been created. The final piece of outreach was the project website. The website provided regular updates on the planning process. Once completed, the CWPP website could transition into a StoryMap, which would serve as an interactive online version of the CWPP. The online StoryMap can be viewed [here](#).

**Figure 1: Community Map Walk Event**

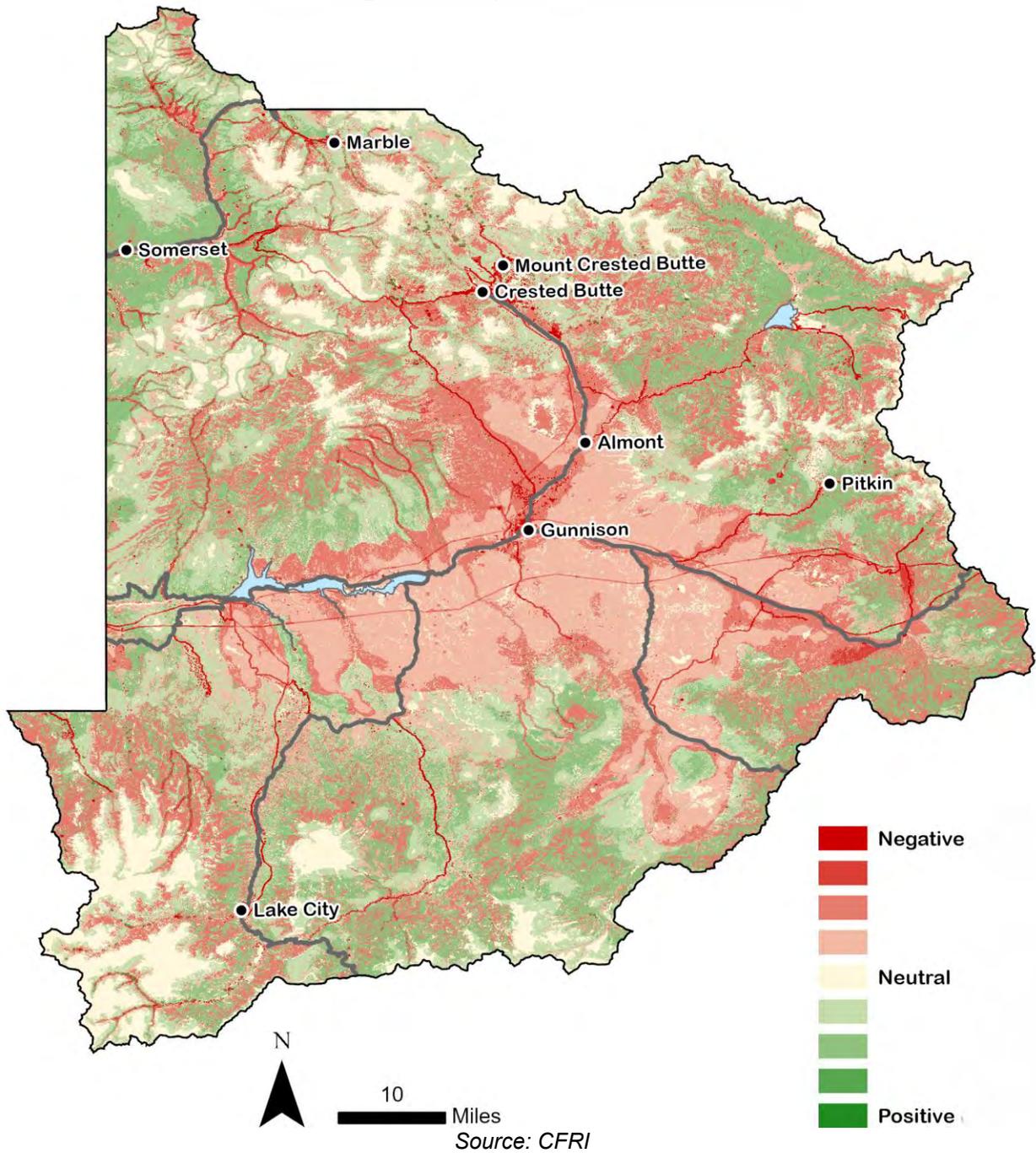


## **Wildfire Risk Assessment**

Figure 2 shows the finalized composite wildfire risk map for the CWPP planning area. This map represents the potential impacts of wildfire on the prioritized values (buildings, infrastructure, life safety, recreation, water, wildlife, and vegetation) identified by the Leads Team, the public, and the UGSSC. Areas in green indicate regions where wildfire is expected to have a positive impact, while areas in red would likely be negatively affected. The intensity of the color reflects the severity of the expected impact—darker shades of green and red indicate more substantial positive or negative effects, respectively.

Within the CWPP planning area, the most significant wildfire risk is concentrated around the towns of Gunnison and Crested Butte, where there is a high density of infrastructure and primary evacuation routes. In the Gunnison Valley, Gunnison sage-grouse habitat is negatively affected by wildfire, there is a significant risk that this habitat would be lost after a high severity burn. For many vegetation types and wildlife species, wildfire would likely improve or enhance their ecosystem function. Ponderosa pine, mixed conifer, and lodgepole pine forests generally benefit from fire. Additionally, bighorn sheep, elk, moose, and mule deer are expected to benefit from wildfire.

Figure 2: Composite Wildfire Risk

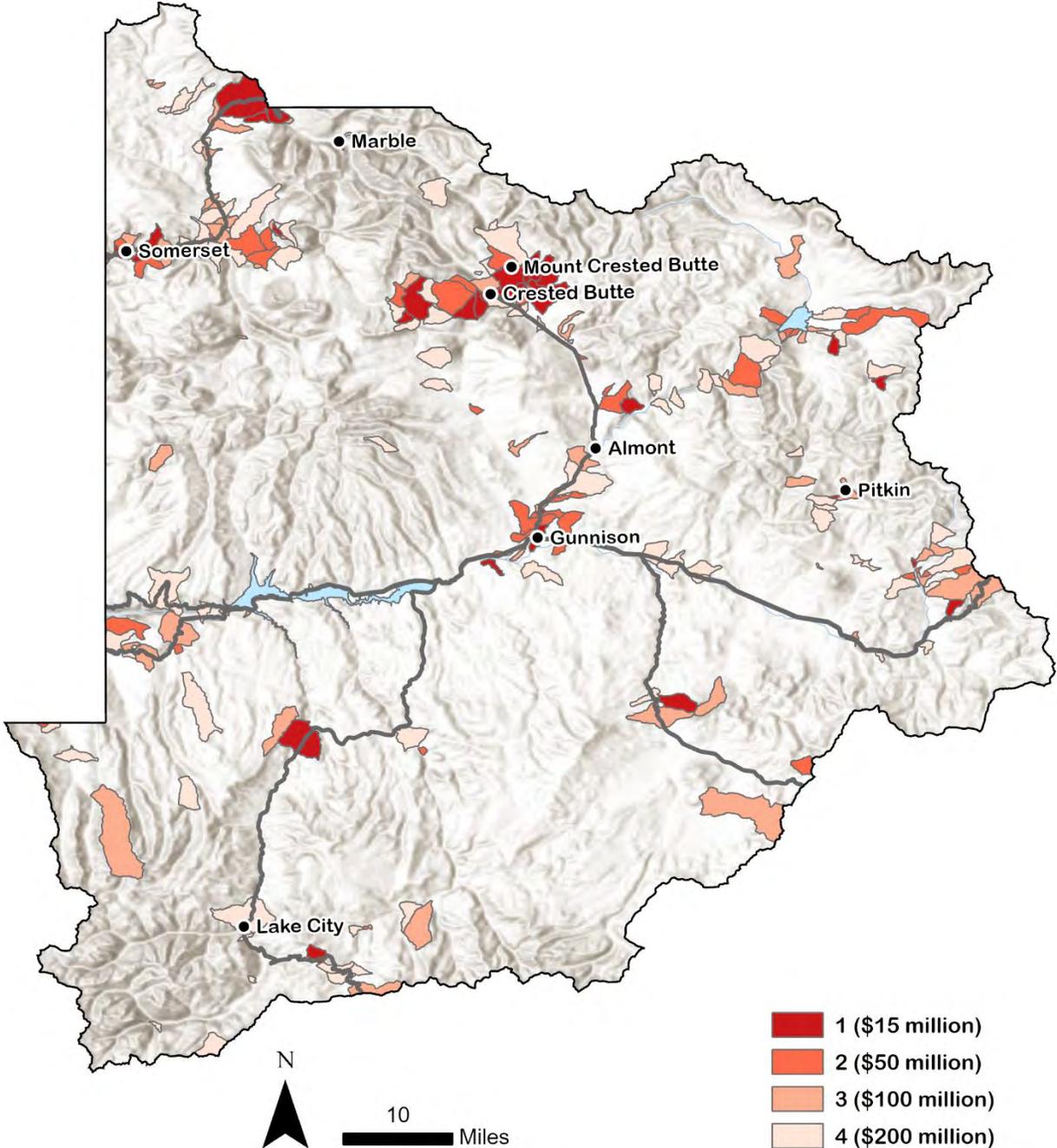


**Decision Support**

Two tools were developed to help the Leads Team and UGSSC identify future vegetation management projects. The first tool identified areas where the greatest risk reduction could be achieved per dollar spent. These areas were identified using the wildfire risk assessment map, vegetation management analysis, cost, and feasibility. Figure 3 shows the areas within the planning area where cost-effectiveness is greatest for various vegetation management treatments. The locations are split into four different budget

levels to help further identify the best potential treatment locations. It is estimated that areas identified in the \$15 million budget could reduce feasible risk by 16% while treating less than 1% of the landscape.

**Figure 3: Areas with the Greatest Risk Reduction per Dollar Spent**

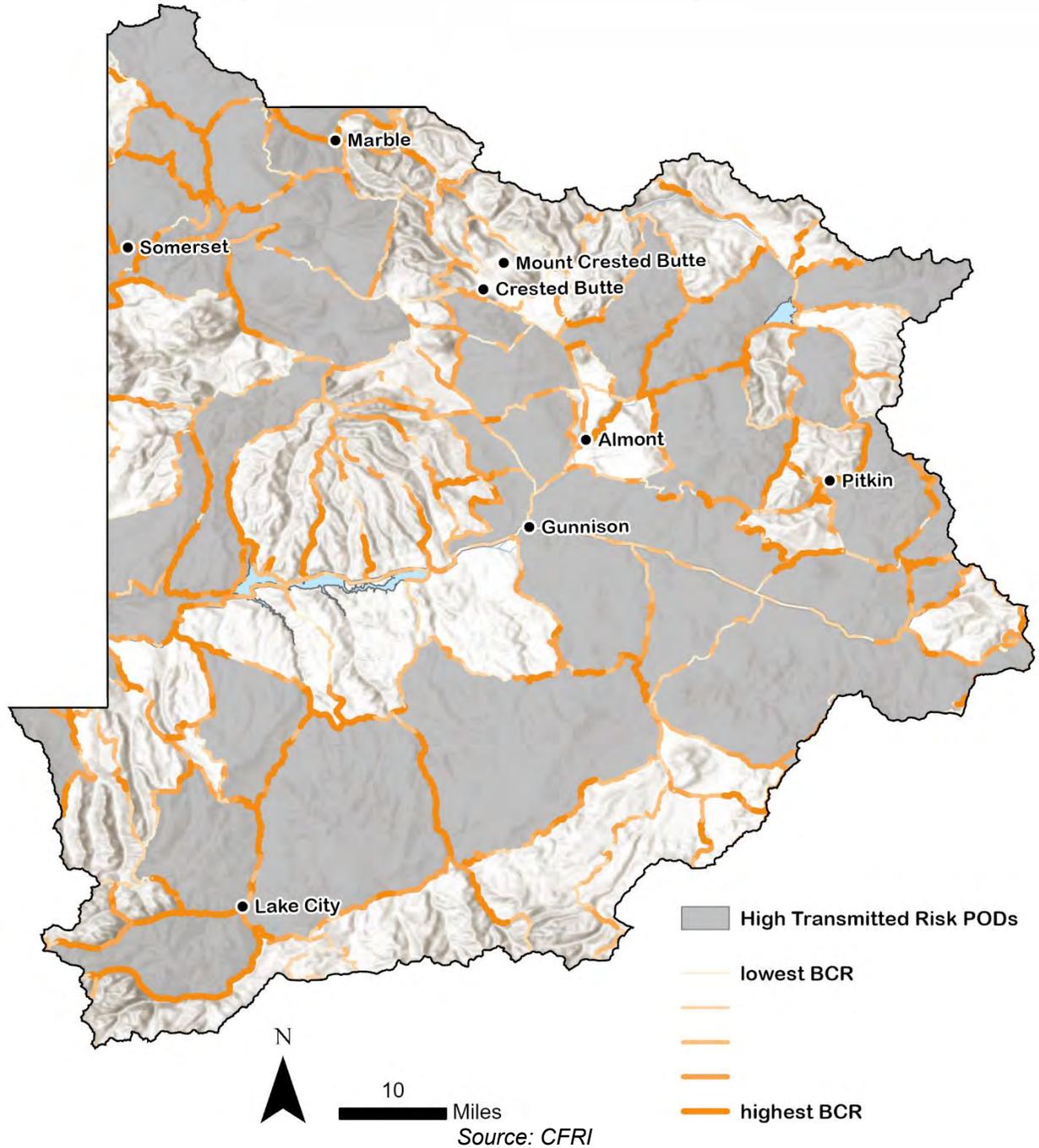


Source: CFRI

The second developed tool calculated the benefit-cost ratio for vegetation management along Potential Operational Delineation (POD) lines. PODs are planning units that identify

the safest and most effective lines to control fire.<sup>1</sup> Figure 4 shows the POD boundary lines with the highest benefit-cost ratio (BCR). The POD boundaries with the highest benefit-cost ratio (i.e., lines in the thickest orange) can help to prioritize where fuel treatments should occur to help limit fire spread and improve firefighter access.

**Figure 4: Benefit-Cost Ratio of POD Boundary Treatments**



<sup>1</sup> U.S. Forest Service. January 13, 2022. "PODs at a Glance." <https://research.fs.usda.gov/rmrs/understory/pods-glance>.

## Action Plan

The three maps below show the short-term (1-2 years), mid-term (3-5 years), and long-term (6-10 years) planned vegetation management project locations. These vegetation management projects were identified over several meetings with the Leads Team, UGSC, and various fire management professionals. Already planned or ongoing projects from multiple entities comprise most short- and mid-term projects. Outcomes from the POD boundary and risk reduction per dollar spent analysis helped to guide the prioritization and identification of many of the long-term vegetation management projects.

In addition to the identified vegetation management projects, the Leads Team and UGSSC members identified wildfire mitigation actions. These actions were linked to the goals and objectives identified in the CWPP. They represent plans of action to help reduce the risks and impacts of wildfire on people, infrastructure, buildings, and the natural environment. While many of these actions will be easily implemented, some depend entirely on funding, staff availability, and local buy-in. Many of the mitigation action themes are listed below. A complete list of wildfire mitigation actions and additional vegetation management project information can be found in the Action Plan section.

### Wildfire Mitigation Action Themes:

- Improving or creating wet meadows and implementing other wildfire-related watershed actions identified in related planning efforts.
- Promoting and coordinating education and outreach on appropriate actions before, during, and after a wildfire event.
- Promoting local wildfire programs related to risk assessments, chipping, defensible space, and home hardening.
- Enhancing wildfire response capabilities.
- Securing funding and staff to help implement the identified projects and actions.
- Identifying additional vegetation management and wildfire mitigation actions utilizing the outcomes from the Decision Support tools.
- Addressing hazardous fuel loading in areas with HVRA's negatively impacted by wildfire.
- Allowing for management, beneficial wildfire.

### Individual Preparedness

While the wildfire mitigation actions and vegetation management projects listed in this plan will help mitigate the impacts of wildfire, homeowners and residents must also do their part to protect themselves and their property. All property owners in Gunnison County need to take steps to harden their homes and have defensible space. Research has demonstrated that homes with a Class A-rated roof and defensible space have an 85% chance of surviving a wildfire. Information and recommendations regarding structural ignitability and defensible space can be found in CSFS publications available [here](#).

Figure 5: Short-Term Projects Map

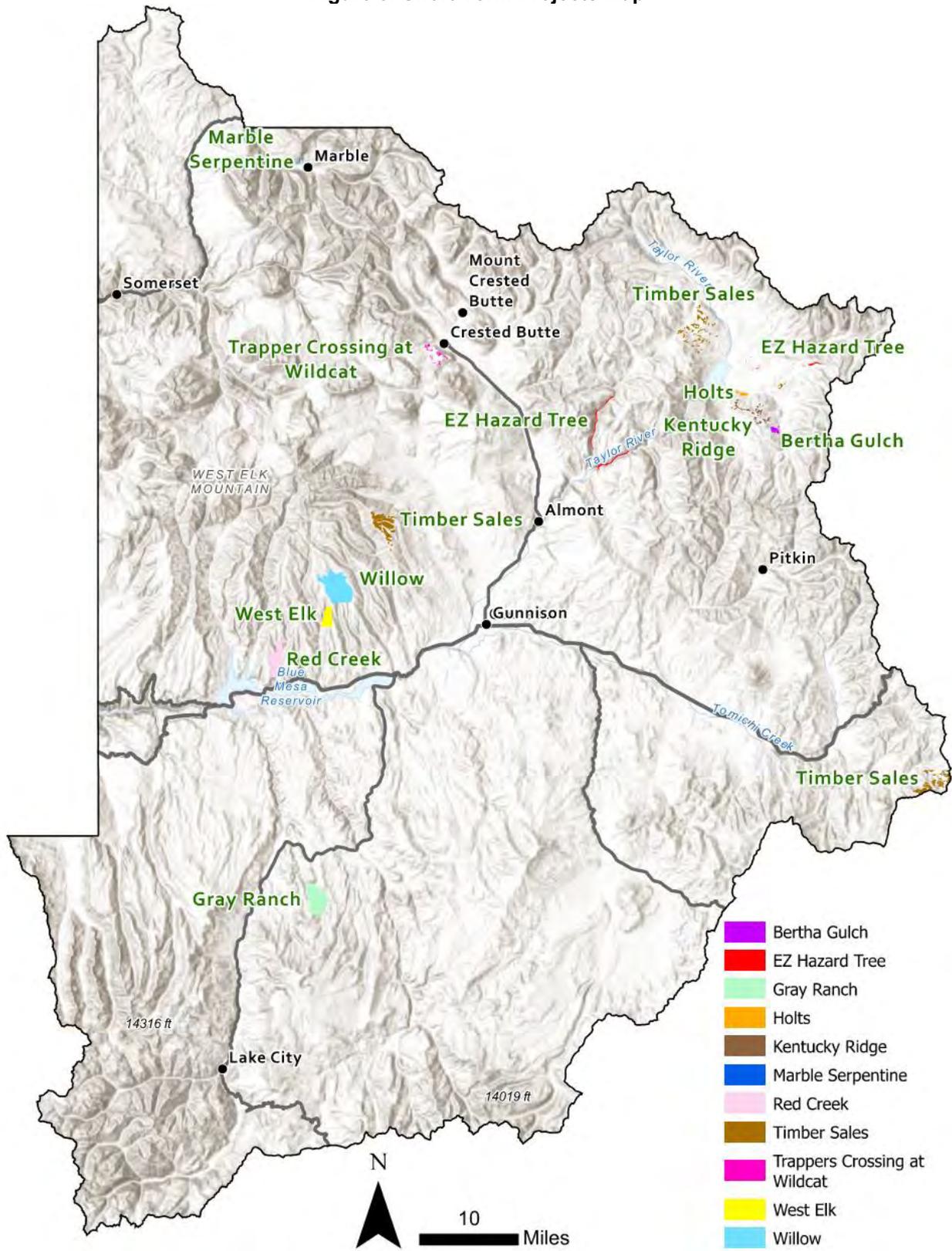


Figure 6: Mid-Term Projects Map

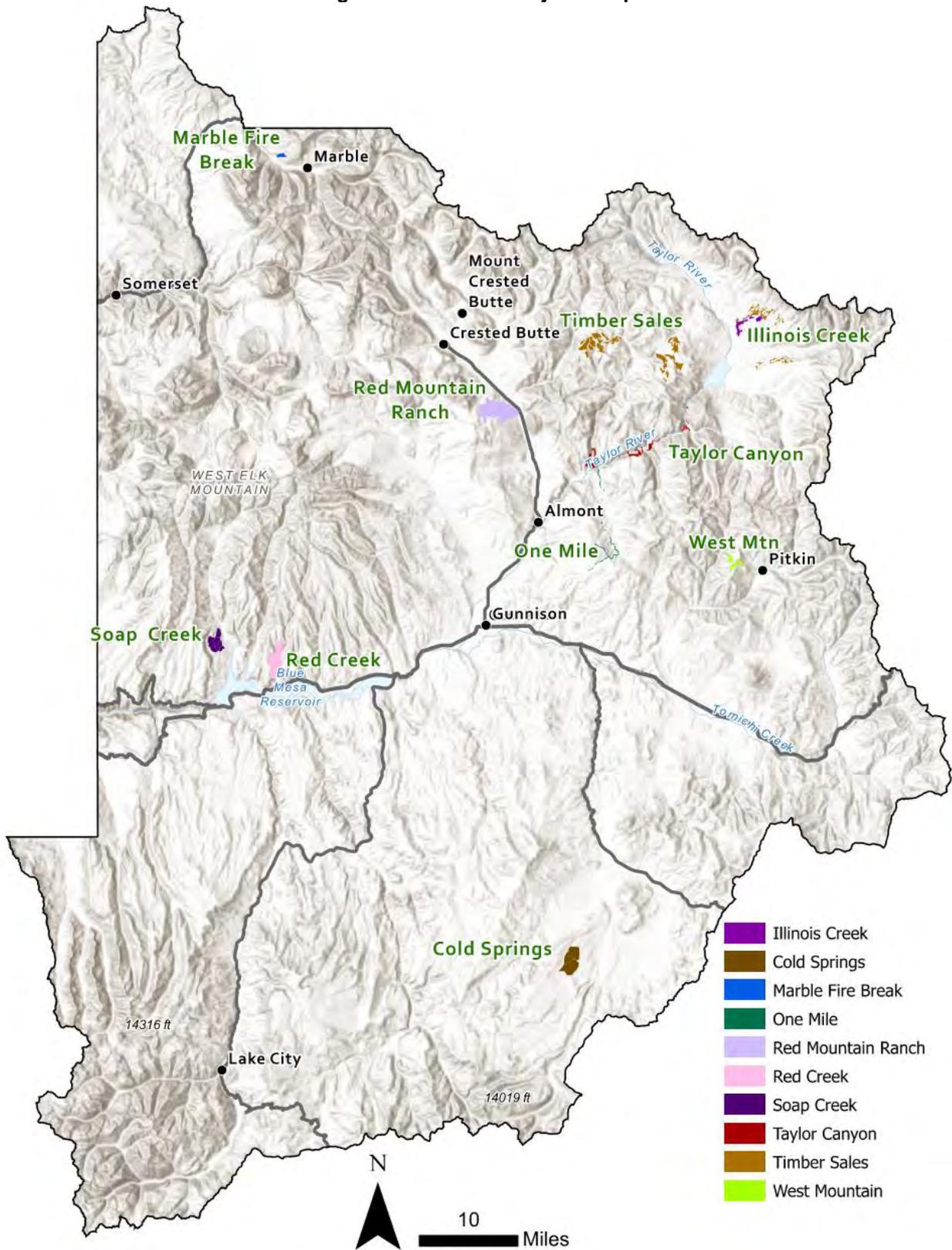
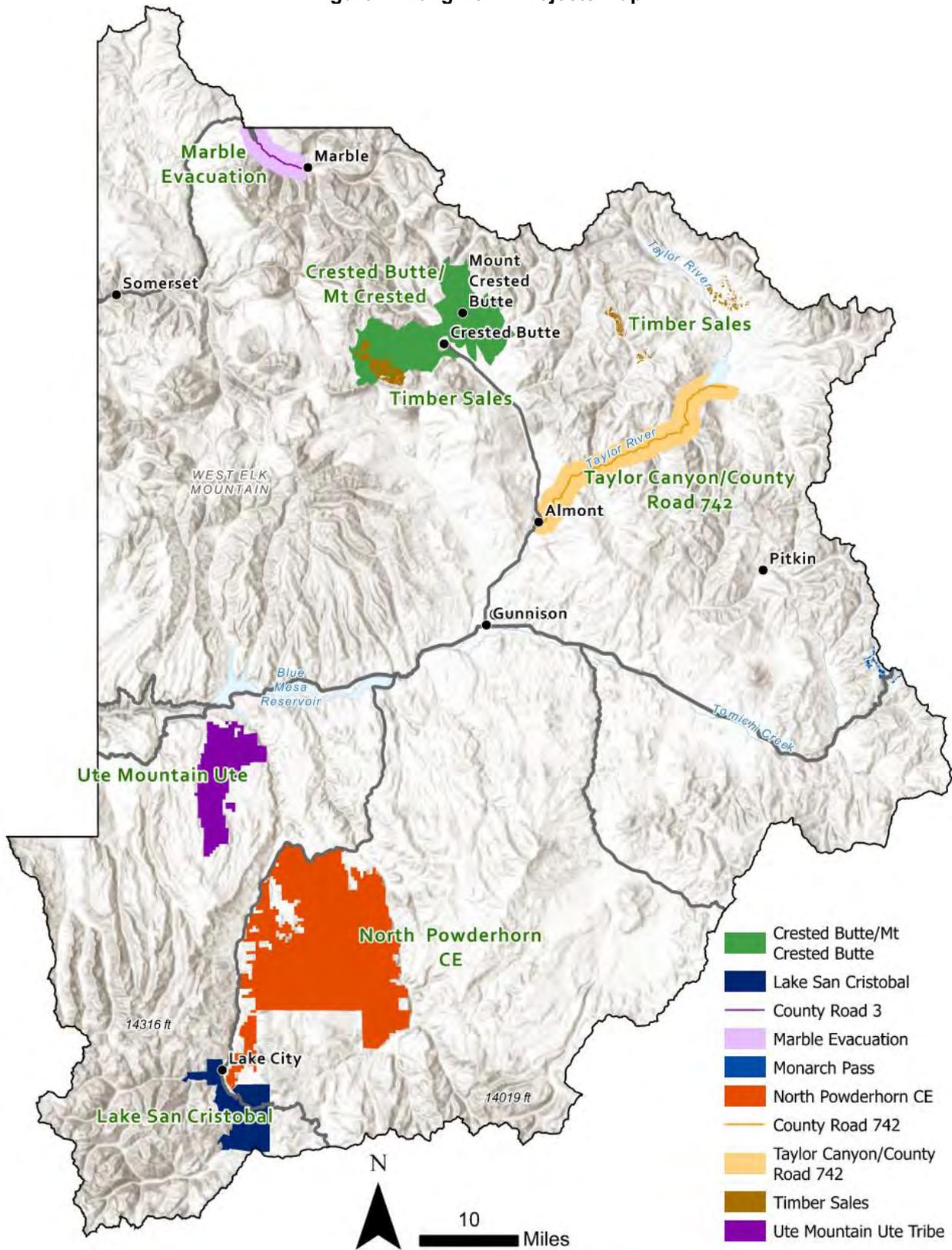


Figure 7: Long-Term Projects Map



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## Section 1

# Living with Wildfire

### **About Gunnison County**

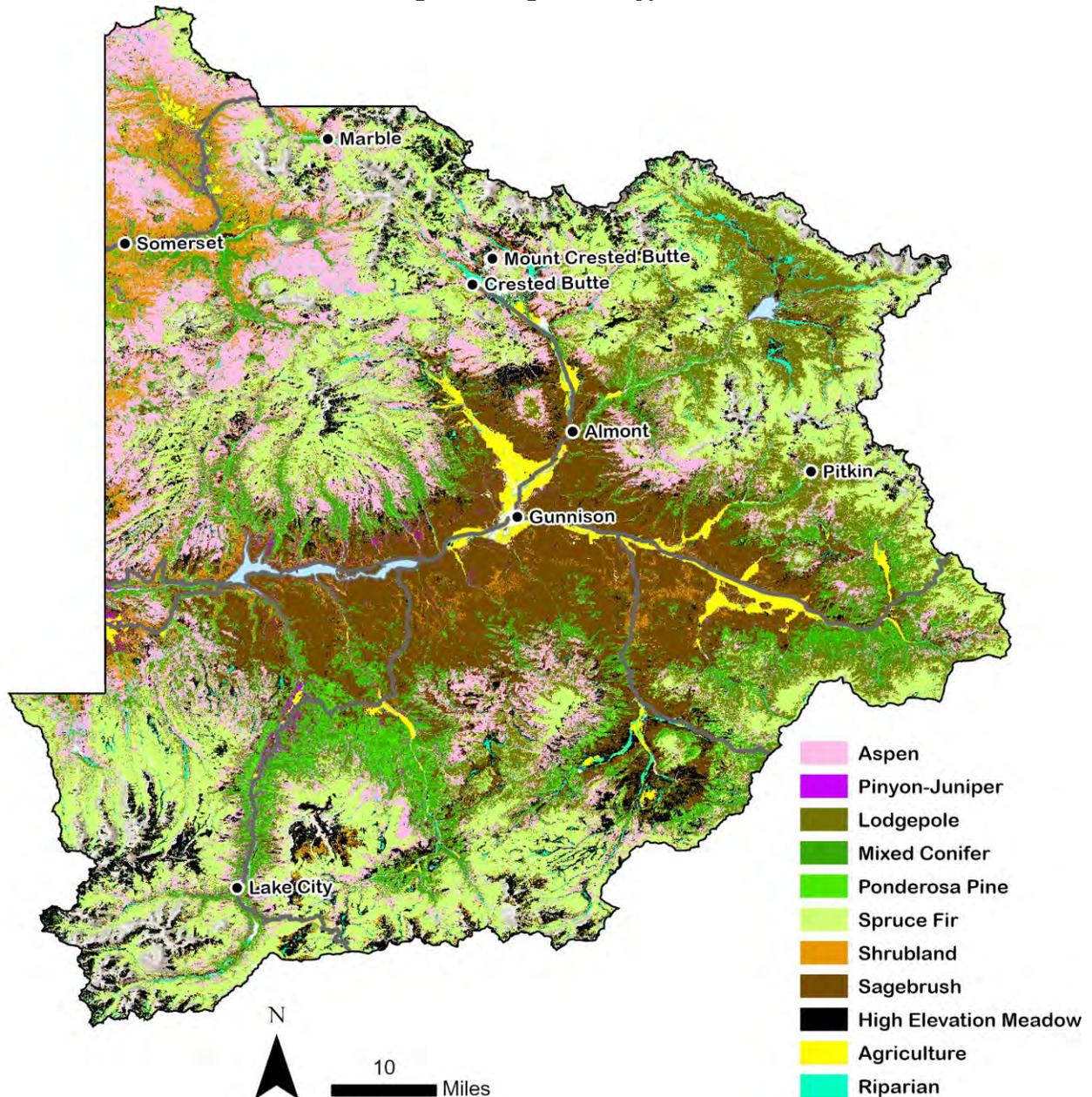
Gunnison County is an area of extraordinary natural beauty located in the heart of the Rocky Mountains. It has a diverse landscape that features towering, rugged mountains and expansive valleys, making it a prominent destination for outdoor enthusiasts and nature lovers. Much of the county lies in the Gunnison Basin, with high mountains along the northern border and the continental divide along the eastern border. The Collegiate Peaks Wilderness, Maroon Bells-Snowmass Wilderness, and White River National Forest are all located in the north and northeastern parts of the county. The Grand Mesa, Uncompahgre, and Gunnison National Forests make up the northern, western, and eastern portions of Gunnison County. To the south is the Powderhorn Wilderness.

The Gunnison, Taylor, and East Rivers cut through the center of the county and are renowned for fishing and recreation. The county also has large reservoirs like Blue Mesa, the largest in Colorado, and the Taylor Park Reservoir. Gunnison County has diverse vegetation types due to its varied elevation, climate, and topography. Vegetation ranges from alpine meadows above the tree line to sagebrush and shrubland in the valleys. Subalpine and montane forests dominate the mid-elevations, with conifers, spruce-fir, ponderosa pine, lodgepole pine, and aspen groves. Riparian zones and wetlands along rivers and streams support willows, cottonwoods, and sedges. Figure 8 shows the existing vegetation types in the county.

Gunnison County encompasses approximately 3,260 square miles, making it the fifth-largest County in Colorado. 78% of Gunnison County is federal land owned by the United States Forest Service (USFS) (58%), the Bureau of Land Management (BLM) (17%), and the Curecanti National Recreation Area (2%). The county is surrounded by Pitkin County (north), Chaffee County (east), Saguache County (southeast), Hinsdale County (south), Ouray County (southwest), Delta County (west), Montrose County (west), and Mesa County (northwest). Landowners surrounding the county are primarily the USFS, with some BLM, private, and state land. Figure 9 shows land ownership in the county and surrounding it.

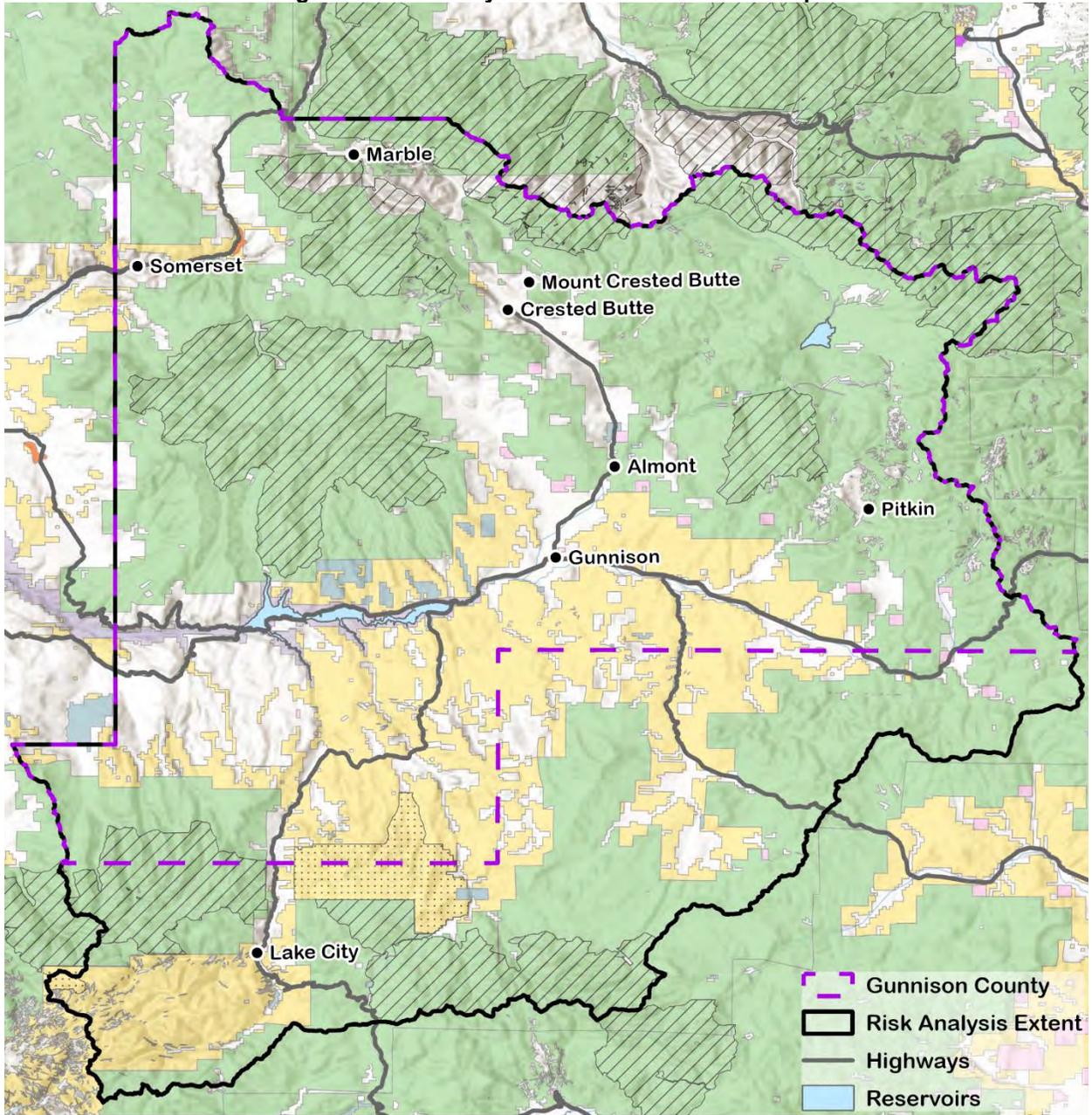
Most private lands and homes are located along the highways, rivers, and creeks that travel through the county. Incorporated communities include the City of Gunnison (County Seat), the Town of Crested Butte, the Town of Marble, the Town of Mount Crested Butte, and the Town of Pitkin. Key transportation routes in the county include U.S. Highway 50 and State Highways 92, 114, 133, 135, 149, and 306. No rail lines travel through the county. The Gunnison Crested Butte Regional Airport is the only public airport in the county.

Figure 8: Vegetation Types



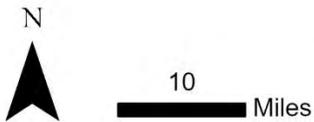
Note: The CWPP planning area includes Gunnison County and parts of Hinsdale and Saguache counties within the Upper Gunnison River Watershed. Source: CFRI

Figure 9: Risk Analysis Extent & Land Ownership



**Land Ownership Type**

- |  |   |
|--|---|
|  Bureau of Land Management (BLM)                      |  State, County, City; Wildlife, Park and Outdoor Recreation Areas |
|  BLM Wilderness Area                                  |  National Park Service (NPS)                                      |
|  Bureau of Reclamation                                |  State  |
|  US Fish and Wildlife (USFW) National Wildlife Refuge |  USDA Forest Service (USFS)                                       |
|  Private  |  USFS Wilderness Area   |



Note: The CWPP planning area includes Gunnison County and parts of Hinsdale and Saguache counties within the Upper Gunnison River Watershed. Source: CFRI

According to the U.S. Census Bureau, Gunnison County had a population of 16,918 in 2020. Population growth has been significant, with 35.9% growth from 1990 to 2000, 9.8% population growth from 2000 to 2010, and 10.4% from 2010 to 2020. The City of Gunnison is the most populous community, constituting 39% of the county’s population. All communities in Gunnison County have grown in population since 2010. Notably, nearly 45% of the population lives in the county’s unincorporated areas, and growth is expected to continue in unincorporated areas. These individuals may be at higher risk of wildfires due to additional nearby vegetation.

**Table 2: Population in Gunnison County (1970-2020)**

Jurisdiction	1970	1980	1990	2000	2010	2020
Crested Butte	372	959	878	1,529	1,487	1,639
Gunnison	4,613	5,785	4,636	5,409	5,854	6,560
Marble	13	30	64	105	131	133
Mount Crested Butte	-	272	264	707	801	941
Pitkin	44	59	53	124	66	72
Unincorporated Areas of Gunnison County	2,536	3,584	4,378	6,082	6,985	7,573
Total	7,578	10,689	10,273	13,956	15,324	16,918

Source: U.S. Census Bureau<sup>2</sup>

### Social Vulnerability

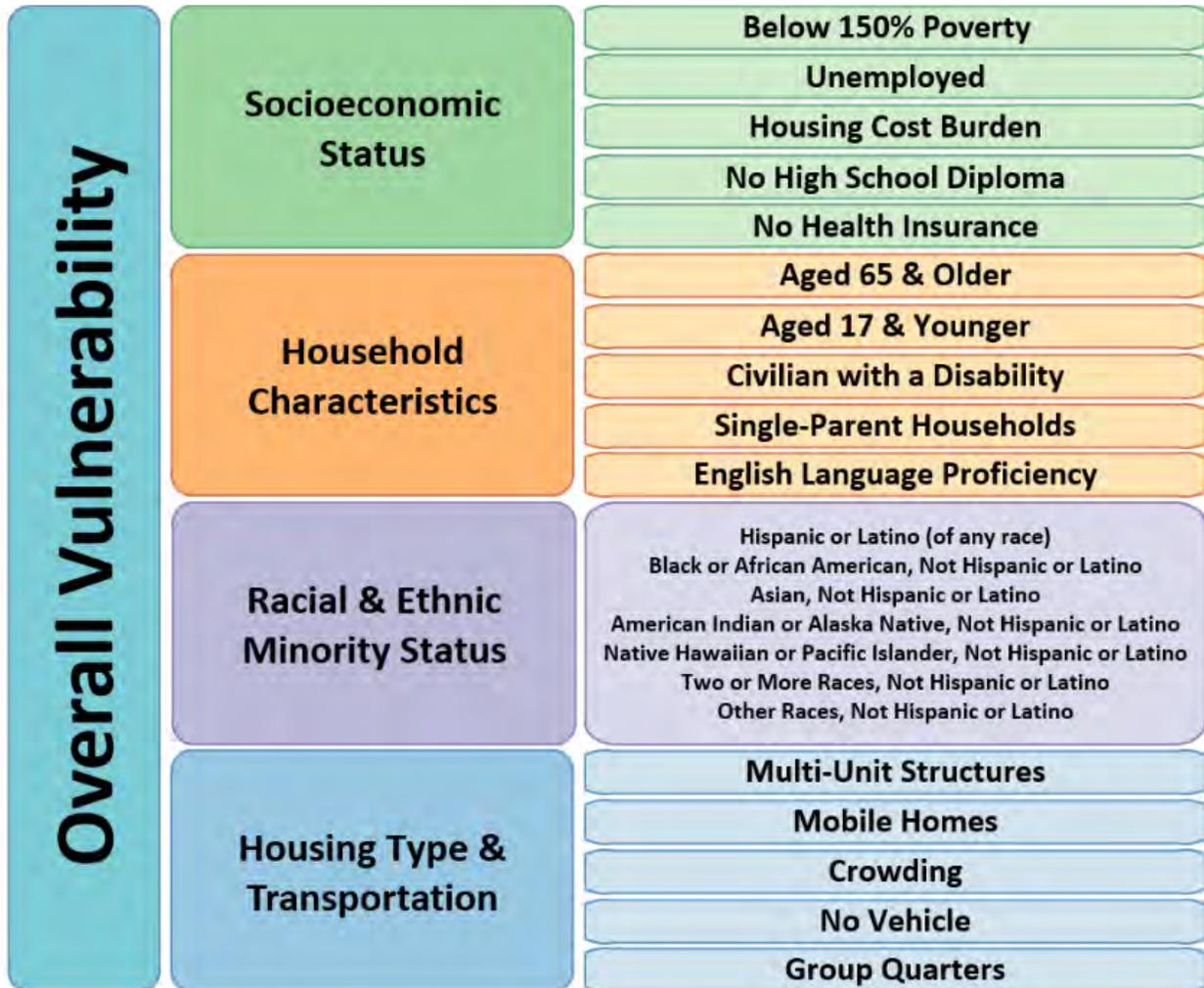
Social vulnerability is crucial in wildfire risk analysis because it helps identify populations struggling to prepare for, respond to, and recover from wildfires. Social vulnerability encompasses demographic and socioeconomic factors that put populations at greater risk when facing hazards and other stressors.<sup>3</sup> Specific social vulnerability factors for wildfire include the following.

1. **Evacuation Challenges** – Older populations, people with disabilities, and those without reliable transportation may have difficulty evacuating quickly during a wildfire.
2. **Access to Resources** – Some populations may lack the financial resources to implement fire-resistant home improvements or purchase insurance.
3. **Health and Safety Risks** – Those with pre-existing respiratory conditions can be disproportionately impacted by smoke exposure and air quality issues.
4. **Recovery Disparities** – Wealthier communities tend to recover more quickly after a wildfire, while socially vulnerable groups may face prolonged displacement, job loss, and difficulty securing assistance.

<sup>2</sup> U.S. Census Bureau. 2020. “Explore Census Data.” <https://data.census.gov/>.

<sup>3</sup> CDC. 2022. “Social vulnerability Index.” <https://www.atsdr.cdc.gov/place-health/php/svi/index.html>.

By being aware of where socially vulnerable populations are, decision-makers can prioritize resources, enhance emergency planning, and develop equitable strategies to protect at-risk populations. The diagram below shows variables that make up the Centers for Disease Control and Prevention (CDC) Social Vulnerability Index.



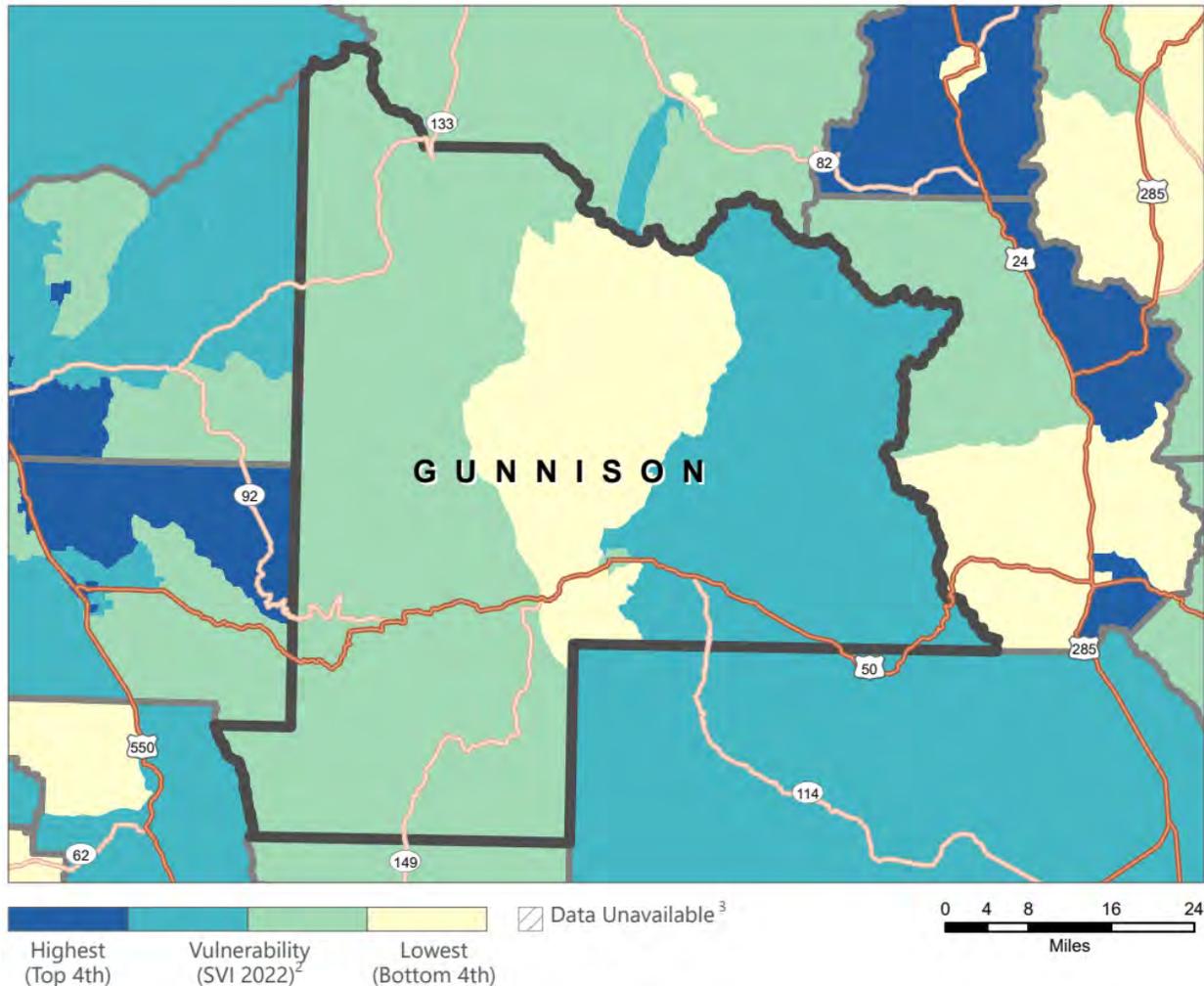
Source: CDC<sup>4</sup>

<sup>4</sup> CDC. 2022. "Social vulnerability Index." <https://www.atsdr.cdc.gov/place-health/php/svi/index.html>.

## Section 1 | Living with Wildfire

The figures below show Gunnison County's overall socially vulnerable population information and the four areas that make up social vulnerability. Overall, the eastern portion of Gunnison County has a higher vulnerability than the western and central portions. When looking at the four main areas, the eastern portion has a high or highest vulnerability in the Household Characteristics and Housing Type/Transportation areas. This vulnerability could mean additional evacuation planning and outreach might be necessary in that area of the county.

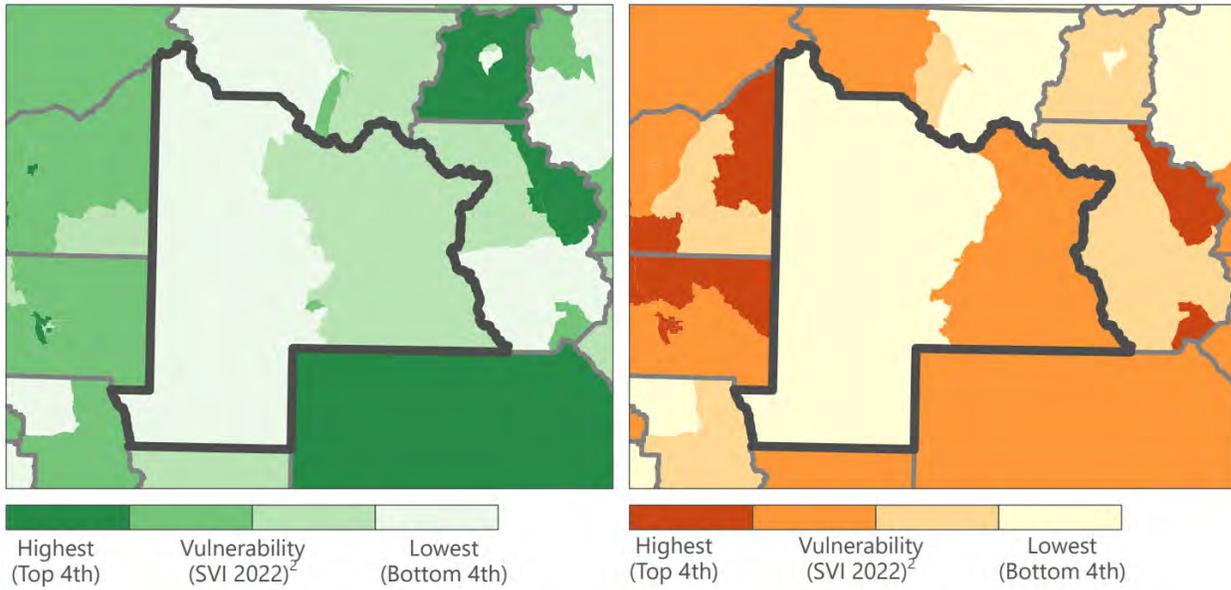
**Figure 10: Overall Social Vulnerability**



Source: CDC<sup>5</sup>

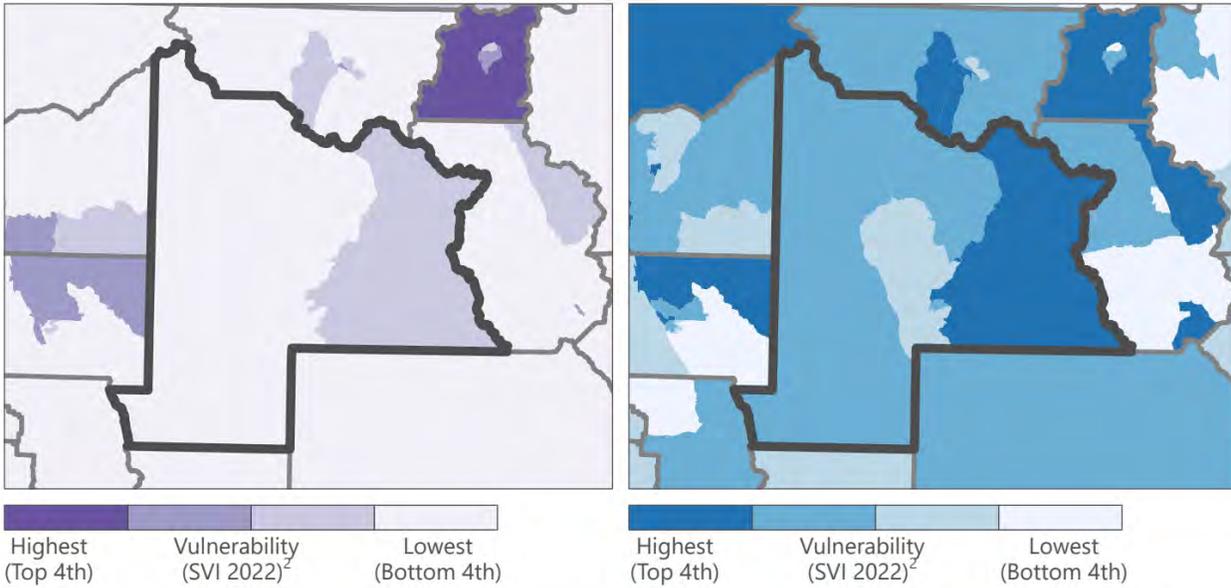
<sup>5</sup> CDC. 2022. "Social vulnerability Index." <https://www.atsdr.cdc.gov/place-health/php/svi/index.html>.

**Figure 11: Socio Economic (Left) & Household Vulnerability (Right)**



Source: CDC<sup>6</sup>

**Figure 12: Racial and Ethnic Minority (Left) & Housing Type/Transportation Vulnerability (Right)**



Source: CDC<sup>7</sup>

## The Need

Devastating wildfires burn across the United States and the State of Colorado every year. At the same time, people continue to move to and live in areas where wildfires are a real risk. These fires threaten lives and properties, disrupt ecosystems, damage critical infrastructure, and degrade air and water quality. On top of it all, climate change and

<sup>6</sup> CDC. 2022. "Social vulnerability Index." <https://www.atsdr.cdc.gov/place-health/php/svi/index.html>.

<sup>7</sup> CDC. 2022. "Social vulnerability Index." <https://www.atsdr.cdc.gov/place-health/php/svi/index.html>.

## Section 1| Living with Wildfire

prolonged drought events are increasing the frequency, intensity, and impacts of wildfires. The introduction of weedy species, such as cheatgrass, can increase the frequency and severity of wildfire, and alter historic disturbance regimes. Without adequate planning, communities remain vulnerable, recovery efforts become more costly, and wildfires' long-term environmental and social effects are exacerbated.

Since the early 20th century through the 1960s, rangeland and forest management practices across the western United States have been designed around a simple protocol: "Prevent Wildfires." While initially intended to protect human settlement, forest, and rangeland resources, the practice of fire suppression led to a wide range of negative consequences. Wildfire is an essential component of many vegetation types that are dependent on wildfire to maintain forest health and trigger reproduction. Without natural wildfire cycles, shrub growth, and forest stands can accumulate to hazardous levels.

For fire and forest management agencies in the county and across the state, it is not a matter of *if* a wildfire will occur but rather *when* one will occur and what the impacts will be. The county needs to identify locations where wildfire is most likely to occur and where wildfire would likely have the most positive and negative impacts. That way, mitigative actions can be taken before a wildfire occurs to help reduce the negative impacts that wildfires can have. The need for a CWPP is crucial as Gunnison County continues to grow and develop so that people can live with wildfire.

Living with wildfire means recognizing that fire is a natural and unavoidable part of many landscapes and adjusting how people build, live, and manage land to reduce risk and coexist with fire rather than trying to eliminate it. In many instances, wildfires can benefit natural ecosystems and environments. There may be occasions where land management agencies choose not to suppress naturally occurring fires and manage the fire to benefit the landscape. There are strict guidelines for when a fire can be managed instead of suppressed, and it depends on weather, fuel conditions, proximity to values at risk, and other metrics.

Gunnison County is no stranger to wildfire. The summary of historical wildfires below shows that large wildfires have occurred and will occur in the future due to ongoing climate change. These large wildfires are occurring at an increased rate, with three of the five events burning over 1,000 acres in the last 25 years. The impacts and costs of containment are also increasing as more and more development occurs in remote, heavily vegetated areas.

### Wildfire History in Gunnison County

Multiple wildfires occur annually in Gunnison County. According to reports submitted to the USFS, the county averages nearly 22 wildfire events per year.<sup>8</sup> These submitted events likely underrepresent the total number of wildfire events because there are few reporting databases, and not all agencies report every fire. Most reported wildfire events

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<sup>8</sup> U.S. Forest Service. 2022. Spatial Wildfire Occurrence Data for the United States, 1992-2020." <https://www.fs.usda.gov/rds/archive/catalog/RDS-2013-0009.6>.

were small and burned one acre or less. However, several fires of over 1,000 acres have occurred in the county. The second largest fire, the Lowline Fire, happened recently in 2023. Figure 14 shows the wildfire locations in the county, along with large fire perimeters. Information about the fire events that burned over 1,000 acres can be found below.

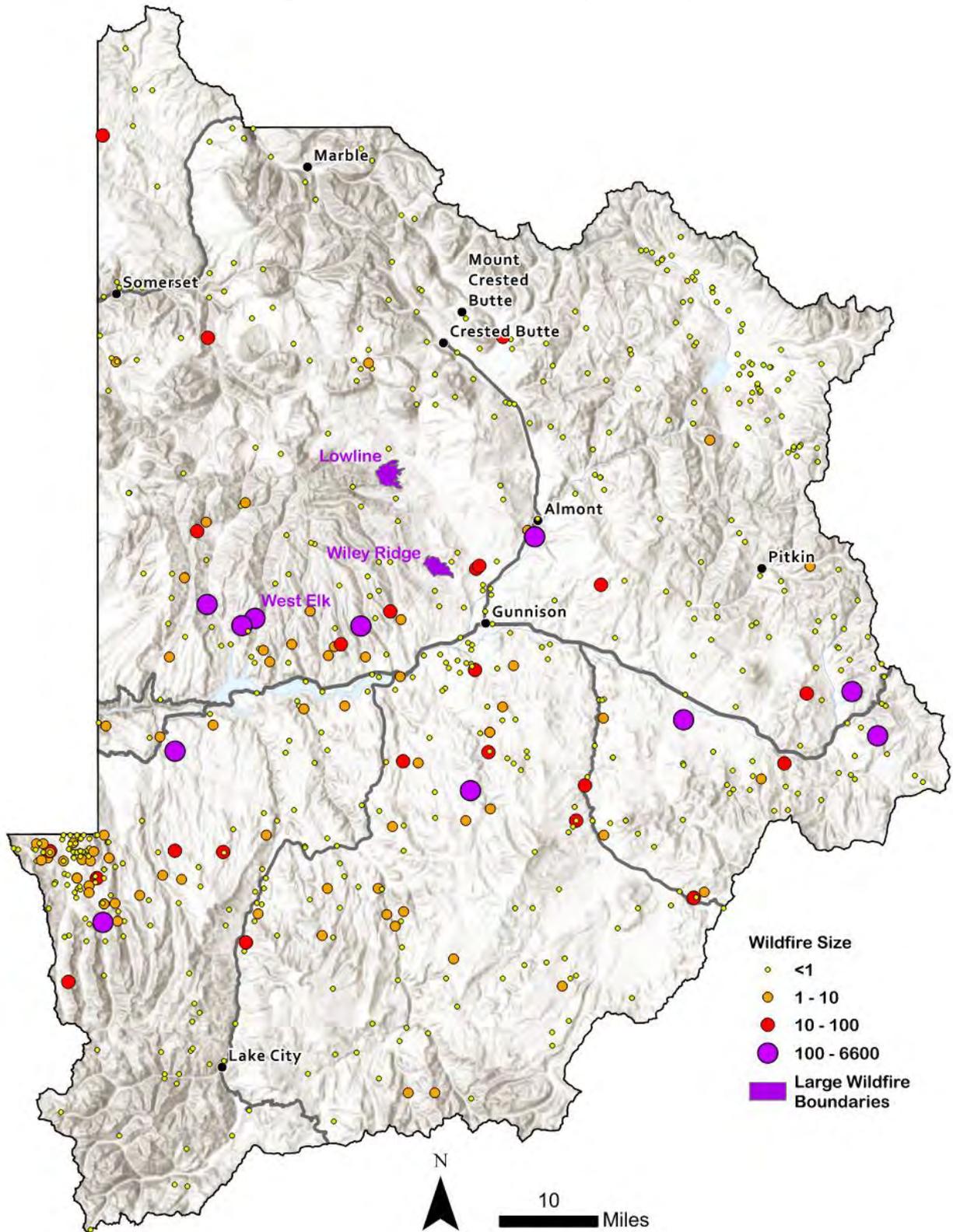
- **Bear Creek Fire, 1950** – 2,365 acres burned along the Gunnison and Delta County border. Due to the age of the fire, additional information is not known.
- **Red Creek Fire, 1977** – This fire caused 1,386 acres to be burned near the Blue Mesa Reservoir. Due to the age of the fire, additional information is not known.
- **Wiley Ridge Fire, June 2002** – The Wiley Ridge Fire was a lightning-caused wildfire that burned over 1,000 acres of forest and sagebrush. Approximately 200 people had to be evacuated during the event. The total cost to fight the fire was \$150,000. The lower cost of suppression was due to the sagebrush. The costs would have been much higher if the entire fire had been in a forest area.
- **West Elk Fire, July 2008** – The West Elk Fire, located 18 miles west of Gunnison, was started by a lightning strike in early July. The fire was left to burn out due to its isolated location in the wilderness and steep terrain. The fire burned primarily beetle-kill areas and covered 1,587 acres.
- **Lowline Fire, July 2023** – The 1,899-acre Lowline Fire started from a lightning strike approximately 10 miles north-northeast of Gunnison (Figure 13). It is estimated that the total cost of containment was \$10,000,000. Evacuations of the surrounding area were conducted during the event.

**Figure 13: Lowline Fire**



*Source: The Colorado Sun*

Figure 14: Wildfire Occurrences (1992-2020)



The CWPP planning area includes Gunnison County and parts of Hinsdale and Saguache counties within the Upper Gunnison River Watershed.

## **The Purpose**

The Gunnison County CWPP is a strategic plan that identifies how wildfires will impact the county and outlines steps that can be taken to be more wildfire-ready. The resulting plan provides a common operating picture that Gunnison County agencies, organizations, and community members can follow to mitigate against, prepare for, respond to, and recover from wildfire. CWPPs empower the county to take advantage of wildland fire and hazardous fuel management opportunities through collaborative planning with the BLM, USFS, Colorado State Forest Service (CSFS), local fire districts, and other stakeholders to reduce wildfire risks. This CWPP is not a wildfire response plan, which focuses on the immediate actions taken during a wildfire event to protect life and property. While both are essential to wildfire resilience, this CWPP emphasizes long-term risk reduction.

Last updated in 2011, the county's CWPP had become outdated, with the risk assessment and identified projects no longer current. This CWPP update was created with broad public input through a considerable collaborative effort to address diverse community priorities and local interests. The plan provides prioritized access to state and federal grant funding opportunities to support identified vegetation-fuel management projects and other mitigation activities to reduce wildfire risks throughout the county. It also allows the county to establish a localized definition and boundary for the wildland-urban interface (WUI). It is important to note that the projects and mitigation actions discussed in the plans are recommendations but do not impose regulations or requirements. The strategies outlined are voluntary and intended to support informed decision-making by communities, landowners, and agencies.

The implementation of effective wildfire mitigation is a dynamic process. The characteristics of forests and communities are constantly changing. Flexibility is designed into the CWPP implementation process to accommodate this changing landscape. Regular plan maintenance, annual reviews, and ongoing updates can document these changes and highlight progress.

### CWPP Planning Area

The CWPP planning area includes Gunnison County and parts of Hinsdale and Saguache counties within the Upper Gunnison River Watershed. This extended planning area was decided so that additional watersheds that are a part of the Upper Gunnison River Watershed could be included.

## **Goals & Objectives**

Goals and objectives are essential to a CWPP because they help provide clear direction and focus for the plan and the planning process. Outlining what the county aims to achieve and its goals and objectives ensures that efforts are aligned with local priorities, resources, and capabilities. Below are the goals and objectives of the Gunnison County CWPP as decided by the project Leads Team. Specific actions related to the goals and objectives can be found in the Action Plan section of this document.

### **Goal 1: Fire-Resilient Landscapes**

Develop and maintain landscapes across the county that are resilient to wildfire, mitigating undesirable fire outcomes and protecting highly valued resources and assets.

- **Objective 1A: Leverage tools from the CWPP process**, including Risk Assessment and Decision Support and Potential Operational Delineations, to prioritize vegetation management and wildfire mitigation actions.
- **Objective 1B: Enhance safety and protect highly valued resources and assets** by implementing practical, effective strategies such as site hardening, creating defensible space, and vegetation management.
- **Objective 1C: Foster collaboration among stakeholders**, including governments, fire protection districts, land management agencies, non-profits, and residents, to achieve effective cross-boundary project outcomes.
- **Objective 1D: Enhance watershed health** by exploring new and supporting existing watershed protection opportunities.

### **Goal 2: Fire-Adapted Communities**

Empower the county and its residents to “live with wildfire,” including being prepared to withstand, respond to, and recover from wildfires.

- **Objective 2A: Engage the community** to increase public awareness of wildfire risks and benefits, improve personal preparedness, and reduce human ignitions.
- **Objective 2B: Provide resources and education** on best practices, including home hardening, defensible space, preparedness, and emergency notification.
- **Objective 2C: Build public support** for vegetation management and wildfire mitigation efforts.
- **Objective 2D: Engage socially vulnerable populations** to gain insight into their unique challenges and opportunities to mitigate wildfire risks.

### **Goal 3: Safe and Effective Wildfire Response**

Enable safe and efficient wildfire response through improved planning, coordination, and education.

- **Objective 3A: Assess current capabilities** and identify opportunities to address gaps to enhance wildfire response.
- **Objective 3B: Strengthen collaboration among key stakeholders**, including governments, fire protection districts, non-profit collaboratives, and response agencies, to improve pre-planning, coordination, and incident management.

- **Objective 3C: Educate residents and stakeholders** on appropriate actions to take before, during, and after wildfire.

## Risk Assessment and Decision Support Overview

From the beginning of the update process, Gunnison County envisioned a CWPP driven by community values and local knowledge and fused with cutting-edge wildfire modeling and innovative planning tools. The Colorado Forest Restoration Institute (CFRI) was brought in to help model wildfire risk and identify locations in the county where vegetation management activities could yield the most return on investment to reduce wildfire risk and impacts. CFRI and the rest of the Leads Team followed the road map below when creating the CWPP.

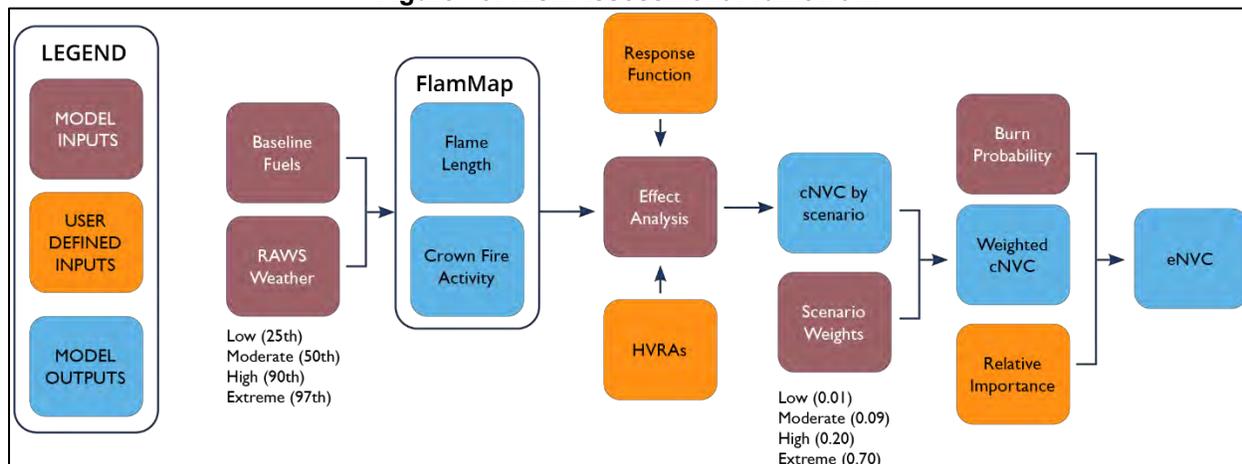
### Gunnison County CWPP Road Map



Source: CFRI

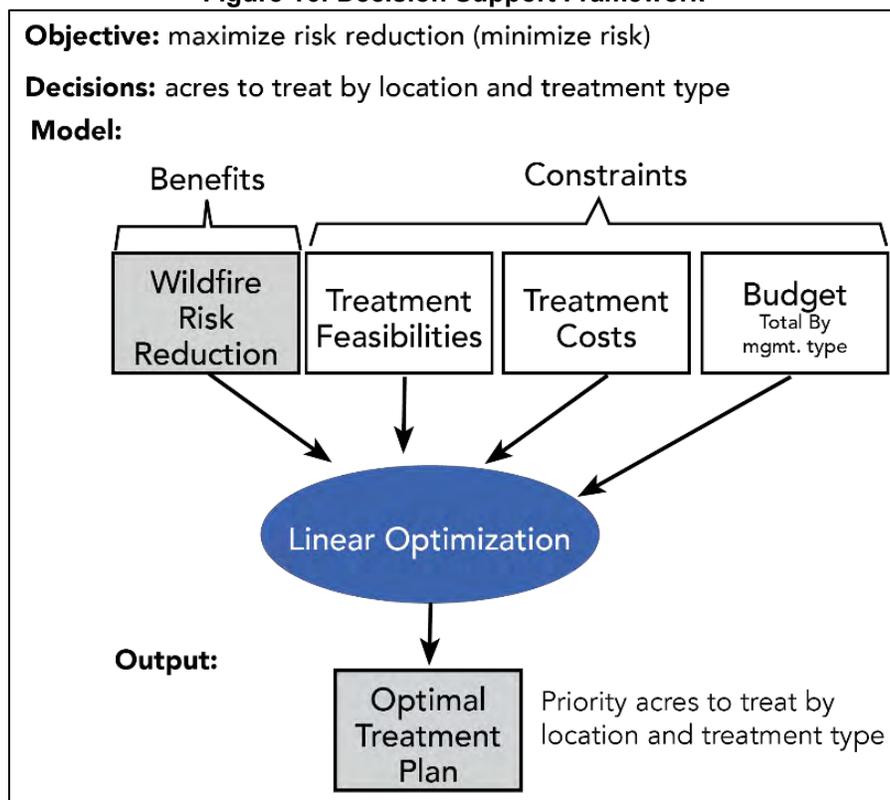
In order to model wildfire risk and identify priority treatment areas, this CWPP update used CFRI's Risk Assessment and Decision Support (RADS) framework (Figure 15 and Figure 16). The RADS process integrates science-based modeling with rigorous community-driven input to inform where wildfire risk is greatest and where risk reduction per dollar invested is maximized. This process enables a broad understanding of shared county values and how those values interact with wildfire. It also prioritizes where and what kind of vegetation management could have the greatest return on investment to reduce wildfire risk. RADS also helps to identify the limits of vegetation management and the need for additional non-vegetation management activities to promote positive wildfire outcomes. The charts below show the RADS analysis framework broken down into the wildfire Risk Assessment and Decision Support processes.

Figure 15: Risk Assessment Framework



Source: CFRI

Figure 16: Decision Support Framework



Source: CFRI

Along with the RADS process, Potential Operational Delineations (PODs) were utilized to further develop landscape strategies for living with wildfire. PODs are planning units that symbolize the safest and most effective lines to control fire (Figure 17).<sup>9</sup> PODs can be

<sup>9</sup> U.S. Forest Service. January 13, 2022. "PODs at a Glance." <https://research.fs.usda.gov/rmrs/understory/pods-glance>.

natural (ridges, fuel type transitions, etc.) or human-made (roads, fuel breaks, etc.). When combined with RADS, vegetation treatment along POD boundary lines can be modeled to determine locations where the return on investment is highest. The RADS framework is the basis for the CWPP, and the processes are discussed in more detail in the Wildfire Risk Assessment and Decision Support sections.

Figure 17: POD Boundaries



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## Section 2

# Planning Process

The planning process for the Gunnison County CWPP involved many steps and individuals from various groups and organizations. Engaging stakeholders throughout the process was critical to the development and success of the CWPP. A primary goal of the planning process was to gather broad public input through considerable collaborative efforts so that diverse community priorities could be included.

As discussed more thoroughly below, the Leads Team collaborated closely with the Upper Gunnison Shared Stewardship Council and other key stakeholders to promote sharing perspectives, plans, priorities, and other helpful information in fuels and land management activities. Collaboration was achieved through various team and stakeholder meetings, a public survey, community map walk events, and a project website/StoryMap.

The sections below further discuss the planning process for the CWPP, who was involved, and the activities that took place. The finalized CWPP represents a strategic plan with the Leads Team and stakeholder consensus that provides a detailed risk assessment and prioritized wildfire projects.

### Leads Team

The initial step in developing the CWPP was to organize a Leads Team that served as the decision-making committee for the plan (Table 3). The Gunnison CWPP Leads Team consisted of representatives from Gunnison County, Crested Butte Fire Protection District, Gunnison Volunteer Fire Department, Upper Gunnison River Water Conservancy District, BLM, USFS, CSFS, West Region Wildfire Council, and consultants from the Colorado Forest Restoration Institute and JEO Consulting Group.

**Table 3: Gunnison County CWPP Leads Team Members**

<b>Name</b>	<b>Agency/Jurisdiction</b>
Scott Morrill	Gunnison County Emergency Management
Lisa Bickford	Gunnison County Emergency Management
Ryan White	Gunnison County Emergency Management
Rob Weisbaum	Crested Butte Fire Protection District
Hugo Ferchau	Gunnison Volunteer Fire Department
Sonja Chavez	Upper Gunnison River Water Conservancy District
Mike Tarantino	Colorado State Forest Service
Todd Loubsky	Colorado State Forest Service
James Savage	Bureau of Land Management
Levi Broyles	U.S. Forest Service
David Carr	U.S. Forest Service
Jamie Gomez	West Region Wildfire Council
Leigh Robertson	West Region Wildfire Council

Name	Agency/Jurisdiction
Brett Wolk*	Colorado Forest Restoration Institute
Jarod Dunn*	Colorado Forest Restoration Institute
Jackie Edinger*	Colorado Forest Restoration Institute
Phil Luebbert*	JEO Consulting Group
Karl Dietrich*	JEO Consulting Group

\*Served in a consultant/advisory role.

The Leads Team met at least monthly throughout the CWPP process. These meetings allowed members to discuss plan components, provide input on models, review plan maps, and discuss upcoming activities and meetings. Meeting minutes, slides, and a monthly update report were provided for those who could not attend a meeting.

### Upper Gunnison Shared Stewardship Council Engagement

To receive input from key local stakeholders, the Leads Team met with the Upper Gunnison Shared Stewardship Council (UGSSC) during bimonthly meetings. The UGSSC was formed by a diverse group of stakeholders in the winter of 2020/2021 over shared concerns about the health and resiliency of the Upper Gunnison River Watershed ecosystem from the 2020 Colorado wildfire season.

The UGSSC is an informal association of leaders from local government, the CFSF, USFS, fire protection districts, water and electric utilities, wildfire experts, non-profit groups, community members, and other federal agencies. This group also plans to help implement the CWPP and ensure it is reviewed and updated regularly.

One of the main goals of the planning process was to gather broad public input through extensive collaborative efforts so that diverse community priorities could be included. The UGSSC served as the connection to help bridge the Leads Team with the public and key stakeholders. Throughout the planning process, the UGSSC members were asked to contact their various members and organizations to gather feedback on all aspects of the CWPP.

During the meetings with the UGSSC, the Leads Team provided project updates and sought input from members. The UGSSC was instrumental in identifying highly valued resources and assets (HVRAs), ranking the relative importance of the HVRAs, reviewing draft versions of the wildfire risk assessment and treatment priority map, and spreading the word about the CWPP public survey.

In addition to the UGSSC, the Leads Team engaged with other planning efforts going on simultaneously in Gunnison County. These engagements included meeting with the Sage Grouse Work Group, the Town of Crested Butte Wildfire Ready Action Plan group, members of the Drought Resilience Plan, and the Gunnison County Land Use Department. These meetings helped ensure a cohesive strategy for wildfire across the different planning processes.

### CWPP Public Survey

In addition to the UGSSC meetings, a comprehensive public survey was used to understand better community values, perception of wildfire risk, knowledge, preparedness, and support for various wildfire mitigation techniques. This survey was available online and as a hard copy in English and Spanish. It was open to the public from July 9 to October 25, 2024. The survey was shared on the county’s social media platforms (figure below) and with local housing associations. Other partners from the UGSSC were also able to spread the word about the survey. In total, there were 119 responses in English and 0 in Spanish. Below is a summary of important data gathered from the survey. A complete survey summary can be found in Appendix A: CWPP Public Survey Summary Report.

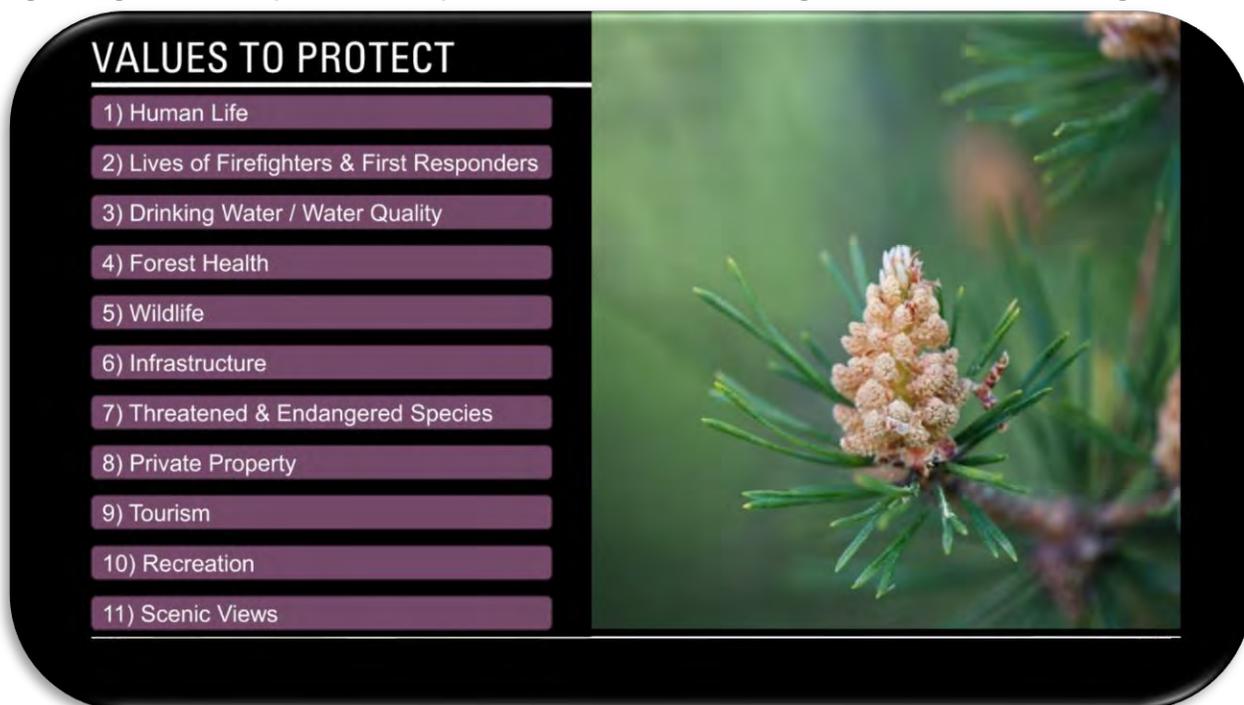
**Figure 18: Survey Posting on the Gunnison County Facebook Account**



## Section 2 | Planning Process

Regarding the public's concern that wildfire will impact them, 62% of respondents selected the highest or second highest level of concern. Additionally, 86% said it was either likely or very likely that a major wildfire would occur in Gunnison County in the next five years. However, only 24% thought it was likely or very likely that their property would be destroyed during a major wildfire event. These results show that while people in the county are concerned about wildfire and think it will happen soon, they do not believe the fire will likely impact their property. These thoughts can be detrimental when getting homeowners to mitigate their property because they may not think wildfire will occur nearby. Additional public education will be needed to help homeowners better understand their wildfire risk.

Regarding values to protect, the public ranked the following values in the following order.



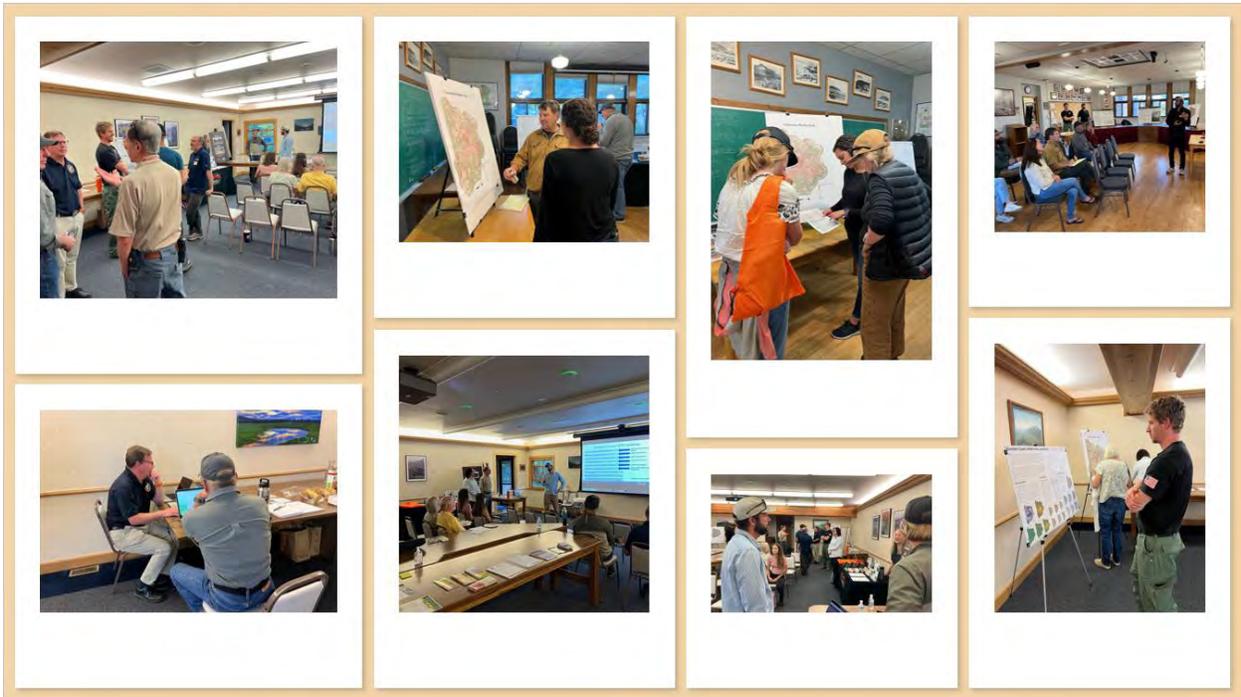
The importance of forest health, water quality, and wildlife over infrastructure and private property may initially seem surprising. However, it shows the importance of the natural environment in Gunnison County. It reflects the idea that was heard often that infrastructure and buildings can be replaced relatively quickly while the natural environment may take longer to recover.

Wildfire preparedness is vital in helping save lives during a large wildfire. The Leads Team wanted to find out how prepared the public was. Approximately 75% of respondents have signed up for Gunnison Regional Alerts, 62% have identified possible evacuation routes, and 29% have created an evacuation go-bag of supplies and documents. Regarding mitigation measures taken on their property, 55% have cleared vegetation around their property, 22% have used fire-resistant materials, 17% have installed a sprinkler system, and 12% have installed fire-resistant landscaping.

### Community Map Walk Events

Another key part of the planning and public outreach process was the community map walk events. These events allowed the public to engage with the Leads Team and UGSSC, learn about the CWPP, and provide feedback on the draft maps that had been created.

Two map walk events were held in the middle of the planning process on September 24, 2024, in the City of Gunnison and on September 25, 2024, in the Town of Crested Butte. Each meeting started with a presentation by the Leads Team introducing the project and providing an overview of the planning process. Afterward, attendees could move through various information stations to converse with Leads Team members, ask questions, and provide feedback. Stations included a CWPP project overview, PODs overview, risk assessment methods and maps, vegetation management prioritization methods, project survey, and additional partner materials.



### CWPP Story Map

To further connect with the public and provide regular updates on the planning process, an online StoryMap was created to serve as the project website. This StoryMap provided a project overview, draft maps, public survey links, the latest project news, and a comment box. It was updated regularly throughout the planning process to provide the latest information about the plan.

Once the CWPP was completed, the StoryMap transitioned from serving as the project website to serving as the online interactive version of the CWPP. The online StoryMap includes an overview of the CWPP planning process, wildfire risk assessment, decision support tools, identified fuel treatment projects, identified mitigation actions, and steps

## Section 2 | Planning Process

that homeowners can take to protect their property. This StoryMap will continue to be updated by Gunnison County as vegetation management projects are completed and new information is gathered.

The online StoryMap can be viewed [here](#).



## Section 3

# Wildfire Preparedness

Wildfire preparedness is essential for minimizing risk and ensuring safety before a fire occurs. Gunnison County has a complex mix of land ownership and jurisdictional boundaries, making interagency cooperation vital for effective wildland fire management. Collaboration is essential for fire suppression and prevention, preparedness, mitigation, and fiscal stability. Federal policies, state statutes, and cooperative agreements between various jurisdictional agencies guide wildland fire management in the county. This section will outline the various planning documents and programs related to wildfire, discuss the definition of wildfire-urban interface, and provide an overview of local fire district capabilities.

### Planning Preparedness

Wildfire planning is a crucial process that helps communities, land managers, and emergency responders prepare for, mitigate, and respond to wildfire threats. The plans and programs below all relate to wildfire mitigation, response, and recovery within Gunnison County.

#### Existing CWPPs

The previous Gunnison County CWPP was completed and approved in 2011. The Gunnison County CWPP is a valuable resource that provides the foundation for understanding wildfire risk and presents attainable milestones designed to reduce potential losses from wildfire. Communities, homeowners associations, and individual fire protection districts can take further action by developing their own area-specific CWPPs, which would tier to the countywide CWPP. The following area-specific CWPPs can be found in Gunnison County.

- [Arrowhead Subdivision CWPP \(2007\)](#)
- [Blue Mesa Subdivision CWPP \(2007\)](#)
- [Ohio City CWPP \(2011\)](#)
- [Quartz Creek CWPP \(2015\)](#)
- [Rainbow Services Incorporated CWPP \(2013\)](#)
- [Star Mountain Ranch CWPP \(2009\)](#)
- [Upper Crystal River Valley CWPP \(2011\)](#)
- [Wilderness Streams CWPP \(2009\)](#)

#### Firewise USA

The National Fire Protection Association administers the Firewise USA recognition program and provides a framework for neighborhoods and communities to increase ignition resistance of homes and reduce wildfire risks locally. There are currently two

## Section 3 | Wildfire Preparedness

Firewise participants in Gunnison County: Arrowhead Improvement Association and Rainbow Services Inc.<sup>10</sup>

### Gunnison County Community Planning Assistance for Wildfire (2019)

The Community Planning Assistance for Wildfire program works with communities to reduce wildfire risks through improved land use planning. Community planning documents were reviewed during the planning process to identify gaps and opportunities for strengthening wildfire policies and regulations. The plan includes three planning and policy recommendations for Gunnison County.

1. Define the Wildland-Urban Interface and Implement a WUI Risk Assessment Program
2. Adopt the WUI Code and Update Land Use Regulations to Create a Resilient Approach to Development in the WUI
3. Leverage Existing Plans to Support Wildfire Hazard and Regulatory Priorities Across Gunnison County

All three of the policy recommendations have been completed or are currently underway. A copy of the Gunnison County Community Planning Assistance for Wildfire document can be found [here](#).

### Gunnison County Continuity of Operations Plans

Each department under Gunnison County has created a continuity of operations plan. These plans outline a strategy of how the department will continue to perform essential functions during a disruption or emergency event, ensuring minimal impact on operations and service delivery. Copies of these plans can be requested from each department.

### Gunnison County Disaster Recovery Plan (2018)

The Gunnison County Disaster Recovery Plan provides an overview of how the county will prepare for and coordinate recovery from a disaster in collaboration with partner jurisdictions and agencies. This ensures that an affected area is ready to undertake an effective, efficient, and organized recovery process and does not miss opportunities to rebuild in a fiscally responsible, sustainable, and resilient way. This plan covers recovery management structure, roles and responsibilities, emergency support functions, and recovery support functions. After a wildfire disaster in the county, the disaster recovery plan would be used to help communities recover in an organized manner. A copy of the plan can be found [here](#).

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<sup>10</sup> National Fire Protection Association. 2025. "State of Listing Participants". <https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Firewise-USA/Firewise-USA-Resources/Firewise-USA-sites/State-listing-of-participants>.

#### Gunnison County Emergency Operations Plan (2024)

The Gunnison County Emergency Operation Plan outlines information for preparing, responding, recovering, and mitigating an all-hazards emergency management approach. It provides a flexible blueprint for the overall coordination of major hazard emergencies. The plan covers plan activation, emergency declaration process, roles and responsibilities, direction and control, incident management, information sharing, communications, resource logistics, and continuity of operations. During an emergency wildfire event, the emergency operations plan would help to guide the response approach. A copy of the plan can be found [here](#).

#### Gunnison County Fire Operating Plan

The 2025 Gunnison County Operating Plan sets forth standard operating procedures, agreed-upon policies, and responsibilities to implement cooperative wildfire protection on all lands within Gunnison County. It contains information about interagency cooperation, preparedness, operations, state of emergency fire fund, and interagency fire resource use and reimbursement. During a wildfire event, the operating plan will help with interagency coordination. A copy of the plan can be requested from Gunnison County Emergency Management.

#### Gunnison County Land Use Regulations and Wildland-Urban Interface Code

Gunnison County's land use regulations include a section for development in areas subject to wildfire hazards. These regulations ensure that development avoids wildfire hazard areas whenever possible. When avoidance is impossible, it provides standards to reduce or minimize the potential threats from wildfire. As part of the regulations, development in all wildfire hazard areas must comply with the 2021 International Wildland Urban Interface Code adopted by the Gunnison County Board of County Commissioners in 2022. A copy of the land use regulations can be found [here](#).

#### Gunnison County Natural Hazard Mitigation Plan (2020)

The Gunnison County Natural Hazard Mitigation Plan identifies the natural hazards that threaten the county and communities, the likely impacts of those hazards, the mitigation goals, and the appropriate strategies to lessen the effects of those hazards. The plan directly discusses wildland fire; however, much of the risk assessment is based on the previous CWPP. Several wildland fire mitigation actions were identified in the plan and added to this CWPP as applicable. The plan will be updated in 2025. A copy of the hazard mitigation plan can be found [here](#).

#### State of Colorado Wildfire Resiliency Code

The Colorado Wildfire Resiliency Code Board is creating a statewide wildfire resiliency code. Once approved and adopted, all counties and communities with a wildland-urban interface must comply with this code. However, local wildfire regulations can exceed the state code requirements. For updates on the planning process and to view draft versions of the wildfire resiliency code and map, visit the Wildfire Resiliency Code Board [website](#).

#### Town of Crested Butte Wildfire Ready Action Plan

The Town of Crested Butte is beginning the process of developing a Wildfire Ready Action Plan (WRAP) for its drinking water source. A WRAP typically includes a post-fire hazard analysis, which evaluates and identifies pre- and post-fire management actions that can be taken. Projects identified in the plan can be added to the CWPP when the WRAP is completed. For more information about the plan, visit the city's [website](#).

#### Upper Gunnison Watershed Management Plan

The Upper Gunnison River Water Conservancy District is developing a watershed management plan for the Upper Gunnison River Basin. A watershed management plan identifies water quality and quantity problems in a particular watershed, proposes solutions, and creates strategies for implementing those solutions. The assessment of current conditions has been completed, and the strategies to address the issues are currently being developed. When finished, there may be watershed strategies related to mitigating wildfire impacts that could be integrated into the CWPP. For more information about the plan and process, visit the [website](#).

#### Upper Gunnison Watershed Wildfire Hazard Assessment (2023)

The Upper Gunnison Watershed Wildfire Hazard Assessment is designed to identify and prioritize HUC12 watersheds based on the hazards that could impact water supplies following wildfires in the Upper Gunnison River Water Conservancy District's (UGRWCD) watershed areas. This document will help the UGRWCD to prioritize sub-watersheds when developing projects to enhance watershed resilience and mitigate potential wildfire impacts. It includes a composite wildfire hazard ranking of watershed sub-basins based on wildfire hazard, debris flow, road hazard, and soil erodibility. A copy of the assessment can be found [here](#).

### **Emergency Notifications**

Emergency notification in the county is through [Gunnison Regional Alerts](#). Gunnison Regional Alerts is used to communicate critical public safety topics, including evacuations, wildfires, and other emergency notifications. All residents, visitors, and family members are encouraged to sign up for alerts [here](#). Alerts can be received through landline phones, cell phones, text messages, and email. Targeted messages by location can be received if addresses are provided. It is essential that everyone listens to all emergency notifications and follows any directions within those messages.

There are many areas in the county with limited cell coverage. These areas can be challenging for the county to reach folks with emergency messaging. Gunnison County is actively working on several locations to improve cell phone coverage. Emergency personnel can't notify every house that could be in danger during an emergency. These alert notifications are the best way to stay updated on critical information, including evacuations.

## Wildland-Urban Interface Preparedness

There are many definitions of the Wildland-Urban Interface (WUI). Most identify it as the area where human development meets wildland vegetation. Gunnison County Community and Economic Development already have a WUI definition outlined in the county's land use regulations. It defines the WUI as *“any development where conditions affecting the combustibility of both wildland and built fuels allow for the ignition and spread of fire through the combined fuel complex.”* It also provides a WUI map and definitions for the WUI Intermix, WUI Interface, Potential WUI, and Non-WUI Vegetated areas.

WUI Intermix – Areas with  $\geq 1$  house per acre and  $\geq 50$  percent cover of wildland vegetation.

WUI Interface – Areas with  $\geq 1$  house per acre and  $\leq 50$  percent cover of vegetation and within 1.5 miles of an area with  $\geq 75\%$  wildland vegetation.

Potential WUI – Platted subdivisions without structures.

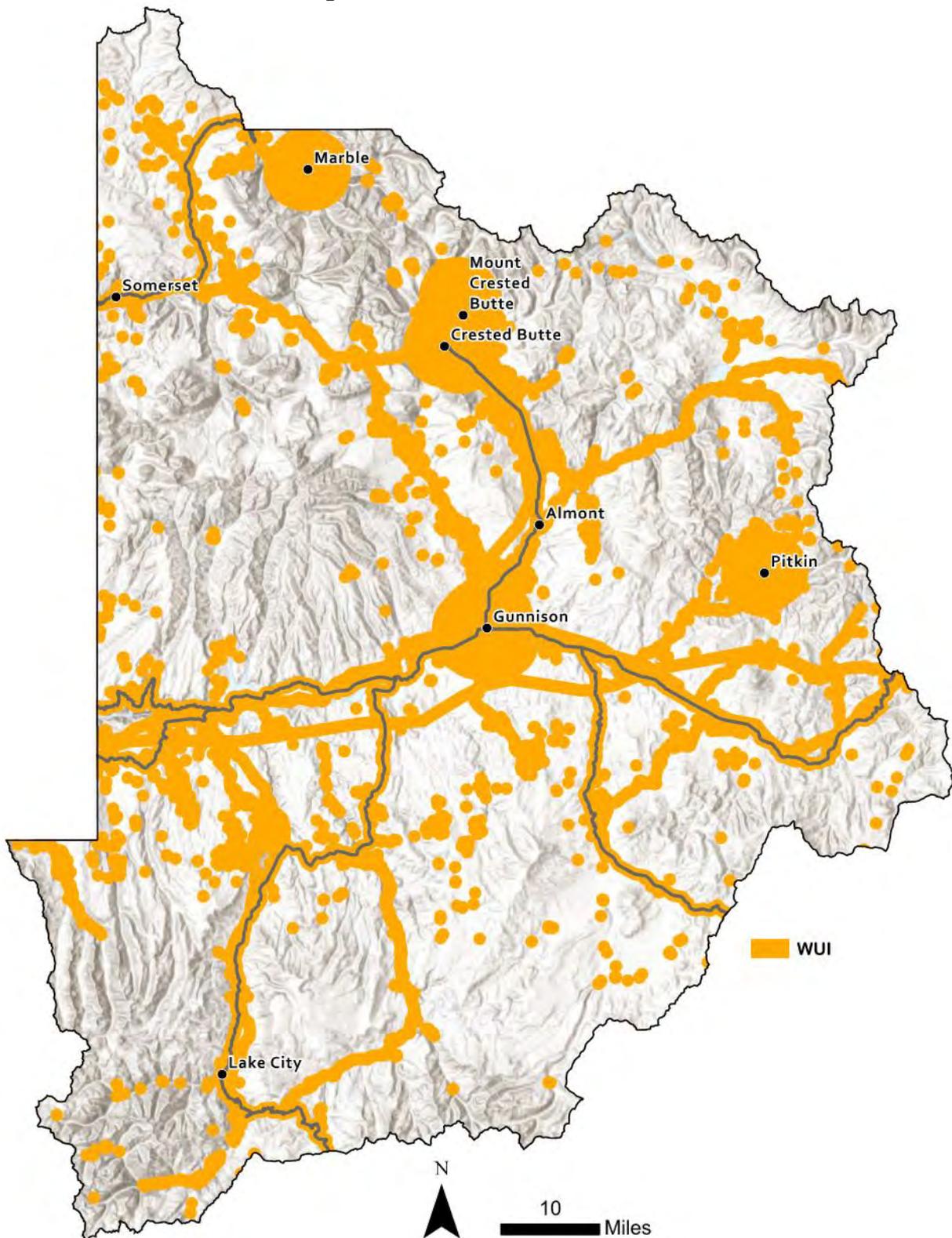
Non-WUI Vegetated Areas – Areas with  $\geq 50$  percent cover of wildland vegetation and no houses.

When reviewing the WUI map and definitions utilized by Gunnison County Community and Economic Development, the Leads Team and UGSSC felt that the identified WUI areas were too small for the 2025 CWPP and did not accurately depict the values discussed throughout the CWPP planning process. It was decided that the WUI would be defined differently for the CWPP. This CWPP WUI definition would better fit the values identified during the risk assessment process.

The Leads Team and stakeholders determined that the Gunnison County CWPP WUI would be defined as areas within a half-mile of primary evacuation routes, water infrastructure, transmission lines, structures, communication infrastructure, emergency service station, monitoring infrastructure, substations, and within a three-mile buffer of incorporated communities in Gunnison County. The WUI map for this CWPP can be found below (Figure 19).

Wildfire mitigation on private property in the WUI is essential because these are high-risk areas where property, infrastructure, and people could be impacted by wildfire. Without proper mitigation, wildfire in the WUI can spread rapidly, endangering lives, overwhelming emergency responders, and causing devastating economic losses. Strategies such as creating defensible space and reducing structural ignitability (home hardening) can significantly lower the risk of fire spreading to homes and critical infrastructure.

Figure 19: Wildland-Urban Interface

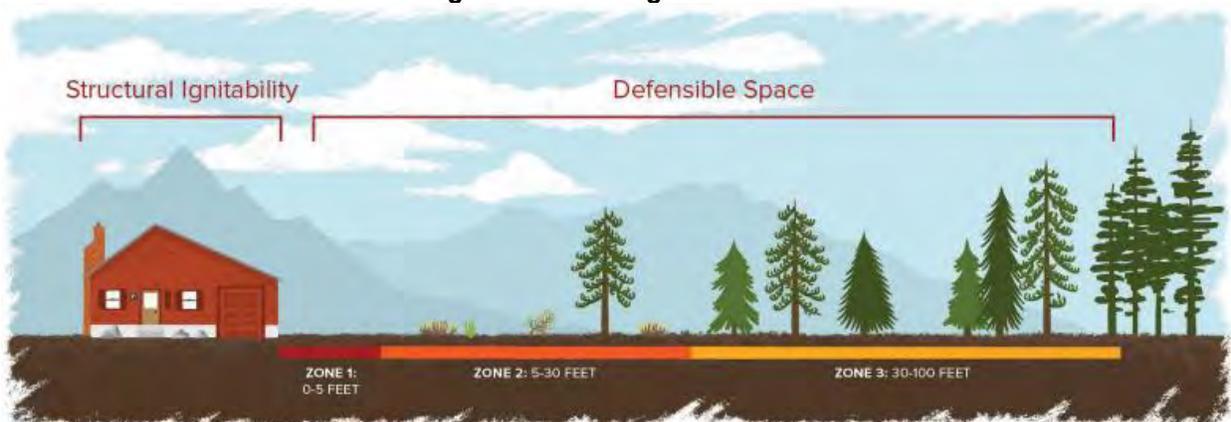


### Defensible Space

The purpose of defensible space is to reduce the amount of fuel near a home or structure. Defensible space can reduce the chance of home ignition and provide a safe space for firefighters to protect the house. For a structure to survive a wildfire, radiated heat and fire intensity must be kept to a minimum. Defensible space is accomplished by clearing and thinning trees and other vegetation around the proposed or existing structures and along the driveway. Defensible space requirements are designed to minimize the impact on the property while providing safety for the structures, the inhabitants, and the firefighters.

The [Home Ignition Zone Guide](#) developed by CSFS provides guidelines for creating a defensible space. In order to establish the most effective defensible space plan possible, the property is evaluated and divided into three zones (Figure 20).

**Figure 20: Home Ignition Zones**



Source: Colorado State Forest Service<sup>11</sup>

**Zone 1** is the area nearest the home (0-5 feet). This zone requires the most vigilance to reduce or eliminate ember ignition and direct flame contact with your home. Use nonflammable, hard surface materials in this zone, such as rock, gravel, sand, cement, bare earth, or stone/concrete pavers.

**Zone 2** is the area transitioning away from the home where fuels should be reduced (5-30 feet). This zone is designed to minimize a fire's intensity and ability to spread while significantly reducing the likelihood of a structure igniting because of radiant heat.

**Zone 3** is the area farthest from the home (30-100 feet). It extends 100 feet from the house on relatively flat ground. Efforts in this zone are focused on keeping fire on the ground and getting fire that may be active in tree crowns to move to the ground where it will be less intense.

<sup>11</sup> Colorado State Forest Service. 2021. "The Home Ignition Zone". [https://csfs.colostate.edu/wp-content/uploads/2021/04/2021\\_CSFS\\_HIZGuide\\_Web.pdf](https://csfs.colostate.edu/wp-content/uploads/2021/04/2021_CSFS_HIZGuide_Web.pdf).

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One of the significant issues confronting defensible space is the need for ongoing maintenance. Treatment projects in timber or shrub fuels have an effective life span of approximately five to ten years before vegetation regeneration creates hazardous fuel loads, with more frequent treatments required for fast-growing fuels such as grasses.

### Structural Ignitability

There are several characteristics of homes that make them more vulnerable to wildfires. These common characteristics are listed below.<sup>12</sup>

- Horizontal or nearly horizontal surfaces, such as wood decks
- Wooden or plastic fences
- Wood or shake-shingle roofs
- Roofs with eaves
- Combustible building materials
- Single-paned windows
- Vents with gaps that exceed 1/8 of an inch
- Fuels such as tall grass, woodchips, trees, or shrubs within five feet of a home or under decks
- Pine needles in gutters
- Firewood or propane tanks within 30 feet of the home

Using fire-safe building materials such as a Class A fire-resistant roof and reducing vegetative fuels surrounding homes are key to lowering structure ignitability. However, completely fireproofing structures can be prohibitively expensive. Conversely, trying to provide a defensible space large enough for a typical, combustible structure may not be practical because embers are known to be carried by winds over three miles away from a fire. Combining these two strategies may be the best alternative for a particular site.

Research has demonstrated that homes with a Class A-rated roof and a defensible space have an 85% chance of surviving a wildfire. The Class A-rated roof protects the home from firebrands that may blow onto the roof from a nearby wildfire. The house's structural integrity can be improved using fire-resistant siding and other building materials. Wooden decking should be avoided because it can be a significant source of home ignition, much like wood roofing material.

Improving the fire-resistant characteristics of a structure goes hand-in-hand with developing defensible space. Extensive recommendations can be found in CSFS publications, which are available [here](#).

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<sup>12</sup> Colorado State Forest Service. 2021. "The Home Ignition Zone". [https://csfs.colostate.edu/wp-content/uploads/2021/04/2021\\_CSFS\\_HIZGuide\\_Web.pdf](https://csfs.colostate.edu/wp-content/uploads/2021/04/2021_CSFS_HIZGuide_Web.pdf).

## **Additional Sources for Wildfire Mitigation and Preparedness**

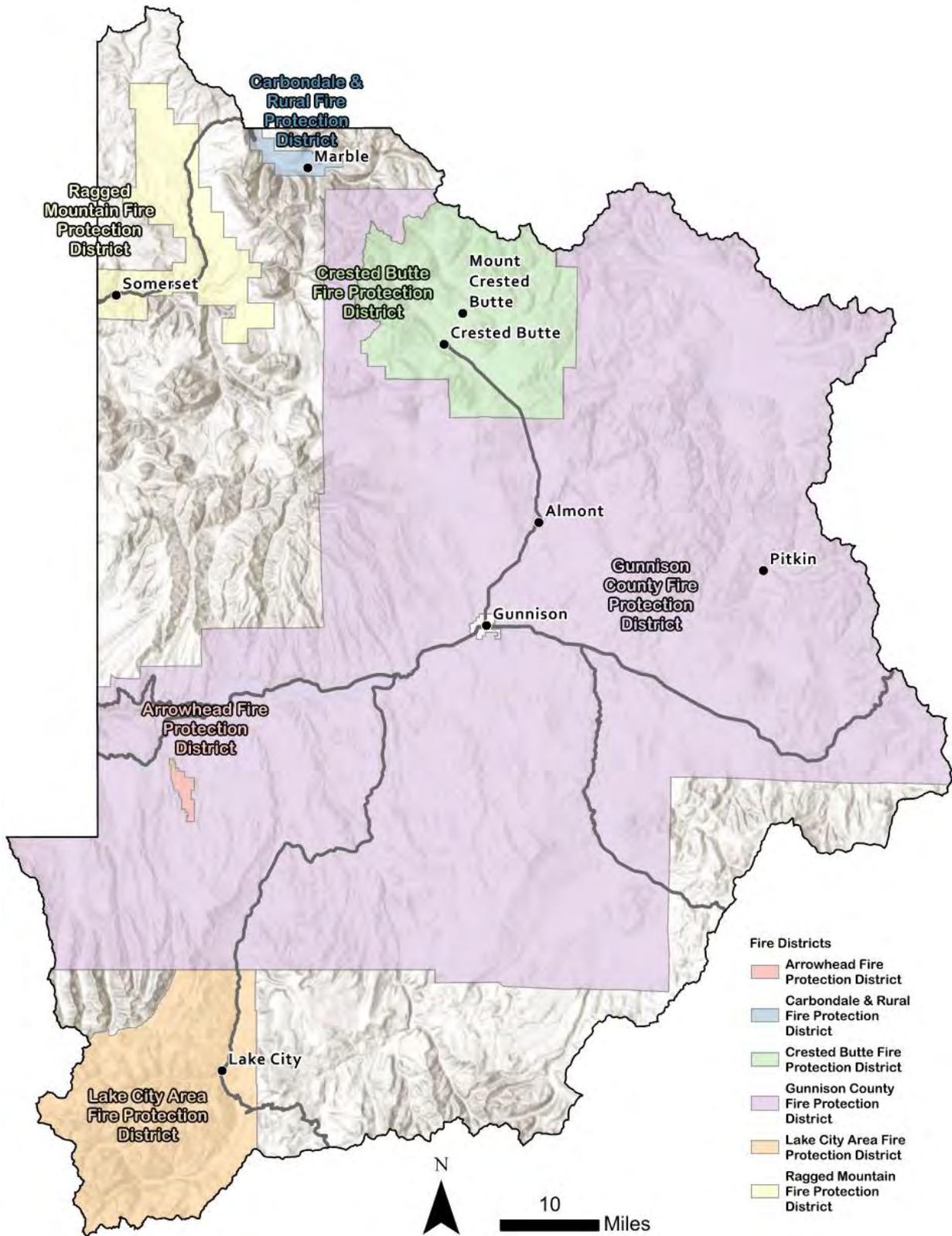
Many local, regional, and state agencies and organizations have helpful wildfire mitigation and preparedness resources. These resources include but are not limited to home hardening, defensible space, wildfire prevention, open burning, fire restrictions, fire safety, emergency alerts, and wildfire education. Included below are links to the various organizations and resources.

- [Arrowhead Fire Protection District](#)
- [Bureau of Land Management](#)
- [Carbondale & Rural Fire Protection District](#)
- [Colorado Division of Fire Prevention and Control](#)
- [Colorado State Forest Service](#)
- [Crested Butte Fire Protection District](#)
- [Gunnison County Office of Emergency Management](#)
- [Gunnison County Fire Protection District](#)
- [Roaring Fork Valley Wildfire Collaborative](#)
- [U.S. Forest Service](#)
- [West Region Wildfire Council](#)

## **Fire District Capabilities**

Five fire protection districts (FPD) are partially or entirely located in Gunnison County: Arrowhead FPD, Carbondale & Rural FPD, Crested Butte FPD, Gunnison County FPD, and Ragged Mountain FPD/Delta County Fire Protection District 2. The figure on the next page shows the locations of the fire districts. The following describes the updated capabilities assessment results from all fire chiefs. The capabilities discussed include training, personal protective equipment (PPE), communications, equipment, water supply, and evacuation. Lake City Area Fire Protection District is in the planning area but will not be profiled as it is not in Gunnison County.

Figure 21: Fire Districts



***Arrowhead Fire Protection District***

Located in southwestern Gunnison County, this small fire district provides services to the Arrowhead community, totaling 325 single-family residences, five commercial buildings, and up to 175 RVs in the summer. Approximately 50-75 residences are occupied in the winter.



Training

The Arrowhead FPD comprises approximately 10 firefighters, nine Emergency Medical Services (EMS) responders, and 10 logistics/support personnel. Not all district members take the S-130/190 course, although other wildland fire training courses are offered and paid for by the district. Members do not take the pack test and fire refresher annually. The district holds several training courses each month: two firefighter-specific training sessions, one monthly training session for EMS personnel, and one scenario-based training session involving firefighters and/or first responders, as well as logistics/support personnel.

Personal Protective Equipment

Arrowhead FPD provides members Nomex pants and shirts, helmets, shelters, wildland boots, and fireline packs. All fire/EMS members have extrication gear. Ten fire personnel have full Bunker gear.

Communications

The district has both VHF and 800 MHz radios but primarily uses VHF. Arrowhead FPD has approximately 28 handheld Kenwood VHF radios, with one base unit supported by a

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repeater. All trucks are equipped with mobile radios. The district also has four 800 MHz Motorola radios integrated with the Emergency Management System, supporting inter-agency incidents.

### Equipment

#### Fire Truck Profiles:

1. Red Type 3 Fire Truck
  - a. 500-gallon water tank w/integrated foam delivery system
  - b. Pump – 1000 gpm at 150psi
2. White Fire Truck
  - a. 300-gallon water tank w/integrated foam delivery system
  - b. Pump – 135 gpm at 100psi
3. Mobile Response Unit (trailer w/ski's winter and summer use) pulled by 2010 Prinoth Snow Cat during the winter season:
  - a. 500-gallon water tank w/integrated foam delivery system
  - b. Pump – 120gpm at 130psi
4. Water Tender – 1
  - a. 1 - 4000-gallon water tender – contracted
  - b. Pump
    - i. 100 gpm at 110 psi
5. Snow Cat – Prinoth Model-Trooper
  - a. Used for winter structure fire initial response in combination with Mobile Response Unit.
  - b. Support high-country search and rescue.
  - c. Equipped with a medical patient cabin providing a stable environment for patient transport.

### Water Supply

Water sources available to the Arrowhead FPD include hydrants, cisterns, and ponds. Three lakes could be used for water supply, including Hazel Lake, Evergreen Lake, and Flint Lakes. Flint Lakes is regarded as the best water source. It has a capacity of 11,000,000 gallons when full and is accessible by helicopter; however, a pump is required to fill apparatuses. Hazel Lake has a capacity of 6,000,000 gallons when full and is accessible by helicopter. A pump is necessary to draw from Hazel Lake. Evergreen Lake is the smallest in capacity (319,000 gallons when full). A pump is not required for Evergreen Lake and is not accessible via helicopter. The district also has access to 84 pressurized hydrants. The flow rate of these hydrants is 100 gpm, though this can be doubled in case of an emergency. Cisterns are also available to the district but are not marked with their volumes.

### Evacuation

Due to single-road access, the entire community has evacuation concerns. Staging areas have been established because of the access and egress challenges. In emergencies, roads should have traffic control to allow emergency vehicles to travel up while residents evacuate with RVs or personal vehicles. Another concern is evacuation during the winter, as the community is only accessible by tracked vehicles during those months.

***Carbondale & Rural Fire Protection District***

Located primarily in Pitkin County, the Carbondale & Rural FPD has a small portion of the district that crosses into northern Gunnison County. The district protects approximately 15,000 and includes the Town of Marble in Gunnison County. Seven stations are located throughout the district, with one in Marble.



**Training**

The Carbondale & Rural FPD comprises 70 dedicated personnel, including eight Marble area volunteer firefighters. The team is highly trained in wildland firefighting and holds many professional certifications, including S-130 and S-190, foundational courses in wildland fire behavior and firefighter safety.

All members participate in mandatory annual wildland fire training to ensure personnel remain at the forefront of industry best practices. This ongoing education emphasizes the latest strategies, tactics, and safety procedures, equipping our team to effectively respond to the evolving challenges posed by changing climate conditions.

In addition to technical training, all members must complete the annual Work Capacity Test (the pack test). This assessment verifies the physical readiness of each firefighter to perform safely and effectively under the strenuous demands of wildland firefighting operations.

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### Personal Protective Equipment

The Carbondale & Rural FPD provides its members Nomex pants and shirts, helmets, fireline packs, and next-generation shelters. The district does not offer wildland boots.

### Communications

The fire district has 107 800 MHz radios, including those in the Marble area. The fire district has four radio kits, with four King radios, ready for deployment at any time. Marble has two King radios at station 83.

### Equipment

Marble has the following fire apparatus:

- ENG 83 – 2019 Timberwolf 4X4, 1000 gpm pump, 750-gallon tank.
- Tender 83 – 2020 Type 2 tactical 4X4, 350 gpm pump, 1,500-gallon tank.
- Brush 83 – 2005 Type 2 tactical 4X4, 100 gpm pump, 300-gallon tank.
- UTV 83 – BRP Defender -6X6 off-road rescue/fire command vehicle.

### Water Supply

Marble has hydrants in town, and the draft sites are on a map. The hydrant system is tested annually, and the flow rate is 1,500 gpm. The district water systems have a flow rate of 2,000 gpm and are tested annually.

### Evacuation

The population of Marble is roughly 133 permanent year-round residences. In the summer months, the population can triple, with summer homeowners and visitors recreating in the area. The only route into and out of Marble is County Road 3, a paved roadway with two lanes.

The evacuation route from County Road 3 dead-ends into State Highway 133, 6.5 miles from the Town of Marble. Evacuees have two choices: heading north on 133 towards Carbondale or south over McClure Pass.

Marble is considered a dead-end community, so three safety zones have been designated for it.

1. Vaughn/Darien Ranch approximately 1.5 miles from the intersection of 133 and County Road 3. A large open irrigated field with dirt road access.
2. Marble airport – just at the entrance of the Town of Marble, just off County Road 3.
3. Beaver Lake – a shallow lake with some open space around it. Just East of the Town of Marble.

### ***Crested Butte Fire Protection District***

Located in north-central Gunnison County, the Crested Butte FPD serves the communities of Crested Butte, Mount Crested Butte, and the rural areas around them. There are four stations located throughout the district.



### Training

The Crested Butte FPD maintains a roster of 45 personnel, primarily paid staff with a small complement of volunteers. Of the paid members, 21 are full-time employees. The district offers various training opportunities, including S-130/190 and other specialized courses, which are fully funded by the district. The pack test is mandatory for any member eligible for local, state, and federal dispatch assignments. The RT 130 refresher course is an annual requirement for all eligible members.

### Personal Protective Equipment

The district provides a complete ensemble of wildland fire PPE for all members. This includes Nomex pants and shirts, wildland boots, helmets, fireline packs, and next-generation shelters capable of outfitting a 12–to 20-person team.

### Communications

The Crested Butte FPD uses VHF and dual-band (700/800mhz and VHF) radios for wildland fire operations. They have 22 mobile and 30 handheld Kenwood VP 900 and VP 8000 radios.

### Equipment

The district is equipped with two tenders and two Type 6 brush trucks. Additional tenders can be acquired through contractors if necessary.

### Water Supply

The district created a water source map with coordinates and availability based on the season. Hydrants, cisterns, and ponds are all present in the district. Hydrants are also available in Crested Butte, Crested Butte South, and Skyland. Testing is up to the municipality or water district. Hydrants are gravity-fed and have generally high flow rates. Volumes are not marked on cisterns.

### Evacuation

A significant concern in the region is the limited egress routes, specifically via Highway 135 and County Road 12. The drainages along Gothic Rd (County Road 317), Washington Gulch (County Road 811), Slater River (County Road 734), and Brush Creek (County Road 738) all funnel traffic toward County Road 317/Highway 135, creating potential choke points during a mass evacuation. To address this, the FPD is collaborating with the Gunnison Emergency Operations Center, local law enforcement, and other agencies to enhance evacuation planning, improve notification systems, and streamline messaging to ensure a more effective and coordinated response in an emergency.

### ***Gunnison County Fire Protection District***

The largest fire district in the county by coverage area (2,700 square miles), the Gunnison County FPD is located in central, eastern, western, and northeastern Gunnison County. It serves the communities of Gunnison, Almont, Pitkin, and rural areas across the county. There are approximately 10,000 full-time residents in the service area.



Source: 5280 Fire

### Training

The Gunnison County FPD has 35 active members, six inactive members, and a wildfire specialist. All district members take S-130/190 before they begin their careers. The district currently has firefighters qualified as FFT2, FFT1, FAL3, FAL2, ENGB, ICT4, ICT3, CRWB, DIVS, among other qualifications. Other wildland fire training courses are offered or paid for by the district. All volunteers may go to the Colorado Wildfire Academy if they

can. The fire district pays for any other reasonable training that volunteers find. The RT-130 fire refresher is mandatory yearly, but the pack test is optional. The district holds regular fire training weekly.

#### Personal Protective Equipment

A complete PPE ensemble, including Nomex pants and shirts, wildland boots, helmets, fireline packs, and fire shelters, is provided by the Gunnison County FPD.

#### Communications

The Gunnison County FPD uses both 800 MHz and VHF radios. Every apparatus has a DTR and VHF radio. All firefighters carry a portable DTR radio, and portable VHF radios are available at the fire station and in each wildland apparatus. The Gunnison Fire DTR talk group and VHF frequency are permanently patched to assist with communications with federal resources.

#### Equipment

The Gunnison County FPD has several wildland fire apparatus at its disposal. The district has one Type 1 engine, one Type 1/3 engine, one Type 4 engine, seven Type 6 engines, one Type 1 support tender, and three Type 2 tactical tenders.

#### Water Supply

Gunnison County FPD can access hydrants, cisterns, and ponds for wildland firefighting water supply. All hydrants, both dry and municipal, are mapped and are relatively abundant throughout the district. If a hydrant is unavailable, the district has the resources necessary to use any available water supply. Flow rates depend on many factors, including location, water supply, and the time of year. As of 2025, dry hydrants are tested annually. Municipal hydrants in the City of Gunnison and Dos Rios are tested regularly by their respective water departments.

#### Evacuation

White Pine, Soap Creek, Gold Creek, and Quartz Creek properties are all evacuation concerns for the district. All these have significant potential for a fire that could block the single egress out of the area. Each also has the potential to have a relatively substantial number of occupants, and often, several people are unfamiliar with the area.

#### ***Ragged Mountain Fire Protection District / Delta County Fire Protection District 2***

While Ragged Mountain FPD is still the district name on paper, Delta County FPD 2 covers the district operationally. The Ragged Mountain FPD/Delta County FPD 2 is primarily in Delta County, but a part of it is in northwestern Gunnison County. It serves the communities of Somerset in Gunnison County and Hidden Valley, Fire Mountain, Cedar Hill, Stucker Mesa, and North Hotchkiss in Delta County.

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### Training

All firefighters are required to train on wildland fires throughout the year. A minimum of 24 hours per year is required for all hazards, including wildland fire, structure fire, evacuation, extrication, swift water rescue, and truck/pump operations. Some firefighters hold red cards and refresh this annually with their full-time departments.

### Personal Protective Equipment

Provided PPE includes wildland fire-rated coats and pants, gloves, boots, helmets, eye protection, wildland packs with fire shelters, and full-leg protection for those running saws.

### Communications

The district uses both 800 MHz and VHF radios for communication.

### Equipment

The Ragged Mountain FPD has one Type 6 response truck and a 4,000-gallon water tender. Delta County FPD 2 has three Type 6 trucks, three Class A pumpers, two 2,000-gallon tenders, one 1,000-gallon 6x6 tender, and three UTVs with water tanks and pumps. All of the equipment can be shared and used within the district.

### Water Supply

The water supply for the Ragged Mountain area of the district consists of ponds, ditches, creeks, and river access, depending on the time of year and flows. There are plans for dry hydrants at a few strategic locations within the area that the Ragged Mountain FPD board plans to put in place.

Evacuation

The Ragged Mountain area of the district has three main access roads: highway 133, County Road 12, and County Road 265. Evacuation back to these roads is a concern for all district private properties as many side roads or driveways are long and single-track only. Some of these roads are one way in and one way out.

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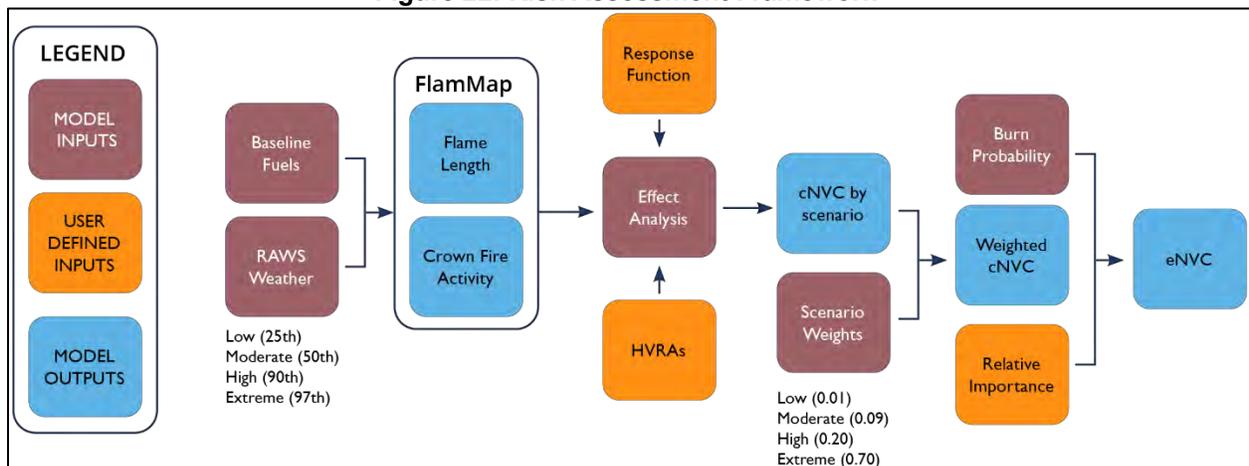
## Section 4

# Wildfire Risk Assessment

### Risk Assessment Overview

This section covers the Risk Assessment portion of CFRI’s RADS planning framework (Figure 22). Wildfire risk is calculated as a combination of fire likelihood, fire behavior, resource values exposure, and susceptibility. As outlined in the graphic below, this process was used to develop the Gunnison County CWPP wildfire risk assessment. The wildfire Risk Assessment Process requires both model inputs and user-defined inputs. Both are used to calculate the expected impact of wildfire (i.e., wildfire risk), also referred to as expected net value change (eNVC). The sections below will discuss the user-defined inputs and model inputs. Additional information about the Risk Assessment methodology can be found in Appendix C: CFRI’s Technical Report. Interactive online versions of all the maps discussed in this section can be found [here](#).

Figure 22: Risk Assessment Framework



CFRI's Quantitative Wildfire Risk Assessment is based on the RMRS-GTR-315 framework (Scott et al., 2013)<sup>13</sup>. HVRAs = highly valued resources and assets, cNVC = conditional net value change, and eNVC = expected net value change. Source: CFRI

### User-Defined Inputs

There were three user-defined inputs in the wildfire risk assessment process. They were HVRAs, the relative importance of the HVRAs, and the response functions of the HVRAs. The subsections below discuss these inputs, their development, and the final decisions. User-defined inputs were decided on collaboratively by the Leads Team and the UGSSC. These inputs are specific to the planning area and were reviewed over several meetings so that all opinions and expertise could be gathered. Once the draft wildfire risk assessment maps were created, the Leads Team and the UGSSC members were asked

<sup>13</sup> Scott et al. 2013. "A wildfire risk assessment framework for land and resource management." <https://research.fs.usda.gov/treesearch/56265>.



**Table 4: Highly Valued Resources and Assets (HVRAs)**

Category	HVRA
Buildings	High Density Buildings
	Low Density Buildings
Infrastructure	Communication Infrastructure
	Electrical Transmission Lines
	Emergency Service Stations
	Monitoring Infrastructure
	Substations/Electrical
	Water Infrastructure
Life Safety	Primary Evacuation Routes
Recreation	Built Recreation Infrastructure
	Camping
	Ski Areas
	Trails
Water	Mines
	Surface Drinking Water
Wildlife	Bighorn Sheep
	Cutthroat Trout
	Elk
	Lynx
	Moose
	Mule Deer
	Pronghorn Antelope
	Sage Grouse
Vegetation	Agriculture
	Aspen
	High Elevation Meadows
	Lodgepole Pine
	Mixed Conifer
	Pinyon-Juniper
	Ponderosa Pine
	Riparian
	Sagebrush
	Shrubland
Spruce Fir	

Relative Importance

After the HVRAs were finalized, the Leads Team and the UGSSC needed to prioritize the HVRAs and determine the most important ones. Not all HVRAs can be a top priority, so a relative importance exercise was utilized to help the prioritization process. The UGSSC members were asked to rank the importance of the HVRAs by giving them values that added up to 100 in each category. The model used relative importance values to prioritize the highest-ranking HVRAs over others. The UGSSC assigned relative importance rankings for each HVRA individually and then used the average scores to create the initial

## Section 4 | Wildfire Risk Assessment

draft importance value. The final relative importance rankings were determined based on additional large-group discussions, as seen in Table 5.

**Table 5: HVRA + Relative Importance**

Category	HVRA	Relative Importance
Buildings	High Density Buildings	60
	Low Density Buildings	40
Infrastructure	Communication Infrastructure	15
	Electrical Transmission Lines	25
	Emergency Service Stations	20
	Monitoring Infrastructure	5
	Substations/Electrical	10
	Water Infrastructure	25
Life Safety	Primary Evacuation Routes	100
Recreation	Built Recreation Infrastructure	20
	Camping	20
	Ski Areas	50
	Trails	10
Water	Mines	2
	Surface Drinking Water	98
Wildlife	Bighorn Sheep	6
	Cutthroat Trout	15
	Elk	6
	Lynx	15
	Moose	6
	Mule Deer	6
	Pronghorn Antelope	6
	Sage Grouse	40
Vegetation	Agriculture	10
	Aspen	13
	High Elevation Meadows	8
	Lodgepole Pine	12
	Mixed Conifer	3
	Pinyon-Juniper	2
	Ponderosa Pine	3
	Riparian	18
	Sagebrush	14
	Shrubland	5
Spruce Fir	12	

Along with the individual HVRA, the Leads Team and the UGSSC members determined the relative importance of the seven HVRA categories. For this ranking, the most important category was given 100, and all the other categories scored relative to 100. The larger the number, the more important a category is, while smaller numbers represent

HVRAs that are relatively less important. The final HVRA category relative importance ratings are in Table 6.

**Table 6: HVRA Category Relative Importance**

Category	Relative Importance
Buildings	63
Infrastructure	73
Life Safety	100
Recreation	31
Water	79
Wildlife	54
Vegetation	48

Response Functions

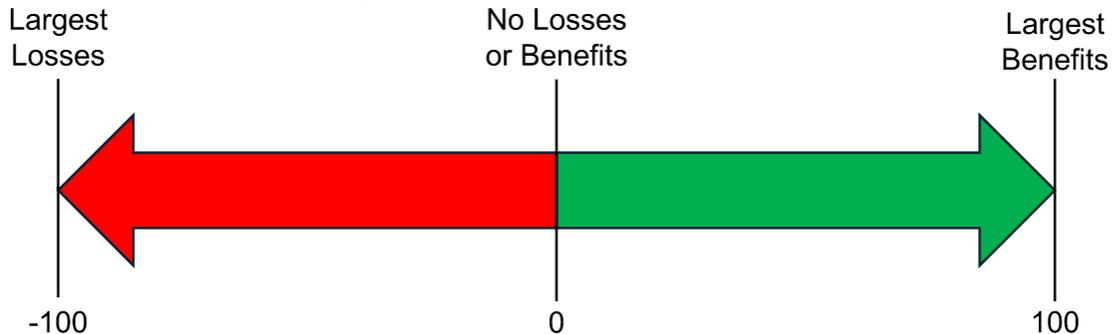
Response functions are the final user input of the Risk Assessment process. These response functions outline the expected resource loss or benefit at different fire intensity levels (FILs). FILs are defined by flame length, which is the distance from the flame tip to the base of the fire.

**Table 7: Fire Intensity & Flame Length**

Fire Intensity Levels (FIL)	Flame Length
FIL 1	<2 feet
FIL 2	2-4 feet
FIL 3	4-6 feet
FIL 4	6-8 feet
FIL 5	8-12 feet
FIL 6	12+ feet

Relative losses are shown as negative numbers, and relative benefits are shown as positive numbers. The more positive or negative the number, the more that resource is expected to be positively or negatively impacted by fire (Figure 23). Response function values are defined based on professional experience, local knowledge, existing risk assessments, and scientific literature. The response functions for each HVRA can be found in Table 8.

**Figure 23: Response Function Values**



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**Table 8: HVRA + Relative Importance + Response Functions**

Category	HVRA	Relative Importance	FIL1 (<2 ft)	FIL2 (2-4 ft)	FIL3 (4-6 ft)	FIL4 (6-8 ft)	FIL5 (8-12 ft)	FIL6 (12+ ft)
Buildings	High Density Buildings	60	-40	-80	-100	-100	-100	-100
	Low Density Buildings	40	-20	-40	-80	-100	-100	-100
Infrastructure	Communication Infrastructure	15	-10	-10	-20	-30	-100	-100
	Electrical Transmission Lines	25	-10	-10	-20	-30	-50	-60
	Emergency Service Stations	20	-40	-80	-100	-100	-100	-100
	Monitoring Infrastructure	5	-30	-60	-80	-100	-100	-100
	Substations/Electrical	10	-10	-10	-20	-30	-100	-100
	Water Infrastructure	25	-10	-20	-40	-100	-100	-100
Life Safety	Primary Evacuation Routes	100	-20	-40	-80	-100	-100	-100
Recreation	Built Recreation Infrastructure	20	20	0	-10	-30	-40	-50
	Camping	20	10	0	-10	-30	-40	-50
	Ski Areas	50	0	-10	-10	-20	-75	-100
	Trails	10	0	-5	-10	-15	-20	-25
Water	Mines	2	NA	NA	NA	NA	NA	NA
	Surface Drinking Water	98	NA	NA	NA	NA	NA	NA
Wildlife	Bighorn Sheep	6	20	40	80	100	100	90
	Cutthroat Trout	15	15	0	-30	-40	-60	-85
	Elk	6	70	70	80	100	60	40
	Lynx	15	0	-10	-20	-40	-80	-100
	Moose	6	70	70	80	80	50	30
	Mule Deer	6	70	70	80	100	90	80
	Pronghorn Antelope	6	20	40	80	100	100	90
	Sage Grouse	40	-20	-30	-50	-80	-100	-100
Vegetation	Agriculture	10	0	-10	-10	-10	-10	-10
	Aspen	13	25	30	35	40	45	50
	High Elevation Meadows	8	30	30	30	30	30	30
	Lodgepole Pine	12	30	30	30	50	50	50
	Mixed Conifer	3	30	30	40	50	20	-20
	Pinyon-Juniper	2	25	40	0	0	0	-60
	Ponderosa Pine	3	60	100	60	20	-40	-60
	Riparian	18	30	60	20	-20	-40	-60
	Sagebrush	14	20	20	-60	-60	-60	-80
	Shrubland	5	30	30	30	30	30	30
Spruce Fir	12	25	40	0	-40	-40	-60	

Table 8 shows that some HVRAs, like buildings, are expected to be negatively impacted at any fire intensity. Other HVRAs, like mule deer, are likely to be positively affected at any fire intensity, and some HVRAs, like riparian vegetation, are likely to be positively impacted at lower fire intensities but negatively impacted at higher fire intensities. Though surface drinking water is not directly affected by flame length, it could still be impacted by ash, post-fire sediment, and other fire-related debris.

## Model Inputs

In addition to the User-Defined Inputs, the wildfire Risk Assessment process requires fire behavior and burn probability inputs to model wildfire risk. FlamMap<sup>14</sup>, a fire analysis application, was used to estimate potential fire behavior, fire growth, spread, and conditional burn probabilities under various weather scenarios. FlamMap uses a baseline fuelscape from LANDFIRE 2022<sup>15</sup> during its modeling process. LANDFIRE is a vegetation modeling application. Various weather scenarios were also used to represent the 25<sup>th</sup>, 50<sup>th</sup>, 90<sup>th</sup>, and 97<sup>th</sup> percentile weather scenarios. These scenarios were weighted to emphasize the extreme (97<sup>th</sup>) percentile conditions because acres have historically burned under more extreme weather. Annual burn probability was based on FSim<sup>16</sup> outputs. FSim models thousands of potential fire events to determine the annual burn probability across the planning area.

## Wildfire Risk Assessment Results

The final output of the Risk Assessment process is a composite wildfire risk map, which displays eNVC. This map shows the potential impacts of wildfire on the identified HVRAs. It accounts for the likelihood of a wildfire and its likely consequences, incorporating the user-defined and model-generated inputs discussed above.

Figure 24 illustrates the composite wildfire risk map for the Gunnison County CWPP planning area. Areas in green indicate regions where wildfire is expected to have a positive impact, while areas in red would likely be negatively affected. The intensity of the color reflects the severity of the expected impact—darker shades of green and red indicate more substantial positive or negative effects, respectively. For example, the City of Gunnison and its surrounding area appear in red, signifying a negative impact expected from wildfire. The darker red areas around the City of Gunnison are at greater risk from wildfire than the lighter shades in large parts of the central valley.

Wildfire risk varies widely across the planning area due to differences in fire behavior, burn probability, vegetation types, HVRA locations, and HVRA response functions. Within the CWPP planning area, the most significant wildfire risk is concentrated around the towns of Gunnison and Crested Butte, where there is a high density of infrastructure and primary evacuation routes.

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<sup>14</sup> USFS. December 2024. "FlamMap."

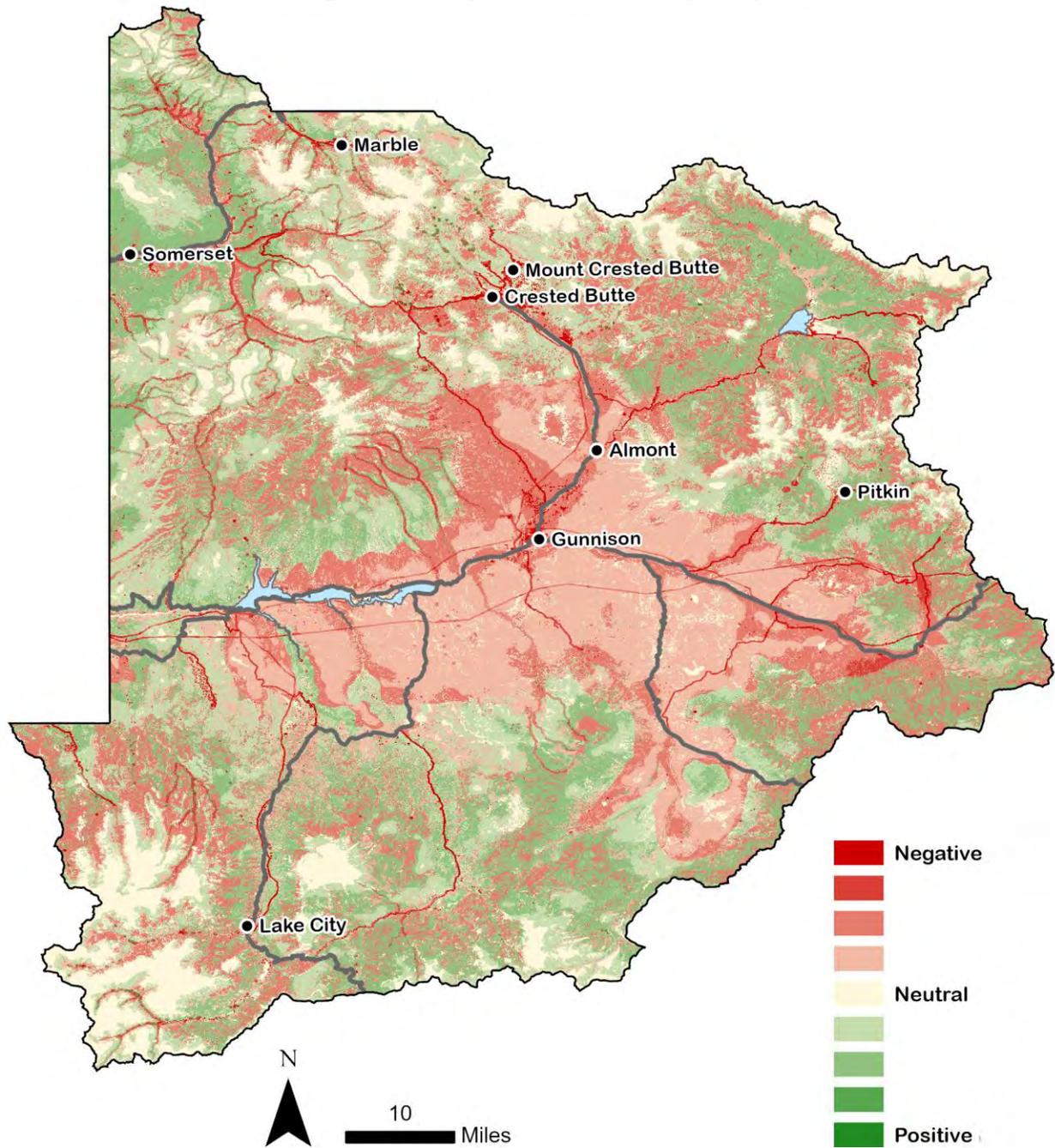
<https://research.fs.usda.gov/firelab/products/dataandtools/flammap>.

<sup>15</sup> LANDFIRE. 2022. "LANDFIRE 2022 Update." <https://www.landfire.gov/data/lf2022>.

<sup>16</sup> USFS. August 2020. "FSim-Wildfire Risk Simulation."

<https://research.fs.usda.gov/firelab/products/dataandtools/fsim-wildfire-risk-simulation>.

Figure 24: Composite Wildfire Risk (eNVC)



Negative eNVC represents a high risk where negative wildfire impacts are expected (red). Positive eNVC means there is an anticipated benefit from wildfire (green). Source: CFRI

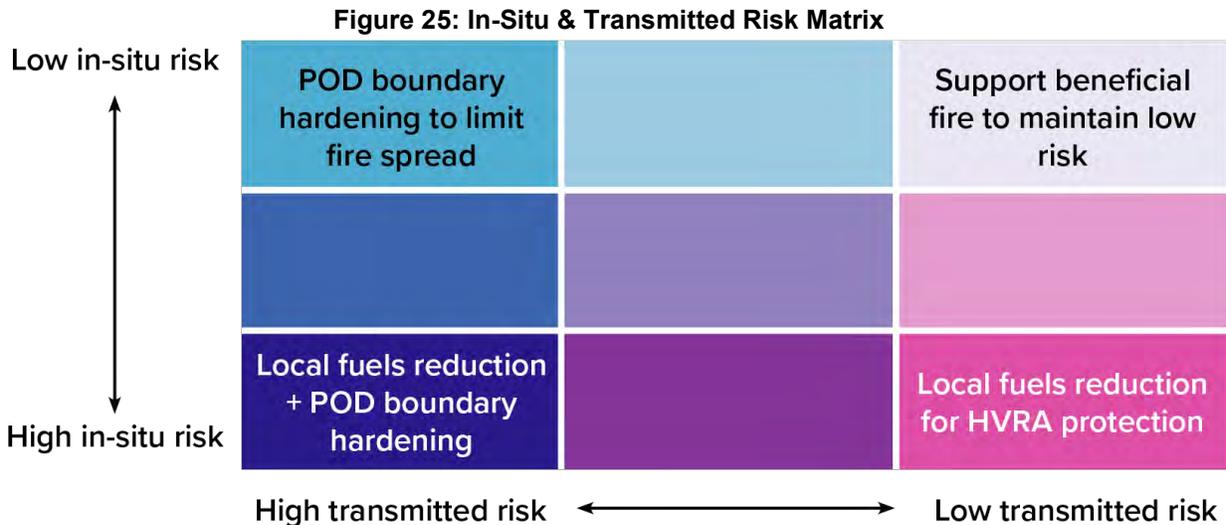
In the Gunnison Valley, much of the wildfire risk is driven by sage grouse habitat due to its high relative importance and negative response to fire. Sage grouse habitat, ranked as the most critical among all wildlife species ranges, is highly vulnerable to wildfire and is expected to be negatively affected at all fire intensity levels (Table 8).

Many vegetation types and wildfire species have positive response functions, indicating that wildfires would improve or enhance their ecosystem function. Ponderosa pine, mixed conifer, and lodgepole pine forests generally benefit from fire. Additionally, species such as bighorn sheep, elk, and mule deer, which rely on mixed landscapes of dense forest interspersed with open forest canopy that typically follows wildfire, frequently overlap with these forest types.

### In-situ and Transmitted Risk

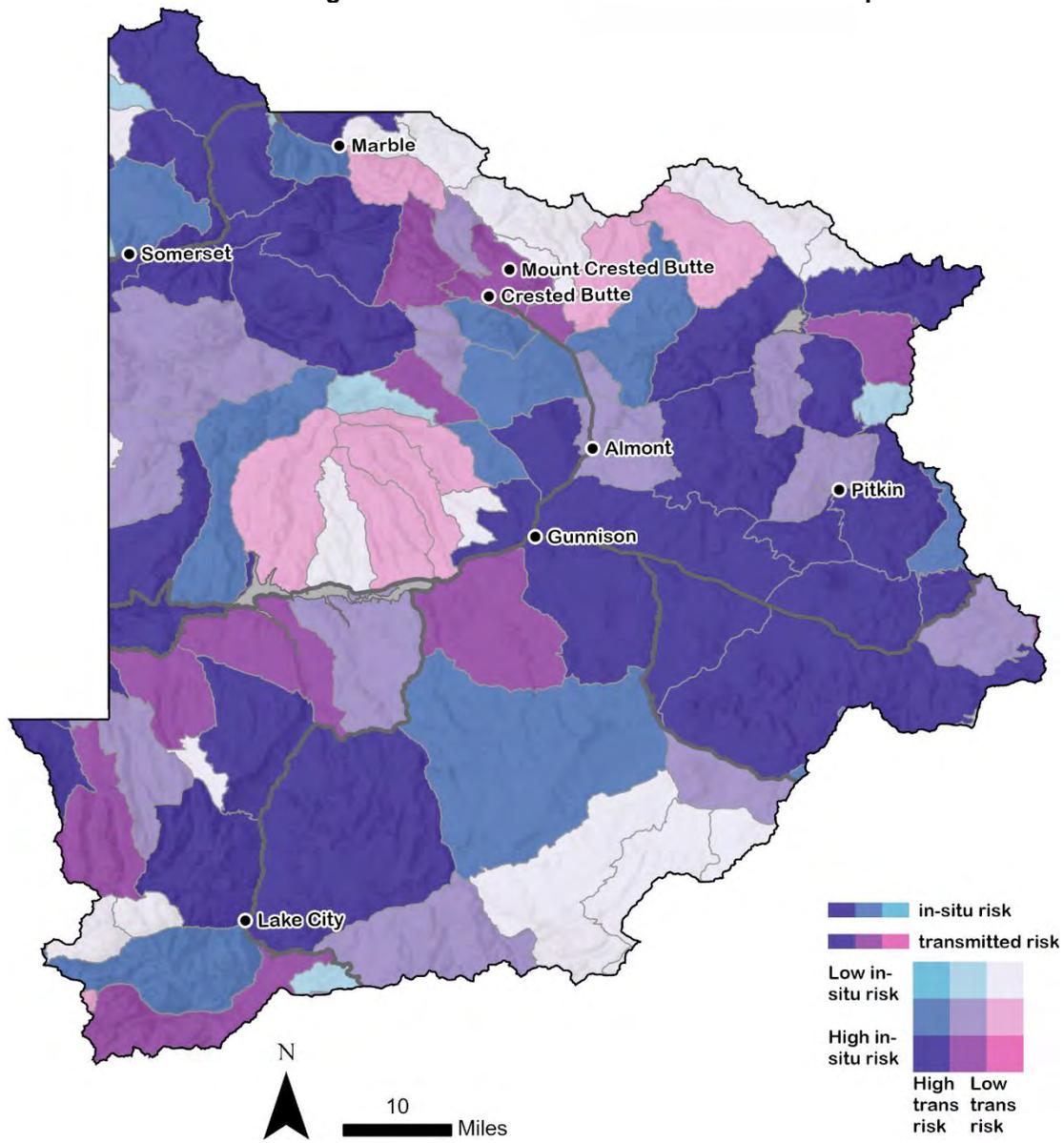
To further analyze risk in the CWPP planning area, both in-situ and transmitted risks were summarized at the POD level. In-situ risk represents local wildfire risk to HVRAs within a POD. Transmitted risk represents wildfire risk to HVRAs if a fire were to cross a POD line into a neighboring POD. A matrix (Figure 25) and map (Figure 26) summarize these two risk types to understand wildfire risk in the planning area better. Dark purple and pink areas (the bottom row of the matrix) have high in-situ risk. Dark purple and blue areas have high transmitted risk.

Possible wildfire risk reduction management activities vary based on the types of risk a POD has. For example, a POD with low in-situ and high transmitted risk could benefit from POD boundary hardening. Alternatively, a POD with high in-situ and low transmitted risks may benefit most from targeted vegetation management treatments. If a POD had low transmitted and in-situ risks, a beneficial fire could help maintain that POD. A POD with high transmitted and in-situ risks could benefit from POD boundary hardening and local fuel reduction.



*Risk matrix that addresses the specific type of risk (in-situ vs. transmitted risk) with an appropriate management activity in relation to Potential Operations Delineations (PODs) and highly valued resources and assets (HVRAs). Source: CFRI*

Figure 26: PODs In-Situ & Transmitted Risk Map



*In-situ risk and transmitted risk matrix summarized by Potential Operational Delineation (POD). The dark purple PODs have the greatest in-situ and transmitted risk, while the light purple PODs (top right of the matrix) are in a condition to receive beneficial fire. Source: CFRI*

## Section 5

# Decision Support

### Decision Support Overview

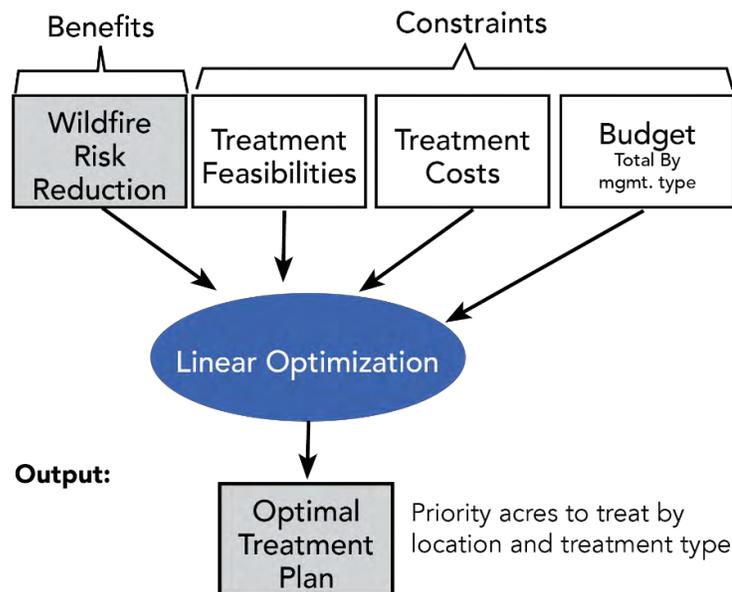
The second portion of CFRI's RADS framework is the Decision Support process. The RADS Decision Support tool helps the Leads Team and UGSSC prioritize the type and location of vegetation management activities to reduce in-situ and transmitted risk. It uses treatment risk reduction, feasibility, cost, and budget to determine the most cost-effective means of reducing wildfire risk. Appendix C: CFRI's Technical Report contains additional information about the Decision Support methodology. The following sections outline methods and results for calculating the cost-effectiveness of vegetation management in POD interiors (in situ risk) and along POD boundaries (transmitted risk), respectively. Interactive online versions of all the maps discussed in this section can be found [here](#).

**Figure 27: Decision Support Framework**

**Objective:** maximize risk reduction (minimize risk)

**Decisions:** acres to treat by location and treatment type

**Model:**



Source: CFRI

### Model Inputs

As the diagram above shows, four inputs go into the Linear Optimization model: treatment risk reduction, treatment feasibilities, treatment costs, and budget. These four inputs are discussed in greater detail below. The Leads Team and other local forest and wildfire management officials reviewed all model inputs specific to the planning area. Initial inputs were based on previous risk assessments and refined by local expertise.

### Treatment Risk Reduction

Six vegetation management activities were analyzed to compare potential wildfire risk reduction: (1) mechanical thinning only, (2) low-severity prescribed fire, (3) high-severity prescribed fire, (4) mechanical thinning followed by prescribed fire, (5) mastication, and (6) patch cuts. Definitions for each activity are given below.

**Mechanical Thin** – Machinery reduces forest density by removing small trees, brush, and excess vegetation.

**Low-Severity Prescribed Fire** – A planned, controlled burn along the forest floor without torching tree canopies or more extensive vegetation.

**High-Severity Prescribed Fire** – A planned, controlled burn to result in high levels of vegetation mortality, including large tree mortality.

**Mechanical Thinning Followed by Prescribed Fire** – Machinery is used to reduce forest density, and then a controlled burn is completed in the same area.

**Mastication** – Small trees, shrubs, and brush are shredded, ground up, or chopped into small pieces using heavy equipment.

**Patch Cuts** – Small areas of trees are harvested or cleared, rather than clearcutting a sizeable, continuous area.

After adjusting canopy and surface fuels for each vegetation management scenario, the models were re-run, and eNVC was re-calculated for all six vegetation management scenarios. The difference between the original eNVC and treated eNVC represents the potential risk reduction of a given vegetation management activity.

### Treatment Feasibilities and Costs

Table 9 presents the feasibility and costs associated with each vegetation management activity. The modeling accounts for more labor- and resource-intensive activities by increasing costs rather than excluding areas that are difficult to treat. Having increasing costs provides broader options to address risk. Risk reduction analysis was conducted only in areas where the vegetation management activity was feasible.

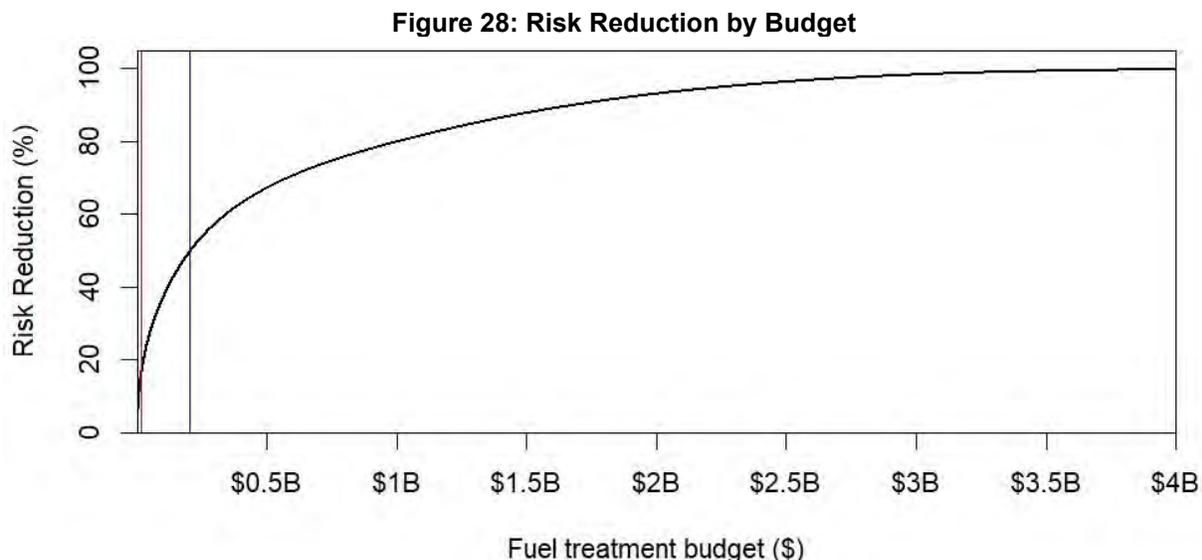
The initial feasibility and cost estimates were derived from previous risk assessments, scientific literature, and the expertise of CFRI staff. In order to ensure greater accuracy and applicability, these estimates were further refined through discussions with the Leads Team, USFS, CSFS, WRWC, and BLM. These collaborative conversations helped tailor the feasibility and cost categories to more accurately represent constraints on vegetation management efforts undertaken in Gunnison County.

**Table 9: Vegetation Management Feasibility & Cost Constraints**

Treatment	Feasibility	Cost
<b>Mechanical Thin</b>	No wilderness or upper tier roadless, > 10% canopy cover.	\$3,000/acre base cost + linear increase with slopes > 30% and distances from road > 800 m up to a max of \$10,000/acre.
<b>Low Severity Prescribed Fire</b>	Ponderosa pine, mixed conifer, Douglas-fir, pinyon-juniper, aspen, and other forest types.	<p><b><u>Lower Complexity Fire</u></b>                      (i.e., when fire activity is modeled as surface fire during 25<sup>th</sup> percentage fire weather):                      \$900/acre &gt; 250 m from a structure,                      \$1,800/acre &lt; 250 m from a structure.</p> <p><b><u>Higher Complexity Fire with Additional Prep</u></b>                      (i.e., when fire activity is modeled as crown fire during 25<sup>th</sup> percentage fire weather):                      \$2,000/acre &gt; 250 m from a structure,                      \$4,000/acre &lt; 250 m from a structure.</p>
<b>High Severity Prescribed Fire</b>	Lodgepole pine and spruce-fir forest types only.	<p><b><u>Lower Complexity Fire</u></b>                      (i.e., when fire activity is modeled as surface fire during 25<sup>th</sup> percentage fire weather):                      \$900/acre &gt; 250 m from a structure,                      \$1,800/acre &lt; 250 m from a structure.</p> <p><b><u>Higher Complexity Fire with Additional Prep</u></b>                      (i.e., when fire activity is modeled as crown fire during 25<sup>th</sup> percentage fire weather):                      \$2,000/acre &gt; 250 m from a structure,                      \$4,000/acre &lt; 250 m from a structure.</p>
<b>Mechanical Thin Followed by Prescribed Fire</b>	No wilderness or upper tier roadless, > 10% canopy cover.	Mechanical thin only \$ + prescribed fire \$ (\$3,900 – \$10,000) up to a max of \$10,000/acre.
<b>Mastication</b>	No wilderness or upper tier roadless, > 10% canopy cover.	\$2,000/acre + linear increase with slopes > 40%, linear increase with Crown Bulk Density above 50 <sup>th</sup> percentile, and distances from road > 800 m up to a max of \$10,000/acre.
<b>Patch Cut</b>	No wilderness or upper tier roadless, > 10% canopy cover; lodgepole, spruce-fir, and aspen forest types only.	\$3,000/acre base cost + linear increase with slopes > 30% and distances from road > 800 m up to a max of \$10,000/acre.

### Budget

Four budget levels were considered when prioritizing the location and types of vegetation management that maximize risk reduction per dollar spent. Those budget levels were \$15 million, \$50 million, \$100 million, and \$200 million. As budget size continues to increase, the slope of the risk reduction curves decreases, representing less risk reduction achieved for every dollar spent. In other words, as the curve flattens to the right, there is limited return on additional investment in vegetation management. As shown in Figure 28, areas selected at lower budget levels are more cost-effective than those selected at higher budget levels.

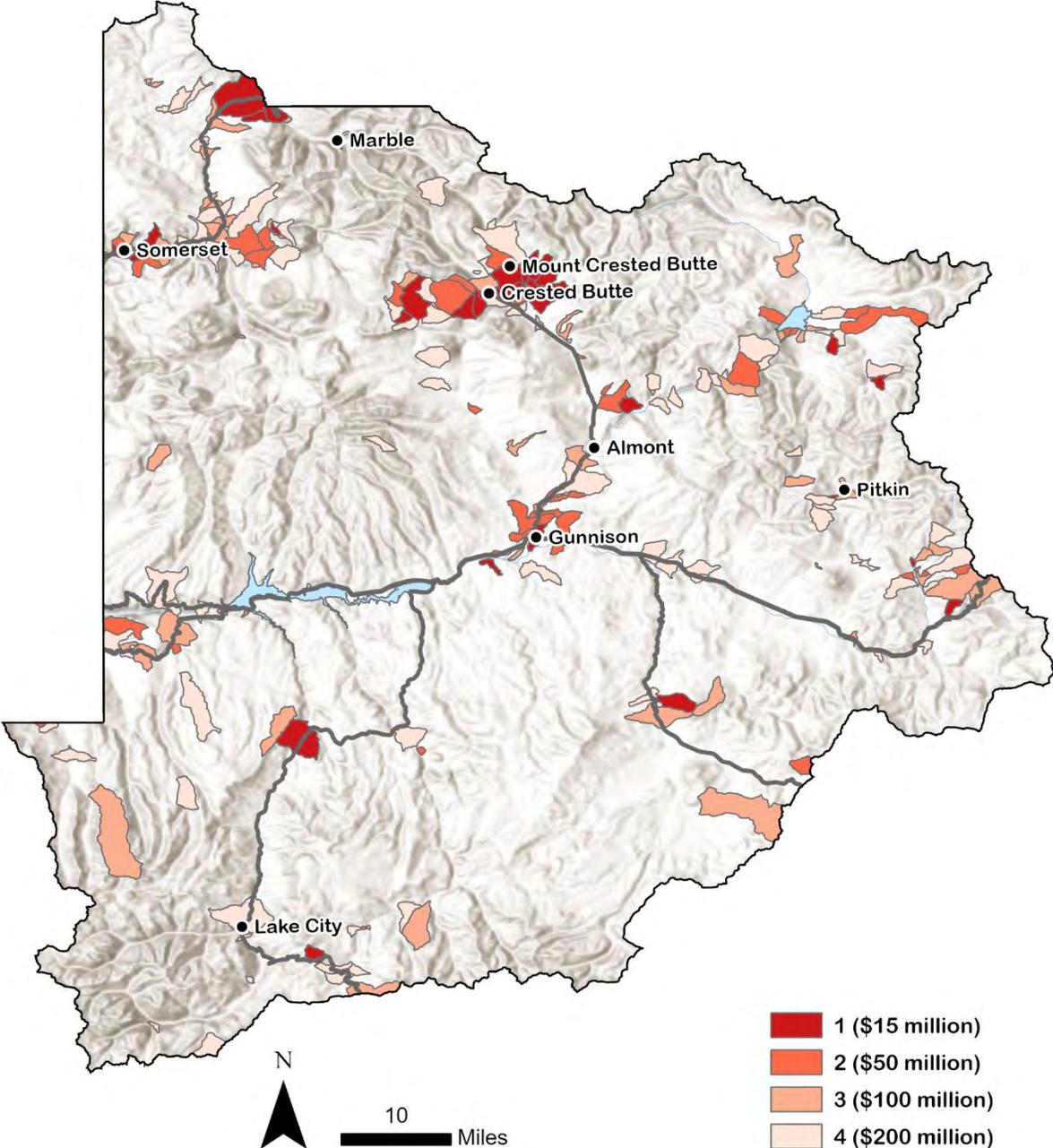


*Feasible risk reduction curve across a variety of simulated budgets. The vertical red line denotes the \$15 million budget, and the blue line represents the \$200 million budget. The steeper the curve, the more risk is reduced per dollar spent. Source: CFRI*

### Vegetation Management to Reduce In-situ Risk

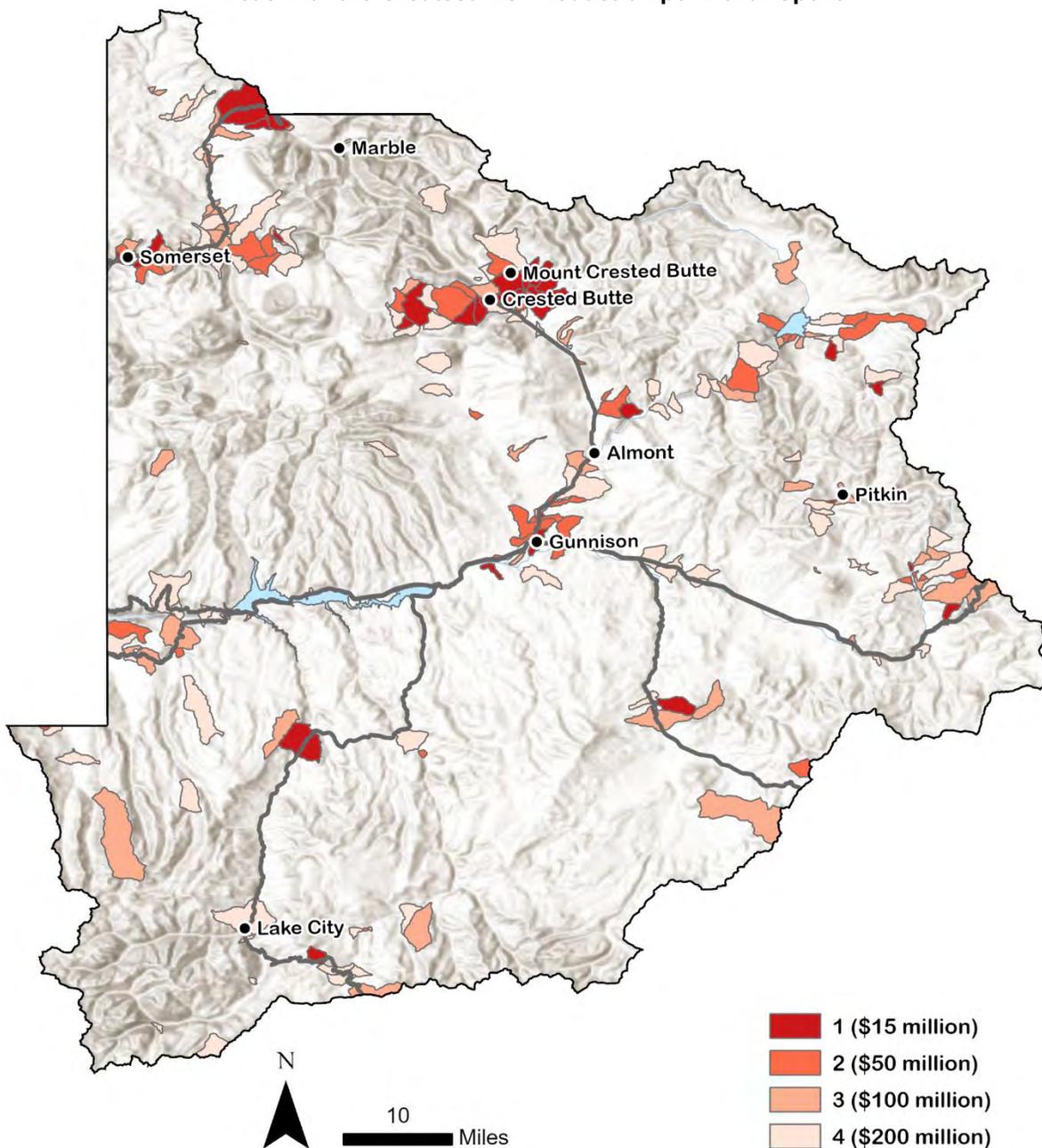
The RADS model selected vegetation management types and locations with the greatest risk reduction per dollar spent for each budget level. These locations will help to reduce in-situ risk (risk within PODs) and protect local values. This analysis used small sub-watershed catchment units as decision units for vegetation management. The Leads Team felt that POD boundaries and watershed extents were too large an area for this analysis, so the sub-watershed catchment units were used. Figure 29 shows the catchments within the planning area where cost-effectiveness is greatest. It is estimated that areas identified in the \$15 million budget could reduce feasible risk by 16% while treating less than 1% of the landscape.

Figure 29: Areas with the Greatest Risk Reduction per Dollar Spent



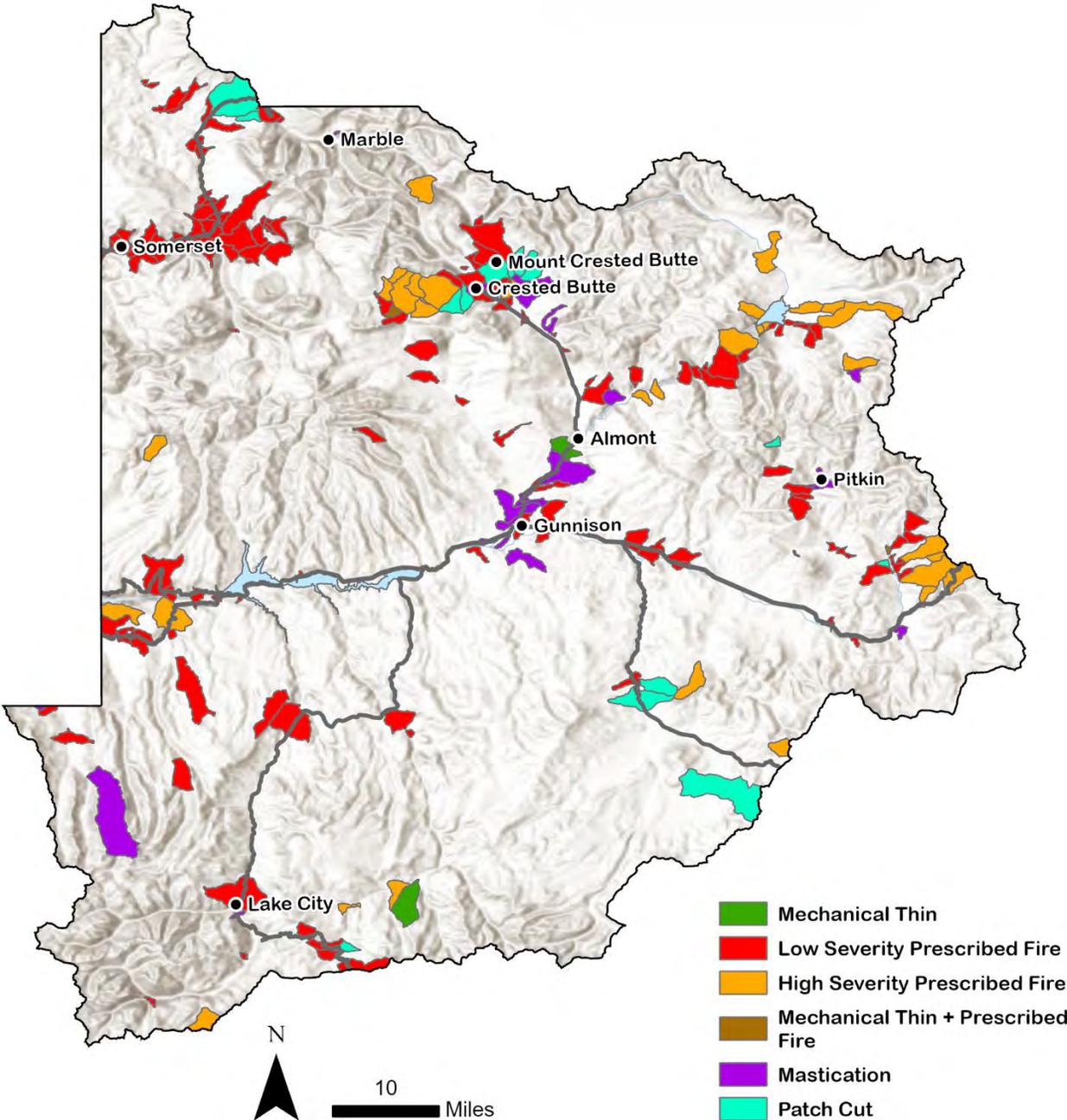
Each polygon represents an NHDPlus catchment used as the management unit. Treatment areas correspond to locations with the greatest risk reduction per dollar spent and fall within budgets from \$15 million to \$200 million. Source: CFRI

**Figure 30 shows the dominant suggested treatment types for the identified areas in Figure 29: Areas with the Greatest Risk Reduction per Dollar Spent**



. The most common vegetation management activity across all budget levels is prescribed fire due to its relatively low cost compared to the other treatment types. High-severity prescribed fire is most cost-effective in spruce-fir and lodgepole pine forests. In contrast, low-severity fire is most cost-effective in mixed conifer, ponderosa pine, aspen, and pinyon-juniper forests. Patch cut is the next most cost-effective treatment type, most common in spruce-fir and lodgepole pine.

Figure 30: Optimal Vegetation Management Activity in Identified Areas



The most cost-effective treatment type for each identified area. Multiple treatments could be recommended for each unit, but only one dominant treatment type is shown within an NHDPlus catchment polygon (i.e., the treatment unit) for visualization. Not all areas within these polygons are considered feasible for the identified treatment. For example, high-severity prescribed fire is only feasible in lodgepole pine and spruce-fir forests, not other vegetation types. Vegetation management is generally restricted to forested landscapes (i.e., > 10% canopy cover or specific forest types in feasibility constraints) to support the protection of highly functional riparian zones within the priority treatment polygons. Source: CFRI

## **Vegetation Management to Reduce Transmitted Risk**

Vegetation management can help reduce both in-situ risk (risk within a POD) and transmitted risk (risk if wildfire crosses a POD line). Treatment along POD boundaries can help limit fire spread by creating fuel breaks or improving firefighter access. Treating along POD boundaries is typically done using mechanical thinning treatments. The risk transmission analysis used the change in suppression difficulty index (SDI) per dollar spent to prioritize treatment locations along POD boundaries. SDI measures difficulty performing fire control work based on topography, fuels, access, and fire behavior.<sup>17</sup>

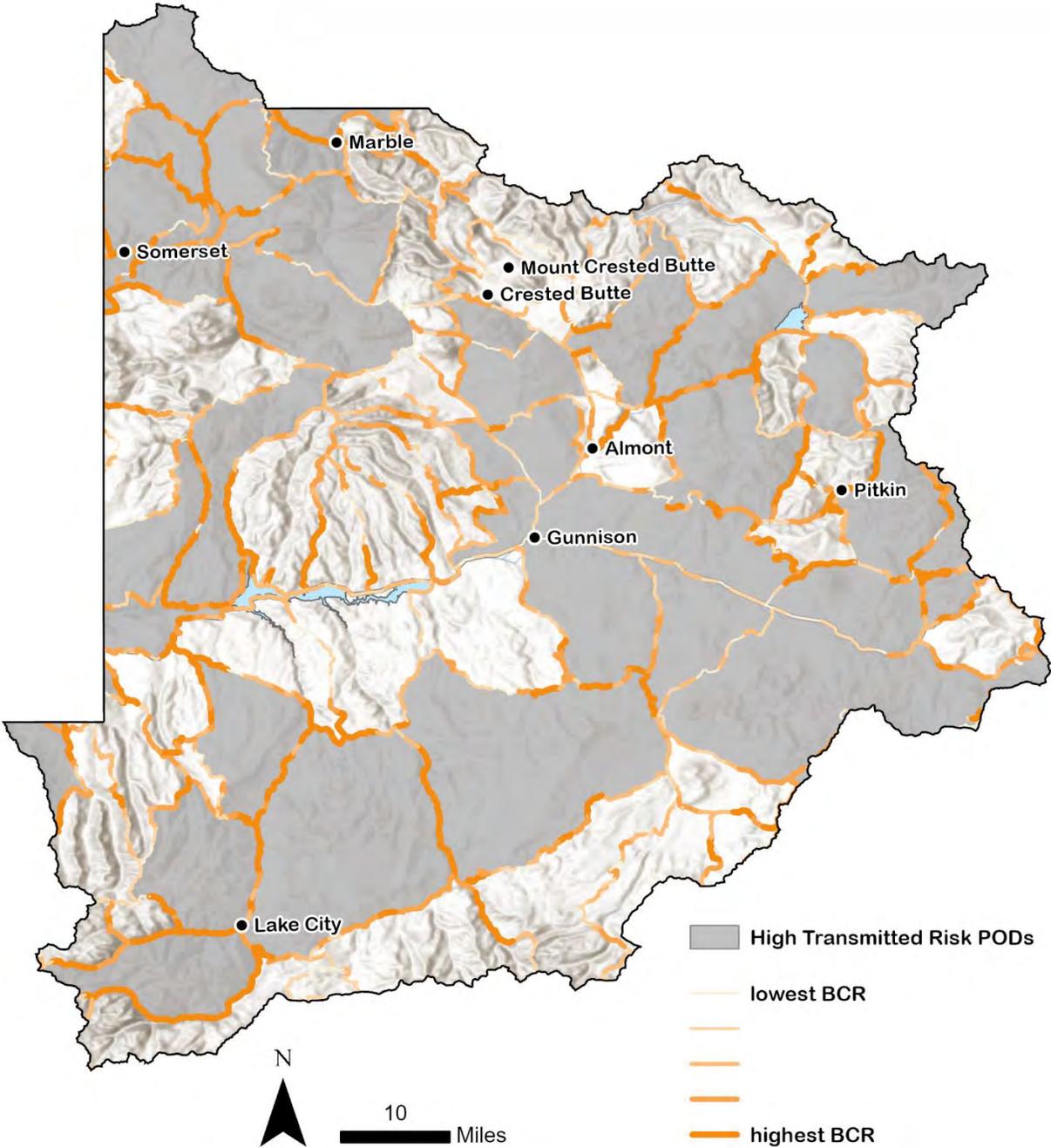
In order to assess the effectiveness of vegetation management along POD boundary lines, wildfire simulations were used to calculate the baseline SDI. Mechanical thinning simulations were used to modify fuels along the POD boundary lines, and SDI was calculated again. The difference between the baseline SDI and mechanical thinning SDI represents the potential of thinning to reduce SDI, making it easier and safer to fight fire directly. Mechanical thinning costs were adjusted according to feedback from local fire and fuel managers to calculate the improvement in SDI. Figure 31 shows the POD lines with the greatest potential for SDI reduction.

The thinner, light orange lines represent a lower benefit-cost ratio (BCR). A lower BCR indicates that treating along that POD line is less cost-effective, and other POD boundary lines should be prioritized. Reasons for a low BCR include low initial suppression difficulty, minimal impacts from thinning, and high treatment costs. Higher BCR POD lines, represented by thicker orange lines, indicate that thinning could be more effective relative to the costs. Treating the thicker orange POD boundaries would yield the greatest reduction in SDI per dollar spent.

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<sup>17</sup> USFS. 2020. "Modelling suppression difficulty: Current and future applications."  
<https://research.fs.usda.gov/treesearch/60002>.

Figure 31: Benefit-Cost Ratio of POD Boundary Treatments



*This benefit-cost ratio (BCR) is calculated as reducing the suppression difficulty index per dollar spent for a mechanical thinning scenario. It is depicted in the orange ramp, with the darkest orange for the highest BCR treatments and the light orange for the lowest BCR treatments. Source: CFRI*

The POD boundary and interior POD treatment analyses should be used as decision-support tools that guide prioritization efforts. These results are most powerful when paired with local knowledge of fire behavior, fire spread direction, ignition density, political and public support, and on-the-ground conditions. The upcoming Action Plan section discusses specific priority locations for vegetation management.

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## Section 6

# Action Plan

Risk reduction projects and wildfire action planning are the heart of the CWPP. Wildfire action planning prepares strategies, resources, and procedures to prevent, respond to, and recover from wildfires. It involves analyzing wildfire risks, determining vulnerabilities, and outlining specific actions and projects to reduce wildfire risk and impacts on people, property, infrastructure, and ecosystems.

The vegetation management projects and wildfire mitigation actions discussed below were identified and refined during several Leads Team meetings, UGSSC meetings, and discussions with local fire experts. Using the wildfire risk assessment map and the tools created during the Decision Support process, the Leads Team created specific and implementable actions. These actions will help meet the goals and objectives of the CWPP and allow the residents and visitors in Gunnison County to live better with wildfire.

These actions require people and funding to get them done. Given staffing levels and funding, the UGSSC stakeholders, the Roaring Fork Valley Wildfire Collaborative (RFVWC), and their agencies and organizations will do their best to complete these actions. Citizens are also key players. Their efforts to prevent and prepare for wildfires, harden homes, and create defensible space are integral to this effort.

### Vegetation Management and Fuel Reduction

Vegetation management and fuel reduction is the process of modifying, removing, or maintaining hazardous naturally-occurring fuel sources such as trees, shrubs, and grasses to reduce wildfire risk. Vegetation management can minimize the risk by breaking up fuel continuity to slow fire spread, reducing fuel loads so fires are less intense, and improving firefighter access. Table 10 shows some of the common techniques used for vegetation management.

**Table 10: Common Vegetation Management Techniques**

Method	Description
<b>Chipping/Mulching</b>	Turning cut vegetation into mulch to reduce fire spread.
<b>Herbicides</b>	Targeted chemical applications to control invasive or fast-spreading vegetation.
<b>Mowing / Grazing</b>	Reducing grasses with machines or livestock.
<b>Prescribed Fire</b>	Fire professionals set controlled fires to reduce fuel loads safely.
<b>Pruning</b>	Cutting lower branches to prevent fire from climbing.
<b>Thinning</b>	Selectively removing trees or shrubs to reduce density.

Identifying vegetation management projects for the CWPP took place over several months and included numerous meetings with the Leads Team, UGGSC, and various fire management professionals. Initially, planned vegetation management projects from multiple entities (USFS, BLM, CSFS, WRWC) were gathered. These projects gave the

Leads Team a better understanding of where and what types of treatments would likely happen in the planning area.

The vegetation management and fuel reduction projects were put into three categories to better understand them, separate the planned projects, and prioritize focus areas. The first is Short-Term Planned Projects that will likely occur in the next 1-2 years. The second category is Mid-Term Planned Projects, likely occurring in the next 3-5 years. The final category is Long-Term Projects that will happen in the next 6-10 years or are identified as prioritized project locations. All identified vegetation management projects broken out by category are provided below, along with a description of the project and its location on a map. Online and interactive versions of all the Short-Term, Mid-Term, and Long-Term project maps can be found [here](#). Appendix B: Vegetation Management History discusses completed historical vegetation management and fuel reduction projects.

### ***Short-Term Planned Projects (1-2 Years)***

These projects are likely to be implemented and completed within the next one to two years. Some are already underway, while others are finishing the planning process or awaiting funding. Information about these projects was gathered from the USFS, BLM, WRWC, and CSFS. Figure 32 shows where these projects are planned to be located.

#### Bertha Gulch

Located six miles southeast of the Taylor Park Reservoir, this USFS project is expected to be completed in 2025/2026. Approximately 62 acres will be treated with thinning, prescribed fire, and timber sales. This is a cross-boundary project on both federal and private land coordinated with CSFS and the National Forest Foundation. A site visit invitation and request for a proposal will be going out in May or June of 2025.

#### EZ Hazard Tree

Located eight miles northeast of Almont, this USFS project is expected to be completed in 2025. Approximately 508 acres will be treated with hand thinning and pile burning. This is a POD boundary hardening project along County Road 742 and Spring Creek Road.

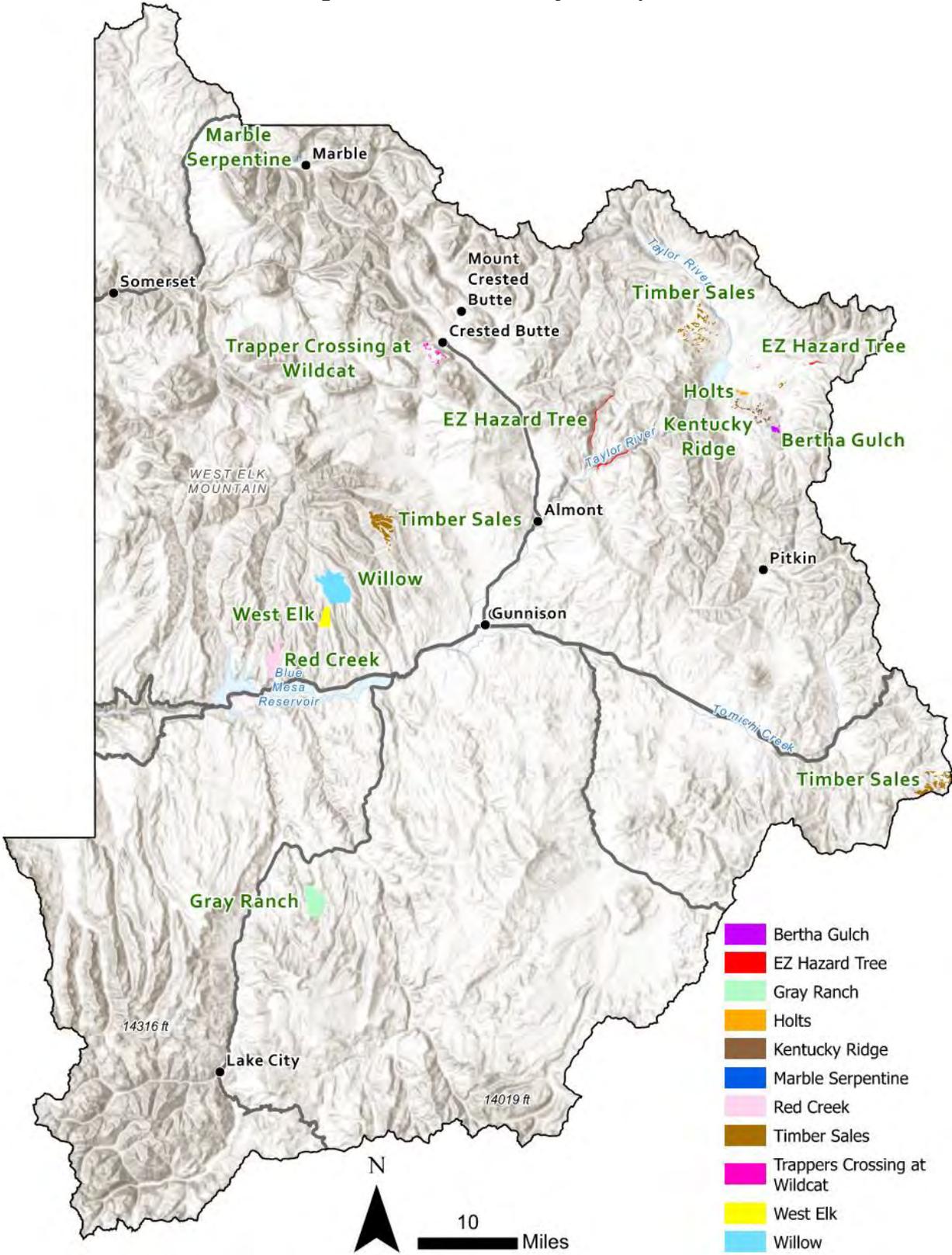
#### Gray Ranch

Located 19 miles northeast of Lake City, this CSFS project is expected to be completed in 2025 and is situated in the North Powderhorn Project Area. Approximately 46 acres of mixed-conifer will be treated with hand thinning and pile burning. All aspen and ponderosa pine will be left uncut. Planning is complete and contracting is underway.

#### Holts

Located one mile southeast of the Taylor Park Reservoir, this USFS project is expected to be completed in 2025/2026. Approximately 100 acres will be treated with hand thinning and pile burning. Land surveys still need to be completed for the National Environmental Policy Act (NEPA) process. The USFS is awaiting funding, with possible site visits and a request for a proposal occurring in the summer of 2025.

Figure 32: Short-Term Projects Map



### Kentucky Ridge

Located three miles southeast of the Taylor Park Reservoir, this CSFS and USFS project is expected to be completed in 2025. Approximately 442 acres will be treated through mechanical timber harvest. No other planning is left for the project.

### Marble Serpentine

Located directly north of the Town of Marble, this Carbondale & Rural Fire Protection District project is expected to be completed in 2025. Approximately 26 acres will be treated through mechanical thinning. Work will begin once contracting a company is completed.

### Red Creek

Located one mile north of Blue Mesa Reservoir, this BLM project is expected to be completed in 2025. Approximately 150 acres of cheatgrass will be treated with a herbicide application. This project will be part of a larger 1,560-acre cheatgrass treatment project. Planning is complete, and BLM is working on contracting.

### Timber Sales

Timber sales refer to the process by which the USFS sells trees from national forests to private companies or individuals for logging. These sales are part of the agency's forest management programs, which aim to balance environmental health, economic benefits, and public use of national forests. Timber sales can be a beneficial and cost-effective way of reducing wildfire risk by thinning overgrown areas, removing dead or diseased trees, creating fire breaks, and reducing ladder fuels.

The locations identified as Timber Sales from the USFS are where sales will likely take place in the short term. However, it is possible that they could be implemented as mid-term or long-term projects. When sales are awarded to Purchasers, they may choose to execute immediately or wait for any given amount of time within the contract period as long as they finish by the termination date.

### Trappers Crossing at Wildcat

In 2012, the WRWC started several vegetation management projects in the community of Trappers Crossing, located one mile southwest of Crested Butte. Trappers Crossing is at extreme wildfire risk. These projects included working with private landowners and the homeowner's association to create defensible space, reduce fuels, and thinning along roadsides to improve ingress and egress. Work has been ongoing and is slated to finish in 2026 or 2027. Below is a table with the project's size and target completion date.

**Table 11: Trappers Crossing at Wildcat Projects**

Project	Number of Parcels	Number of Acres	Status / Target Date
Defensible Space R1	6	37.4	Complete
Roadside R1 – Marmot	2	5.7	Complete
Roadside R1 – Providence Ridge	5	16.8	Summer 2025
Roadside R2	13	46.0	Summer 2025
Defensible Space R2	12	112	Paused, Pending Funding

Source: WRWC

### West Elk

Located seven miles north of Blue Mesa Reservoir, this USFS project is expected to be completed in 2025. Approximately 685 acres will be treated using thinning and prescribed fire. No other planning or funding is needed. The USFS is waiting for the right conditions to perform the prescribed burn.

### Willow

Located ten miles north of Blue Mesa Reservoir, this USFS project is expected to be completed in 2025. Approximately 1,000 acres will be treated using thinning and prescribed fire. No other planning or funding is needed. The USFS is waiting for the right conditions to perform the prescribed burn.

### ***Mid-Term Planned Projects (3-5 Years)***

These are currently planned projects that are not likely to be implemented for another three to five years. Most still have significant steps to complete in the planning process, such as land surveys and the NEPA process. Information about these projects was gathered from the USFS, BLM, and CSFS. Figure 33 shows where these projects are planned to be located. Additional projects may be added to this list as opportunities become available. For example, the WRWC will likely identify additional projects with private landowners, but specific locations have not been determined yet.

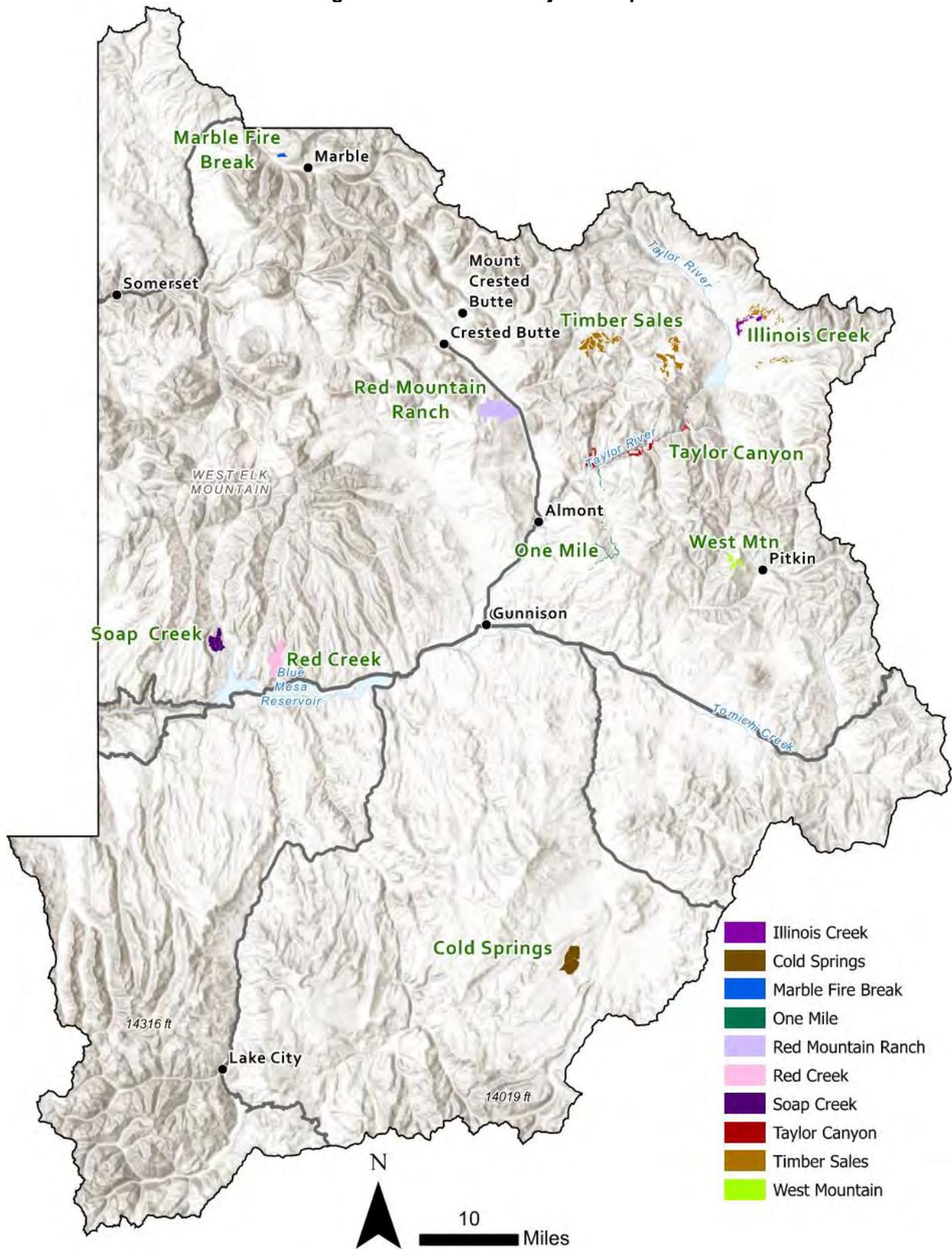
### Cold Springs

Located ten miles southwest of Highway 115 in Saguache County, this USFS project is expected to be completed between 2028 and 2030. Approximately 1,500 acres will be treated using thinning and prescribed fire. The NEPA process has been completed, but the USFS is waiting on the State Historic Preservation Office's concurrence. Funding also needs to be secured for this project.

### Illinois Creek

CSFS is currently applying for grant funding. Located three miles north of the Taylor Park Reservoir, USFS and private landowners will lead this cross-boundary treatment. Approximately 600 acres will be treated through clearcutting, patch cutting, thinning, and surface fuel management in lodgepole pine dominant stands. This work will be ongoing through the next five-plus years.

Figure 33: Mid-Term Projects Map



Marble Fire Break

Located two miles northwest of the Town of Marble, this USFS project does not have a specific timeline but will likely be completed in three to five years. Approximately 115 acres will be treated using thinning and prescribed fire. Several planning steps and funding still need to be completed for this project.

One Mile

Located six miles east of Almont, this USFS project is expected to be completed in 2028. Approximately 314 acres will be treated with hand thinning and pile burning. This project will help to harden an existing POD boundary. Land surveys still need to be completed for the NEPA process.

Red Creek

Located one mile north of the Blue Mesa Reservoir, this BLM project will treat 1,560 acres of cheatgrass with a herbicide application. One hundred twenty-five acres will be treated in 2025, but it is unknown when the rest will be treated. The timeline will depend on funding.

Red Mountain Ranch

Located between Almont and Crested Butte along Highway 135, this CSFS project is expected to be completed in 2029. Approximately 2,458 acres will be treated with thinning and surface fuel management on ingress/egress routes, creating defensible space, and establishing fuel breaks using patch cutting, group cutting, and shaded fuel breaks. Red Mountain Ranch will also be managing affected stands for mountain pine beetle. Trees are currently being marked on a portion of the property, and projects will continue to be developed and implemented.

Soap Creek

Located four miles north of the Blue Mesa Reservoir, this USFS project is expected to be completed in 2028-2030. Approximately 4,000 acres will be treated using thinning and prescribed fire. The NEPA process has been completed, and the USFS is awaiting funding and conditions.

Taylor Canyon

Located along County Road 742 in Taylor Canyon, this USFS project is expected to be completed in 2028. Approximately 733 acres will be treated with hand thinning and pile burning. This project will help to harden an existing POD boundary. This project is currently under contract.

Timber Sales

The locations identified as Timber Sales from the USFS are where sales are likely to occur in the mid-term. However, it is possible that they could be implemented as short-term or long-term projects. When sales are awarded to Purchasers, they may choose to execute immediately or wait for any given amount of time within the contract period as long as they finish by the termination date.

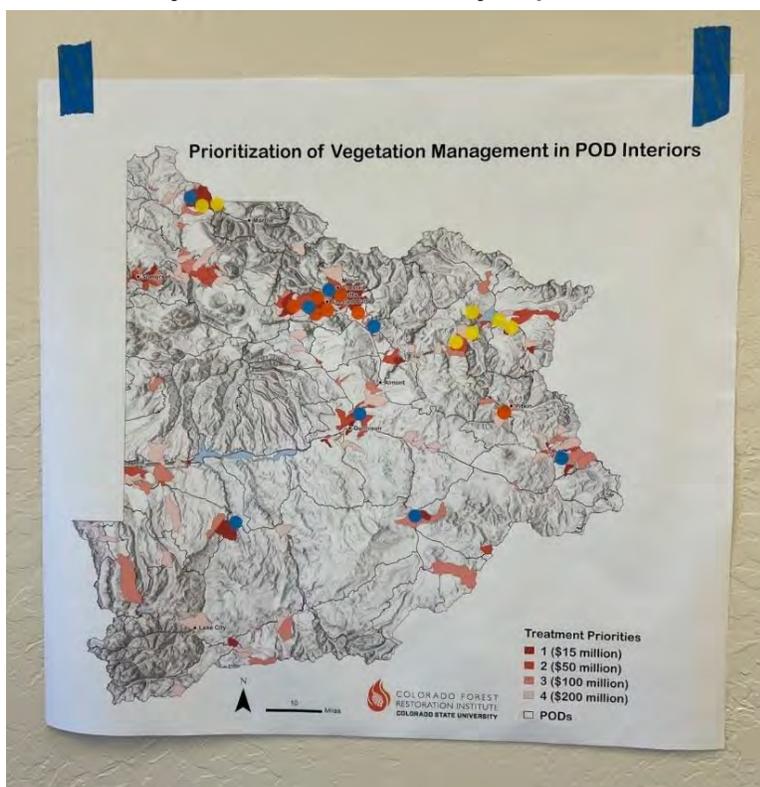
West Mountain

This USFS project is expected to be completed in 2027. Approximately 300 acres will be treated with hand thinning and pile burning. This project will connect with work previously done on private land in the Quartz Creek area. The project is currently waiting on funding.

**Long-Term Projects (6-10 Years)**

These projects will likely take longer to be implemented and have not started the planning process. Because of this, specific types and methods of treatments have yet to be identified. The RADS process helped to identify and prioritize long-term vegetation management projects. During a UGSSC meeting, a project identification exercise was used to gain input from stakeholders. The exercise entailed using maps created during the RADS process to show where vegetation management could have the greatest return

**Project Prioritization Activity Map**

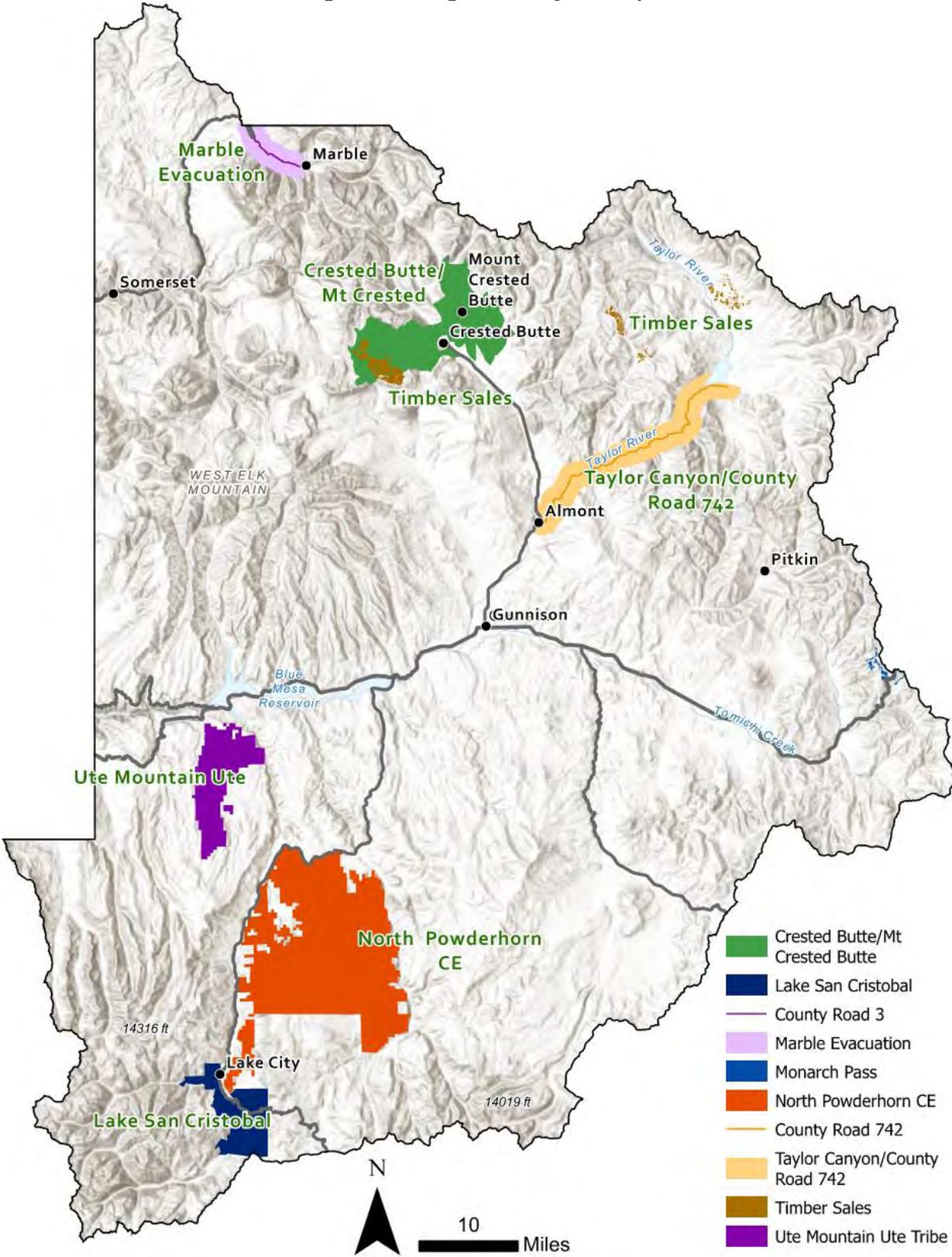


on investment. Leads Team and UGSSC members were then given dots to vote on the locations where they would like to see future vegetation management and fuel reduction projects. The Leads Team prioritized locations for future long-term projects based on areas that received the most votes. While many locations received votes, the Leads Team felt that only identifying the areas with the most votes would help to focus efforts. Identifying too many project locations early on would not be helpful due to limited budgets and staffing constraints. As outlined later in the implementation discussion, the UGSSC will meet regularly to plan additional vegetation management projects using the

tools developed during the RADS process.

Figure 34 shows where these projects could be located. The provided locations are approximate, and the actual project may be outside the boundaries or in smaller specific areas within these locations. Additional projects will likely be added to this list over time. The UGSSC and RFVWC will work together to plan additional vegetation management projects primarily using the outcomes from the RADS process. Also included in the Long-Term Projects are long-term USFS projects, a CSFS project, and a BLM project.

Figure 34: Long-Term Projects Map



### Crested Butte/Mt Crested Butte

The areas surrounding Crested Butte and Mt Crested Butte were identified as high wildfire risk areas with expected adverse impacts overall to HVRAs. These areas also have a high return on investment for vegetation management activities (Figure 29). For those reasons, the Leads Team and UGSSC members identified these areas to focus on for future vegetation management. The USFS will lead most projects because they own much of the land. However, there are also private landowners and BLM land, so cross-boundary partnership is key. Treatments likely include thinning, pile burning, and evacuation route hardening. Ideally, projects would tie into other completed and planned vegetation management projects in the area.

### EZ Hazard Tree - Expansion

This USFS project is expected to expand on the planned EZ Hazard Tree project. Additional roadside units will be added in the Taylor Park area. The exact locations are unknown, but treatments will likely include hand thinning and pile burning.

### Lake San Cristobal

Located west and south of Lake City and north, east, and south of Lake San Cristobal, this BLM project is expected to occur over the next 15 years. The BLM will target approximately 6,000 acres for treatment in the identified project area and will not exceed 2,000 acres of treatments per year. Treatments likely include prescribed fire, mechanized treatments, and mechanized hand treatments. Internal planning is still needed to determine specific locations. Timber cruising, archeological surveys, raptor surveys, and other site-specific surveys are still required.

### Marble Evacuation

The Town of Marble and the evacuation routes leading out of the community were identified as a significant concern for many Leads Team members and UGSSC members. The community has only one way in and one way out. Vegetation along the route (County Road 3) is very dense in some areas, with trees growing up to the roadway. County Road 3 is a POD boundary line identified in the RADS process as having a high treatment-benefit-cost ratio. Possible vegetation management types include POD boundary hardening, thinning, and pile burning. Much of the land along the road is privately owned, so the county, RFVWC, and Carbondale Fire must work with private landowners for any large project. The RFVWC, Carbondale Fire, and USFS have already completed some vegetation management projects in the area, and any future work should be tied to those projects.

### Monarch Pass

Located north of U.S. Highway 50 near the Chaffee County border, this USFS project does not have an expected completion date but is not anticipated to occur in the next five years. Approximately 451 acres will be treated with thinning, clearcut, salvage, and fuel treatments. NEPA has been completed for this project, but funding has not been acquired.

North Powderhorn CE

Located northeast of Lake City, this BLM and CSFS project includes vegetation management in the North Powderhorn project area. Additional treatments in the area require archeological surveys, timber cruising, raptor surveys, and other site-specific surveys to determine the geographic extent of the treatments and treatment types. A forest management plan is currently being developed.

Taylor Canyon/County Road 742

County Road 742 in Taylor Canyon and the surrounding area was the third identified location where the Leads Team and UGSSC wanted to prioritize future treatments. County Road 742 was identified as having high expected negative impacts from wildfire and was also recognized as having a high vegetation management treatment return on investment. The USFS will lead most projects because they own much of the land. The Leads Team would like to connect any future projects to the area's historical or planned vegetation management projects. Vegetation management types will likely include thinning, pile burning, POD boundary hardening, and prescribed fire.

Timber Sales

The locations identified as Timber Sales from the USFS are where sales will likely take place in the long term. However, it is possible that they could be implemented as short-term or mid-term projects. When sales are awarded to Purchasers, they may choose to execute immediately or wait for any given amount of time within the contract period as long as they finish by the termination date.

Ute Mountain Ute Tribe

Located four miles south of the Blue Mesa Reservoir, this CSFS and Ute Mountain Ute Tribal project is expected to be completed over the next 10 years. Approximately 4,000 acres will address tribal management objectives, including concerns about fuels and wildfires. A forest management plan has been developed for this area.

***Vegetation Management Projects Summary***

Table 12 summarizes the short-term, mid-term, and long-term vegetation management projects described above.

**Table 12: Vegetation Management Projects Summary**

<b>Project Name</b>	<b>Short, Mid, Long Term</b>	<b>Implementation Leader</b>
<b>Bertha Gulch</b>	Short-Term	USFS
<b>EZ Hazard Tree</b>	Short-Term	USFS
<b>Gray Ranch</b>	Short-Term	CSFS
<b>Holts</b>	Short-Term	USFS
<b>Kentucky Ridge</b>	Short-Term	CSFS, USFS
<b>Marble Serpentine</b>	Short-Term	Carbondale & Rural Fire Protection District
<b>Red Creek</b>	Short-Term	BLM
<b>Timber Sales</b>	Short-Term	USFS
<b>Trapper Crossing at Wildcat</b>	Short-Term	WRWC

Project Name	Short, Mid, Long Term	Implementation Leader
West Elk	Short-Term	USFS
Willow	Short-Term	USFS
Cold Springs	Mid-Term	USFS
Illinois Creek	Mid-Term	CSFS
Marble Fire Break	Mid-Term	USFS
One Mile	Mid-Term	USFS
Red Creek	Mid-Term	BLM
Red Mountain Ranch	Mid-Term	CSFS
Soap Creek	Mid-Term	USFS
Taylor Canyon	Mid-Term	USFS
Timber Sales	Mid-Term	USFS
Crested Butte/Mt Crested Butte	Long-Term	USFS
EZ Hazard Tree - Expansion	Long-Term	USFS
Lake San Cristobal	Long-Term	BLM
Marble Evacuation	Long-Term	RFVWC, Carbondale & Rural Fire Protection District
Monarch Pass	Long-Term	USFS
North Powderhorn CE	Long-Term	BLM, CSFS
Taylor Canyon/County Road 742	Long-Term	USFS
Timber Sales	Long-Term	USFS
Ute Mountain Ute Tribe	Long-Term	CSFS, Ute Mountain Ute Tribe

**CWPP Action Plan**

The Gunnison CWPP's overarching goals and objectives can be translated into wildfire mitigation actions. The goals and objectives set a broad framework for the desires and outcomes Gunnison County and the stakeholders wish to achieve. The actions listed below provide more details and directions for achieving these goals and objectives. They represent plans of action to help reduce the risks and impacts of wildfire on people, infrastructure, buildings, and the natural environment.

The identified action items were created through a collaborative process with the Leads Team, RFVWC, and UGSSC members discussing the wildfire needs in the planning area. Members were allowed to identify and discuss various actions over several meetings. The following lists the identified action items related to each goal and objective to enable people to live better with wildfire.

While many of these actions will be easily implemented, some depend entirely on funding, staff availability, and local buy-in. These hurdles may impact the time it takes to execute actions or determine if they can be implemented at all. As discussed later, these action items will be reviewed regularly and updated as needed.

### Goal 1: Fire-Resistant Landscapes

Develop and maintain landscapes across the county that are resilient to wildfire, mitigate undesirable fire outcomes, and protect highly valued resources and assets.

- Objective 1A: **Leverage tools from the CWPP process**, including RADS and PODs, to prioritize vegetation management and wildfire mitigation actions.
  - Action 1A.1: Plan and implement additional vegetation management and wildfire mitigation actions using primarily outcomes from the RADS process. Additional vegetation management and wildfire mitigation actions will be planned during the UGSSC meetings.
- Objective 1B: **Enhance safety and protect highly valued resources and assets** by implementing practical, effective strategies such as site hardening, creating defensible space, and vegetation management.
  - Action 1B.1: Implement the identified short-term planned vegetation management projects. Information about these projects can be found under Short-Term Planned Projects above and is listed in Figure 32.
  - Action 1B.2: Implement the identified mid-term planned vegetation management projects. Information about these projects can be found under Mid-Term Planned Projects, which is listed in Figure 33.
  - Action 1B.3: Implement the identified long-term vegetation management projects. Information about these projects can be found under Long-Term Projects above and is listed in Figure 34.
  - Action 1B.4: Identify locations where cheatgrass treatments are needed in the county. Work with landowners to treat and remove cheatgrass in the identified locations. Several proposed locations have been identified. However, treatment depends on grant money. Future locations may include but are not limited to:
    - Woods Gulch
    - Gold Basin
    - Red Creek
  - Action 1B.5: Protect critical functions in key buildings by providing backup power sources.
- Objective 1C: **Foster collaboration among stakeholders**, including governments, fire protection districts, land management agencies, non-profits, and residents, to achieve effective cross-boundary project outcomes.

- Action 1C.1: Schedule and facilitate UGSSC meetings where stakeholders can collaborate and plan cross-boundary vegetation management projects using outcomes from the RADS process. The WRWC will lead this action.
  - Action 1C.2: Secure funding and hire an individual to implement wildfire mitigation actions, possibly in partnership with the WRWC. This individual will also assist Gunnison County Community Development with WUI Code implementation.
  - Action 1C.3: Work with neighboring private landowners and homeowners associations when planning vegetation management projects to expand the treated areas.
  - Action 1C.4: Create a Gunnison County Forest Fund to help collect funds from various sources to support vegetation management projects and other wildfire mitigation actions. Partner with a non-profit to take in donations, grants, funds from local taxes under an agreement, and other funds.
  - Action 1C.5: Work with county officials on having a voter-approved county levy where tax funds could go into the Gunnison County Forest Fund to help fund identified projects.
- Objective 1D: **Enhance watershed health** by exploring new and supporting existing watershed protection opportunities. A wildfire risk assessment for the Upper Gunnison Watershed can be found [here](#).
    - Action 1D.1: Create or improve wet meadows and other landscapes that burn less intensely and can act as fire breaks. Work with the UGRWCD and other partners on locations that will help reduce fire risk and meet other resource objectives. Future locations include:
      - Red Creek, off Highway 50 by the Blue Mesa Reservoir
      - East Flat Top Mountain
      - Lost Canyon Area, off County Road 743
      - Antelope Creek Drainage Area

#### Wet Meadows Projects

Since 2012, the UGRWCD with the support of partners has installed 2,600 Zeedyk and low-tech process-based restoration structures on 49 miles of streams. This work has restored an estimated 121 acres of riparian habitat in the Upper Gunnison Basin. UGRWCD will keep building structures in these areas in the future.

- Action 1D.2: Implement projects as identified in supporting watershed-related plans such as:
  - Upper Gunnison Watershed Management Plan
  - Upper Gunnison Drought Contingency Plan
  - Town of Crested Butte Wildfire Ready Action Plan
  - Western Colorado Conservation Center Wildfire Ready Action Plan
  - Roaring Fork Watershed Wildfire Ready Action Plan

## Goal 2: Fire-Adapted Communities

Empower the county and its residents to “live with wildfire,” including being prepared to withstand, respond to, and recover from wildfires.

- Objective 2A: **Engage the community** to increase public awareness of wildfire risks and benefits, improve personal preparedness, and reduce human ignitions.
  - Action 2A.1: Coordinate education and outreach across all the partners (WRWC, Gunnison County, USFS, BLM, RFVWC, CSFS, and local fire protection districts) for county-wide wildfire education. Messaging can be coordinated at the UGSSC meetings.
  - Action 2A.2: Identify locations with elevated wildfire risk and/or elevated risk of ignitions. Target these areas with strategic messaging to promote preparedness, home hardening, defensible space, and reducing human ignitions. Initial locations include the Marble, Gunnison, Mount Crested Butte, and Crested Butte areas. Also, target popular recreation sites and campgrounds.
  - Action 2A.3: Promote the CWPP StoryMap. The StoryMap can be found [here](#).
- Objective 2B: **Provide resources and education** on best practices, including home hardening, defensible space, preparedness, and emergency notification.
  - Action 2B.1: Share information about Gunnison County’s Wildland Urban Interface code.
  - Action 2B.2: Encourage residents to sign up for a site visit from the West Region Wildfire Council or Roaring Fork Valley Wildfire Collaborative.
  - Action 2B.3: Share information and encourage homeowners to participate in the West Region Wildfire Council’s Wildfire Ready Home Program.
  - Action 2B.4: Implement a community chipping program. Meet with the City of Gunnison on the possibility of using the city’s tree dump as the chipping location.

### Example Chipping Program – Chaffee Chips

Created by Chaffee County, Chaffee Chips empowers community members to create defensible space by coordinating neighborhood slash and removal and chipping services. More information can be found [here](#).

- Objective 2C: **Build public support** for vegetation management and wildfire mitigation efforts.
  - Action 2C.1: Provide information on the importance of vegetation management via pre- and post-treatment photos, how treatments affect wildfires, and other outreach materials. Coordinate outreach between Gunnison County, WRWC, USFS, BLM, RFVWC, CSFS, local fire protection districts, and other stakeholders.
  - Action 2C.2: Promote and assist with developing community or neighborhood-specific CWPPs in high wildfire-risk areas.
- Objective 2D: **Engage socially vulnerable populations** to gain insight into their unique challenges and opportunities to mitigate wildfire risks.
  - Action 2D.1: Engage with Immigrantes Unidos, the Cora Community, local schools, Aspen Valley Land Trust, Six Points Evaluation and Training Inc., and other vulnerable population groups or organizations that work with these population groups to gain insights and share wildfire-related information.

### Goal 3: Safe and Effective Wildfire Response

Enable safe and efficient wildfire response through improved planning, coordination, and education.

- Objective 3A: **Assess current capabilities** and identify opportunities to address gaps to enhance wildfire response.
  - Action 3A.1: Work with local and county community development departments, Gunnison Valley Housing Authority, and other local organizations to promote innovative housing solutions to increase the number of qualified firefighters living in the county.
  - Action 3A.2: Improve cell coverage across the county to make it easier for citizens to report emergencies and to reach people for emergency messaging.
  - Action 3A.3: Increase water supplies and storage for wildfire response by enhancing existing infrastructure, creating redundancies, and increasing

water storage capacity and location. Identify locations in the county that most need water supply or storage improvements.

- Action 3A.4: Explore the possibility of updating county land use codes to require that new developments have multiple ingress and egress points.
- Objective 3B: **Strengthen collaboration among key stakeholders**, including governments, fire protection districts, non-profit collaboratives, and response agencies, to improve pre-planning, coordination, and incident management.
  - Action 3B.1: Create a list of available resources (equipment, radios, etc.) between Gunnison County, local fire protection districts, DFPC, USFS, WRWC, RFVWC, BLM, and CSFS that can be shared between agencies.
  - Action 3B.2: Collaborate between agencies to help sponsor Incident Qualification Cards (Red Cards).
  - Action 3B.3: Create an Evacuation Plan for Gunnison County or within specific county areas.
  - Action 3B.4: Promote and help create Continuity of Operations Plans for communities and organizations.
- Objective 3C: **Educate residents and stakeholders** on appropriate actions to take before, during, and after wildfire.
  - Action 3C.1: Coordinate education and outreach between Gunnison County Emergency Management, USFS, BLM, RFVWC, CSFS, and local fire protection districts on actions to take before, during, and after wildfires.
  - Action 3C.2: Increase outreach and education to short-term rentals and second homeowners on appropriate actions to take before, during, and after wildfire.
  - Action 3C.3: Encourage residents to sign up for [Gunnison Regional Alerts](#). Educate residents on the importance of following emergency instructions and the limitations of the emergency notifications.

The actions listed in this section of the CWPP are not all-inclusive. Conditions, funding, and opportunities change over time, and it is critical to update this CWPP. Gunnison County and the UGSSC will add appropriate new actions to meet changing needs and opportunities and make this a living CWPP.

## **Project Funding**

Grant funding is often necessary for vegetation management and other projects and can facilitate fuel reduction on private and public lands. Due to an ever-changing political and funding landscape, specific grant programs will not be discussed in this plan. On a federal level, wildfire grants have historically come from three primary sources: the USFS, BLM, and FEMA. On the state level, grants will likely come from the CSFS, Colorado Division of Fire Prevention & Control, Colorado Department of Natural Resources, and Colorado Water Conservation Board. It is recommended that the UGSSC regularly check with these federal and state agencies on available grant funds. The Colorado Department of Local Affairs has also compiled a [Local Community Funding Guide](#) to help navigate various state and federal funding types. The [Wildfire Risk to Communities](#) also has combined funding information, as does the [Colorado Watershed Assembly](#).

While grants can be helpful in funding wildfire projects, they are not the only option. Other resources include local funding options (local budgets, capital improvement programs, fees, etc.), public-private partnerships, donations, private foundations, and non-profit organizations. Funding projects and actions will likely require innovative solutions from various sources.

## **Implementation and Updates**

The vegetation management and wildfire mitigation actions detailed in this plan have the potential to significantly lower wildfire risk, but only through proper implementation. Turning strategy into action is essential for realizing the goals of the Gunnison County CWPP. Successful execution of these initiatives will depend on strong collaboration among state and federal agencies, Gunnison County, fire protection districts, local communities, organizations, and private landowners.

A critical component of the implementation process includes identifying a team that will move the plan forward, help implement the mitigation recommendations, and continue planning additional wildfire mitigation actions. The UGSSC has been identified as the entity that will take over and lead the implementation and update process. The UGSSC is already made up of all the key stakeholders needed to sustain the CWPP momentum. Led by the WRWC, the UGSSC will meet every other month to discuss planned vegetation management projects, provide updates on wildfire mitigation actions, and prepare for future wildfire projects and actions. The UGSSC will continue to utilize the tools developed during the RADS process to help make informed decisions on wildfire risk reduction.

The Gunnison County CWPP is a crucial resource for understanding wildfire risks and hazards, offering practical steps to help minimize potential wildfire impacts. To remain effective, the CWPP must be regularly reviewed and updated to reflect evolving conditions and community priorities. A comprehensive CWPP update should occur every five to ten years to ensure the wildfire risk assessment remains current. Gunnison County Emergency Management will lead all updates of the Gunnison County CWPP.