Rio Blanco County

Community Wildfire Protection Plan 2024

Prepared By: JEO CONSULTING GROUP



CWPP Certification

The Rio County Community Wildfire Protection Plan (CWPP) 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, federal agencies, state agencies communities and other organizations invited to participate.
- This plan identifies and prioritizes areas for vegetation-fuels 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.
- This plan provides recommendations on ways to improve wildfire response capabilities for the fire protection districts.

The following entities mutually agree with the contents of the Rio Blanco County CWPP:

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List of Acronyms

BLM – Bureau of Land Management
BTU – British Thermal Unit
CSFS – Colorado State Forest Service
CWPP – Community Wildfire Protection Plan
DFPC – Colorado Division of Fire Prevention and Control
EFF – State Emergency Fire Fund
FEMA – Federal Emergency Management Agency
FPD – Fire Protection District
GIS – Geographical Information System
HFRA – Healthy Forests Restoration
HMP – Hazard Mitigation Plan
ISO – Insurance Services Office
MAMA – Mountain Area Mutual Aid Plan
NCFU – Northwest Colorado Fire Unit
NEPA – National Environmental Policy Act
PODs – Potential Operational Delineations
UCRIFMU – Upper Colorado River Interagency Fire Management Unit
USFS – U.S. Forest Service
VCC – Vegetation Condition Class
WUI – Wildland-Urban Interface

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Introduction

The Purpose

The Rio Blanco County Community Wildfire Protection Plan (CWPP) is a strategic plan that identifies specific wildland fire risks facing Rio Blanco County, the communities, and fire districts in the county. It also provides prioritized mitigation projects and activities designed to reduce those risks. The need for a CWPP is crucial as families and businesses continue to develop into unincorporated areas of the county. Homes and infrastructure are being built in close proximity to wildland vegetation-fuels and terrain that could be conducive to catastrophic wildfire. Rio Blanco has experienced large wildfire events, many of which have occurred in the past 10 years. While damages have been relatively small, recent fires across the state and the United States have shown how devasting and damaging they can be.

The development of CWPPs is authorized and defined in Title I of the Healthy Forests Restoration Act (HFRA) passed by Congress on November 21, 2003, and signed into law by President George W. Bush on December 3, 2003. CWPPs are designed to empower the county to take advantage of wildland fire and hazardous fuel management opportunities through collaborative planning with the Bureau of Land Management (BLM), U.S. Forest Service (USFS), and Colorado Division of Fire Prevention and Control (DFPC) to reduce the risks of wildfire. On July 1, 2012, the DFPC assumed the responsibilities for wildland fire prevention and protection as provided by House Bill 12-1283. Prior to July 1, 2012, it was the obligation of the Colorado State Forest Service (CSFS) to provide wildland fire prevention and protection.

The CWPP brings together diverse local interests to discuss their mutual concerns for public safety, community sustainability, and natural resources. The plan provides prioritized access to state and federal grant funding to support identified vegetation-fuel management projects and other mitigation activities to reduce the risks of wildfire throughout the county. The HFRA places renewed emphasis on community planning by extending a variety of benefits to counties, fire districts, and communities with a wildfire protection plan in place. Critical among these benefits are the opportunity for jurisdictions to establish a localized definition and boundary for the wildland-urban Interface (WUI) and to identify or shape fuels treatment priorities on surrounding federal and non-federal lands in Rio Blanco County.

The implementation of effective wildfire mitigation is a dynamic process. The characteristics of forests and interface 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.

The Need

Wildfire is a naturally occurring and important component of the many vegetation types that dominate much of Rio Blanco County. Some of these vegetation types are “fire-dependent” ecosystems that have evolved over thousands of years to be resilient to wildfire occurrence. Many plant species located within the county are dependent on wildfire to maintain stand health and trigger reproduction. Although fires naturally occur and are important for ecosystem function, they present considerable risks to human welfare and economic values.

Since the early 20th century rangeland and forest management practices across the western United States were designed around a simple protocol, “Prevent Wildfires.” While originally

intended to protect human settlement, forest and rangeland resources, the practice of fire suppression led to a wide range of negative consequences. Without natural wildfire cycles, weedy species such as cheatgrass, shrub growth, and forest stands have accumulated to hazardous levels.

In 2022, CSFS sponsored a Risk Assessment Summary Report to assess the risk of wildfire in many of the forested counties including Rio Blanco County. The resulting report provided a wide range of information including a composite wildfire risk to assets. Wildfire risk ratings were obtained by combining the burn probability with the individual risk layers and values (WUI risk, watershed protection risks, forest assets risk, and riparian assets risk). According to the Risk Assessment Summary Report only a small portion of the county is classified as high or highest wildfire risk. However, the county or the core planning team believe wildfire risk is much higher than indicated for Rio Blanco County due to past wildfire events, suppression difficulty in many areas, fire intensity, and risk to assets.

Policy Framework

This CWPP is a planning document. There is no legal requirement to implement the recommendations herein. Actions on public lands will be subject to federal, state, and county policies and procedures such as adherence to the HFRA and the National Environmental Policy Act (NEPA). Action on private land may require compliance with county land use codes, building codes, and local covenants. The following documents set policy and provide guidance to the development of the CWPP:

- Colorado State Forest Service – Minimum Standards for Developing Community Wildfire Protection Plan (2022)
- HFRA (2003) – Federal legislation that promotes healthy forest and rangeland management, hazardous fuels reduction on federal land, community wildfire protection planning, and biomass energy production.
- National Fire Plan and 10-Year Comprehensive Strategy (2001) – Interagency plans that focus on firefighting coordination, firefighter safety, post-fire rehabilitation, hazardous fuels reduction, community assistance, and accountability.
- 10-Year Comprehensive Strategy: Implementation Plan (May 2002).
- National Cohesive Wildland Fire Management Strategy Phase II National Report (June 2012).
- Federal Emergency Management Agency (FEMA) Disaster Mitigation Act (2000) – Provides criteria for state and local multiple-hazard and mitigation planning.
- State of Colorado Forest Improvement District House Bill 07-1168 (2007) – provides for the creation of forest improvement districts for wildland fire management including vegetation-fuel management.
- Rio Blanco County Wildland Fire Operating Plan (2022).
- Rio Blanco County Hazard Mitigation Plan (2020).

<u>Existing CWPPs</u>

The previous Rio Blanco County CWPP was completed and approved in 2012. The Rio Blanco County CWPP is a valuable resource that provides the foundation for understanding wildfire risks and hazards, and presents attainable milestones designed to reduce potential losses from wildfire. Communities, home-owner associations, and individual fire protection districts can take further action by developing their own area-specific CWPP, which would tier to the countywide CWPP.

BLM and USFS Policy

Rangely is almost completely surrounded by BLM lands and Meeker also has nearby BLM lands that are undeveloped and a source of vegetative-fuels and wildfire ignition potential. The recommendations identified in the CWPP will assist the BLM and USFS in identifying and prioritizing forest and rangeland treatments on federal lands in relation to adjacent populated areas. The appropriate environmental analysis and documentation through the NEPA process for vegetation-fuel treatments on BLM and USFS lands, needs to be completed prior to any ground disturbing or vegetation management activities.

A completed CWPP does not authorize private landowners to conduct vegetation treatments on federal lands. Private landowners that own land adjacent to federal lands may not conduct defensible space treatments on BLM or USFS lands without written permission and the NEPA process being completed. The NEPA process can take up to a year to complete once a project location has been identified. The best approach for private landowners with property adjacent to federal lands is to contact the BLM or USFS and initiate appropriate planning.

Flat Tops Wilderness



Source: City of Meeker

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Planning Process

The HFRA designed the CWPP to incorporate a flexible process that can accommodate a wide variety of needs. This CWPP is tailored to follow the standardized steps for developing a CWPP as outlined in Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities,[1] and the Colorado State Forest Service Minimum Standards for Community Wildfire Protection Plans.[2] Table 1 outlines the CWPP development process.

Table 1: CWPP Development Process

Step	Task	Explanation
One	Convene Decision Makers	Form a Core Team made up of representatives from local governments, fire authorities, and the CSFS.
Two	Involve Federal Agencies	Engage local representatives of the BLM, USFS and other land management agencies as appropriate.
Three	Engage Interested Parties	Contact and encourage participation from a broad range of interested organizations and stakeholders.
Four	Establish a Base Map	Develop a base map of the county that provides a better understanding of communities, critical infrastructure, and forest/open space at risk.
Five	Develop a Risk Assessment	Develop a risk assessment that considers fuel hazards, community and commercial infrastructure, resources, and preparedness capability. Rate the level of risk and incorporate into the base map as appropriate.
Six	Establish Priorities and Recommendations	Use the risk assessment and base map to facilitate a collaborative public discussion that prioritizes fuel treatments and non-fuel mitigation practices to reduce fire risk and structural ignitability.
Seven	Develop an Action Plan and Assessment Strategy	Develop a detailed implementation strategy and a monitoring plan that will ensure long-term success.
Eight	Finalize the CWPP	Finalize the county CWPP and communicate the results to interested parties and stakeholders.

Source: Communities Committee et al, 2004

Core Planning Team

The initial step in the development of the CWPP is to organize a core planning team that serves as the decision-making committee (Table 2). The Rio Blanco County CWPP core planning team consisted of representatives from Rio Blanco County, Rio Blanco Fire Protection District, Rangely Rural Fire Protection District, BLM, CSFS, White River Integrated Water Initiative, White River / Douglas Creek Conservation Districts, USFS - White River National Forest Service, USFS – Medicine Bow-Routt National Forests & Thunder Basin National Grassland, Town of Meeker, and Town of Rangely.

The planning team must mutually agree on the plan's final contents. The planning team collaborated closely with relevant affected land management agencies and active community stakeholders as the plan was implemented. Active collaboration between agencies and

[1] Communities Committee et al. March 2004. "Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities." https://www.forestsandrangelands.gov/documents/resources/communities/cwpphandbook.pdf.

[2] Colorado State Forest Service. 2022. "Minimum Standards for Developing Community Wildfire Protection Plans." https://csfs.colostate.edu/wp-content/uploads/2022/03/2022-CSFS_CWPP_Min_Standards.pdf.

communities is an important CWPP component to promote the sharing of perspectives, plans, priorities, and other information useful in fuels and land management activities.

Core planning team meetings were convened throughout the course of the CWPP development. The purpose of each meeting focused on a specific aspect of the CWPP planning process. Meetings were convened on August 22, 2023, and December 7, 2023; virtually and in-person at the Rio Blanco County Courthouse. Agendas and sign-in sheets for the core planning team meetings can be found in *Appendix C*.

Table 2: Rio Blanco County CWPP Core Planning Team Members

Name	Agency/Jurisdiction
Eddie Smercina	Rio Blanco County
Matt Franks	Rio Blanco County
Leif Joy	Rio Blanco County
Larry Jones	Rio Blanco County
Luke Pelloni	Rio Blanco Fire Protection District
Laura Smith	Rio Blanco Fire Protection District
Jasper Whiston	Rangely Rural Fire Protection District
Carly Thomson	Town of Meeker
Jocelyn Mullen	Town of Rangely
Lisa Piering	Town of Rangely
Callie Scritchfield	White River / Douglas Creek Conservation Districts
Liz Chandler	White River Integrated Water Initiative
Landon Smith	BLM
Curtis Keetch	USFS
Dan Nielsen	USFS
Jamie Statezny	USFS
Matt Schiltz	CSFS
Chazz Lakin	CSFS
Todd Ruffner	CSFS
Phil Luebbert	JEO Consulting Group Inc.
Karl Dietrich	JEO Consulting Group Inc.

As a strategic plan, the real success of this CWPP hinges on effective and long-term implementation. The CWPP planning and development process must include efforts to identify a core planning team that serves as the implementation organization. The CWPP core planning team will oversee the execution of prioritized recommendations and maintain the CWPP as the characteristics of the WUIs change over time. Specific projects may be undertaken by individual fire protection districts (FPDs), while larger-scale treatments may require collaboration among federal agencies, county agencies, communities, and private landowners. Original CWPP core planning team representatives may assist in the implementation of the CWPP action plan. Continued public meetings and online engagement are recommended as means to generate additional support and maintain momentum.

CWPP vegetation-fuel treatment recommendations were prioritized through an open and collaborative effort with the core planning team. Prioritized treatments target wildfire hazard reduction in the WUI, including structural ignitability and critical supporting infrastructure. An action plan guides treatment implementation for high-priority projects over the span of several years.

The finalized CWPP represents a strategic plan with planning team consensus that provides prioritized wildfire hazard reduction treatment projects, preferred treatment methods, a base map of the WUI, and defensible space recommendations.

Fire Protection District and Community Meetings

Meetings were held with each of the fire protection districts along with the communities to identify WUI locations, current resource capacity, potential vegetation-fuel projects, evacuation information, and resource needs to improve response capabilities. Meeting information and attendees can be found below. An example agenda can be found in *Appendix C*.

Table 3: Rio Blanco Fire and Town of Meeker Meeting

October 10th, Virtual Meeting
Attendees:
Luke Pelloni, Rio Blanco Fire Protection District
Carly Thomson, Town of Meeker
Eddie Smercina, Rio Blanco County
Phil Luebbert, JEO Consulting Group
Karl Dietrich, JEO Consulting Group

Table 4: Rangely Fire and Town of Rangely Meeting

October 11th, Virtual Meeting
Attendees:
Jasper Whiston, Rangely Rural Fire Protection District
Lisa Piering, Town of Rangely
Eddie Smercina, Rio Blanco County
Phil Luebbert, JEO Consulting Group
Karl Dietrich, JEO Consulting Group

Public Outreach

Public involvement is an important part of CWPP development for strategic input, long-term ownership, and implementation. The CWPP needs to accurately reflect the county's interests, concerns, and priorities to promote legitimacy and long-term success.

Finding effective ways to engage the public and gain feedback can be challenging because CWPPs are complex planning tools. The plan addresses issues that community members may be unaware of and identifies potential impacts that people may not have dealt with. In addition, the CWPP showcases numerous solutions to local wildfire concerns or problem areas which emphasize the need to successfully engage the public. The public outreach strategy for the CWPP included the use of a public survey.

Public Survey

As a method to engage the public and receive more local input on wildfire risks, priorities, and concerns in the county, a public survey was developed by the core planning team. Flyers with QR code links to the survey were sent out with water bills for the towns of Meeker and Rangely (example can be found in *Appendix C*). However, the response was not as high as hoped with 48 survey responses from these mailings. The lower survey response numbers could be due to several factors, possibly including lack of public interest in wildfire planning, lack of concern in the communities regarding wildfire risk, and unfamiliarity with QR code usage and online surveys. During the second core planning team meeting it was determined that better response and feedback would come from targeted public stakeholder interactions during an open house or meeting. Summarized responses from the public survey can be found in *Appendix C*.

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Rio Blanco County Characteristics

County Overview

Rio Blanco County is located in northwestern Colorado, encompassing approximately 3,223 square miles (2,062,720 acres). Approximately 73% of the land in the county is federally owned by BLM or USFS. BLM manages 53% primarily in the central and western portions of the county. USFS manages 17% mostly located in eastern Rio Blanco County and includes parts of the White River and Routt National Forests. Private lands account for approximately 25% of the county with the rest owned by the state or county (Figure 1). Rio Blanco County is surrounded by Moffat County (north), Routt County (northeast), Garfield County (south), and Uintah County, UT (west). Landowners surrounding the county are primarily the USFS (east), BLM (north, south), private land (north, south), state owned land (north), and the Ute Tribe (west).

The communities of Meeker and Rangely are the county's main population centers and are both located along the White River corridor. Meeker is located just north of the intersection of State Highways 13 and 64. Rangely is located 58 miles west of Meeker along State Highway 64, about 15 miles shy of the Colorado-Utah border. The elevation of Meeker is 6,249 feet and the elevation of Rangely is 5,297 feet. Residential development is concentrated along the White River corridor, along major streams, and near transportation corridors. However, some new developments are occurring further from these main corridors, specifically along County Road 42 and 55. A new development of 90 residential units is planned north of Meeker by the hospital.

Key transportation routes in the county include State Highways 64 and 139, which travel through Rangely, and State Highway 13, which travels through Meeker. A Class 3 rail line briefly travels through the far northwestern portion of the county. Meeker Coulter Field Airport and Rangely Airport are two public airports in the county.

Population

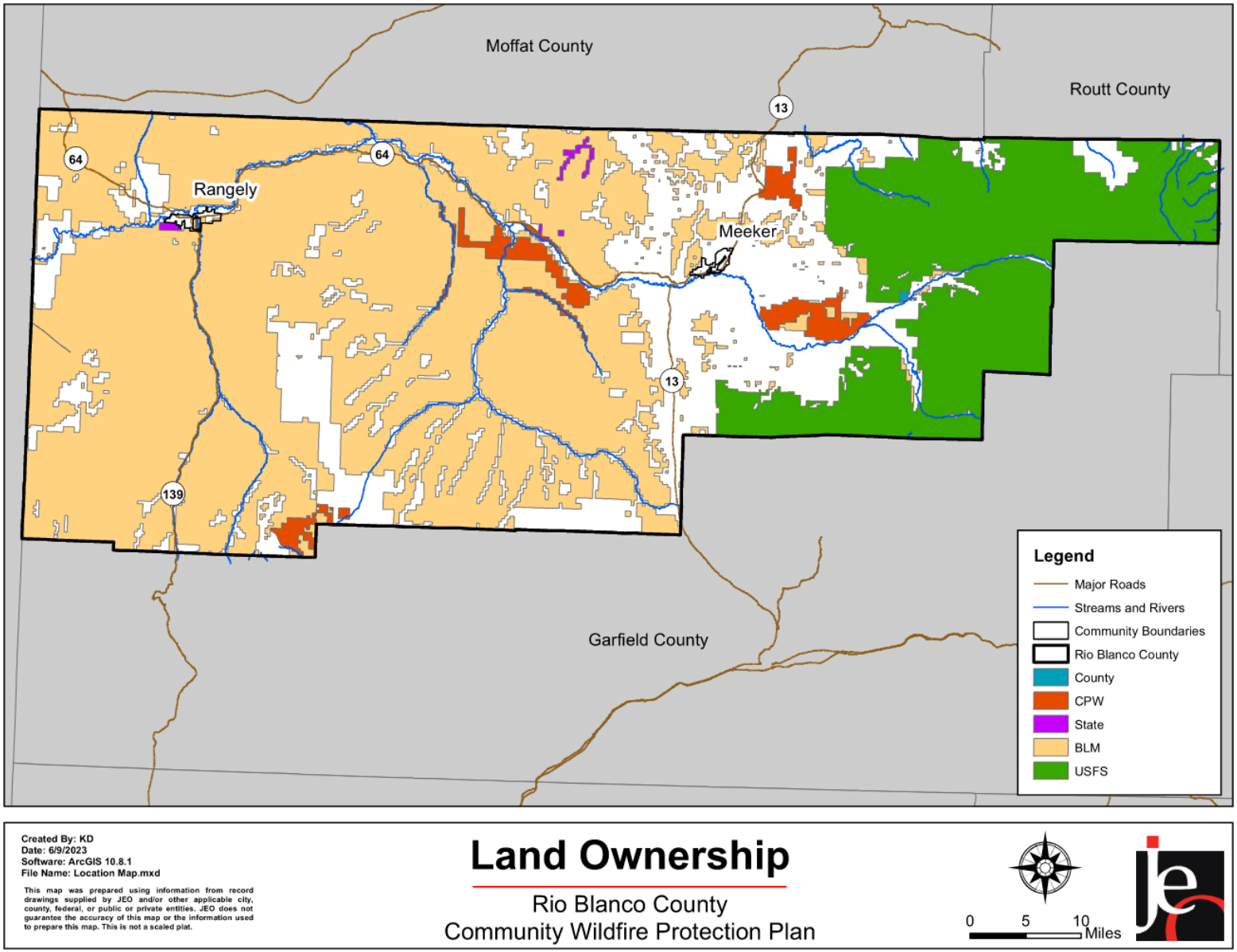
Rio Blanco County has a population of 6,529 in 2020 according to the U.S. Census Bureau. The population has declined since 2010 when it was 6,666. The Town of Meeker is the most populous community with 36% of the county's population. Both Meeker and Rangely have declined in population since 2010. Of note, nearly 30% of the population lives in rural unincorporated areas of the county and the number has grown since 2010. These individuals may be at higher risk of wildfires.

Table 5: Population in Rio Blanco County (1970-2020)

Jurisdiction	1970	1980	1990	2000	2010	2020
Meeker	1,597	2,356	2,098	2,242	2,475	2,374
Rangely	1,591	2,113	2,278	2,096	2,365	2,299
Unincorporated Rio Blanco County	1,654	1,786	1,596	1,648	1,826	1,856
Total	**4,842**	**6,255**	**5,972**	**5,986**	**6,666**	**6,529**

Source: U.S. Census Bureau

Figure 1: Land Ownership

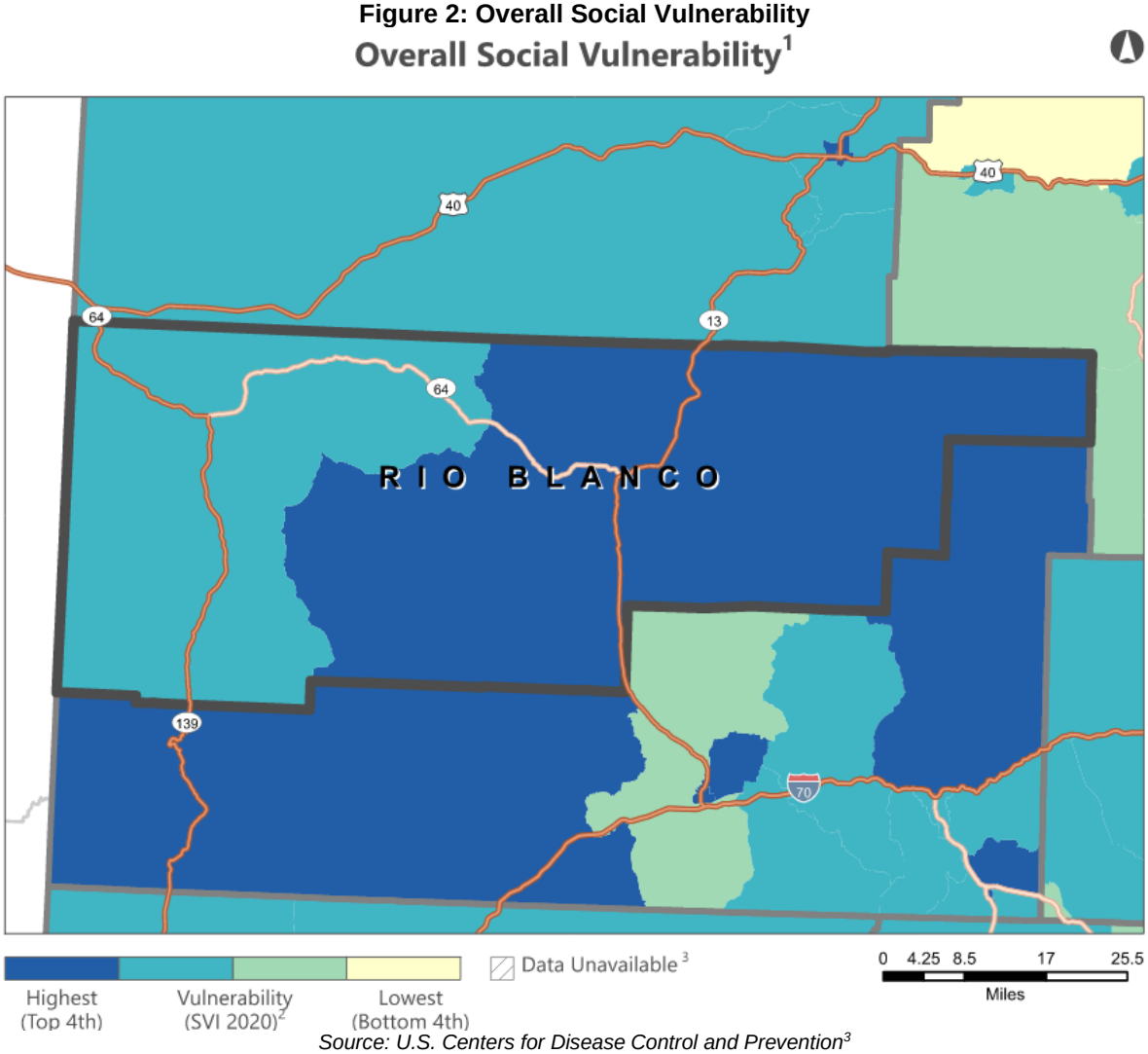


Social Vulnerability

The Centers for Disease Control and Prevention has developed the Social Vulnerability Index that measures the resilience of communities when confronted by external stresses from hazardous events. The Social Vulnerability Index is broken down into four categories: socioeconomic status, household characteristics, racial and ethnic minority status, and housing type/transportation. The figures below show the overall social vulnerability for Rio Blanco County and the four categories that comprise it.

That data shows that Rio Blanco County has high vulnerability compared to other counties in Colorado. Vulnerability was especially high for housing type/transportation, socioeconomic status, and household characteristics.

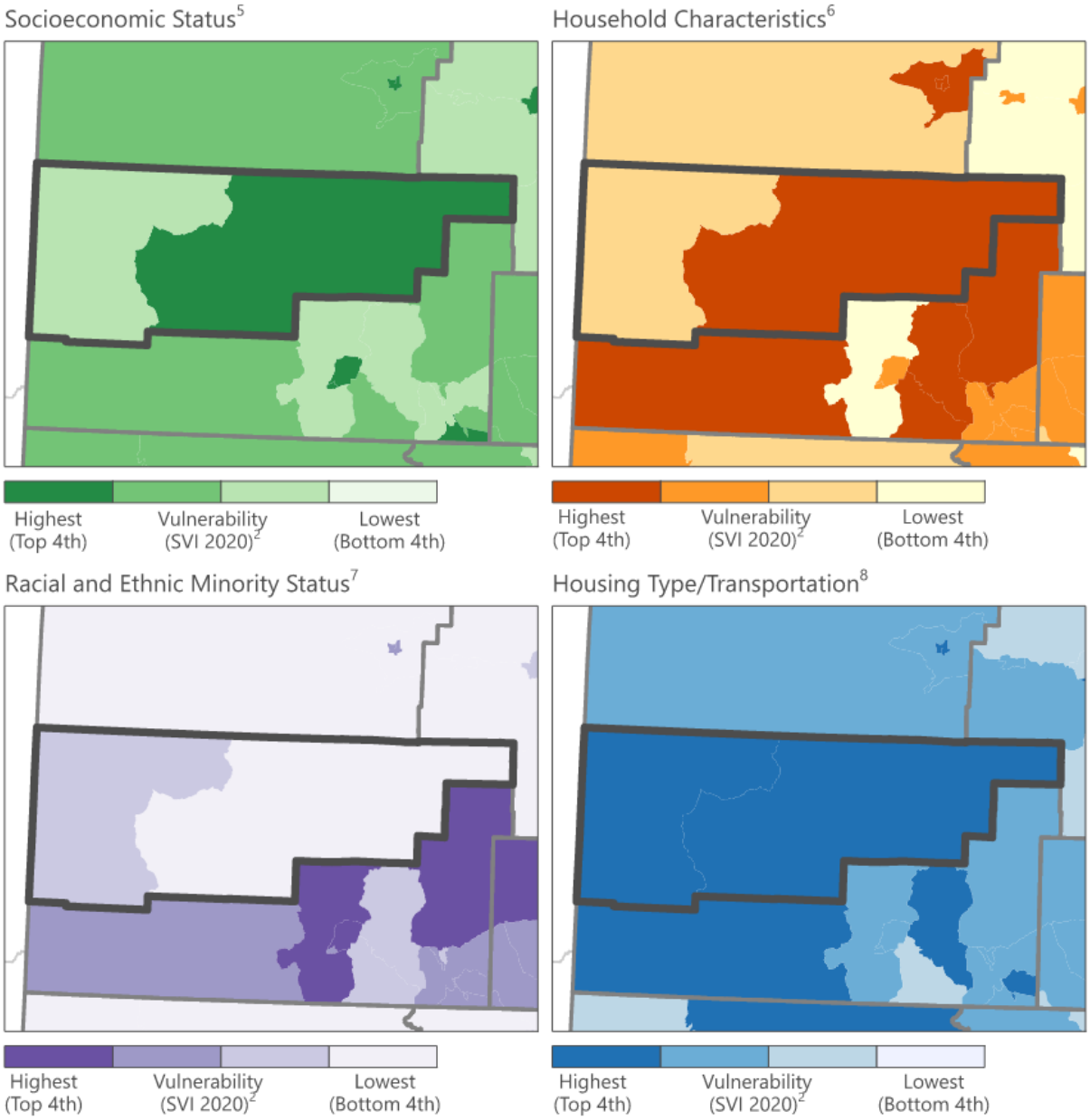
Figure 2: Overall Social Vulnerability



Source: U.S. Centers for Disease Control and Prevention[3]

[3] U.S. Centers for Disease Control and Prevention. 2020. "CDC/ATSDR Social Vulnerability Index". https://www.atsdr.cdc.gov/placeandhealth/svi/index.html.

Figure 3: Four Social Vulnerability Categories

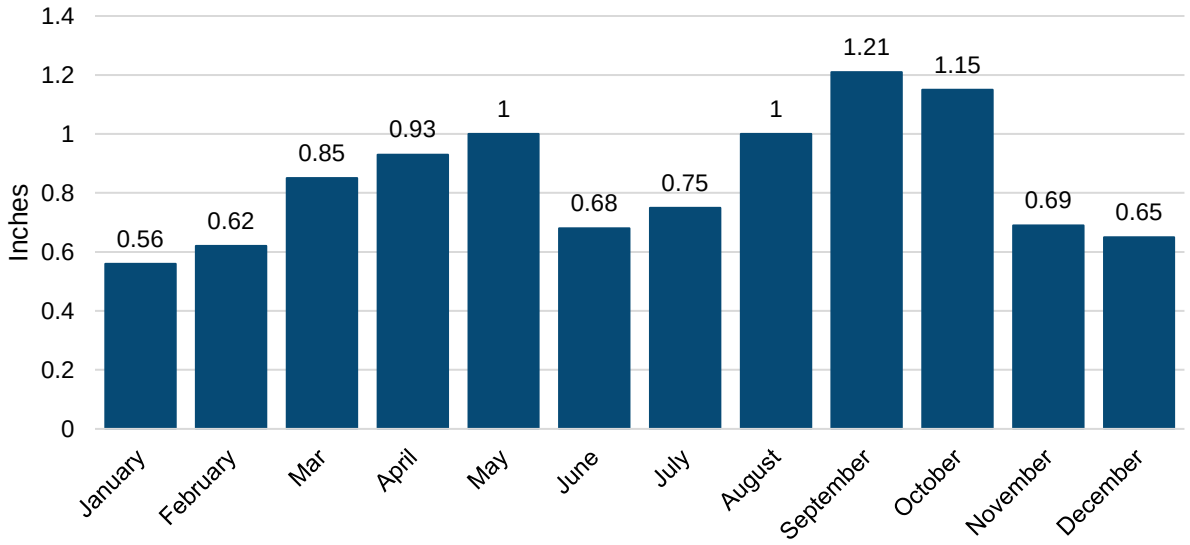


Source: U.S. Centers for Disease Control and Prevention

Climate

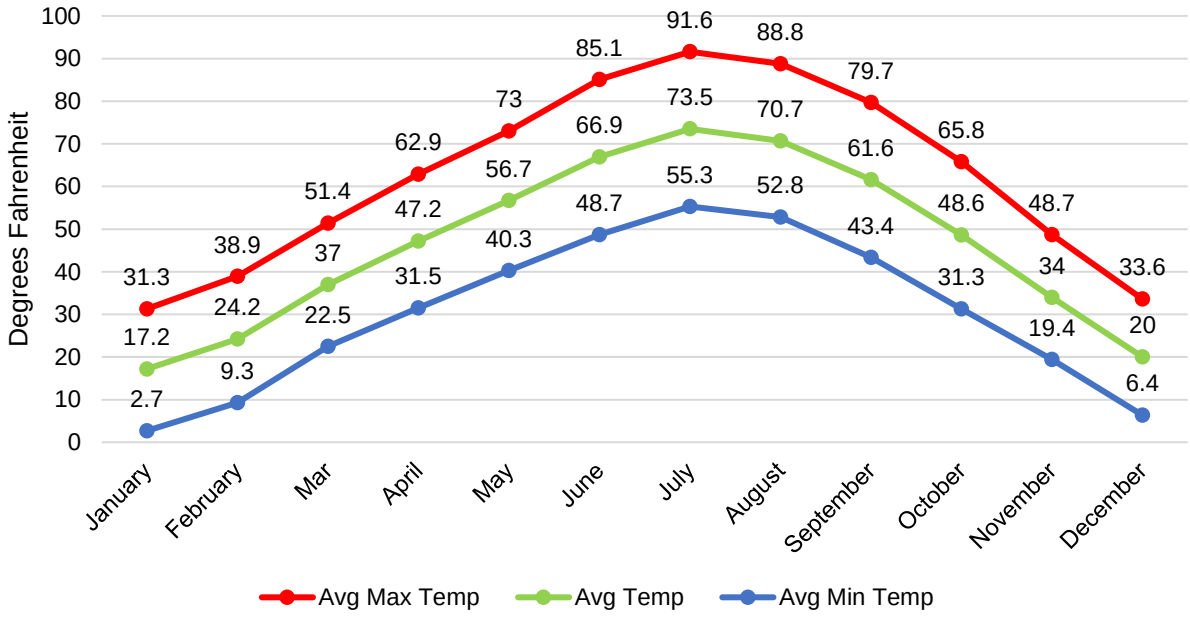
The climate of Rio Blanco County is continental, characterized by dry air, sunny days, clear nights, variable precipitation, and large daily temperature changes. The climate is mostly semi-arid/high desert in the lower elevations. It becomes transitional near Meeker and is alpine in the higher elevations of Piceance Basin and eastern Rio Blanco County. Precipitation is highest in the months of September and October (Figure 4). Average annual precipitation is 9.94 inches. However, annual precipitation can vary greatly from less than 10 inches near Rangely to greater than 50 inches in the far eastern portion of the county. Snowfall amounts range from 30 inches at lower elevations to 180 inches at higher elevations. Temperature in Rio Blanco County ranges from an average high of 89°F in summer to an average low of 6°F in the winter (Figure 5).

Figure 4: Average Monthly Precipitation



Source: High Plains Regional Climate Center, 1894-2023[4]

Figure 5: Average Temperatures

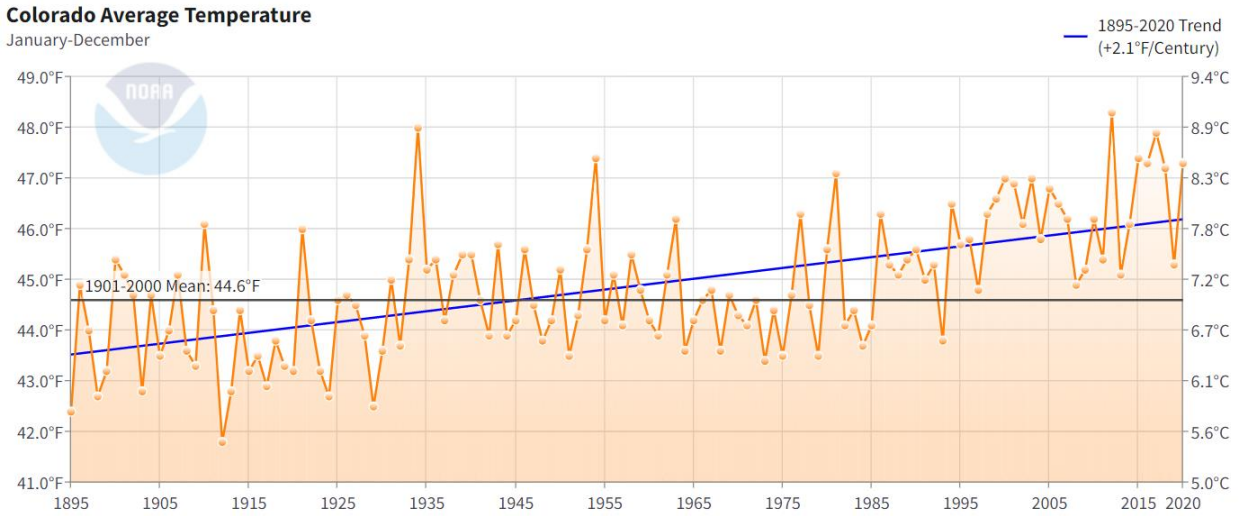


Source: High Plains Regional Climate Center, 1894-2023

Since 1895 Colorado's overall average temperature has increased by 2.1°F. While overall temperature shifts have not been consistent, the trend for increasing temperatures is apparent. Climate modeling suggests warmer temperature conditions will continue in the coming decades and rise steadily into the mid-century. This trend will likely contribute to an increase in the frequency and intensity of wildfire events, due to reduced snowpack, drought conditions, and higher temperatures.

[4] High Plains Regional Climate Center. 1894-2023. "CLIMOD: Rangely Station". http://climod.unl.edu/.

Figure 6: Colorado Average Temperature (1895-2020)



Source: National Oceanic and Atmospheric Administration, 2020[5]

Additionally, the length of the frost-free season has been increasing nationally since the 1980s. While a longer warm season may provide some additional recreational opportunities in western Colorado, concurrent changes in temperature, water availability, pest pressures, and tree mortality may exacerbate wildfire event conditions. Since 1895, yearly annual precipitation for Colorado has decreased slightly (decline by 1.8" per century). Snow droughts can arise from a lack of precipitation (dry snow drought), temperatures that are too warm for snow (warm snow drought), or a combination of the two. Rivers and reservoir water sources are increasingly important to communities and residents in the planning area to meet water needs during periods of shortage.

Topography

Western Rio Blanco County is part of the Colorado Plateau region and eastern Rio Blanco County lies within the Southern Rocky Mountains region. Elevation in the county ranges from 4,950 feet to over 12,000 feet. The White River begins in the eastern portion of the county and flows east to west through Meeker, Rangely, and into Utah. Douglas Creek, Wolf Creek, Yellow Creek, Strawberry Creek, Flag Creek, Piceance Creek, and Coal Creek all flow into the White River. Other water features include Marvine Lakes, Bailey Lake, Big Beaver Reservoir, Allen Basin Reservoir, Crosho Lake, Chapman Reservoir, Sheriff Reservoir, Vaughan Lake, Haley Reservoir, D D and E Wise Reservoir, Rio Blanco Lake, and Kenney Reservoir. Rio Blanco County has significant deposits of coal and nahcolite. Because of this the energy and mining industry are a significant portion of the county's economy.

[5] National Oceanic and Atmospheric Administration, 2020. "Climate at a Glance: Statewide Time Series". Accessed May 2023. https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/statewide/time-series/5/tavg/12/12/1895-2020?base_prd=true&begbaseyear=1901&endbaseyear=2000&trend=true&trend_base=100&begtrendyear=1895&endtrendyear=2020

Wildland Vegetation

Rio Blanco County is approximately 20.7% forested with many of the remaining vegetation types dominated by pinyon-juniper, oak shrubland, shrubland, and grassland.[6] The forested areas are primarily spruce-fir, hardwood, and mixed conifer. Wildland fuels consist of both live and dead vegetation that are available for combustion. Figure 7 shows the vegetation classes and locations in the county.

Hardwood

Approximately 147,947 acres of hardwood stands occur within Rio Blanco County. This is approximately 47% of the forested timber types found in the county.[7] Hardwood stands are primarily Aspen stands in the county. Aspen exists in a post-disturbance seral stage or in stable, self-perpetuating stands. This thin barked species is easily top killed by fire, but readily regenerates from the surviving root system. From many standpoints, aspen stands are a desired forest type in the WUI. They provide some privacy screening for residences, are widely used by wildlife species, and are aesthetically pleasing while being generally fire resistant. The high thin crowns resist crown fire initiation and spread. Aspen stands also provide summer shade while allowing for winter sun. Some Aspen stands in the eastern portion of the county experienced defoliation in 2022.[8]

Spruce-Fir

Spruce-fir stands develop on moist, cool sites typically above 10,200 feet and experience infrequent stand replacing fires. The low branches in these stands allow for the initiation of crown fire, and crown fire is readily propagated through the dense canopy under the right conditions. It requires unusually dry conditions to support large scale fires in these forests, but the abundance of ladder fuels and closed canopy can support high intensity crown fires. These thin barked species are extremely sensitive to fire and will be killed by even low intensity fires. The spruce-fir community type accounts for approximately 35% of the timber type in Rio Blanco County and covers 111,505 acres.[9]

Mixed Conifer

Approximately 45,540 acres of mixed conifer occurs in the county. Mixed conifer makes up 14% of timber types in the county.[10] This forest type occurs at approximately 6,900 to 10,500 feet in elevation and includes a diverse range of species. Fire regimes for mixed-conifer forests are typically low frequency and mixed severity. However, fire suppression has caused these forests to be denser and contain more fuel. This increases the chances of high-intensity, stand-replacing crown fires.

[6] Colorado State Forest Service. 2022. “2022 Colorado Wildfire Risk Assessment Summary Report – Rio Blanco County”.
[7] Colorado State Forest Service. 2022. “2022 Colorado Wildfire Risk Assessment Summary Report – Rio Blanco County”.
[8] Colorado State Forest Service. 2022. “2022 All pests – Northwest Area”. https://csfs.colostate.edu/forest-management/forest-health-report/northwest-colorado/.
[9] Colorado State Forest Service. 2022. “2022 Colorado Wildfire Risk Assessment Summary Report – Rio Blanco County”.
[10] Colorado State Forest Service. 2022. “2022 Colorado Wildfire Risk Assessment Summary Report – Rio Blanco County”.

Pinyon Pine and Rocky Mountain Juniper

Pinyon pine and rocky mountain juniper grow in similar habitats with rocky soils in lower elevation areas in the northern portion of the county. Both trees are very flammable because of their resinous wood and accumulation of dead lower branches. Covering 501,066 acres[11] in the county, these trees can drastically increase fuel load and are found in many identified Wildland Urban Interface areas. Without proper management and thinning, tree densities can increase to a level that would support damaging crown fires. Dead trees are also resistant to decay which can increase fuel loads if not removed.[12]

Beetle Kill Stands

Rio Blanco County has a significant amount of beetle killed trees. Personnel operating within these stands should be aware of the danger presented by dead and dying trees falling at increasing rates.

Western Balsam Bark Beetle[13]

The western balsam bark beetle primarily impacts subalpine fir within Rio Blanco County. A prolonged drought prior to 2022 weakened the fir trees which makes them more vulnerable to bark beetles. The CSFS anticipates that it will take several years of sufficient precipitation for the subalpine fir trees to recover enough to fend off the western balsam bark beetle. Infestations are generally not widespread and tend to be patchy within a stand of trees. Subalpine fir tree needles will turn reddish when killed by the beetles. Most of the impacted trees can be found in the eastern portion of the county in the White River and Routt National Forests.

Dead trees will usually fall adding to the fuel load in stands. Newly infested trees can be removed prior to the adult beetles emerging the next year. However, due to the spotty nature of infestation and difficult terrain, management can be difficult.

Douglas-Fir Beetle[14]

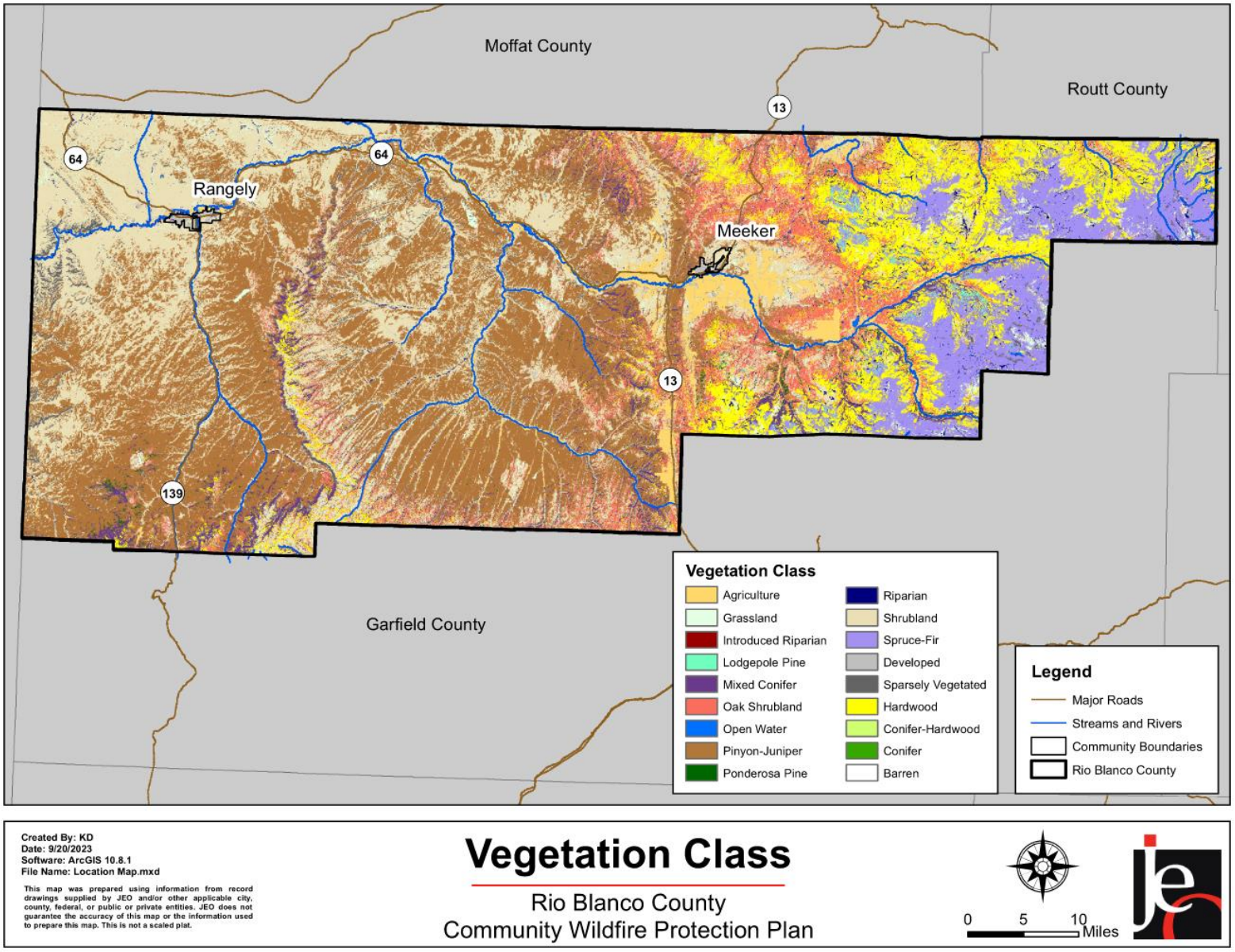
The Douglas-fir beetle has started to impact Douglas-fir trees in Rio Blanco County. Mortality from the beetle can occur in pockets of trees to an entire stand. Drought conditions prior to 2020 have stressed trees, reducing their ability to defend against the Douglas-fir beetle. The eastern portion of the county has seen the largest activity with the beetle in 2022.

Fir Engraver Beetle[15]

Areas impacted by the Douglas-fir beetle have also seen impacts from the fir engraver beetle. Outbreaks from the beetle typically consist of groups of five to ten trees scattered throughout a stand. When impacted trees will die and have red-brown dust in bark crevices. Woodpecker damage is usually accompanied as the birds eat the beetles. To slow the spread, impacted trees need to be removed and burned, cut, or submerged in water before new broods are produced.

[11] Colorado State Forest Service. 2022. “2022 Colorado Wildfire Risk Assessment Summary Report – Rio Blanco County”.
[12] Colorado State Forest Service. 2022. “Pinon-Juniper Management”. https://static.colostate.edu/client-files/csfs/pdfs/120866_PinonJuniperGuide_www.pdf.
[13] Colorado State Forest Service. 2022. “Report on the Health of Colorado’s Forests”. https://csfs.colostate.edu/forest-management/forest-health-report/northwest-colorado/.
[14] Colorado State Forest Service. 2022. “Report on the Health of Colorado’s Forests”. https://csfs.colostate.edu/forest-management/forest-health-report/northwest-colorado/.
[15] Colorado State Forest Service. 2023. “Fir Engraver Beetle”. https://csfs.colostate.edu/fir-engraver-beetle/.

Figure 7: Vegetation Class



Wildfire Protection Authorities

The wildland fire protection authorities that operate in Rio Blanco County include two fire protection districts, Rio Blanco County Sheriff, Upper Colorado River Interagency Fire Management Unit (UCRIFMU), Northwest Colorado Fire Unit, and Colorado Division of Fire Prevention and Control. The fire protection districts include Rangely Rural Fire Protection District and Rio Blanco Fire Protection District. Table 6 lists the fire protection authorities in the county.

Table 6: Wildfire Protection Authorities

Fire Protection Authority
Rangely Rural Fire Protection District
Rio Blanco Fire Protection District
Rio Blanco Sheriff
Upper Colorado River Interagency Fire Management Unit
Northwest Colorado Fire Unit
Colorado Division of Fire Prevention and Control

Mutual aid agreements among the agencies provide guidance for initial wildfire attack and support during an incident. Wildfire protection within the county cannot be accomplished by solely one authority because of the complexity of land ownership. Cooperation and coordination are keys to effective wildfire and fuels management, which is coordinated through the county's Wildland Fire Operating Plan.

Rangely Rural Fire Protection District

The Rangely Rural Fire Protection District spans 1,000 square miles covering the entire Town of Rangely as well as several unincorporated areas in Rio Blanco County including Cedar Ridge, Coal Mine Draw, Dead Dog Draw, Douglas Creek, Elks Park, Johnson Draw, Kenney Reservoir, Parkview, Rangely Airport, Stinking Water Creek, Sulphur Draw, White River, and Willow Creek. There are approximately 4,000 residents in the district. Made up of between 25-30 volunteers, the district provides 24-hour response to structural fires, wildland fires, vehicle accidents, rescue calls, and assistance on EMS calls. Courtesy fire inspections when requested, and community education are also performed by the fire district.

Rio Blanco Fire Protection District

Established in 1933, the Rio Blanco Fire Protection District provides fire protection for approximately 2,700 residents in a 1,940 square-mile area in central and eastern Rio Blanco County. The response area includes the Town of Meeker and unincorporated areas including Anderson Gulch, Cherry Ranch, Curtis Creek, Fairfield Gulch, Fourmile Gulch, Green Cabins, Lion Canyon, Meeker Airport, Meeker Dome, Rim Rock, Ryan Gulch, Sage Hills, Sanderson Hills Park, Sulphur Creek, and White River. The district has one full time Fire Chief and office administrator, all other staff are volunteers. The district also provides EMS response, fire education and voluntary fire inspections.

Fire Station 1 - Meeker



Upper Colorado River Interagency Fire Management Unit & Northwest Colorado Fire Unit

The UCRIFMU and the Northwest Colorado Fire Unit (NCFU) are responsible for responding to wildfires on federal lands within their jurisdictions. The UCRIFMU jurisdiction within Rio Blanco County includes the BLM Colorado River Valley Field Office, Grand Junction Field Office, and the USFS White River National Forest. The NCFU is responsible for the portion of the BLM White River Field Office that occurs in Rio Blanco County.

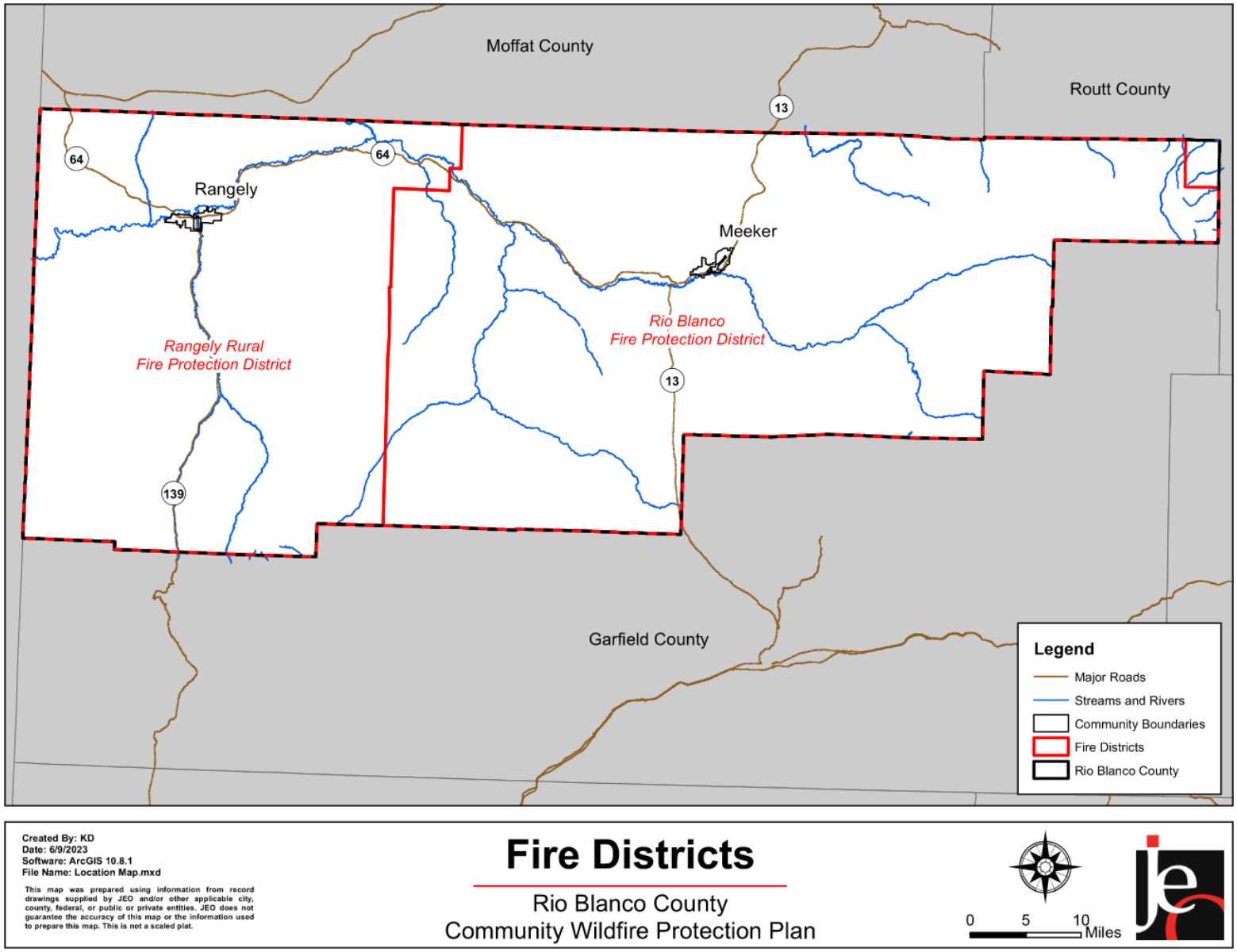
Rio Blanco County Sheriff

The Rio Blanco County Sheriff is the Fire Warden and therefore responsible for fire protection. However, the County Sheriff has very little actual suppression capability. The County Sheriff relies largely on the local fire protection districts for resources as needed. Fire restrictions are enacted and enforced by the County Sheriff.

Colorado Division of Fire Prevention and Control

When a wildfire exceeds the capability of the county to control or extinguish, the County Sheriff can request assistance from DFPC. DFPC's priority wildland fire mission is to assist and support local agencies and counties with a range of wildfire management programs.

Figure 8: Fire Districts



Insurance Service Office Fire Hazard Ratings

The Insurance Services Office (ISO) provides fire and wildfire hazard assessment services for residential and commercial property insurers to help establish a standardized basis for appropriate fire insurance premiums. The ISO ratings within Rio Blanco County range from 03 to 10 depending on proximity to fire protection (Table 7). The insurance industry surveys more than 44,000 fire-response jurisdictions regularly for up-to-date information concerning a community's fire protection services. The Fire Suppression Rating Schedule provides a standardized methodology for reviewing the firefighting capabilities of individual communities. The schedule measures major elements of a community's fire-suppression capacity and develops a numerical grading known as a Public Protection Classification. Ratings range from 1 (best) to 10 (worst). These ratings are established based on the following factors and are developed independent of any findings and conclusions stated in this CWPP:

- Fire Alarms – Ten percent of the overall grading is based on how well the fire department receives fire alarms and dispatches its fire-fighting resources.

- Engine Companies – Fifty percent of the overall grading is based on the number of engine companies and the amount of water a community needs to fight a fire. This includes suppression resource distribution, equipment maintenance, available personnel, and training.

- Water Supply – Forty percent of the grading is based on the community's water supply. In urban interface settings where a municipal water supply is available, the water supply is assessed for fire suppression capacity beyond daily maximum consumption, as well as the distribution of fire hydrants. In rural areas, documenting the ability to provide a continuous water supply to firefighting apparatus through a water tender relay may suffice.

Table 7: Rio Blanco County ISO Ratings

Fire Protection District	ISO Rating
Rangely Rural Fire Protection District	5/8B. Anything over five miles is 10
Rio Blanco Fire Protection District	03/3X

Protected Values

Human welfare receives priority protection in the event of a wildfire. Economic and ecological values are secondary to human welfare, however, the proper protection of these values through collaborative planning is an important goal of this CWPP.

Community Lifelines

The *2020 Rio Blanco County Multi-Jurisdictional Hazard Mitigation Plan* (HMP) identified community lifelines for Rio Blanco County. A lifeline enables the continuous operation of critical government and business functions and is essential to human health and safety or economic security.[16] The table on the next page lists the identified lifelines and their general location. Highways 13, 64, and 139 were also identified as critical transportation corridors.

[16] FEMA. April 2023. "Community Lifelines". https://www.fema.gov/emergency-managers/practitioners/lifelines

Table 8: Community Lifelines

Community Lifeline	Location
Administration Building	Meeker
Administration Building	Rangely
Barone Junior High	Meeker
Colorado Northwestern Community College	Rangely
Columbine Park Rodeo Grounds	Rangely
Kenney Reservoir	Northeast of Rangely
Meeker Elementary School	Meeker
Meeker High School	Meeker
Meeker Recreation Center	Meeker
Meeker Town Hall	Meeker
Rio Blanco Fire Protection District	Meeker
Pioneers Medical Center	Meeker
Rangely Elementary School	Rangely
Rangely High School	Rangely
Rangely Hospital	Rangely
Rangely Middle School	Rangely
Rangely Recreation Center	Rangely
Rangely Town Hall	Rangely
Rangely Fire Protection District	Rangely
Rio Blanco County Administration	Meeker
Rio Blanco County Courthouse	Meeker
Rio Blanco County Road and Bridge – Meeker	Meeker
Rio Blanco County Road and Bridge – Rangely	Rangely
Rio Blanco County Fairgrounds	Meeker
Rio Blanco Reservoir	East of Meeker

Source: 2020 Rio Blanco County HMP

Historic and Cultural Resources

Rio Blanco County has many resources that are valued highly by communities and residents. Historic and cultural resources need to be protected for the future education and enjoyment of residents and visitors. The *2020 Rio Blanco County HMP* reviewed national inventories to identify historic and cultural assets in the county. The table below lists properties in Rio Blanco County that are located on the National Register of Historic Places.

Table 9: Historic and Cultural Assets in Rio Blanco County

Property	Location	Year Listed
Battle of Milk River Site	Meeker	1975
Canon Pintado	Rangely	1975
Carrot Men Pictograph Site	Rangely	1975
Coal Creek School	617 City Rd 6, Meeker	2014
Collage Shelter Site	Rangely	1980
Duck Creek Wickiup Village	Meeker	1975
Fremont Lookout Fortification Site	Rangely	1975
Hay's Ranch Bridge	City Rd 127, Meeker	1985
Hotel Meeker	560 Main St, Meeker	1980
Meeker I.O.O.F. Lodge-Valentine Lodge No. 47	400 Main St, Meeker	2014
Pyramid Guard Station	City Rd 8, Yampa	2008
St. James Episcopal Church	368 4th St, Meeker	1978

Source: National Register of Historic Places, 2019

Oil and Gas Industry

Extensive oil and gas exploration, drilling, and extraction activities occur throughout the county. The oil and gas industries are critically important to the economic wellbeing of the county but does pose both positive and negative challenges to wildfire management including:

- Equipment or infrastructure can spark wildfire events in remote areas.
- Production sites and associated infrastructure can be vulnerable to damage from wildfires.
- Activity and vehicle travel may occur in areas with flammable vegetation-fuels.
- Exploration and production sites are generally in remote areas that may be difficult to reach quickly in the event of a wildfire ignition.
- Oil and gas roads may serve as fire breaks and provide faster access to remote areas.
- Buried pipelines can pose dangerous situations to bulldozing fire breaks to contain a wildfire.
- Oil and gas personnel are frequently the first to report wildfires occurring in remote locations because of the line of sight provided by the elevated locations on hill slopes and ridge tops.
- Many companies require that vehicles carry fire extinguishers to suppress small fires.
- During wildfire season, some companies have water trucks that can be made available for wildfire response.

Water, Wastewater, and Electrical Infrastructure

Electrical substations and transmission lines are the most vulnerable to wildfire in the county. They are vital to the continuity of operations in the oil, gas, and mining sector, as well as to the population centers of Rangely and Meeker. Electricity to the eastern end of the county is supplied by the White River Electric Association while the western end is supplied by Moon Lake Electric Association. Other critical pieces of infrastructure include the clearwell and backwash ponds at the Rangely Water Treatment Plant, the Rangely pre-sedimentation ponds, Meeker municipal well fields, Oldland Solar Array, and Wells on Piceance Creek.

Watershed Protection

Following a wildfire, waterways can become contaminated from additional sediments, ash, and fire retardants. Additional debris in drinking water systems can cause negative impacts such as higher maintenance costs. While typically harmless to humans and land animals, fire retardants do have some level of toxicity to aquatic organisms.[17]

The Core Planning Team discussed critical watersheds in the county with the Planning Advisory Committee for the White River Integrated Water Initiative. The following list of critical watersheds was identified by the planning area committee and USFS.

- East Douglas Creek Reservoirs
- Lake Avery Dam
- Taylor Draw Dam
- Trout Creek
- White River
- Willow Creek
- Yellow Creek

[17] Colorado State University Extension. December 2014. “Addressing the Impacts of Wildfire on Water Resources”. https://extension.colostate.edu/topic-areas/natural-resources/addressing-the-impacts-of-wildfire-on-water-resources-6-706/.

Livestock

According to the 2017 Census of Agriculture, livestock, poultry, and products made up 85% of the county's agricultural sales. Sales from cattle was $14,436,000 in 2017 and inventory was 25,253.[18] Livestock are very sensitive to nearby wildfire, with reactions ranging from nervousness, panic, and aggressiveness. Livestock are more likely to be injured fleeing from a wildfire due to fences and other barriers. Experienced handlers, proper equipment, and an evacuation plan are most helpful during a wildfire event. Access and transportation issues are likely to occur during a wildfire event.[19] Air quality during an event may also impact the short-term health of livestock.

After a wildfire, surface water bodies are vulnerable to contamination from ash and fire-retardant materials. Testing livestock water is recommended if the water supply could have been impacted.[20] Animals may be emotionally affected and take time to find normal behavioral patterns.[21]

Tourism and Recreation Features

Much of the local recreation and tourism industry is based on trout fishing and hunting of elk and deer. There is considerable benefit to the local population from these activities including the leasing of hunting rights, outfitting, and boarding of sportsmen. County Road 8 has been designated as a scenic byway because of the open spaces and view of deer and elk. The preservation of these open spaces in the major valley will be necessary to maintain recreation and tourism in the county.



[18] U.S. Department of Agriculture. 2017. "2017 Census of Agriculture". https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Colorado/cp08103.pdf.

[19] Colorado State University Extension. August 2013. "Care for Livestock During a Disaster". https://extension.colostate.edu/topic-areas/agriculture/caring-for-livestock-during-disaster-1-815/.

[20] Colorado Stat University Extension. December 2014. "Addressing the Impacts of Wildfire on Water Resources". https://extension.colostate.edu/topic-areas/natural-resources/addressing-the-impacts-of-wildfire-on-water-resources-6-706/.

[21] Colorado State University Extension. December 2010. "Caring for Livestock After Disaster". https://extension.colostate.edu/topic-areas/agriculture/caring-for-livestock-after-disaster-1-816/.

Wildlife Habitat

Natural resources in Rio Blanco County provide habitat for protected wildlife and can have beneficial functions that reduce the impacts from various natural hazards. Endangered and threatened species are protected by law and any future wildfire mitigation projects are subject to these laws. Endangered and threatened species located in Rio Blanco County are listed in the table below. Colorado Parks and Wildlife have identified High Priority Habitats across the state. Figure 9 shows the identified high priority habitat areas in Rio Blanco County.[22]

Table 10: Threatened and Endangered Species in Rio Blanco County

Species Name	Type of Species	Status
Mexican Spotted Owl	Birds	Threatened
Yellow-Billed Cuckoo	Birds	Threatened
Bonytail	Fish	Endangered
Colorado Pikeminnow	Fish	Endangered
Humpback Chub	Fish	Threatened
Razorback Sucker	Fish	Endangered
Dudley Bluffs Bladderpod	Plants	Threatened
Parachute Beardtongue	Plants	Threatened
Black- Footed Ferret	Mammals	Endangered
Canada Lynx	Mammals	Threatened

Source: U.S. Fish and Wildlife Service[23]

Mexican Spotted Owl

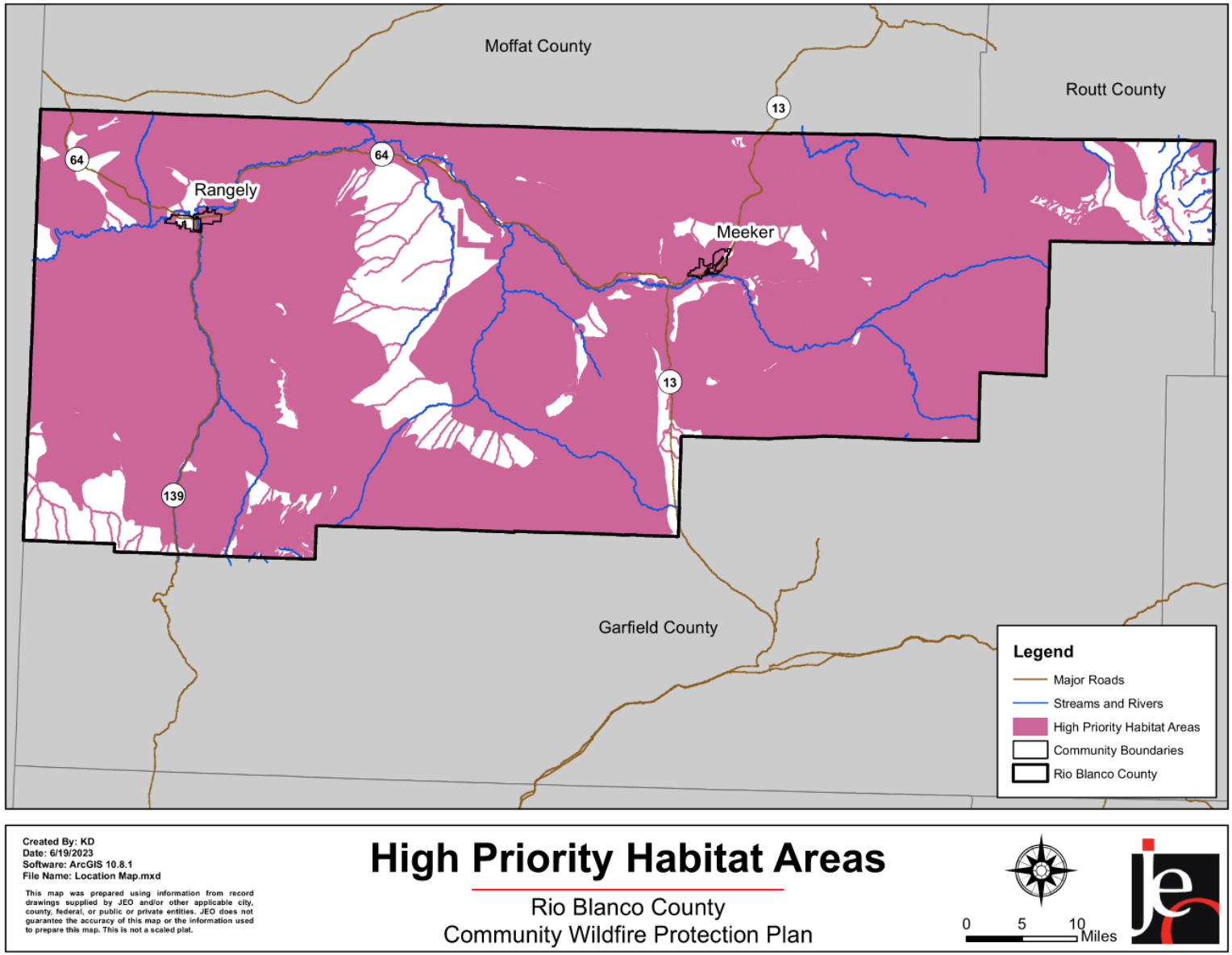


Source: U.S. National Park Service

[22] Colorado Parks and Wildlife. 2022. "Colorado Parks and Wildlife – HPH COGCC SB181 Data". https://www.arcgis.com/home/group.html?id=280f7c0420604edaa66ed6c0311d31d9#overview.

[23] U.S. Fish & Wildlife Service. Accessed June 2023. "Listed Species with Spatial Current Range Believed to or Known to Occur in Colorado". https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=CO&stateName=Colorado&statusCategory=Listed.

Figure 9: High Priority Habitat Areas



Wildfire Risk Assessment

People living in or near wildland settings in Rio Blanco County are vulnerable to the threat of wildfire. The development of homes and other structures is encroaching into the forest wildland and natural areas and is expanding the WUI. Interface neighborhoods are characterized by a diverse mixture of varying housing structures, development patterns, ornamental and natural vegetation, and natural fuels. Problems can arise if this new development increases the amount of fuel without coordinated thinning of the forests and the creation of defensible space around homes.

In the event of a wildfire, vegetation, structures, and other flammables can combine to create unwieldy and unpredictable events. Factors relevant to the fighting of such fires include access, firebreaks, proximity of water sources, distance from fire stations, and available firefighting personnel and equipment. The vulnerability of structures and homes in the interface area is increased by: combustible roofing and construction material; no/insufficient defensible space; poor access to structures; heavy natural fuel types; steep slopes; limited water supply; and winds over 30 miles per hour.

Much of the data in this section comes from the CSFS 2022 Colorado Forest Atlas. A detailed risk summary report was generated for Rio Blanco County and the information given was used to create maps, tables, and paragraph discussion. The Colorado Forest Atlas gives comprehensive and scientific results that can be used for wildfire mitigation and prevention planning.

Fire History

Multiple wildfire events have impacted Rio Blanco County in the past. Most of the wildfire events are small (one acre or less) but several large wildfires (38 over 500 acres) have portions in the county. Figure 10 below shows the location of historical wildfire events from 1984-2021. This map likely underrepresents the total number of wildfire events as historical occurrences are not well documented. These events come from two different sources. The Large Fire Perimeters come from Monitoring Trends in Burn Severity[24] and covers fires that burned 500+ acres. Fire ignitions come from the U.S. Forest Service[25] and include all fires reported by federal agencies. Most fires in the county are from natural caused ignitions.

According to the U.S Forest Service and Monitoring Trends in Burn Severity data, Rio Blanco County experienced 3,402 wildfires between 1984 and 2021. The average wildfire in Rio Blanco County burned 43 acres. Of the fires recorded nearly 83 percent burned under one acre. Only three percent of the recorded fires burned more than 100 acres with the largest fire burning 17,821 acres in 2017. Historically notable fires include: the Greasewood Fire, Dead Dog Fire, Indian Valley Fire, Cabin Lakes Fire, Red Canyon Fire, Oil Springs Fire, and most recently the Deserado Fire. Most large fires in the county quickly cross ownership lines and require a multi-jurisdictional response.

- **Greasewood Fire, June 2004** – Over 7,800 acres were burned from a lightning caused fire. No structures were burned but the estimated firefighting cost was $1,100,000.

[24] Monitoring Trends in Burn Severity. 2022. “Burned Areas Boundaries”. https://www.mtbs.gov/direct-download.

[25] 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.

- **Dead Dog Fire, June 2017** – Over 17,00 acres burned along the western slope of Colorado from this human caused fire. Several people needed to be evacuated.



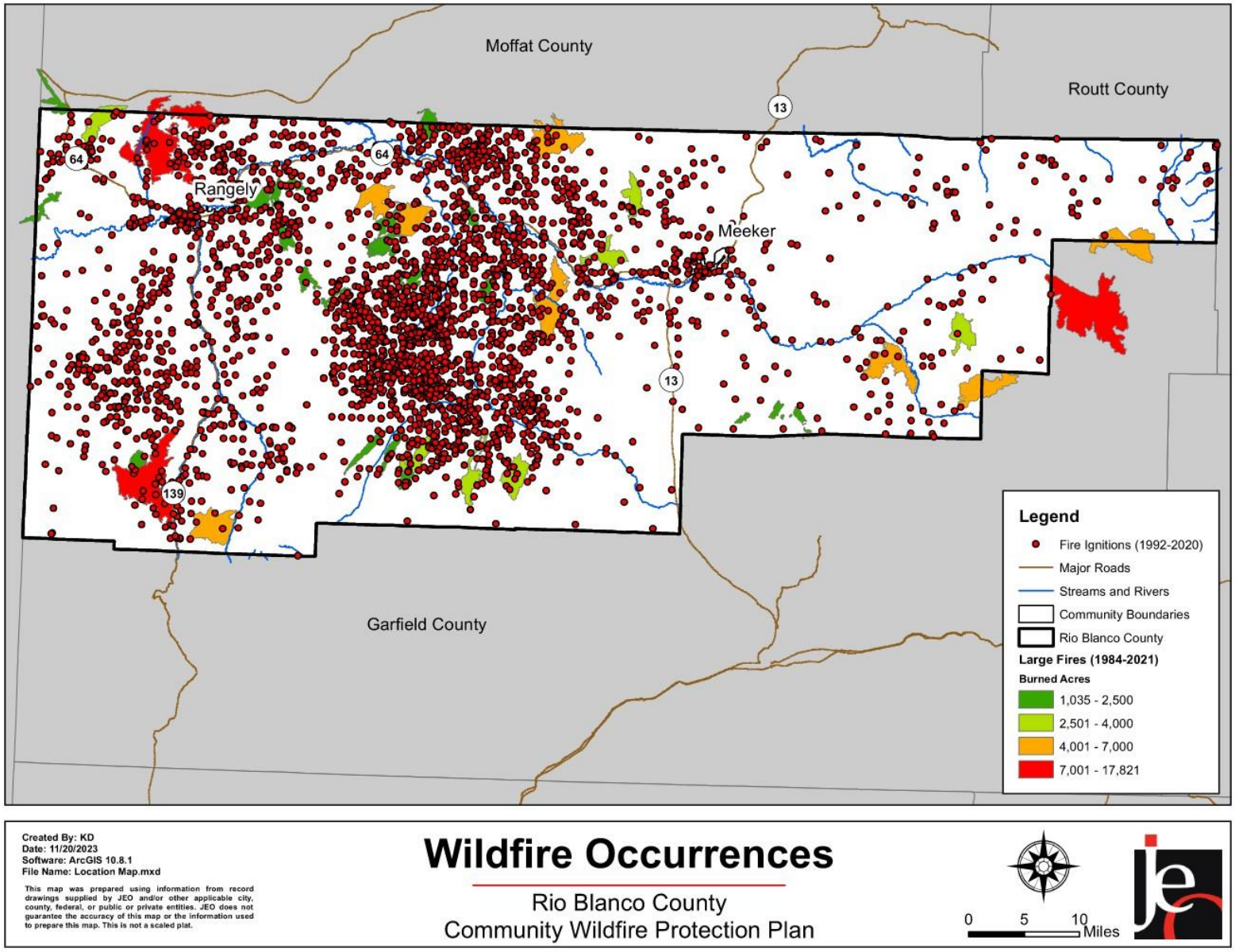
Source: Herald Times

- **Indian Valley Fire, July 2018** – Over 6,100 acres burned of private and BLM land. Four structures were threatened, and many acres of sage grouse habitat were burned. The fire lasted for over 10 days.



Source: Rio Blanco Sheriff's Office

Figure 10: Wildfire Occurrences 1984-2021



- **Cabin Lakes Fire, July 2018** – Over 5,700 acres burned southeast of Meeker near the Garfield County border.
- **Red Canyon Fire, July 2018** – Over 5,700 acres burned south of Rangely near the Garfield County border.
- **Sulphur Creek Fire, July 2018** – 977 acres burned five miles north of Meeker. High winds and a nearby power line made containment difficult.
- **Oil Springs Fire, June 2021** – Over 12,500 acres burned south of Rangely near the Garfield County border.



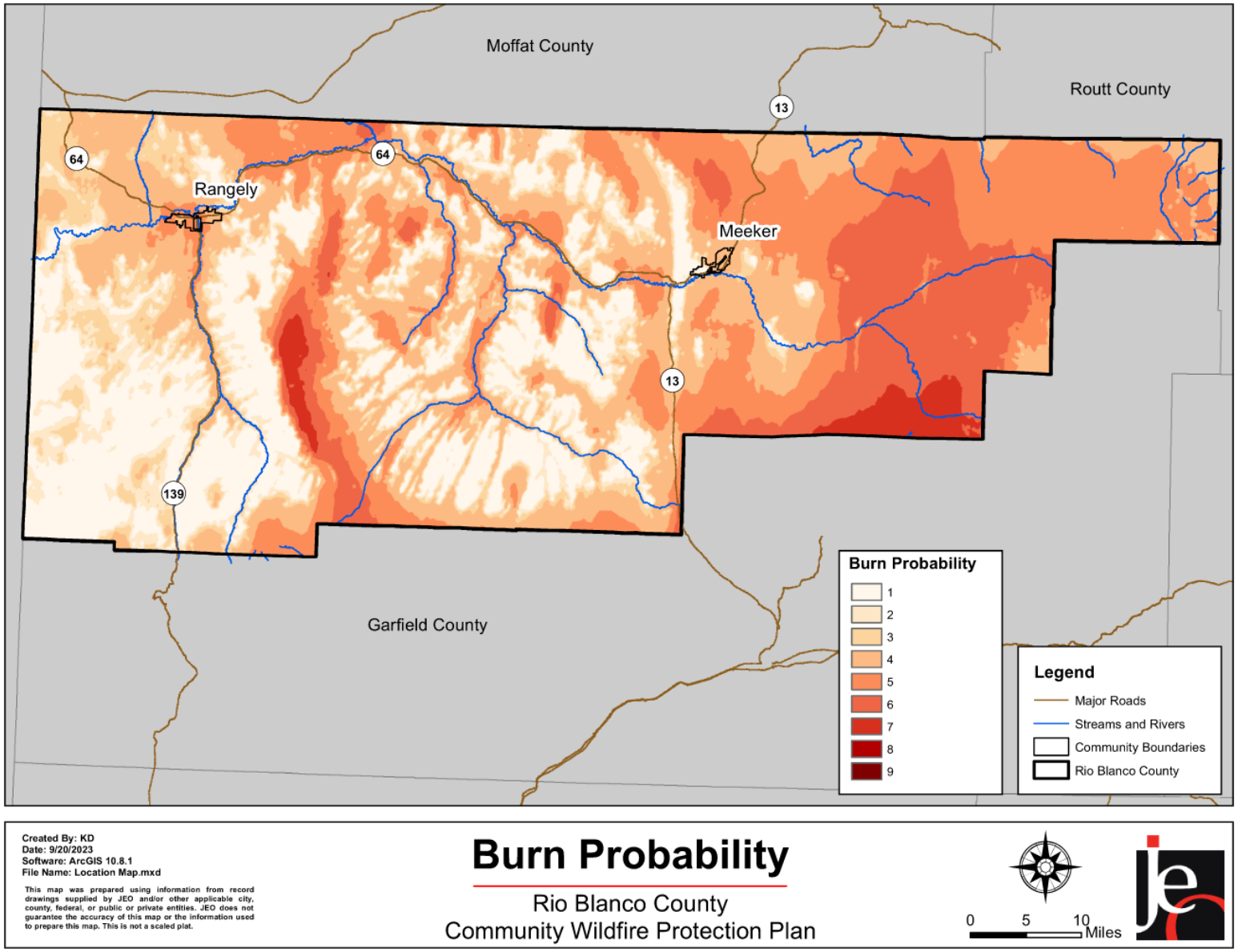
Source: Rio Blanco Sheriff's Office

- **Deserado Fire, August 2023** – Over 1,100 acres of private land burned. No structures were threatened but the estimated cost was $350,000.

Probability of Future Events

Wildfire events are likely to occur in the future. The 2020 Rio Blanco County Multi-Jurisdictional Hazard Mitigation Plan states there is a 100% chance of wildfire in the county in any given year. Figure 11 shows the annual probability of any location burning due to wildfire according to the Colorado Forest Atlas. A score of 1 is the lowest probability, 5 is moderate probability, and 9 is highest probability. Probability varies widely throughout the county. The eastern portion of the county has mostly a moderate to high burn probability, while the central and eastern portions have mostly low with some moderate probability. Only 2% of the county is in the high to highest probability category area.

Figure 11: Burn Probability



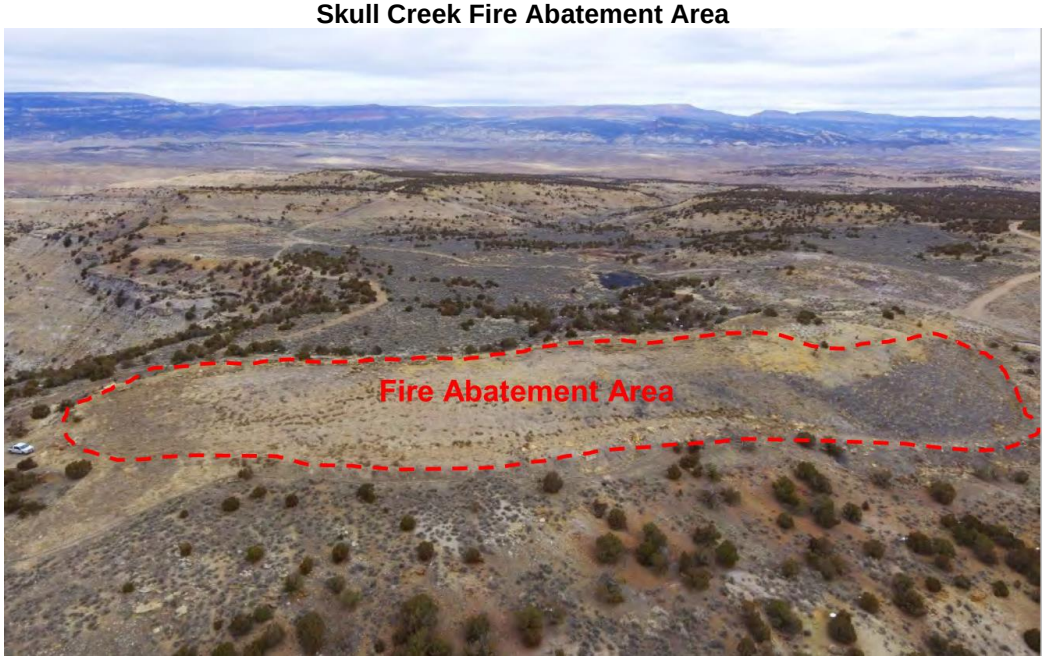
Underground Coal Mine Fires

Rio Blanco County has three underground coal mine fires. Two of the fires are still active with one being extinguished. Mine and coal fires present safety hazards to the public. With coal fires, the mine itself is not on fire, the remaining coal pillars, coal seam, and burnable debris is what burns. Coal fires are dangerous due to instability of the ground surface, the possibility of toxic exhaust gases being trapped in hollows, and the ability to start surface fires. Sites that appear dormant can become active again and require diligent monitoring.[26]

Skull Creek Fire[27]

The Skull Creek Mine Fire site is located approximately seven miles north/northeast of Rangely on BLM land. It is unclear whether this fire was associated with a mine or if it started as an outcrop fire. An initial abatement project was performed in 1951. The project involved excavating a 600 foot long, 60-foot-deep cutoff trench to isolate the fire from the rest of the coal in the mesa. In 2015 and 2016, abatement of the mine fire was completed. The fire was abated through mass excavation, then mixing and cooling of hot materials.

Skull Creek Fire Abatement Area



Source: Colorado Department of Natural Resources

Black Diamond Mine[28]

The Black Diamond Mine fire site is located on a tributary of Anderson Gulch approximately one mile northwest of Meeker on private land. The mind operated prior to 1906 and then from 1916 to 1930. In 2015 and 2016, a mine fire abatement project was completed at the Black Diamond site. The remediation entailed excavation of the burning outcrop, re-grading the slope, and covering

[26] Colorado Department of Natural Resources. 2018. "Colorado Underground Coal Mine Fires – 2018 Inventory Report". http://hermes.cde.state.co.us/drupal/islandora/object/co:35359/datastream/OBJ/view.
[27] Colorado Department of Natural Resources. 2018. "Colorado Underground Coal Mine Fires – 2018 Inventory Report". http://hermes.cde.state.co.us/drupal/islandora/object/co:35359/datastream/OBJ/view.
[28] Colorado Department of Natural Resources. 2018. "Colorado Underground Coal Mine Fires – 2018 Inventory Report". http://hermes.cde.state.co.us/drupal/islandora/object/co:35359/datastream/OBJ/view.

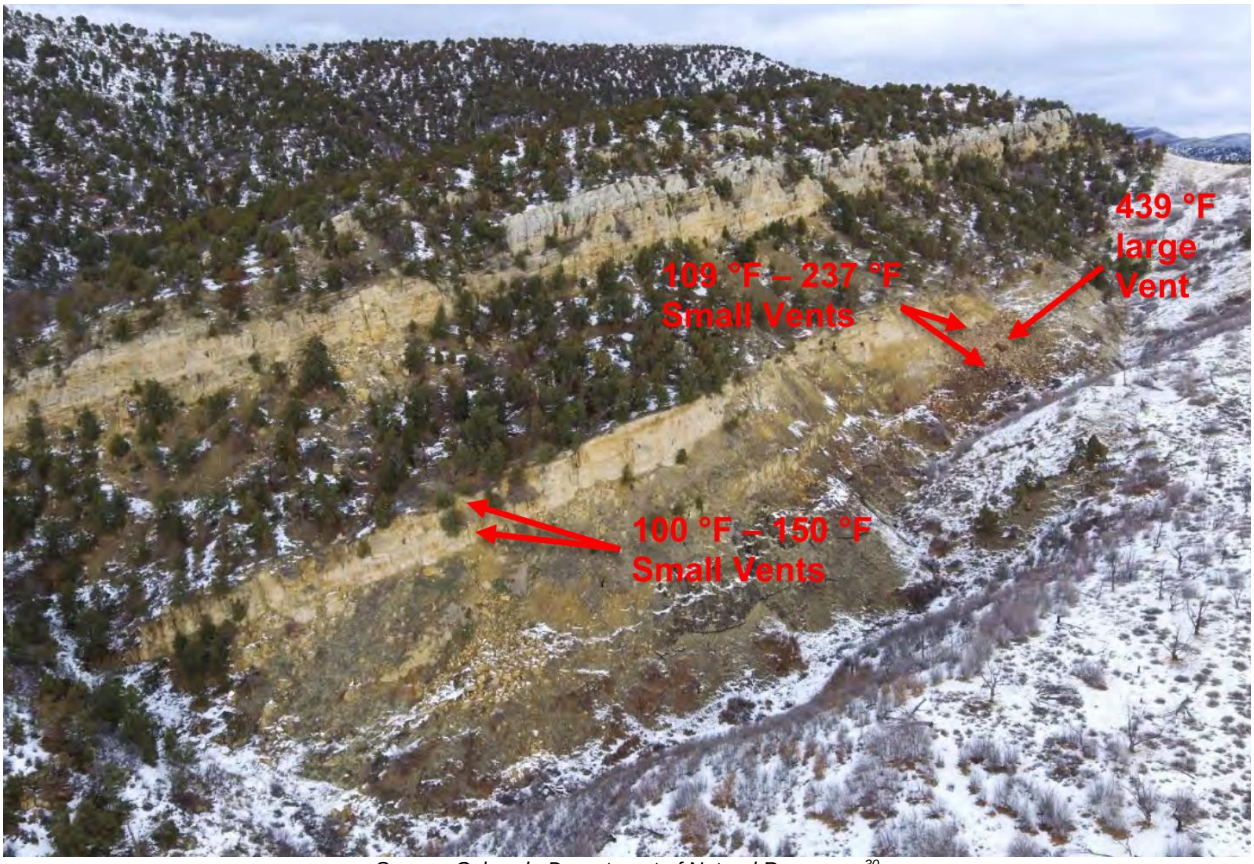
the area with a layer of locally sourced riprap. The air shaft continues to vent through the soil of the graded slope and riprap armor layer.

There are several vents with high concentrations of carbon monoxide and temperatures ranging from 110°F to 237°F. One large vent had a temperature of 439°F but is located in an area of riprap and is 70 feet away from the nearest vegetation. Overall, it is believed this fire poses moderate risk of wildfire. The site is located within ¼ mile of a trail system with no fencing and only one sign to deter trespassers.

Rienau Number 2[29]

The Rienau Number 2 fire site is located approximately 6.5 miles north of Meeker immediately east of Highway 13 on private property. The Rienau Number 2 Coal mine operated from 1928 to 1965. In the spring of 2003, the Meeker Fire Department contained and extinguished a small brush fire that started at the base of the hill near the backfilled mine entry. This area was cool in 2002, but at the time of the fire it was venting at temperatures of 300-450°F. Within two months of the fire, the vents had cooled to 150-200°F, demonstrating the sporadic nature of underground coal fires.

Black Diamond Mine Vents



Source: Colorado Department of Natural Resources[30]

[29] Colorado Department of Natural Resources. 2018. "Colorado Underground Coal Mine Fires – 2018 Inventory Report". http://hermes.cde.state.co.us/drupal/islandora/object/co:35359/datastream/OBJ/view.

[30] Colorado Department of Natural Resources. 2018. "Colorado Underground Coal Mine Fires – 2018 Inventory Report". http://hermes.cde.state.co.us/drupal/islandora/object/co:35359/datastream/OBJ/view.

Black Diamond Mine & Rienau Number 2 Fires

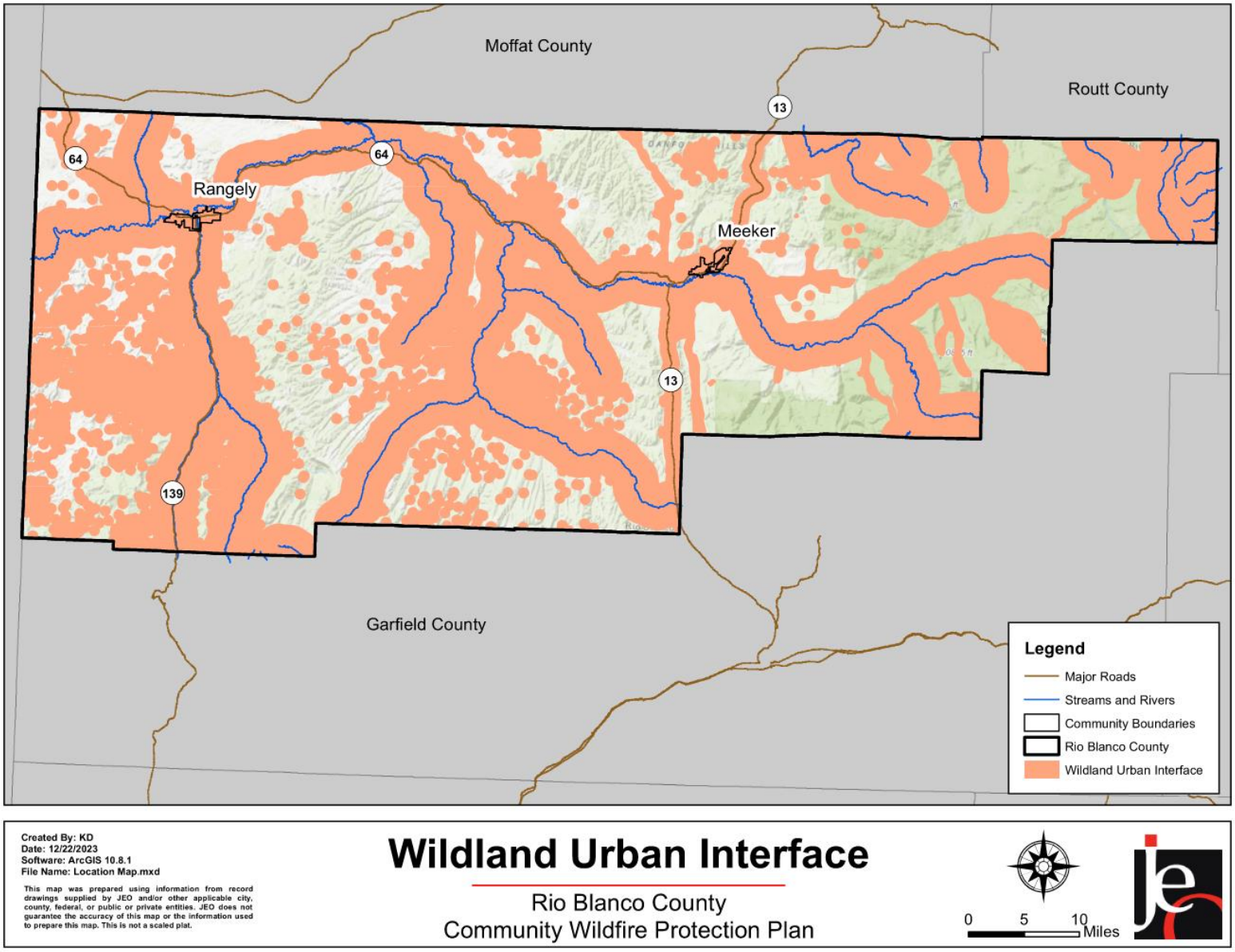


Source: Colorado Department of Natural Resources

Wildland Urban Interface

The WUI should be flexible in its definition to be able to accommodate local areas of concern and priority landscapes. For the purpose of this plan, the core planning team defined the WUI as; areas within one mile of highways and other major transportation routes, within half a mile of oil and gas infrastructure, within two miles of major waterways, within communities, within the Meeker source water protection area, and surrounding communication towers at risk to wildland fire. The WUI boundaries were presented at core planning team meetings for discussion and approval. The Wildland Urban Interface map for Rio Blanco County can be found below (Figure 12). Zoomed in fire authority maps for the WUI can be found in *Appendix B*.

Figure 12: Wildland Urban Interface



Wildfire Risk to Assets

The Colorado Forest Atlas calculates a composite wildfire risk rating for all of Colorado. Wildfire risk is defined by the Colorado Forest Atlas as the possibility of loss or harm occurring from wildfire. All values (Forest Assets, Riparian Assets), risks (WUI Risk, Watershed Protection Risks), and burn probability are combined together to create the risk index (Figure 13). Zoomed in fire authority maps for the wildfire risk can be found in *Appendix B*.

The eastern portion of the county contains most of the low, moderate, and high-risk areas. The rest of the county is in the lowest risk category. The table below shows that only 0.3% of the county falls within the two highest risk classes, while 88.5% falls in the lowest risk class.

Table 11: Wildfire Risk to Assets Acres

Wildfire Risk Class	Acres	Percent
Lowest Risk	1,793,095	88.5%
Low Risk	215,877	10.6%
Moderate Risk	10,417	0.5%
High Risk	5,885	0.3%
Highest Risk	0	0%

Source: Colorado State Forest Service[31]

A Fire Intensity Scale is also conducted by the Colorado Forest Atlas. This scale uses fuels, topography, and weather to determine a relative intensity from Class 1 (lowest) to Class 5 (highest). A majority of the county has a Moderate Intensity (33.5%) rating or High Intensity (21.1%) as seen in Figure 14. The highest fire intensity areas are primarily located on the eastern side of the county.[32]

During the planning process core planning team members indicated that the wildfire risk in the county is much higher than shown by the Colorado Forest Atlas. Planning team members were asked to identify locations of high wildfire risk in the county. These locations were identified due to various reasons such as long response times, nearby fuel loads, or potential economic impact. The identified locations of concern are listed below. In addition to these locations, the Rio Blanco Fire Protection District is concerned with response times in the district. The district boundary is very large, and all responses come out of one station.

County Road 2 – County Road 2 travels parallel to the White River east of the Town of Rangely. Due to County Road 2's proximity to the river there is an increased density of vegetation. Along the road there are approximately five homes sounded by sage brush and trees, where response times exceed 15 minutes. These properties are at high risk to wildfire and may need defensible space around their homes and any other structures.

Colorado Northwestern Community College – The community college is located in the southern portion of the Town of Rangely off Kennedy Drive. It is surrounded on three sides by a natural landscape made up primarily of shrubland. Several buildings on campus have sage brush and trees on their outer perimeter and fall within flame impingement areas. Proper defensible space is needed around these buildings for firefighter response should a wildfire threaten the campus.

[31] Colorado State Forest Service. 2022. "Colorado Wildfire Risk Assessment Summary Report – Rio Blanco County".
[32] Colorado State Forest Service. 2022. "Colorado Wildfire Risk Assessment Summary Report – Rio Blanco County".

Electrical, Oil, and Gas Infrastructure – There is extensive electrical, oil, and gas infrastructure located primarily in the western and central portions of the county. Downed power lines and sparks from oil and gas equipment could easily spark wildfires. This infrastructure is typically located in remote areas that are difficult to get to and far away from fire stations. This may mean a fire is not noticed or responded to for an extended period of time, which may cause issues if they spread quickly. Once a fire has started, it may cause extensive damage to infrastructure. The White River Electric Association is in the process of developing a wildfire mitigation plan that includes sensitive recloser settings that may help to better detect wildfires quicker.

Of particular concern is the Piceance Basin. There are countless wells, several large natural gas processing facilities, and Natural Soda at risk of wildfire. Additionally, there are five electrical substations and hundreds of miles of large and small power lines that are at a significant risk each year. A high percentage of the high-paying jobs in the county are in these wildfire risk areas, so the economic impact would be significant if a fire was to destroy or damage these facilities or the electrical lines that serve them.

Sage Hills Subdivision – The Sage Hills Subdivision is located in the northern most portion of the Town of Meeker. Because of this, the subdivision is surrounded on all four sides by natural landscape made up primarily of pinyon-juniper and shrubland. The western and northwestern side is especially high risk due to denser vegetation and more hilly terrain. Several homes in the subdivision directly abut this terrain and do not have adequate defensible space.

White River National Forest – The White River National Forest is located in the eastern portion of Rio Blanco County and is operated by the USFS. The area attracts lots of tourism and is a prime recreation location. The area has the densest vegetation in the county made up primarily of hardwoods and spruce-fir. It also has a much more mountainous terrain with steep elevation changes resulting in difficult to reach areas. A wildfire in this area may be difficult to suppress and could result in future mudslides and loss of tourism if large areas were burned.

White River – The White River is the primary water body in Rio Blanco County. It flows east to west thought the center and northern portions of the county. Both the Town of Meeker and the Town of Rangely are directly adjacent to the river. The White River is a vital resource for the county. The Town of Rangely, many rural areas, and those downstream in other states rely on the river for drinking water. The river is also home to endangered fish species and attracts many for fishing and recreational purposes.

The land on either side of the river is densely vegetated with trees and has a much higher risk of wildfire than other areas in the county. If a wildfire were to happen along the White River it could become contaminated from additional sediments, ash, and fire retardants. This would have massive impacts on drinking water, animals, and recreation.

Figure 13: Wildfire Risk to Assets

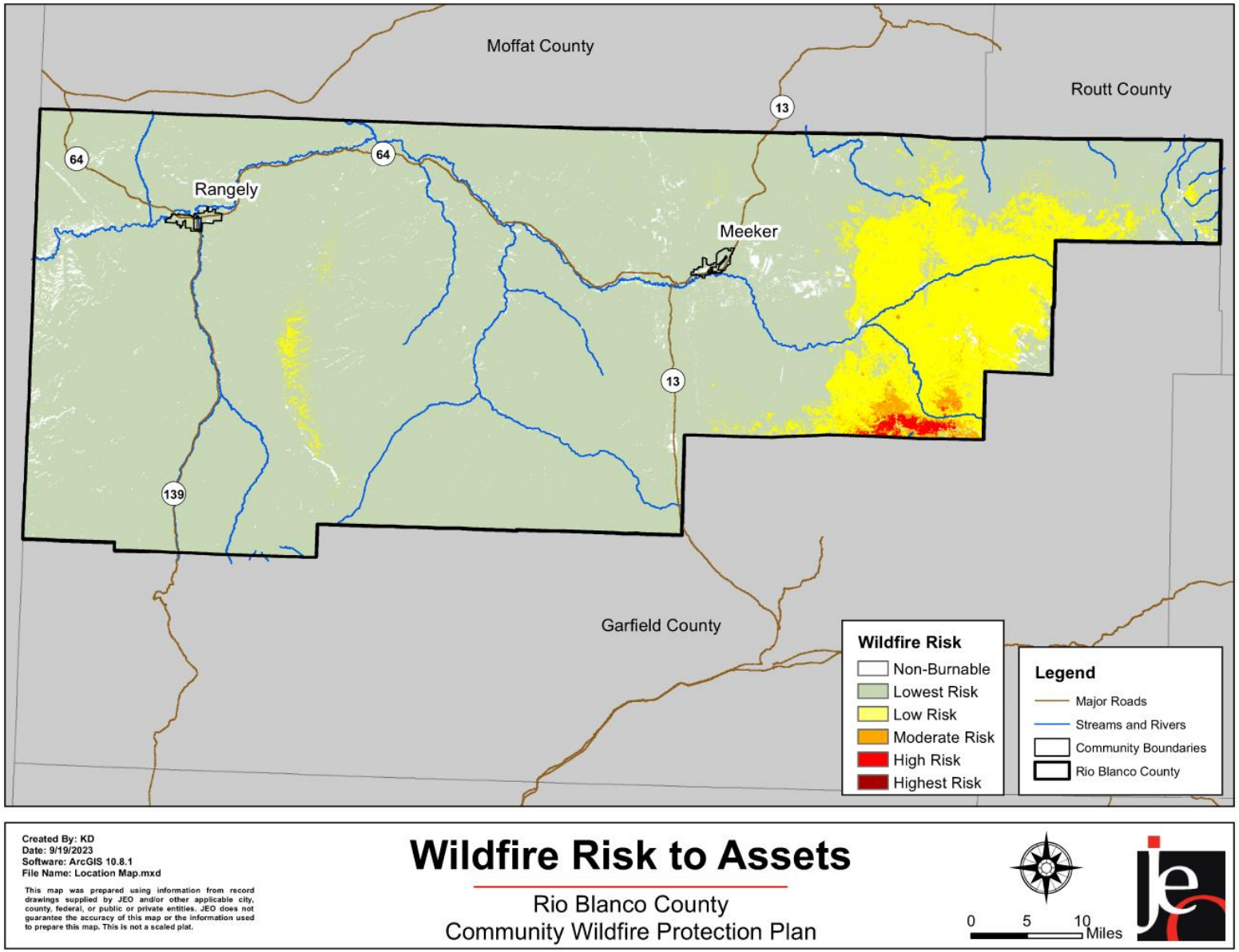
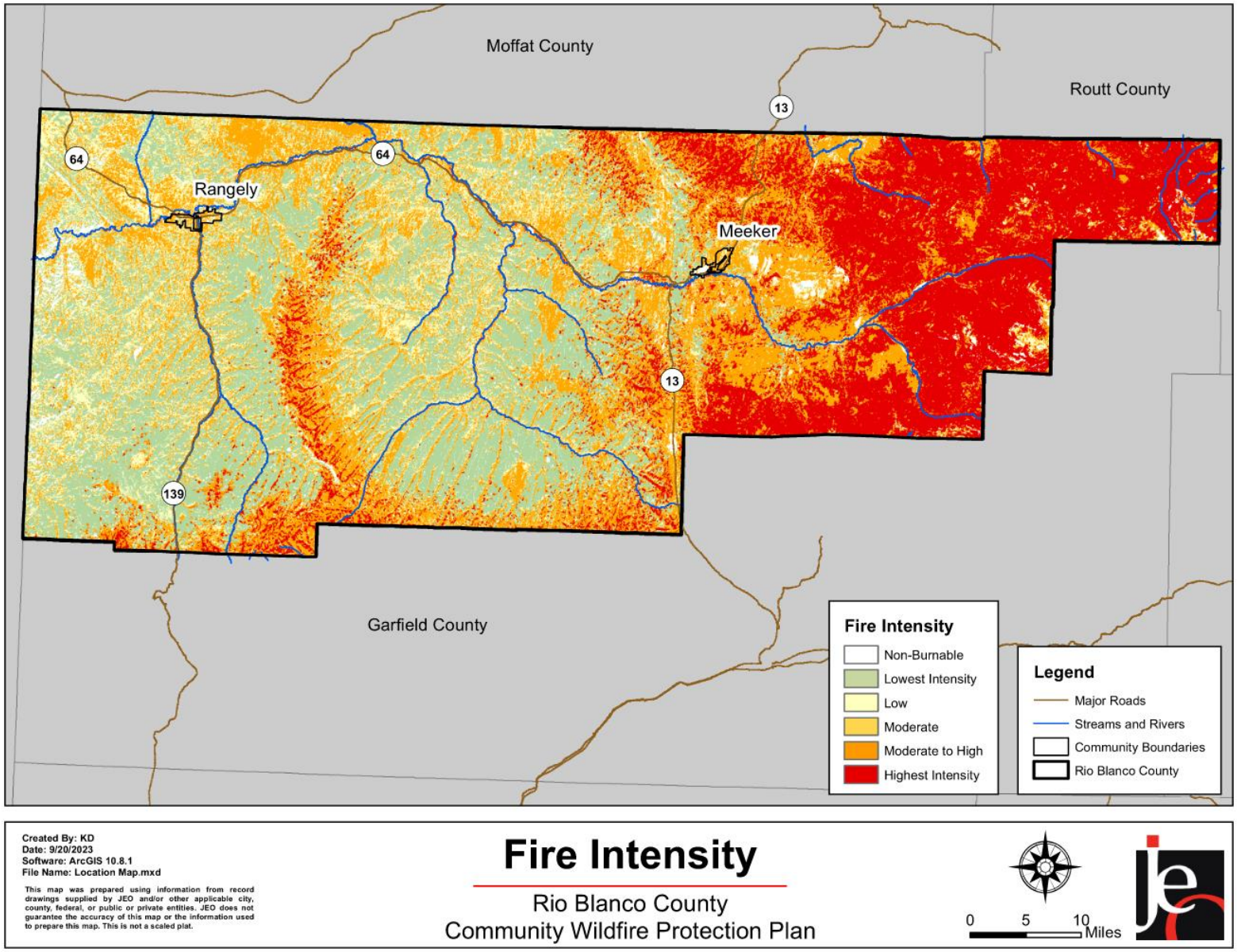


Figure 14: Fire Intensity



Vegetation Condition Class

Vegetation Condition Class (VCC) indicates the general level to which current vegetation is different from the estimated historical vegetation reference conditions. Vegetation changes from historical conditions have resulted because of settlement and fire exclusion policy.

The VCC is based on changes to vegetation composition, structural stage, and canopy closure. VCC may be utilized, in combination with other factors, to help guide management objectives and set priorities for vegetation-fuel treatments and management. The classification of vegetation into VCC considers only wildland vegetation and not vegetation associated with agricultural or urban areas. VCC classes are shown in the table below. Most of the county falls in the 1.B or 2.A condition class (Figure 15).

Table 12: Vegetation Condition Class

Vegetation Condition Class	Definition
VCC 1.A	Very Low Departure
VCC 1.B	Low Departure
VCC 2.A	Moderate to Low Departure
VCC 2.B	Moderate to High Departure
VCC 3.A	High Departure
VCC 3.B	Very High Departure

Source: LandFire,2020[33]

Population at Risk

Populations living in the WUI are most at risk of wildfire. The population living in WUI areas was estimated using the structure count of buildings in the WUI area. Approximately 93.5% of structures are located in the WUI.

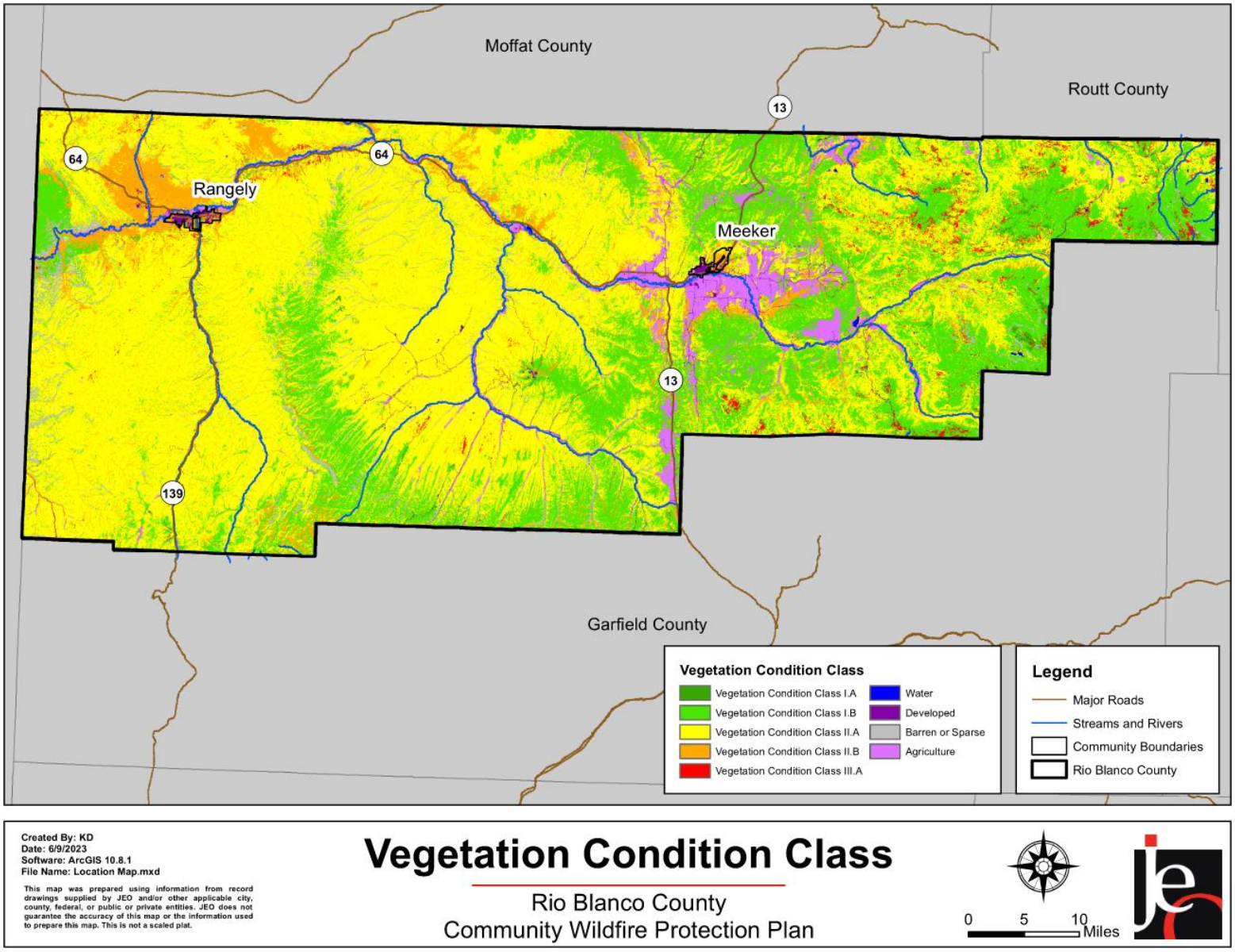
Public health impacts from smoke and air pollution can also occur from wildfires. Smoke, soot, tar, minerals, carbon monoxide, carbon dioxide, and other toxins can be released during a wildfire. Those with preexisting health conditions like respiratory and cardiovascular disease are especially vulnerable. Those fighting fires can also be impacted from smoke inhalation and heat stroke.



Source: Rio Blanco Sheriff's Office

[33] LandFire. 2020. "Vegetation Condition Class". Accessed May 2023. https://www.landfire.gov/viewer/.

Figure 15: Vegetation Condition Class



Values and Buildings at Risk

Building Risk

Property damage from wildfires can be severe and can even destroy entire communities. Wildfires typically result in total building loss, including contents. The CSFS Wildfire Risk Atlas created estimates for potential building damage from wildfire. These estimates were created by analyzing 13 years of building damage data from state agency inspections after large fires and spatial analysis of the number of buildings in the county threatened by fires. Table 13 shows most buildings in the county have very low damage potential. However, 13.7% of buildings have a high or very high potential of damage from wildfire.

Table 13: Building Damage Potential

Building Damage Potential	Acres	Percent
Very Low	25,645	55%
Low	8,640	18.5%
Moderate	5,993	12.8%
High	3,433	7.4%
Very High	2,923	6.3%

Source: Colorado State Forest Service[34]

Community Lifeline Risk

Community lifelines are also at risk to wildfires with vulnerability depending on the type of construction materials. Roadways are not likely to be damaged but closed roads could cause issues for residents and first responders. Table 14 lists community lifelines and the wildfire risk they are located in. All identified lifelines are in the lowest wildfire risk.

Table 14: Community Lifeline Wildfire Risk

Community Lifeline	Wildfire Risk
Administration Building – Meeker	Lowest Risk
Administration Building - Rangely	Lowest Risk
Barone Junior High	Lowest Risk
Colorado Northwestern Community College	Lowest Risk
Columbine Park Rodeo Grounds	Lowest Risk
Kenney Reservoir	Lowest Risk
Meeker Elementary School	Lowest Risk
Meeker High School	Lowest Risk
Meeker Recreation Center	Lowest Risk
Meeker Town Hall	Lowest Risk
Rio Blanco Fire Protection District	Lowest Risk
Pioneers Medical Center	Lowest Risk
Rangely Elementary School	Lowest Risk
Rangely High School	Lowest Risk
Rangely Hospital	Lowest Risk
Rangely Middle School	Lowest Risk
Rangely Recreation Center	Lowest Risk
Rangely Town Hall	Lowest Risk
Rangely Fire Protection District	Lowest Risk
Rio Blanco County Administration	Lowest Risk
Rio Blanco County Courthouse	Lowest Risk

[34] Colorado State Forest Service. 2022. “Colorado Wildfire Risk Assessment Summary Report – Rio Blanco County”.

Community Lifeline	Wildfire Risk
Rio Blanco County Road and Bridge – Meeker	Lowest Risk
Rio Blanco County Road and Bridge – Rangely	Lowest Risk
Rio Blanco County Fairgrounds	Lowest Risk
Rio Blanco Reservoir	Lowest Risk

Source: 2020 Rio Blanco County HMP, CSFS

Watershed Protection Risk

The inherent activities of wildland fire management are potential sources of watershed and source water contamination even though these actions are intended to protect human welfare, economic values, and ecological values. Vegetation-fuel treatments, wildfire suppression activities, and burned areas are potential sources for watershed contamination. The types of potential contaminants delivered to surface waters resulting from vegetation-fuel projects depend on the type of treatment. For example, mechanical treatments may increase sediment loads to surface waters from soil-surface disturbances. Vegetation herbicide treatments could result in chemical contamination of surface waters. Prescribed fire may increase sediment and ash flows into surface waters. Wildfire suppression sources of contaminants may include increased sediment, debris, and ash flows into surface waters. The fire burned area or scar may also result in increased sediment, debris, and ash flows into surface water until vegetation is re-established. Burned areas can be especially susceptible to accelerated erosion from subsequent precipitation events for years after fire suppression.

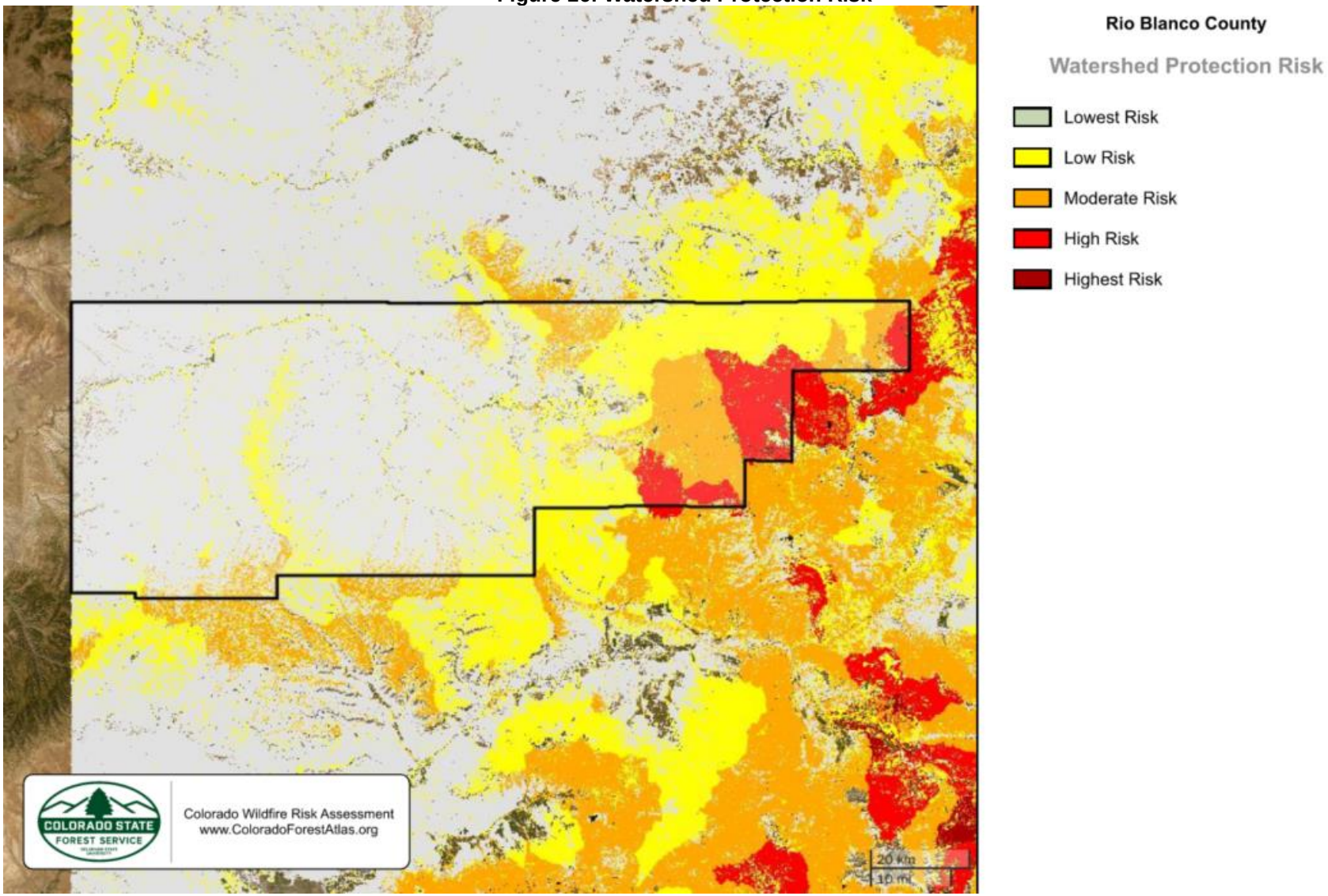
Several actions can be taken to reduce the risks of watershed contamination from wildland fire activities. BLM and the USFS would need to follow their fire management plans and resource management plan stipulations with regards to vegetation-fuel management, fire suppression, and post-fire stabilization. Private landowners should work with the CSFS, conservation district, or NRCS to address ways to protect water sources from wildland fire management on their properties. Additional mitigation such as installing site-specific erosion control devices around source water intake may be necessary during and after any wildland fire management activities.

CSFS developed a Watershed Protection Risk Index to provide a measurement of risk to watersheds based on the potential negative impacts from wildfire. In areas which experience low-severity burns, fire events can serve to eliminate competition, rejuvenate growth, and improve watershed conditions. But in landscapes subjected to high or moderate-burn severity, the post fire threats to public safety and natural resources can be extreme. Critical surface vegetation loss leaves forested slopes vulnerable to large-scale soil erosion and flooding during subsequent storms. These impacts threaten overall health, safety, and integrity of communities and natural resources downstream. The index for Rio Blanco County lists the majority of the county in the lowest risk (64.1%), with only 5.6% in the high and highest risk (Figure 16).



Source: Aspen Journalism

Figure 16: Watershed Protection Risk



Wildland Fire Emergency Operations and Capabilities

Rio Blanco County encompasses a mosaic of land ownership and jurisdictional boundaries. Due to this mosaic, interagency cooperation is essential not only for wildland fire suppression but also for prevention, preparedness, mitigation, and fiscal continuity. Wildland fire management is governed by a variety of federal policies, state statutes, and cooperative agreements between jurisdictional agencies.

Within the FPDs, the Fire Chief has authority for wildfire suppression on all non-federal lands unless that authority is mutually transferred to the County Sheriff. In addition to fire suppression, the FPDs offer emergency first response medical services, hazardous materials response, and fire prevention education. The County Sheriff has authority for all state and private lands outside of the FPDs. DFPC does not have jurisdiction on any lands, until authority and responsibility are transferred by mutual consent from the County Sheriff to DFPC. DFPC works closely with the FPDs and the County Sheriff in fulfillment of these responsibilities. The UCRIFMU and NCFU provide fire suppression on federal lands in the county.

Interagency Cooperation

Dispatch Centers

The Rio Blanco County communication center is located in the Town of Meeker. The communication center along with the Craig Interagency Dispatch Center and Grand Junction Interagency Dispatch Center receive reports of wildfires and coordinate notification to the appropriate agency and County Sheriff. The closest forces should be dispatched without regard to jurisdiction. All requests by Rio Blanco County agencies for additional resources and assistance beyond initial attack are to be through the communication center. Requests for assistance beyond the capabilities of Rio Blanco County are to be made through the Craig Interagency Dispatch Center or Grand Junction Interagency Dispatch Center.

Mutual Aid

As identified in the Rio Blanco County Wildland Fire Operating Plan, mutual aid is considered county-wide. The period for mutual aid is defined as the time of initial dispatch and ends at either midnight of the first operational period or midnight of the second operational period.

The Mountain Area Mutual Aid Plan (MAMA) establishes mutual aid between local fire and EMS agencies within Eagle, Garfield, Grand, Lake, Pitkin, Rio Blanco, Routt, and Summit Counties. When Mountain Area Mutual Aid is implemented, an agency representative may be assigned to the incident to facilitate the tracking and allocation of MAMA resources and coordinate with the agency(s) having jurisdiction. Resources who respond under MAMA may be assigned to the incident and placed on a resource order for extended attack if needed and available.

Potential Operational Delineations (PODs)

PODs are spatial boundaries defined by control features, such as roads, ridge tops, and rivers. PODs provide information on forest conditions and fire potential can be summarized. PODs are a pre-planning framework that gives land managers a process for developing wildfire response options before fires start. PODs are currently being used by both the USFS and BLM on federal

land. While Rio Blanco County is not currently using PODs, they are open to using them as a management tool in the future across the county.

State Emergency Fire Fund (EFF)
The EFF was established in 1967 by a few counties that recognized that some fires may exceed the capabilities of county resources and abilities. County participation is voluntary. Currently, 43 counties including Rio Blanco County contribute into this insurance-type fund that can pay for catastrophic wildfires and suppression costs on state and private land that exceed a participating county's capabilities. EFF funding must be requested by the county sheriff and can only be approved by the director of DFPC.

The EFF is strictly a fire suppression fund and cannot pay for rehabilitation. However, repair of damage directly related to suppression (e.g., water bars on cat lines) may be authorized by a DFPC line officer, if accomplished as a suppression component at the time of the fire suppression effort. Alternate resources can be negotiated dependent on resources appropriate for the fire. The EFF is a necessary link to FEMA funds; however, federal agencies cannot obligate EFF funds.

Use and Reimbursement of Interagency Fire Resources

A cost share agreement should be considered for any multi-jurisdiction fire that escapes the initial attack, particularly when air resources have been ordered. However, cost sharing agreements should not influence the suppression of the fire. Cost sharing agreements may be negotiated after the fire is out.

Aviation resources for wildland fire will be ordered through Grand Junction Interagency Dispatch Center or the Craig Interagency Dispatch Center. When aircraft are ordered, the request should include the following:

- Name and agency of person ordering
- Name and location of the fire
- Lat/Long of the fire
- Elevation of the fire
- Name and radio frequency of ground contact
- Other aircraft in the area
- Aircraft hazards in the area
- Aerial retardant use
- Values at risk and the estimated time of impact.

Federal and State Resources

U.S. Forest Service
The USFS is responsible for all fire management activities on National Forest system lands within Rio Blanco County and provides a portion of the staffing of the UCRIFMU. USFS lands in Rio Blanco County are all part of the White River National Forest. Fire management in the White River National Forest is governed by the White River National Forest Fire Management Plan (2011), as well as the revised Land and Resource Management Plan for the White River National Forest (2002). Included in this plan are the following standards and guidelines for fire management in the White River National Forest:[35]

[35] United States Forest Service. 2011. "White River National Forest Fire Management Plan". https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5302825.pdf.

- Decisions made concerning vegetation management activities including “no action” will minimize exposure of firefighters and the public to fire hazards.
- All ignitions will receive an appropriate management response (suppression or fire use) according to the White River Fire Management Plan.
- Where feasible and appropriate, utilize prescribed fire to accomplish resource management goals and objectives.
- Minimize ground-disturbing activities associated with fire management actions.
- Fire management activities should be designed to sustain ecosystems including the interrelated ecological, economic, and social components.
- Ignitions in areas covered by specific fire use plans (prescriptions) should be managed to accomplish resource management objectives.

Bureau of Land Management

The BLM is responsible for all fire management activities on BLM lands in Rio Blanco County. These lands are all covered by the White River Field Office. The BLM also provides a portion of the staffing of the UCRIFMU. Fire management on BLM lands is governed by the Federal Wildland Fire Management Policy, which directs federal agencies to achieve a balance between suppression to protect life, property, and resources, and fire use to regulate fuels and maintain healthy ecosystems. In addition the BLM field office has a Fire Management Plan that becomes the on-the-ground, operational framework. The Fire Management Plan implements national direction for wildfire suppression, wildland fire use, fuels treatment, emergency stabilization and rehabilitation, and community assistance/protection programs.

Colorado Division of Fire Prevention and Control

DFPC is designated the lead Colorado state agency for wildfires and maintains cooperative wildfire protection agreements with each county in Colorado. DFPC provides technical assistance to all counties and local fire protection districts upon request. At the request of a County Sheriff (or representative) and upon mutual agreement with the DFPC Director (or representative), DFPC may assume charge of wildfires that exceed the County’s capabilities. DFPC provides a combination of ground and aviation resources that are positioned statewide to assist in wildfire suppression activities.

Rio Blanco County Resources

Emergency Notification

Rio Blanco County Emergency Management has several ways for residents and visitors to receive emergency hazard updates. Current fire activity and fire restrictions are listed on the county’s website (https://www.rbc.us/457/Emergency-Management). Text alerts through Genasys do not need to be signed up for with reverse 911. Other notifications can be signed up for through Rio Blanco County Emergency Management. The Rio Blanco Sheriff’s Department also posts updates on their Facebook page.

Rio Blanco County Wildland Fire Operating Plan

The Rio Blanco County Wildland Fire Operating Plan sets the standards for operating procedures, agreed upon procedures, and responsibilities to implement cooperative wildfire protection on lands within Rio Blanco County. The plan operates together with the Rio Blanco County Emergency Operations Plan. The plan discusses interagency cooperation, preparedness, operations, state emergency fire fund, and use and reimbursement of interagency fire resources.

Wildfire Response Capacity Needs

Improving FPD response time and capacity in the county is an effective way to protect economic and ecological values from wildfire. Vegetation-fuels mitigation and improving FPD response capacity go hand-in-hand. The resources and training needs were identified by each of the FPDs and can be found in Table 15.

Table 15: Fire Protection District Resources and Training Needs

Fire Protection District	Resource Needs	Training Needs
Rangely Rural Fire Protection District	- Available Staff (currently all are volunteer) - Bulk raw water fill in the Town of Rangely - Improved ability to locate smoke reports called in by the public - Better communication between dispatch centers, National Weather Service, BLM, and USFS	- Additional trained firefighters for fire inspections
Rio Blanco Fire Protection District	- Available Staff (currently all are volunteers) - Firewise participation for Sage Hills	- None

Other Resources

Firewise USA

The Firewise USA recognition program is administered by the National Fire Protection Association and provides a framework for neighborhoods and communities to increase ignition resistance of homes and reduce wildfire risks locally. There are currently no Firewise participants in Rio Blanco County.[36]

Community Access and Evacuation

Access and evacuation are an important component of any community's wildfire response. Community access characteristics dictate the efficiency of emergency evacuation as well as the effectiveness of emergency response. Preferably community road design provides multiple points of ingress and egress, supports two-way traffic flow, and offers adequate emergency apparatus turnaround radius on dead end roads and cul-de-sacs. Road improvements to primary or secondary evacuation routes may be as straight-forward as seasonal grading, constructing or improving turnarounds at dead ends, widening a particularly tight switchback, or improving a section of road that would not support fire access. Evacuation roles and responsibilities are discussed in Appendix G of the Rio Blanco County Emergency Operations Plan.

During the planning process FPDs, communities, and the county were asked to identify locations that could be more difficult to evacuate than others. Below are the locations along with reasons why they would be more difficult to evacuate. Overall, the county has very few evacuation concerns as most homes and neighborhoods have multiple ingress and egress routes. USFS has identified evacuation routes which include County Roads 8, 19, 90, 94, and 97.

[36] National Fire Protection Association. 2023. "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.

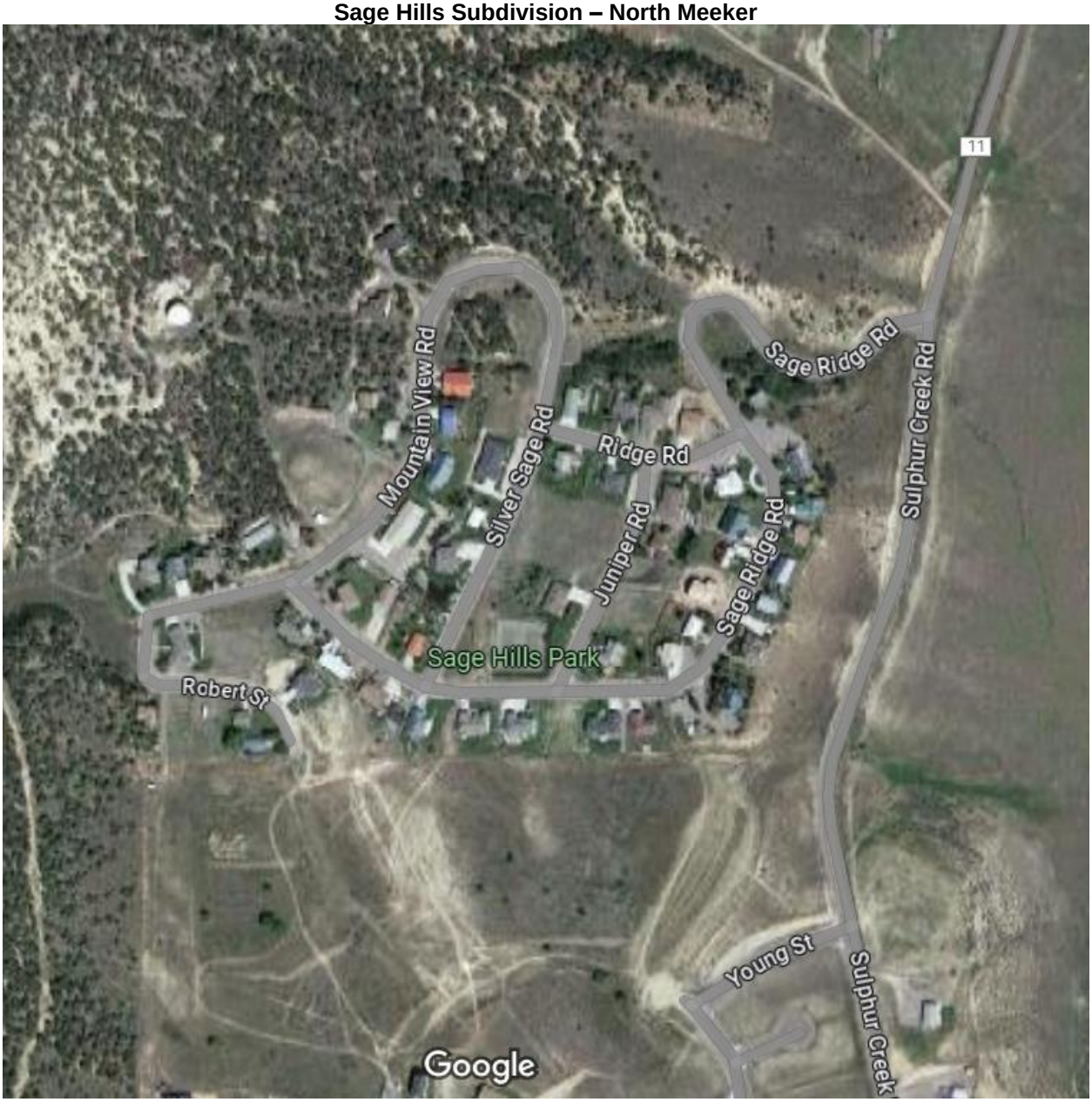
Rangely Rural Fire Protection District and Town of Rangely

The Rangely Fire Protection District indicated most locations in the district do not have evacuation concerns due to multiple ingress and egress points. However, there are rural homes with only one ingress and egress road that could be impacted if a wildfire crosses the road.

Rio Blanco Fire Protection District and Town of Meeker

There are four subdivisions in the fire district that have limited ingress and egress points. Those subdivisions include Sage Hills Subdivision, Elk Creek Subdivision, South Fork Subdivision, Buford Newcastle Subdivision. These areas may have difficulties with evacuation without advanced warning times.

Sage Hills Subdivision – North Meeker



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Wildfire Risk Reduction Projects and Activities

Risk reduction projects and activities ultimately support the overarching CWPP goals of enhancing the safety and welfare of the county's residents, emergency responders and protecting assets of economic and ecological value. These goals are achieved by reducing the threat of catastrophic wildfire through fuel breaks and thinning, defensible space, and structural ignitability. More information about these wildfire risk reduction projects and activities is listed below. Collaborative planning among stakeholder groups, the core planning team, and private homeowners is necessary for effective wildfire mitigation to occur.

Fuel Breaks and Thinning

A fuel break occurs where trees and shrub density has been reduced to break-up horizontal and vertical fuel loads. Fuel breaks are proposed around communities to provide a degree of protection from wildfire and a few roads. Reducing the amount of vegetation-fuel near communities and along access roads enhances the effectiveness of the physical canopy break the road provides, as well as critical safety factors along likely evacuation and incident access routes. This creates a safer emergency ingress/egress scenario while greatly aiding potential tactical suppression efforts. Fuel breaks can also be used effectively to connect preexisting holding features. Fuel breaks can be created by harvesting dead, diseased, and malformed trees and shrubs; removing ladder fuels; and sufficiently thinning trees and shrubs so that there is approximately 10 to 15 feet between plant canopies. Because of the inherent access issues associated with these strategic locations, pile burning is often the only feasible option for the removal of slash.

Defensible Space

The purpose of defensible space is to reduce the amount of fuel near the home and provide a space for firefighters to protect the home. According to CSFS, defensible space is the area around a home or other structure that has been modified to reduce fire hazards.[37] For a structure to survive a wildfire, radiated heat and fire intensity must be kept to a minimum. This is accomplished by a combination of 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 to the property while still providing safety for the structures, the inhabitants, and the firefighters.

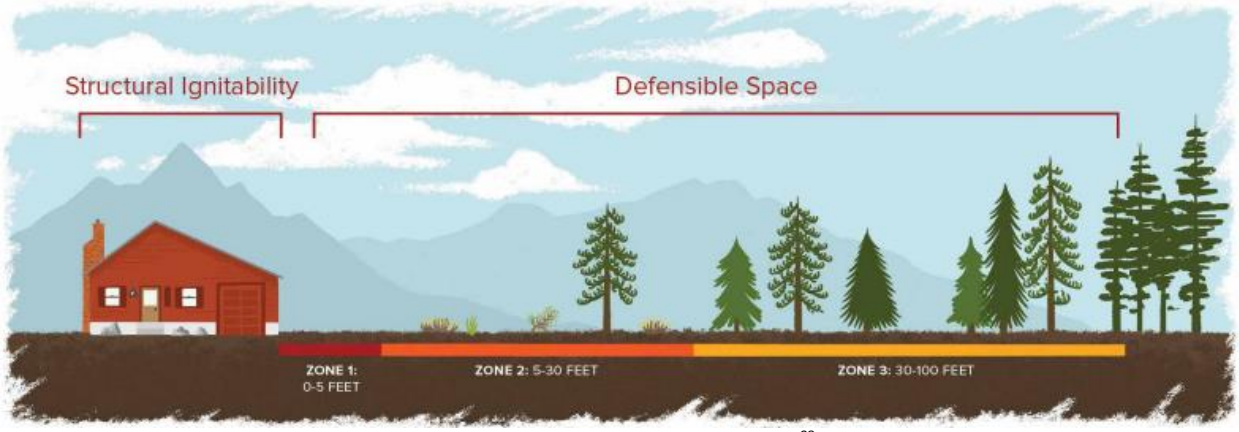
The Home Ignition Zone Guide developed by CSFS provides guidelines for creating a defensible space. To develop the most effective defensible space plan possible, the property is evaluated and divided into 3 Zones (Figure 17).

> **Zone 1** is the area nearest the home (0-5 feet). This zone requires the most vigilant work in order 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 its ability to spread while significantly reducing the likelihood a structure ignites because of radiant heat.

[37] Colorado State Forest Service. 2023. "Protect Your Home & Property from Wildfire". https://csfs.colostate.edu/wildfire-mitigation/protect-your-home-property-from-wildfire/.

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

Figure 17: Home Ignition Zones



Source: Colorado State Forest Service[38]

One of the major issues confronting defensible space and hazardous fuels mitigation is the need for ongoing maintenance. Treatment projects in timber or shrub fuels have an effective life span of approximately 10 to 15 years before vegetation regeneration once again creates hazardous fuel loads. In addition, defensible buffers and fuel breaks mowed in grasslands are beneficial only for one growing season.

Structural Ignitability

There are several characteristics of homes that make them more vulnerable to wildfires. These common characteristics are listed below.[39]

- 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

The use of fire safe building materials such as a Class A fire resistant roof and reducing vegetative fuels that surround homes are key to reducing 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 firebrands

[38] Colorado State Forest Service. 2021. "The Home Ignition Zone". https://csfs.colostate.edu/wp-content/uploads/2021/04/2021_CSFS_HIZGuide_Web.pdf.
[39] Colorado State Forest Service. 2021. "The Home Ignition Zone". https://csfs.colostate.edu/wp-content/uploads/2021/04/2021_CSFS_HIZGuide_Web.pdf.

are known to be carried by winds for over a mile away from a fire. Choosing a combination of 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 about 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 structural integrity of the house can also be improved by using fire resistant siding and other building materials. Wooden decking should be avoided because it can be a significant source of home ignitions much like wood roofing material.

Improving the fire-resistant characteristics of a structure goes hand-in-hand with the development of defensible space. Extensive recommendations can be found in CSFS publications available at https://csfs.colostate.edu/wildfire-mitigation/protect-your-home-property-from-wildfire/.

Currently, the county and communities have no requirements for Firewise construction or defensible space. The Town of Meeker tried to pass a wildfire protection zone but that discussion was tabled. Local fire districts are notified and can provide input on high density or larger developments. A recommendation is that the county adopts a uniform WUI building code.

Identified Wildfire Risk Reduction Activities

Many wildfire risk reduction activities do not have specific locations or completion times. This is because many are ongoing projects that increase resilience across the entire county. These projects include things like Firewise Communities, public education, interagency cooperation, and exercises. Separately identified vegetation-fuels, reduction projects, and locations are discussed in the next subsection.

Core planning team members were asked to review wildfire risk reduction activities identified in the *2012 Rio Blanco County Community Wildfire Protection Plan* and provide a status update. Activities were also reviewed to determine if they were still needed. After updates were provided, agencies were given the opportunity to identify any new activities to add to this CWPP. Below is the list of Completed Activities, New Identified Activities, Kept Activities, and Removed Activities. Each newly identified and kept wildfire risk reduction activity includes background information, agencies involved, a general priority level, and a status update.

Completed Activities

Activity	Forest/Fuels Coordinator Position
Background	Create a position within the county that would handle fuels and wildfire projects coordination.
Agencies Involved	Rio Blanco County
Status	Completed

New Identified Activities

Activity	Black Diamond Mine Fire Investigation, Fencing and Signage
Background	Install fencing and signs at the north and south ends of the fire site. Further investigate the vents at the southern end of the site to determine the level of risk they present to starting a surface fire.
Agencies Involved	Rio Blanco County, Rio Blanco Fire Protection District
Priority	Low
Status	Not Started

Activity	Bulk Raw Water Fill
Background	Construct a bulk raw water fill for use in wildland and structural fire events.
Agencies Involved	Town of Rangely, Rangely Rural Fire Protection District
Priority	High
Status	Planning Stage. Project is currently slated for 2024 completion.

Activity	Cross Boundary Planning Efforts
Background	Identify cross boundary planning activities within and outside of Rio Blanco County. Identify and map PODs boundary lines throughout Rio Blanco County.
Agencies Involved	Rangely Rural Fire Protection District, Rio Blanco Fire Protection District, Rio Blanco County, USFS, BLM, Surrounding Counties, Surrounding Fire Districts
Priority	Medium
Status	Not Started

Activity	Firewise Communities
Background	Work with neighborhoods and subdivisions in the county to get them designated as Firewise Communities. Sage Hills Subdivision has been identified as a possible Firewise community.
Agencies Involved	Rangely Rural Fire Protection District, Rio Blanco Fire Protection District, Rio Blanco County
Priority	Medium
Status	Not Started

Activity	Rienau Number 2 Mine Fire Inspection
Background	Perform an on-ground inspection of the Rienau Number 2 Mine Fire with landowner approval.
Agencies Involved	Rio Blanco County, Rio Blanco Fire Protection District
Priority	Low
Status	Not Started

Activity	Robert Street / Sanderson Drive Construction
Background	Provide a secondary egress route for the Sage Hills neighborhood by constructing Robert Street/Sanderson Drive
Agencies Involved	Town of Meeker
Priority	Medium
Status	Not Started

Kept Activities

Activity	Defensible Space Outreach
Background	Priority should be given to encouraging property owners to establish defensible space around their homes.
Agencies Involved	Rangely Rural Fire Protection District, Rio Blanco Fire Protection District, Rio Blanco County, USFS, CSFS, White River and Douglas Creek Conservation Districts
Priority	Low
Status	Ongoing. Some education is currently put out by the local fire districts. The White River Conservation District is hosting a Community Meeting Open to the public to discuss forest health and foster support for forest treatment in the White River National Forest. CSFS released a 2024 Live Wildfire Ready outreach program to help people explore wildfire risk in their community and bring awareness to home hardening. The USFS 2024 Collaborative Wildfire Risk Reduction Program launched a 10-year Wildfire Crisis Strategy, to safeguard communities by promoting community readiness and the Ready, Set, Go! program.

Activity	Fire Danger Public Postings
Background	During periods of high fire danger public postings should be utilized. This can include the use of digital roadways signs along Highway 64, Highway 139, Highway 13, and County Road 8. Cautionary signs should also be considered at high use trail heads.
Agencies Involved	Rangely Rural Fire Protection District, Rio Blanco Fire Protection District, Rio Blanco County
Priority	High
Status	Ongoing. The Sheriff's Office, local fire districts, and county emergency management post fire danger information regularly using social media and the county website.

Activity	Defensible Space
Background	Support defensible space efforts following public outreach. Maintain defensible space around man-camps, industrial facilities, and critical infrastructure sites.
Agencies Involved	Rangely Rural Fire Protection District, Rio Blanco Fire Protection District, Rio Blanco County, USFS, CSFS
Priority	Medium
Status	Ongoing. Almost all gas and oil well locations in the county were inspected and corrected as needed during '20/'21 for no to minimal flame impingement potential. CSFS provides Home Ignition Zone Assessments for homeowners. The USFS has established a partnership with the National Fire Protection Association and its Firewise Communities program, which aims to teach individuals how to adapt to living with wildfire and encourages collaboration to prevent losses.

Activity	Wildfire Risk Development Review
Background	Utilize fire behavior maps to specify high hazard WUI areas for on-site assessments prior to development.
Agencies Involved	Rangely Rural Fire Protection District, Rio Blanco Fire Protection District, Rio Blanco County, Town of Meeker, Town of Rangely
Priority	Low
Status	Not Started

Activity	Electrical Infrastructure Fuel Break Coordination
Background	Coordinate with electrical utilities for the creation of fuel breaks in the utility right of way to better protect electrical infrastructure.
Agencies Involved	Rangely Rural Fire Protection District, Rio Blanco Fire Protection District, Rio Blanco County, BLM, USFS, White River Electric Association
Priority	Medium
Status	Not Started. Electrical companies do a good job of clearing areas around and underneath electrical infrastructure. However, there are lines on BLM land where NEPA studies would be required for any fuels reduction. These areas are at an increased risk as they may not be cleared as often as needed due the additional time and cost to perform the NEPA studies.

Activity	Codify Emergency Notification Procedures
Background	In the event of a wildfire, have an established system of notifying affected industrial facilities in addition to the general public.
Agencies Involved	Rangely Rural Fire Protection District, Rio Blanco Fire Protection District, Rio Blanco County, Town of Meeker, Town of Rangely
Priority	High
Status	Ongoing. Reverse 911 implemented throughout the county.

Activity	Interagency Training and Exercise Plan
Background	Convene an interagency group to develop a realistic five-year plan for wildland fire training and exercises.
Agencies Involved	Rangely Rural Fire Protection District, Rio Blanco Fire Protection District, Rio Blanco County, BLM, USFS
Priority	Low
Status	Not Started

Activity	Apparatus and Equipment Needs Evaluation
Background	The fire districts should identify apparatus and equipment needs and replacement schedules to support funding.
Agencies Involved	Rangely Rural Fire Protection District, Rio Blanco Fire Protection District
Priority	Medium
Status	Ongoing. Apparatus and equipment needs replaced as needed.

Activity	Pre-Attack Plans and Tactical Maps
Background	Pre-attack plans and tactical maps should be developed for all areas of the county by combining and augmenting information from each responding agency.
Agencies Involved	Rangely Rural Fire Protection District, Rio Blanco Fire Protection District, Rio Blanco County, BLM, USFS
Priority	Low
Status	Not Started

Activity	Annual Table-Top Trainings
Background	Conduct annual table-top trainings at the AOP review meetings.
Agencies Involved	Rangely Rural Fire Protection District, Rio Blanco Fire Protection District, Rio Blanco County, Town of Meeker, Town of Rangely, BLM, USFS
Priority	Low
Status	Ongoing. Currently have annual meetings for the AOP.

Activity	Interagency Recovery Coordination
Background	Have members of local BAER Teams meet with the county emergency manager and local utilities to discuss recovery strategies and needs.
Agencies Involved	Rio Blanco County
Priority	Medium
Status	Not Started

Activity	Damage Calculation
Background	Work with the county assessor's office to ensure there is a practical method for calculating damage and dollar loss in the event of a large incident.
Agencies Involved	Rio Blanco County
Priority	Low
Status	Ongoing

Identified Vegetation-Fuel Reduction Projects

The FPDs, BLM, USFS, RBC Sheriff, and RBC Emergency Management need to work together to reduce hazardous fuels throughout the county. Active vegetation-fuels management to reduce fire risks can improve forest and rangeland health, protect water quality, and improve wildlife habitat diversity. Unfortunately, actual application of these beneficial management projects is limited due to budget and staffing constraints from national to local level. With limited resources, supported projects need to be well defined and address multiple goals and issues. Collaborative planning is essential to maximize resource benefits from implemented vegetation-fuel projects.

Possible vegetation-fuel management projects were identified through core planning team meetings, communication with federal organizations, and individual FPD meetings (Table 16). Locations of the projects can be found in Figure 18. The various fuels treatments include fuel breaks, vegetation thinning, vegetation treatments, and prescribed burns. The following table includes several key pieces of information.

- **Lead Organization –** The organization who will be the responsible party for initiating and organizing efforts to carry out the fuel treatment.
- **# –** The associated number identified in the Fuel Reduction Project Locations map.
- **Fuel Treatments –** The name of the project and the likely type of fuel treatment(s) that will be used.
- **Methods –** The method(s) used to complete the identified fuel treatment projects.
- **Collaboration –** The various entities that will be involved with the identified fuel treatment projects.
- **Priority –** The purpose of the priority rating of high, moderate, or low is to identify the importance of the fuel treatment to protect infrastructure. The priority rating does not necessarily mean that the fuel treatments need to occur in a set order.

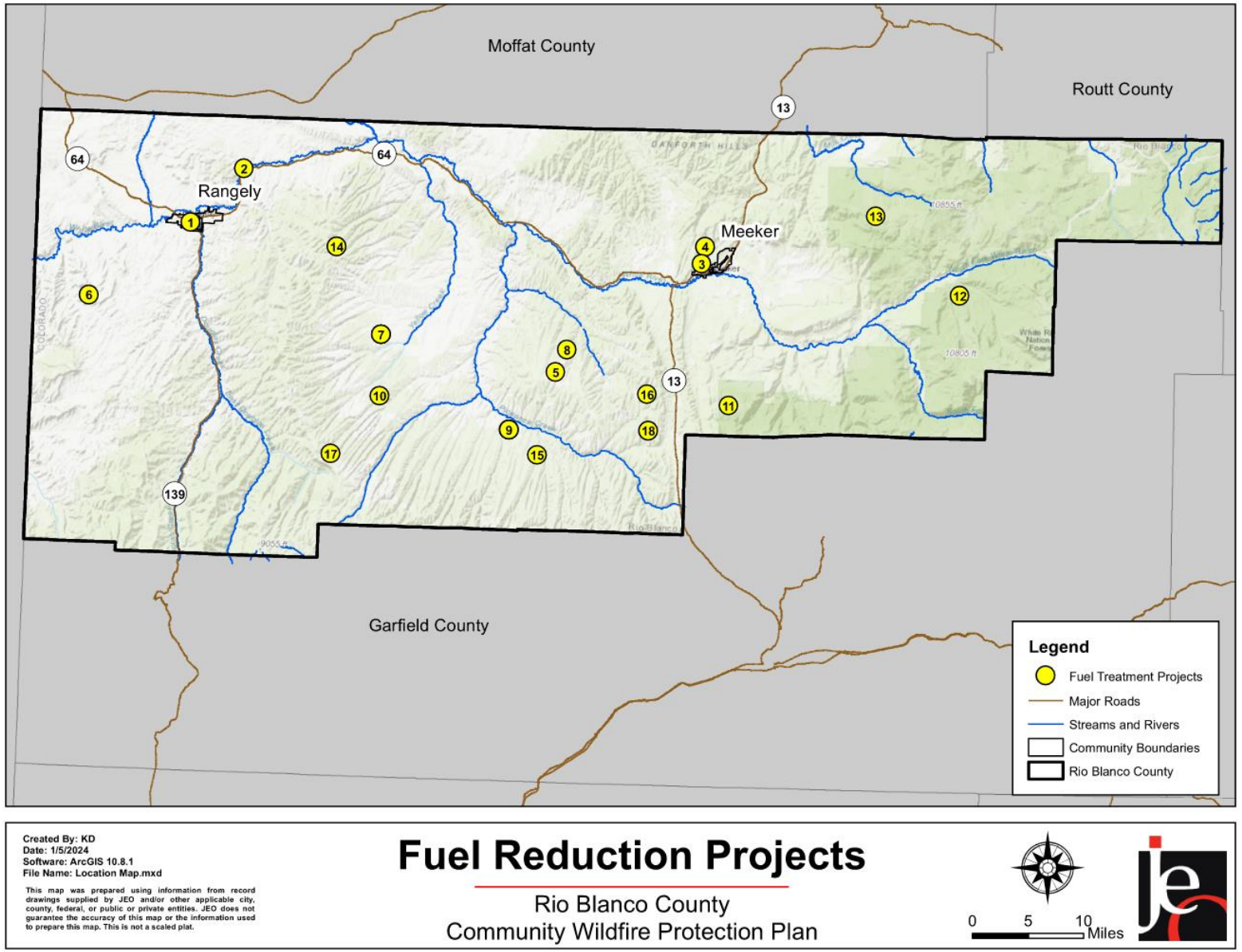
Table 16: Fuel Reduction Projects

Lead Organization	#	Fuel Treatments	Methods	Priority (H/M/L)	Collaboration
Rangely Rural Fire Protection District	1	Colorado Northwestern Community College – Fuel Break	Front End Loader, Skid Steer	Medium	Colorado Northwestern Community College
	2	Kenney Reservoir – Prescribed Fire	Prescribed Fire	High	Rio Blanco Water Conservancy District, BLM
Rio Blanco Fire Protection District	3	Meeker – Fuel Break & Vegetation Thinning	Chipping, Hand Crew	High	-
	4	Meeker Sportsman's Club – Fuel Break & Vegetation Thinning	Equipment, Hand Crew	High	Meeker Sportsman's Club
BLM	5	Oldland CRMP Phase II (2024) – Vegetation Thinning	Mastication	High	White River Conservation District, NRCS, GoCo, Private Landowner
	6	Banta Ridge (2024) – Vegetation Thinning	Mastication	Low	-
	7	84 Mesa Phase IV (2024) – Vegetation Thinning	Mastication	Medium	-
		84 Mesa Phase V (2025) – Vegetation Thinning	Mastication	Medium	-
	8	Pitcher's Mound Phase II (2024) – Vegetation Thinning	Mastication	Medium	-
	9	Willow Creek Phase IV (2024) – Vegetation Thinning	Cut and Pile	High	-
		Willow Creek Phase V (2025) – Vegetation Thinning	Cut and Pile	High	-
	10	Bar D Mesa (2024) – Vegetation Thinning	Mastication	High	Mule Deer Foundation
USFS	11	Southwest Blanco Wildlife – Fuels Reduction, Vegetation Treatment & Prescribed Fire	Mechanical, Prescribed Fire	Medium	Conservation District, Private Landowners
	12	Ute/Papoose/Marvine WUI/Crooks Park – Fuels Reduction & Prescribed Fire	Mechanical, Prescribed Fire	High	Ute Lodge, Marvine Ranch, Conservation District
	13	Yellow Jacket – Vegetation Treatment & Prescribed Fire	Logging, Prescribed Fire	High	-
	-*	Big Ridge – Vegetation Treatment, Fuels Reduction, & Prescribed Fire	Hand Thinning, Logging, Prescribed Fire, Pile Burning, Mechanical	Low	-
	-**	Blanco Burn Blocks – Fuels Reduction & Prescribed Fire	Mechanical, Prescribed Fire	High	Conservation District, Private Landowners

Lead Organization	#	Fuel Treatments	Methods	Priority (H/M/L)	Collaboration
	-***	Blanco PODs Boundary – Fuels Reduction & Prescribed Fire	Mechanical, Prescribed Fire, Pile Burning	Low	-
	-****	Little Flat Top – PODs Boundary, Timber Sale, Fuels Reduction & Prescribed Fire	Mechanical, Mastication, Hand Crew, Cut and Pile, Lop and Scatter, Prescribed Fire	Medium	CSFS, Conservation Districts, Town of Oak Creek, Private Landowners
Conservation Districts (White River Conservation District & Douglas Creek Conservation District)	14	CRMP (1-V2, 1-V3, 1-V4, 1-V5, 1-V6, 1-V7, 1-V8, 1-V9, 1-V10, 1-V11, 1-V12, 1-V13, 1-V15) – Vegetation Treatment, Fuel Break, & Vegetation Thinning	Mechanical	Low	NRCS, USFS, BLM, CPW, CDA, Trout Unlimited, River's Edge West, Private Landowners
	15	CRMP (2-V3, 2-V4, 2-V5, 2-V7, 2-V10, 2-V14, 2-V15, 2-V16, 2-V17, 2-V18) – Vegetation Treatment, Fuel Break, & Vegetation Thinning	Mechanical	Medium	NRCS, BLM, CPW, CDA, Private Landowners
	16	CRMP (3-V0, 3-V1, 3-V2, 3-V3, 3-V4, 3-V5, 3-V6, 3-V7, 3-V8, 3-V9, 3-V11, 3-V12, 3-V13, 3-V14, 3-V15, 3-V16, 3-V17, 3-V18, 3-V19, 3-V20, 3-V21, 3-V22) – Vegetation Treatment, Fuel Break, & Vegetation Thinning	Mechanical, Chemical	High	BLM, CPW, CDA, Mule Deer Foundation, Private Landowners
	17	CRMP (4-V0, 4-V1, 4-V2, 4-V3, 4-V4, 4-V5, 4-V6, 4-V7, 4-V8) – Vegetation Treatment, Fuel Break, & Vegetation Thinning	Mechanical, Chemical, Prescribed Fire	Medium	NRCS, BLM, CPW, CDA, Private Landowners
	18	CRMP (5-V0, 5-V1, 5-V2, 5-V3, 5-V4, 5-V5, 5-V6, 5-V7, 5-V8, 5-V9, 5-V10, 5-V11, 5-V12, 5-V13, 5-V14, 5-V15) – Vegetation Treatment, Fuel Break, & Vegetation Thinning	Mechanical	Medium	NRCS, BLM, CPW, CDA, Private Landowners

* Project is not mapped and will be located along the White River Corridor
**Project is not mapped and will take place across USFS land in Rio Blanco County
***Project is not mapped and will take place along POD lines on USFS land in Rio Blanco County
****Project is not mapped and will be located on the western portion of the Yampa District and will occur over three different counties

Figure 18: Fuel Reduction Project Locations



Completed Projects

Projects recently completed in the county include the following listed in the table below.

Table 17: Completed Projects in Rio Blanco County

Project	Primary Organization
Piceance Mechanical (2020):430 acres treated through mastication	BLM
Hog Lot Phase II (2020): 327 acres treated through mastication	BLM
Centerfield Mastication Phase I (2020): 531 acres treated through mastication	BLM
84 Mesa Hand Thinning (2020): 280 acres treated through lop and scatter	BLM
Dragon Road Mechanical (2020): 359 acres treated through mastication	BLM
Wolf Ridge Phase I (2021): 377 acres treated though mastication	BLM
84 Mesa Phase I (2021): 579 acres treated through mastication	BLM
Willow Creek Phase I (2021): 391 acres treated through cut and pile	BLM
Willow Creek Phase II (2022): 280 acres treated through cut and pile	BLM
Wolf Ridge Phase II (2022): 402 acres treated through mastication	BLM
Magnolia Bench (2022): 631 acres treated through mastication	BLM
84 Mesa Phase II (2022): 957 acres treated through mastication	BLM
Pitcher's Mound (2022): 263 acres treated through mastication	BLM
Centerfield Mastication Phase II (2022): 552 acres treated through mastication	BLM
Dry Ryan Mechanical (2023): 415 acres treated through cut and pile	BLM
Magnolia Bench Phase II (2023): 761 acres treated through mastication	BLM
Oldland CRMP Phase I (2023): 709 acres treated through mastication	BLM
84 Mesa Phase III (2023): 579 acres treated through mastication	BLM
Dry Ryan mastication (2023): 351 acres treated through mastication	BLM
Stadtman Mesa (2023): 372 acres treated through mastication	BLM
Willow Creek Phase III (2023): 594 acres treated through cut and pile	BLM

Project Funding and Grants

This section provides information on resources that may be helpful in planning and preparing for wildfire risk reduction projects and activities. Grant funding support is often a necessary component of a fuels treatment project and can facilitate fuel reduction on both private and public lands.

USDA

Community Wildfire Defense Grant Program – The community Wildfire Defense Program is intended to help at-risk local communities plan for and reduce the risk of wildfire. It provides funds for CWPP development and implementation of projects identified in the CWPP. Funds for projects can be up to $10 million with a 25% non-federal match. For more information about the program visit: https://www.fs.usda.gov/managing-land/fire/grants.[40]

Landscape Scale Restoration Program – The Landscape Scale Restoration Program is a Forest Service State and Private Forestry competitive grant program that promotes collaborative, science-based restoration of priority forest landscapes. Landscape Scale Restoration projects address large-scale issues such as wildfire risk reduction, watershed protection and restoration, and the spread of invasive species, insect infestation and disease. The program pays up to 50% of the costs and requires a 50% non-federal match. Additional information about the program can

[40] U.S. Department of Agriculture. 2023. "Community Wildfire Defense Grant Program". https://www.fs.usda.gov/managing-land/fire/grants.

be found here: https://www.fs.usda.gov/managing-land/private-land/landscape-scale-restoration.[41]

Bureau of Land Management[42]

Community Wildfire Assistance Program – Fuels Focus - The program's goal is to reduce hazardous fuels. Grant funds can support activities such as hazardous fuels reduction, thinning, chipping, outreach, and education. Additional information about the program can be found here: https://www.blm.gov/site-page/programs-public-safety-and-fire-fire-and-aviation-regional-information-montana-dakotas-3.

Natural Resources Conservation Service[43]

Environmental Quality Incentives Program – This program provides funds for forest management for ecological restoration, improving wildlife habitat, and to reduce fire hazard and facilitate prescribed burning. Prescribed grazing management to plan intensity, frequency, timing, and duration of grazing and/or browsing to manage fuel continuity and loading to reduce wildfire hazard and/or facilitate desired conditions for prescribed burns. More information about the program can be found here: https://www.nrcs.usda.gov/getting-assistance/conservation-technical-assistance.

FEMA

Assistance to Firefighters Grant Program – The primary goal of this program is to meet the firefighting and emergency response needs of fire departments. Eligible fire departments can receive financial assistance for critical training and equipment. In 2022 available funding for the grant program was $324 million. Additional information about the program can be found here: https://www.fema.gov/grants/preparedness/firefighters/assistance-grants.[44]

Staffing for Adequate Fire and Emergency Response Grant Program – The Staffing for Adequate Fire and Emergency Response Grants was created to provide funding directly to fire departments to help increase or maintain the number of trained firefighters. Available funding in 2022 was $360 million.

Visit https://www.fema.gov/grants/preparedness/firefighters/safer/documents for additional information about the program.[45]

Hazard Mitigation Grant Program – Post Fire – This program provides post fire assistance to help communities implement hazard mitigation measures after wildfire disasters. Funding for this program is only available after a declared wildfire disaster has occurred within the State of

[41] U.S. Department of Agriculture. 2023. "Landscape Scale Restoration". https://www.fs.usda.gov/managing-land/private-land/landscape-scale-restoration.

[42] Bureau of Land Management. 2023. "Community Wildfire Assistance". https://www.blm.gov/site-page/programs-public-safety-and-fire-fire-and-aviation-regional-information-montana-dakotas-3.

[43] Natural Resources Conservation Service. 2023. "Conservation Technical Assistance." https://www.nrcs.usda.gov/getting-assistance/conservation-technical-assistance.

[44] U.S. Federal Emergency Management Agency. 2023. "Assistance to Firefighters Grants". https://www.fema.gov/grants/preparedness/firefighters/assistance-grants.

[45] U.S. Federal Emergency Management Agency. 2023. "Staffing for Adequate Fire and Emergency Response". https://www.fema.gov/grants/preparedness/firefighters/safer/documents.

Colorado. Funding covers 75% of the cost for the project with 25% being a local match. More information about the program can found here: https://www.fema.gov/grants/mitigation/post-fire.[46]
Building Resilient Infrastructure and Communities – Building Resilient Infrastructure and Communities supports states, local communities, and fire departments undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. Funding is available annually and covers 75% of the costs of the project. For more information about the program visit: https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities.[47]

Colorado State Forest Service

The CSFS helps community groups, nonprofits, and other secure grants and assistance for projects that promote healthy forests and wildfire mitigation. Projects that benefit only one landowner do not qualify for these state-funded grant programs. Grant programs administered by CSFS are listed below.

CSFS also developed the Natural Resources Grants & Assistance Database to help interested groups and individuals search for natural resource project funding and assistance programs that promote the health and welfare of Colorado's natural resources: https://csfs.colostate.edu/natural-resources-grants-database/.[48]

Forest Restoration & Wildfire Risk Mitigation Grant Program – This program provides sate support through competitive grant funds that encourage community-level actions across the state for specific purposes:

- Reduce the risk of wildfire to people, property, and infrastructure in the WUI.
- Promote forest health and forest restoration projects.
- Encourage use of woody material for traditional forest products and biomass energy.

In 2023 the CSFS had $7,440,000 awarded for this program. There are no minimum or maximum amounts for each award. Local community groups, counties, municipalities, non-profit groups, and fire protection districts can all apply for funding. More information about the Forest Restoration & Wildfire Risk Mitigation program can be found here: https://csfs.colostate.edu/grants/forest-restoration-wildfire-risk-mitigation/.[49]

Wildfire Mitigation Incentives for Local Government Grant Program – This program provides sate support through competitive grant funds to match revenue raised by local governments for forest management or fuels reduction, or for local governments to expand existing, long-term programs dedicated to forest management and wildfire mitigation. CSFS had $9.5 million available for grant awards in 2023 for this program. More information about the Wildfire Mitigation

[46] U.S. Federal Emergency Management Agency. 2023. "Hazard Mitigation Grant Program Post Fire". https://www.fema.gov/grants/mitigation/post-fire.
[47] U.S. Federal Emergency Management Agency. 2023. "Building Resilient Infrastructure and Communities". https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities.
[48] Colorado State Forest Service. 2023. "Natural Resources Grants Database". https://csfs.colostate.edu/natural-resources-grants-database/.
[49] Colorado State Forest Service. 2023. "Forest Restoration & Wildfire Risk Mitigation". https://csfs.colostate.edu/grants/forest-restoration-wildfire-risk-mitigation/.

Incentives for Local Government Grant Program can be found here: https://csfs.colostate.edu/grants/wildfire-mitigation-incentives-for-local-government/.[50]

Wildfire Mitigation Resources & Best Practices Grant Program – This program provides support to conduct outreach among landowners in high hazard areas. To be eligible, a recipient must be an agency of local government, a county, municipality, special district, tribal agency, or nonprofit organization. The CSFS has $300,000 available for grant awards through this program. For more information about the Wildfire Mitigation Resources & Best Practices Grant Program, visit: https://csfs.colostate.edu/grants/wildfire-mitigation-resources-best-practices-grant-program/.[51]

Programs for Private Landowners – The CSFS offers a variety of programs to assist landowners in managing their forest property. Programs include Forest Ag, Forest Legacy, Forest Stewardship, and Tree Farm. Information about these programs can be found here: https://csfs.colostate.edu/grants/.[52]

Colorado Department of Revenue[53]

Mitigation Income Tax Subtraction – Colorado landowners with property located in a WUI area may qualify to receive a tax subtraction for the costs of wildfire mitigation work. To be eligible the taxpayer must own the property which the wildfire mitigation measures are performed, and the total subtraction cannot exceed 50% of the landowner's out-of-pocket expenses. The deduction is available through tax year 2025. The Colorado Department of Revenue has a fact sheet located here: https://tax.colorado.gov/sites/tax/files/documents/ITT_Wildfire_Mitigation_Measures_Dec_2022.pdf.

State Income Tax Credit for Wildfire Mitigation - Landowners are eligible for a state income tax credit to reimburse the costs incurred in performing wildfire mitigation measures on the landowner's property. A landowner with a federal taxable income at or below $120,000 for the income tax year commencing on or after January 1, 2023, is allowed a state income tax credit in an amount equal to 25% of up to $2,500 in costs for wildfire mitigation measures. https://tax.colorado.gov/sites/tax/files/documents/ITT_Wildfire_Mitigation_Measures_Dec_2022.pdf.

Colorado Division of Fire Prevention & Control[54]

Volunteer Fire Assistance Grant – The Volunteer Fire Assistance Program's purpose is to provide financial, technical and other assistance to organize, train, and equip fire departments in rural areas and rural communities to prevent and suppress fires. A single fire department serving a rural area or a rural community with a population of 10,000 or less is eligible for funding.

Firefighter Safety Disease Prevention Grant – This grant provides funding or reimbursement for equipment designed to increase firefighter safety and prevent occupation-related diseases.

[50] Colorado State Forest Service. 2023. "Wildfire Mitigation Incentives for Local Government". https://csfs.colostate.edu/grants/wildfire-mitigation-incentives-for-local-government/.
[51] Colorado State Forest Service. 2023. "Wildfire Mitigation Resources & Best Practices Grant Program". https://csfs.colostate.edu/grants/wildfire-mitigation-resources-best-practices-grant-program/.
[52] Colorado State Forest Service. 2023. "Grants & Funding Assistance". https://csfs.colostate.edu/grants/.
[53] Colorado Department of Revenue. December 2022. "Income Tax Topics: Wildfire Mitigation Measures". https://tax.colorado.gov/sites/tax/files/documents/ITT_Wildfire_Mitigation_Measures_Dec_2022.pdf.
[54] Colorado Division of Fire Prevention & Control. 2023. "Grants". https://dfpc.colorado.gov/dfpcgrants.

Grants are limited to a maximum of $20,000 per fire department. Funding is decided through the senate and is not available every year.

Colorado Water Conservation Board

Colorado's Water Plan Grants – Watershed Health & Recreation Projects – The purpose of this grant is to make progress on the critical actions and measurable objectives identified in Colorado's Water Plan. Grants can support planning, design, or projects. This grant program does not fund fuel treatments. More information about this grant can be found here: https://cwcb.colorado.gov/funding/colorado-water-plan-grants.[55]

Wildfire Ready Watersheds – This program focuses on the development of Wildfire Ready Watershed action plans and implementation of projects designed to mitigate post wildfire impacts. Applications will be accepted for capacity building, planning, engineering, and implementation to address the susceptibility of values at risk to post wildfire hazards. A 50% match is required for implementation grants. More information about this program can be found here: https://www.wildfirereadywatersheds.com/.[56]

Colorado Department of Natural Resources

Colorado Strategic Wildfire Action Program – Workforce Development - Awards of conservation corps or State Wildland Inmate Fire Teams crew time to complete on the ground fire mitigation work. Or cash awards for fire mitigation workforce development training. No defensible space projects. More information about the program can be found here: https://dnr.colorado.gov/divisions/forestry/co-strategic-wildfire-action-program.[57]

Private Entities

National Fish and Wildlife Foundation: Restoration and Stewardship of Outdoor Resources – Funds for forestry projects that have a direct nexus to watershed health and wildlife habitat improvement. Project activities may include but are not limited to: habitat restoration practices specific to priority dry conifer forest types and aspen forest types and restoration of both age class structure and restoration. Additional information can be found here: https://www.nfwf.org/programs/rocky-mountain-rangelands/restore-colorado-program/restore-colorado-2023-request-proposals.[58]

Coalitions & Collaboratives, Inc.: Action, Implementation, and Mitigation – Funds are available for wildfire risk reduction work including but not limited to hiring contractors, running cost share programs, defensible space, home assessments, and prescribed fire; capacity building, personnel, planning, and equipment under $5,000. https://co-co.org/get-involved/grants/aim-grant/.[59]

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[55] Colorado Water Conservation Board. 2023. "Colorado Water Plan Grants". https://cwcb.colorado.gov/funding/colorado-water-plan-grants.

[56] Colorado Water Conservation Board. 2023. "Wildfire Rady Watersheds". https://www.wildfirereadywatersheds.com/.

[57] Colorado Department of Natural Resources. 2023. "Colorado Strategic Wildfire Action Program". https://dnr.colorado.gov/divisions/forestry/co-strategic-wildfire-action-program.

[58] National Fire and Wildlife Foundation. 2022. "RESTORE Colorado 2023 Request for Proposals". https://www.nfwf.org/programs/rocky-mountain-rangelands/restore-colorado-program/restore-colorado-2023-request-proposals.

[59] Coalitions & Collaboratives, Inc. 2023. "Action, Implementation, & Mitigation". https://co-co.org/get-involved/grants/aim-grant/.

Great Outdoors Colorado: Conservation Service Corps – Provides fire fuels mitigation including the use of chainsaw crews performed by certified conservation service corps crews. It must be a minimum of two weeks of work. https://goco.org/programs-projects/grant-programs/conservation-service-corps. [60]

[60] Great Outdoors Colorado. 2023. "Conservation Service Corps". https://goco.org/programs-projects/grant-programs/conservation-service-corps.

Implementation, Monitoring, Evaluation, and Plan Update

Plan Implementation

The Rio Blanco County CWPP is a strategic planning document that is developed and approved by the Core Planning Team. An important component of the development process includes a CWPP Implementation Team that will move the plan forward, implement the mitigation recommendations, and maintain the plan as the characteristics of the WUI areas change through time and vegetation-fuel projects are completed. Organizing and maintaining the Implementation Team are often the most challenging components of the CWPP process. The Implementation Team is essential in the process of converting the CWPP proposed projects from a plan into action items. A recommendation is that the CWPP Core Planning Team transition into the CWPP Implementation Team.

The Implementation Team would work closely with the FPDs, community organizations, private landowners, and public agencies to coordinate and implement the identified vegetation-fuels treatments and other recommended risk reduction projects. Semi-annual meetings should occur to move the CWPP forward. Building partnerships among community organizations, FPDs, local governments, BLM, USFS, and private landowners is necessary in identifying and prioritizing measures to reduce wildfire risk. Maintaining this cooperation is a long-term effort that requires the commitment of all partners involved. The CWPP encourages communities and home-owner associations to take an active role in identifying needs, developing strategies, and implementing solutions to address wildfire hazards and risks by assisting with the development of local community wildfire plans and participating in fire prevention activities.

The Rio Blanco County CWPP is a valuable resource that provides the foundation for understanding wildfire risks and hazards, and presents attainable milestones designed to reduce potential losses from wildfire. Communities, home-owner associations, and FPDs can take further action by developing their own area-specific CWPP, which would tier to the countywide CWPP.

Sustaining CWPP Momentum

The Rio Blanco County CWPP serves as the foundation to develop safer WUIs through hazard assessments and strategic planning focusing on reducing the threat of wildfire to human welfare, and economic and ecological values. The risk reduction projects and actions outlined in this plan will greatly reduce wildfire risk, but only if implemented. Converting strategy into action is the key to achieving this important goal.

Communities can be made safer by reducing the risks of wildfire loss, and this CWPP presents realistic measures to achieve this goal. The CWPP process encourages homeowners to take an active role as fuel treatment strategies are developed and prioritized around their communities. Ownership of CWPP implementation at the local level is the most effective means to achieving successful results and sustaining the effort from year to year. Communities and homeowners can seek support and guidance through a variety of local, state, and federal resources identified in this plan including FPDs, DFPC, CSFS, BLM, and USFS.

Monitoring and Evaluation

Monitoring is a critical component of all plans. Monitoring provides information on whether a plan is meeting its goals. Adaptive management allows for changes to occur if they are warranted. The purpose of this monitoring strategy is to track implementation of planned activities and evaluate how the goals of the CWPP are being met over time. The data gathered will help to determine if updates need to be made and if the plan is useful and being implemented as envisioned. This CWPP must be continually monitored and updated as conditions and community values change. It is recommended that monitoring CWPP progress be maintained by the Implementation Team, and they provide updates to DFPC on a regular basis. The following are the components of effective monitoring:

- **Identify**: Did you identify what specifically needs to be done?
- **Plan**: Did you plan how the action would occur?
- **Implementation**: Was the project implemented according to plan?
- **Monitoring**: Did treatments meet the goals?
- **Verification**: Did actions lead to the outcomes that were expected?
- **Adaptive Management**: What changes to the plan, if any, need to be made to facilitate the execution of the next similar project?

Each functional element of the CWPP provides monitoring tasks for recommended action items. The following table provides a summary of monitoring tasks for each of these functional areas. Evaluations are to be conducted on an annual basis.

Table 18: Monitoring Tasks per Objective

Objective	Tasks
Risk Assessment	● Update GIS for fire occurrence and fire perimeter. Compile BLM, USFS, and county data. ● Update the hazard and risk assessment as new data becomes available. ● Continue to assess values at risk and include additions in CWPP updates.
Fuels Reduction	● Identify, prioritize, and implement fuels treatment projects. ● Track total acres of treatment on public and private lands. ● Track grants and other funding sources and make appropriate applications. ● Track defensible space projects on private lands. ● Monitor project effectiveness and coordinate activities and strategies with UCRIFMU, NCFU, and DFPC.
FPD Capacity Improvements	● Maintain compliance with the Rio Blanco County Wildland Fire Operating Plan ● Track progress on water supply improvements and mapping. ● Track progress of resource improvements. ● Review mutual aid resources and agreements.
Public Outreach	● Review public outreach material and update as necessary. ● Maintain web presence on the county site. ● Coordinate with communities for presentations. ● Coordinate with DFPC for neighborhood Firewise seminars and include CWPP discussion. ● Evaluate techniques used to motivate and educate private landowners.

Plan Update

To serve their intended purpose and remain useful, CWPPs must go through a full update process on a regular basis. This ensures that a wildfire risk analysis is as up to date as possible. It also allows for community values and wildfire risk reduction projects to be updated based on changing priorities and landscapes. The Core Planning Team/Implementation Team is the best group of individuals to lead the update process. The Core Planning Team has committed that this CWPP will go through a full update at least every five years. Smaller updates to the plan may be incorporated more frequently, especially in the event of a large wildfire in the county. Rio Blanco County Emergency Management will lead the update process.

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Appendix A: Wildland Fire Management Primer

Wildland fire is defined as any fire burning in wildland fuels and includes prescribed fire, wildland fire for resource benefit, and wildfire events. Prescribed fires are planned controlled fires ignited by land managers to accomplish specific natural resource improvement objectives. Fires that occur from natural causes, such as lightning, that are used to achieve management purposes under carefully controlled conditions with minimal suppression costs are known as wildland fire for resource benefits. Wildfires are unwanted and unplanned fires that result from natural ignition, unauthorized human-caused fire, or escaped prescribed fire.

Wildland fires may be further classified as ground, surface, or crown fires (see Appendix B for the glossary of terms). Ground fire refers to burning/smoldering materials beneath the surface including duff, tree or shrub roots, punky wood, peat, and sawdust that normally support a glowing combustion without flame. Surface fire refers to loose fuels burning on the surface of the ground such as leaves, needles, and small branches, as well as grasses, forbs, low and medium shrubs, tree seedlings, fallen branches, downed timber, and slash. Crown fire is a wildland fire that moves rapidly through the crowns and canopy of trees or shrubs. Crown fires are usually the most devastating and dangerous of the three fire types because of their rapid spread rates and difficulty to suppress.

When assessing wildfire hazard and risk, wildfire hazard refers to vegetation or wildland fuel in terms of its contribution to problem fire behavior and its resistance to control. Risk is the probability of an actual ignition of wildland fuels. Values at risk include human welfare, infrastructure, structures, and natural resources that are likely to suffer long-term damage from the direct impacts of a wildfire.

Wildland Fire Behavior

Fire behavior is the way a fire reacts to the influences of fuel, weather, and topography. Fire behavior is typically evaluated at the fire line and described most simply in terms of intensity, flame length, and rate of forward spread. The implications of observed or expected fire behavior are important components of suppression strategies and tactics, particularly in terms of the difficulty of control and effectiveness of various suppression resources. The fire behavior chart described in the table on the next page is an excellent tool for measuring the safety and potential effectiveness of various fire line resources given a visual assessment of active flame length. The chart is valuable because it infers the relative intensity of the fire behavior to identified action stages for decision makers. Specific trigger points can indicate when to mobilize various resources, change fire suppression strategies, or request additional specialized equipment and/or assistance. It is important to note that the listed categories do not need to be used for personnel safety measures. Wildfire events are dangerous and can shift rapidly, putting first responders and staff at risk. According to Wilson (1977), most firefighter fatalities occur in small fires.

Table 19: Fire Behavior Characteristics Chart and Fire Suppression Interpretations

Flame Length (Ft)	Fire Line Intensity (BTU/Ft/Sec)	Interpretation
0-4	0-100	Fires can generally be attacked at the head or flank by people using hand tools. The handline should hold the fire.
4-8	100-500	Fires are too intense for direct attack on the head by persons using hand tools. Handline cannot be relied on to hold fire. Equipment such as dozers, engines, and retardant aircraft can be effective.
8-11	500-1,000	Fires may present serious control problems such as torching, crowning, and spotting. Control efforts at the head of the fire will probably be ineffective.
11+	1,000+	Crowning, spotting, and major runs are common. Control efforts at the head of the fire are ineffective.

Source: Fireline Handbook Appendix B (National Wildfire Coordinating Group, 2006)

Fire risk is the chance of fire starting, as determined by the presence and activity of causative agents. Fire hazard is a fuel complex, defined by volume, type condition, arrangement, and location, that determines the degree of ease of ignition and of resistance to control. Fire severity, on the other hand, is the degree to which a site has been altered or disrupted by fire; loosely, a product of fire intensity and residence time.

The characteristics of fuels, topography, and weather conditions combine to dictate fire behavior, rate of spread, and intensity. Wildland fuel attributes refer to both dead and live vegetation and include such factors as density, bed depth, continuity, density, vertical arrangement, and moisture content. Structures with flammable materials are also considered a vegetation-fuel source.

Fuels may also be described in terms of size. The terms one-hour, ten-hour, one-hundred-hour, and one-thousand-hour fuels refer to the amount of time required for the water content of the fuel particle to reach equilibrium with the ambient environment. This corresponds to the diameter of the fuel particle.

When fire burns in the forest understory or through grass, it is generally a surface fire. When fire burns through the canopy of vegetation, or overstory, it is considered a crown fire. The vegetation that spans the gap between the forest floor and tree crowns can allow a surface fire to become a crown fire and is referred to as ladder fuel.

For fire to spread, materials such as trees, shrubs, or structures in the flame front must meet the conditions of ignitability. The conditions needed are the presence of oxygen, flammable fuel, and heat. Oxygen and heat are implicitly available in a wildland fire. However, if the potential fuel does not meet the conditions of combustion, it will not ignite. This explains why some trees, vegetation patches, or structures may survive a wildland fire and others in the near vicinity are completely burned.

Groupings of trees comprise a mosaic and effective management of the mosaic can influence fuel loads, such as with Pinion/Juniper stands. Forestry managers may increase spacing between groups to reduce potential crown spread. However, in some species of trees, root interdependency is an important element for trees survival.

Potential surface fire behavior may be estimated by classifying vegetation in terms of Fire Behavior Fuel Models and using established mathematical models to predict potential fire behavior under specific climatic conditions. Weather conditions such as high ambient

temperatures, low relative humidity, and windy conditions favor fire ignition and high-intensity fire behavior. Under no-wind conditions, fire burns more rapidly and intensely on upslopes than on level terrain. The effects of terrain can be particularly pronounced in steep narrow canyons often referred to as “chimneys” due to their convective characteristics. Wind tends to be the driving force in fire behavior in the most destructive WUI fires. Gusting or sustained winds can be problematic for firefighters.

The CSFS website has additional information on Fire Ecology in Colorado.

Ecological Benefits of Wildfire

Lightning-induced fire is a historic component of ecosystems in Rio Blanco County, and its occurrence is important to maintaining the health of rangeland and forest ecosystems. Native Americans used fire as a tool for hunting, improving wildlife habitat, land clearing and warfare. As such, many of the plant species and communities have adapted to recurring fire through phonological, physiological, or anatomical attributes. Some plants, such as lodgepole pine and western wheatgrass, require reoccurring fire to persist.

European settlers, land use policy, and changing ecosystems have altered fire behavior and fuel accumulation from their historic setting. Euro-American settlers in Rio Blanco County changed the historic fire regime in several interrelated ways. The nature of vegetation changed because of land use practices such as homesteading, livestock grazing, agriculture, water development, mining, and road construction. Livestock grazing reduced the number of fine fuels such as grasses and forbs, which carried low-intensity fire across the landscape. Mining activities led to large scale deforestation and removal of individual tree stands that formed the historical forest mosaic. The removal of the naturally occurring vegetation also facilitated the invasion of nonindigenous grasses and forbs, some of which create more flammable fuel beds than their native predecessors. Cheatgrass is an example of an introduced grass that is problematic for firefighters as it is highly flammable and burns rapidly. Because of its continuous nature in many vegetation types, it can easily carry fire across the landscape.

In addition, more than a century of fire-suppression has resulted in large accumulations of surface fuels, ladder fuels, and canopy fuels in western forests and shrublands. Fuel loads also increased as forests and shrublands encroached into grasslands. This increase in fuel loading and continuity has created hazardous situations for public safety and fire management, especially when found in proximity to communities. These hazardous conditions will require an array of tools, including prescribed fire and thinning treatments in order to manage vegetation to more desirable situations.

Prescribed Fire

Prescribed fire is a typically small scale, planned fire and may be used as a resource management tool under carefully controlled conditions. This includes pre-treatment of the fuel load and close monitoring of weather and other factors. Prescribed fire ultimately improves wildlife habitat, helps abate invasive vegetation, reduces excess fuel loads, and lowers the risk of future wildfires in the treatment area. These and other fuel management techniques are employed to protect human life, economic values, and ecological values. The use of prescribed fire in the WUI is carefully planned and enacted only under favorable weather conditions and must meet air quality requirements of the Colorado Department of Public Health and Environment Air Pollution Control Division.

Prescribed fire may be conducted either in a defined area, as a broadcast burn, or in localized burn piles. Broadcast burns are used to mimic naturally occurring wildfire but only under specific

weather conditions, fuel loads, and expert supervision. Burn piles are utilized to dispose of excess woody material after thinning if other means of disposal are not available or are cost-prohibitive.

Hazardous Fuels Mitigation

Wildfire behavior and severity are dictated by fuel characteristics, weather conditions, and topography. Because fuel is the only variable of these three that can be practically managed, it is the focus of many mitigation efforts. The objectives of fuels management may include reducing surface fire intensity, reducing the likelihood of crown fire initiation, reducing the likelihood of crown fire propagation, and improving forest health. By breaking up vertical and horizontal fuel continuity in a strategic manner, fire suppression resources are afforded better opportunities to control fire rate of spread and contain wildfires before they become catastrophic. These objectives may be accomplished by reducing surface fuels, limb branches to raise canopy base height, thinning trees to decrease crown density, and/or retaining larger fire-resistant trees.

Improperly implemented fuel treatments can have negative impacts in terms of forest health and fire behavior. Aggressively thinning forest stands in wind-prone areas may result in subsequent wind damage to the remaining trees called wind-throw. Thinning can also increase the amount of surface fuels and sun and wind exposure on the forest floor. This may increase surface fire intensity if post-treatment debris disposal and monitoring are not properly conducted. The overall benefits of properly constructed fuel breaks are, however, well documented.

The WUI is the zone where communities and wildland fuel interface and is the central focus of this CWPP. Every fire season, catastrophic losses from wildfire plague the WUI. Homes are lost, businesses are destroyed, community infrastructure is damaged, and most tragically, lives are lost. Precautionary action taken before a wildfire event often makes the difference between saving or losing a home.

Creating a defensible space around a home is an important component in wildfire hazard reduction. Defensible space is defined as an area around a structure where fuels have been treated, thinned, or removed in order to reduce wildfire intensity as it moves towards a structure. Defensible space reduces the chances of a structure fire moving to the surrounding wildlands, and to provide room for firefighters to do their jobs. Providing an effective defensible space can be as basic as pruning trees, applying low-flammability landscaping, and cleaning up surface fuels and other fire hazards near a home. These efforts are typically concentrated within 100 feet of a home but may significantly vary based on the percentage of slope adjacent to the structure. The minimum distance is 30 feet from a structure. Recommended guidelines for creating effective defensible space are outlined in the CSFS Home Ignition Zone Guide.

In addition to the creation of defensible space, fuel breaks may be utilized to this end. These are strategically located areas where fuels have been reduced in a prescribed manner, often along evacuation routes, designated safety zones (for areas with limited evacuation routes) and community access roads. Fuel breaks may be strategically placed with other fuel breaks or with larger-area treatments. When defensible space, fuel breaks, and area treatments are coordinated, a community and the adjacent natural resources are afforded an enhanced level of protection from wildfire.

While reducing hazardous fuels around a structure, it is very important to prevent fire loss. Recent studies indicate that, to a great extent, the structure hardening attributes determine ignitability. A report from the National Fire Protection Association in 2017 noted that home ignition during extreme wildfire is primarily determined by the condition of the home in relation to its immediate

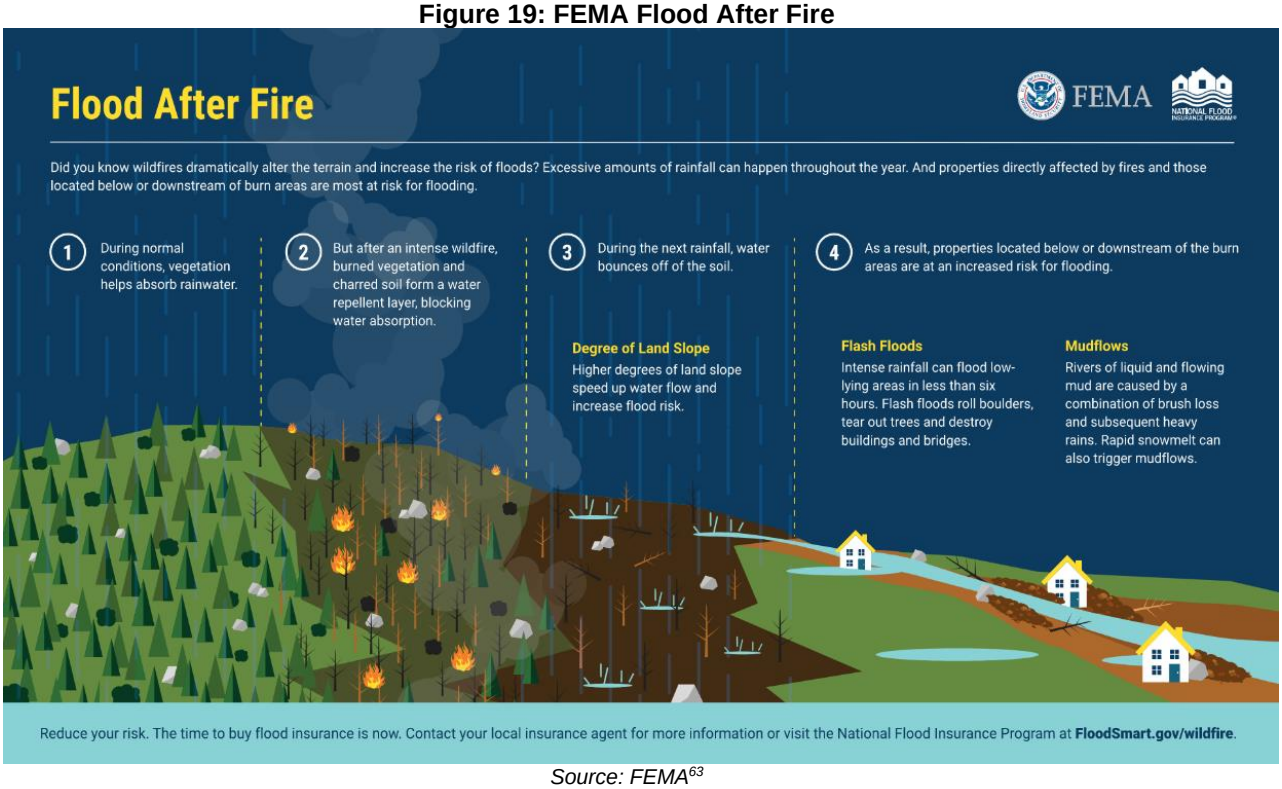
surroundings.[61] Studies of home survivability indicate that homes with noncombustible roofs and a minimum of 30 feet of defensible space had an 85 percent survival rate. Conversely, homes with wood shake roofs and less than 30 feet of defensible space had a 15 percent survival rate.[62]

The CSFS website has additional resources for learning how to protect your home and property from wildfire.

Flood After Fire

Wildfire also contributes to an increased risk from other hazard events, compounding damage and straining resources. FEMA has provided additional information in recent years detailing the relationship between wildfire and flooding (Figure 19). Wildfire events remove vegetation and harden soil, reducing infiltration capabilities during heavy rain events. Subsequent severe storms that bring heavy precipitation can then escalate into flash flooding, dealing additional damage to jurisdictions.

Figure 19: FEMA Flood After Fire



Source: FEMA[63]

[61] National Fire Protection Association. 2017. Assessing Structure Ignition Potential from Wildfire.

[62] Foote, Ethan, Gilless, I.D. & Keith, J. 1996. Structural Survival. In California's I-Zone, ed. Slaughter, Rodney, 112-121. Sacramento, CA: California Fire Service Training and Education System.

[63] FEMA. 2020. "Flood After Fire." https://www.fema.gov/media-library-data/1573670012259-3908ab0344ff8fbf5d537ee0c6fb531d/101844-019_FEMA_FAF_Infographic-ENG-web_v8_508.pdf.

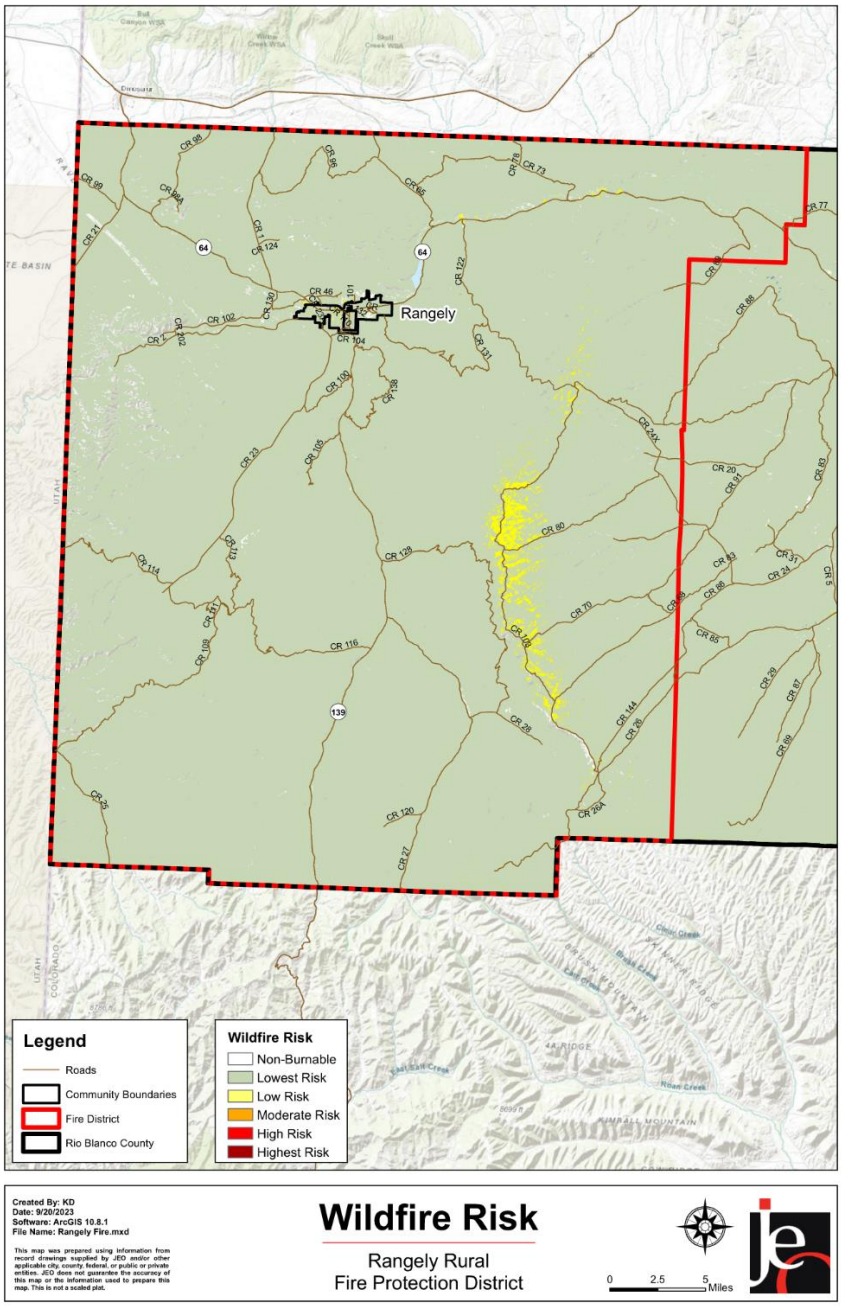
Site Restoration

Many times, it is necessary to seed an area with an appropriate seed mix after a fuel treatment or fire because of the paucity of desirable plant seed or other propagules in the soil or from adjacent undisturbed vegetation. Reseeding the treated area with desirable species can be necessary to combat the establishment of weedy vegetation such as cheatgrass and annual mustards, which can exacerbate hazardous vegetation-fuel situation. Establishing a desirable plant cover as quickly as possible will also reduce the chances for soil erosion and is beneficial to restoring watershed quality and wildlife habitat. The seed mix should be adapted to the ecological conditions of the site and meet land management objectives. An appropriate seed mix can be developed through discussions with the CSFS, local conservation district, or Natural Resources Conservation Service.

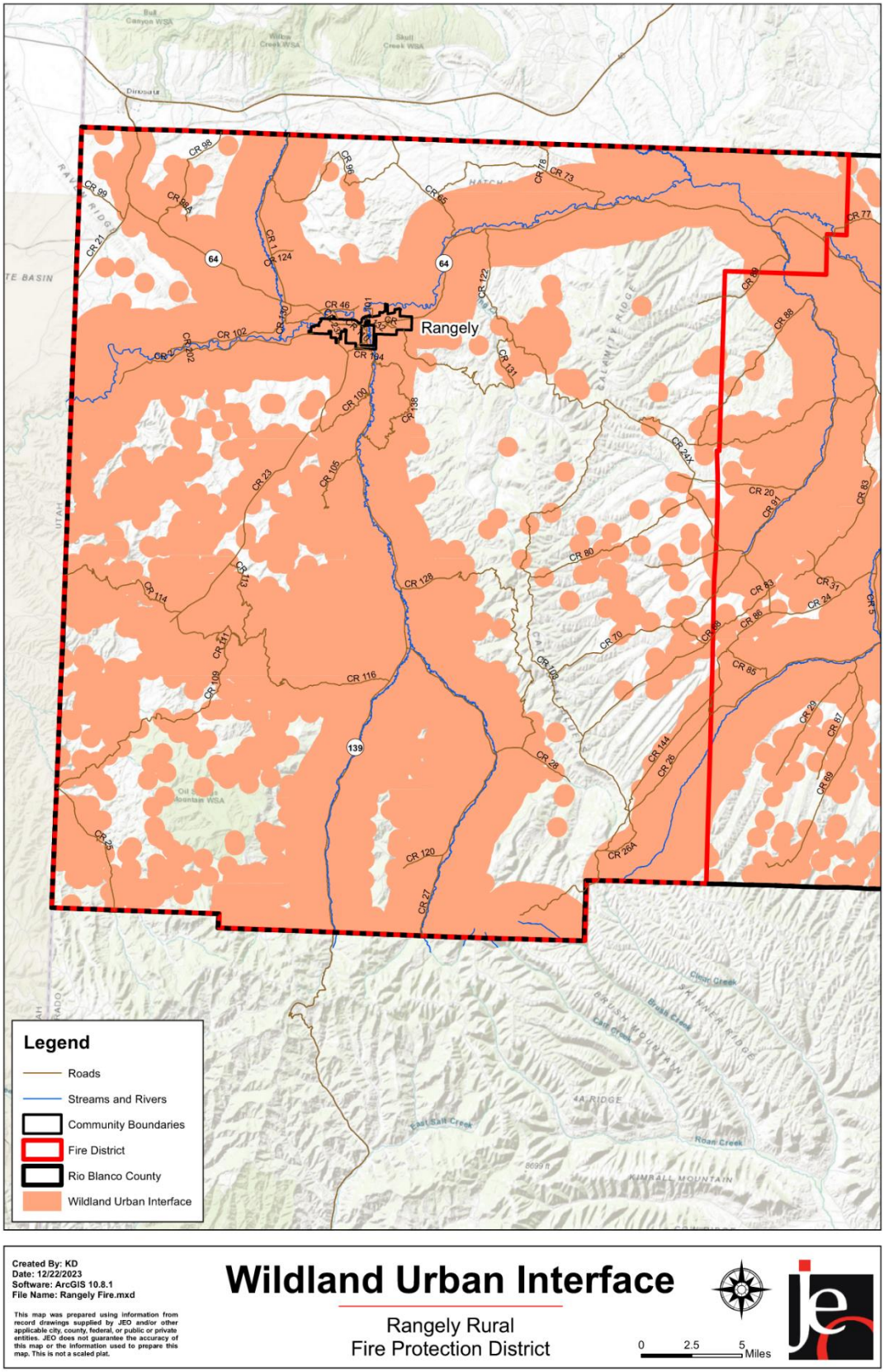
Appendix B: Fire District Wildfire Risk, WUI, and Wildfire Risk Reduction Projects & Activities Maps

Rangely Rural Fire Protection District

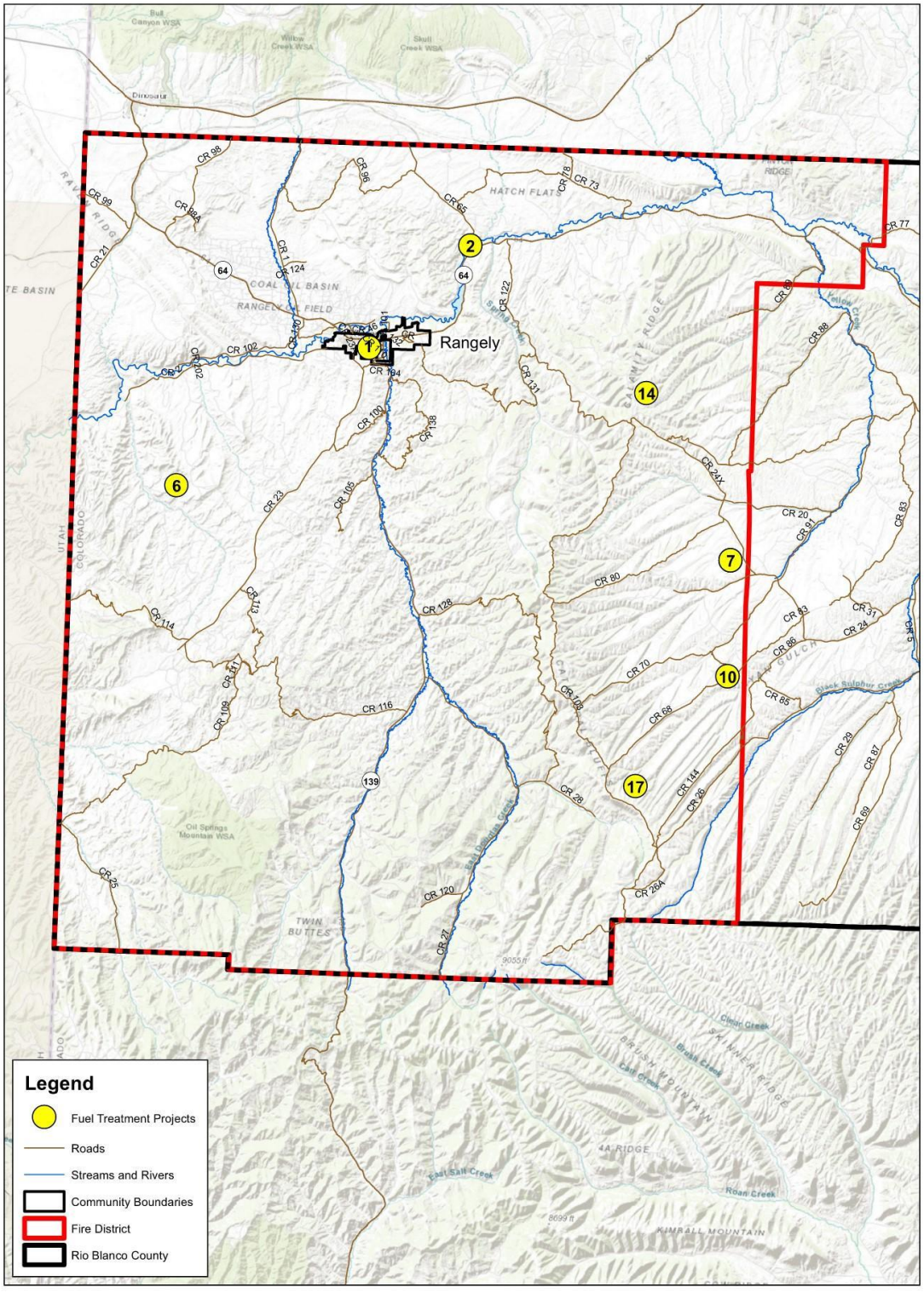
Rangely - Wildfire Risk Map



Rangely - WUI Map

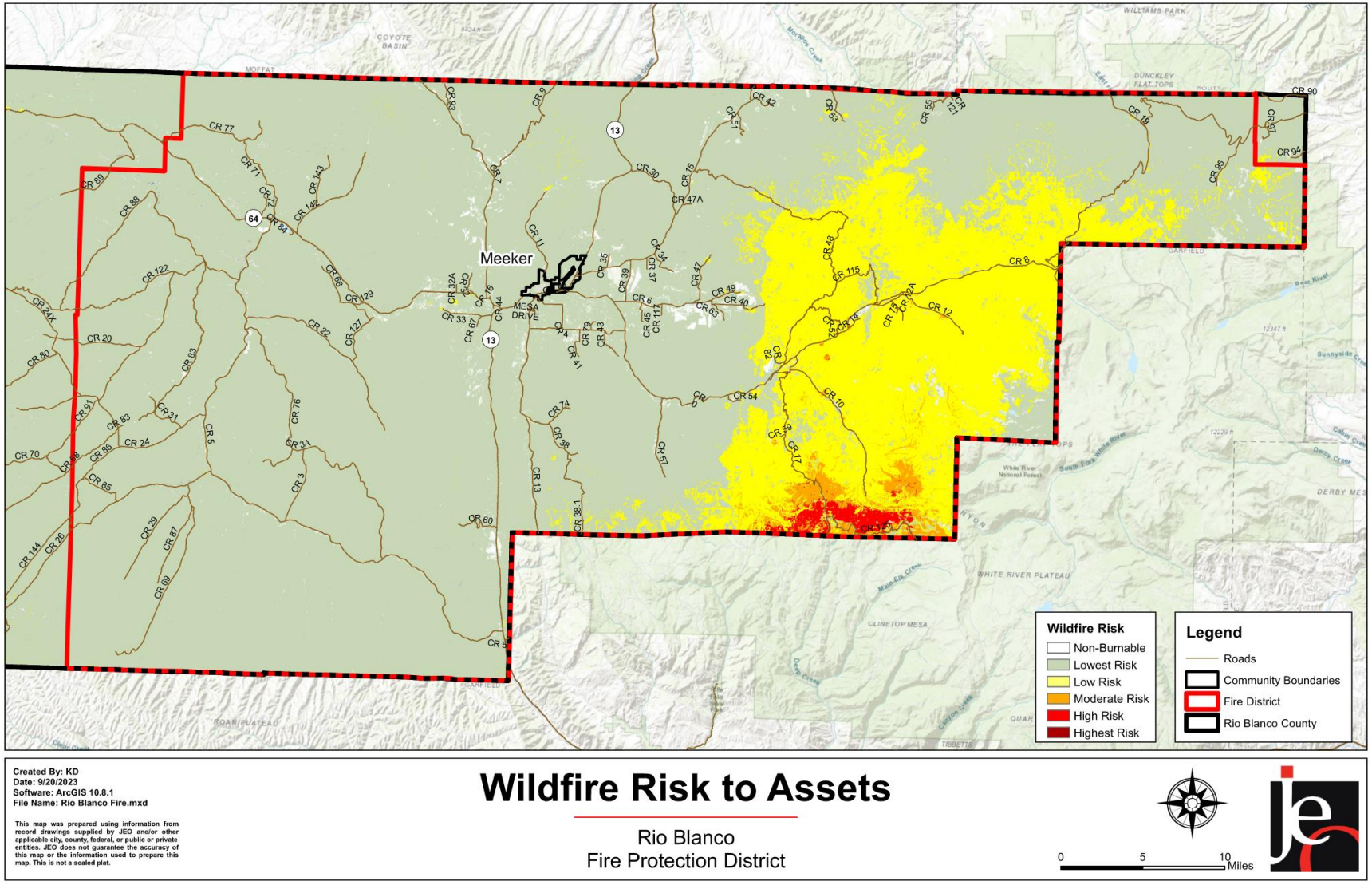


Rangely – Fuel Reduction Projects

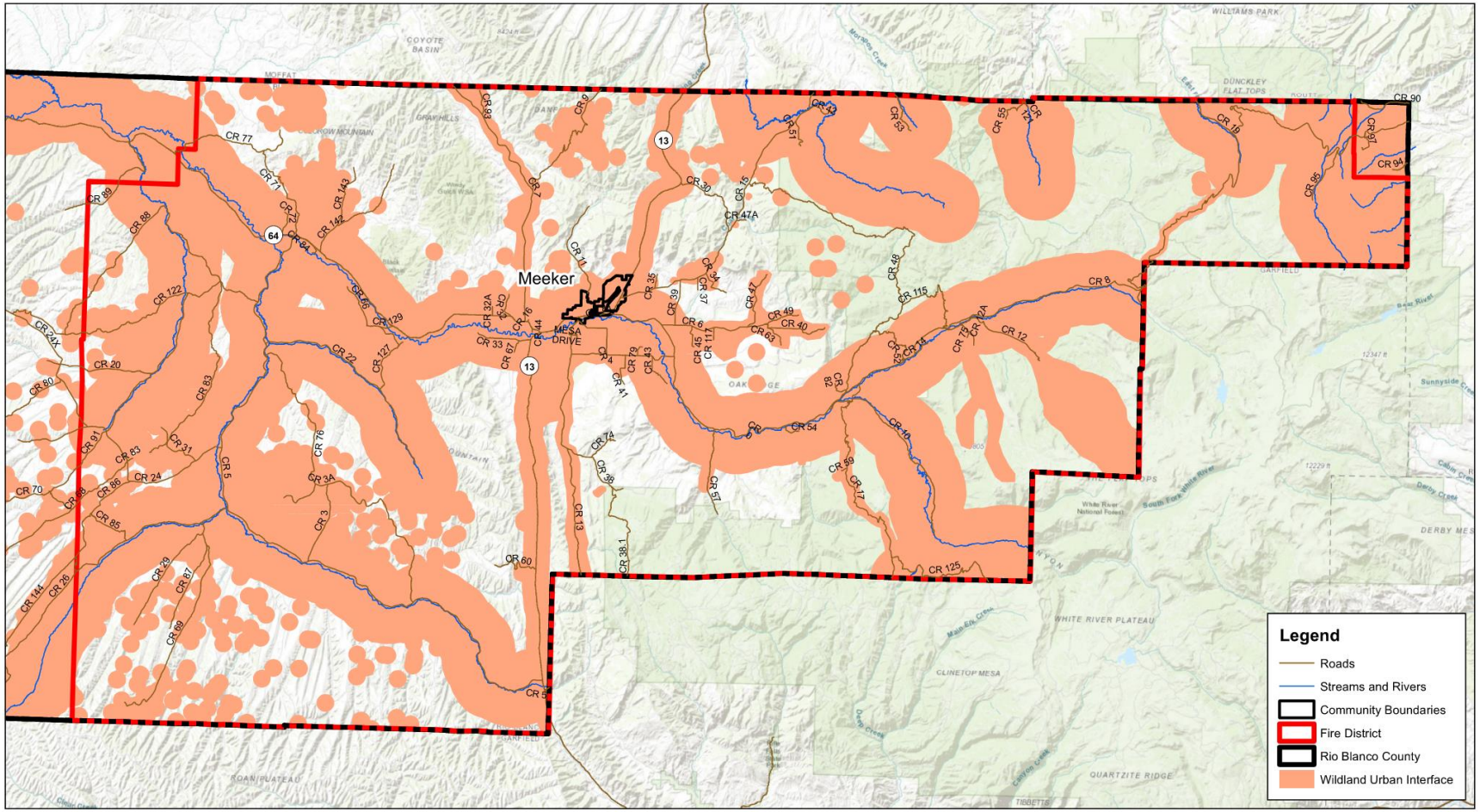


Rio Blanco Fire Protection District

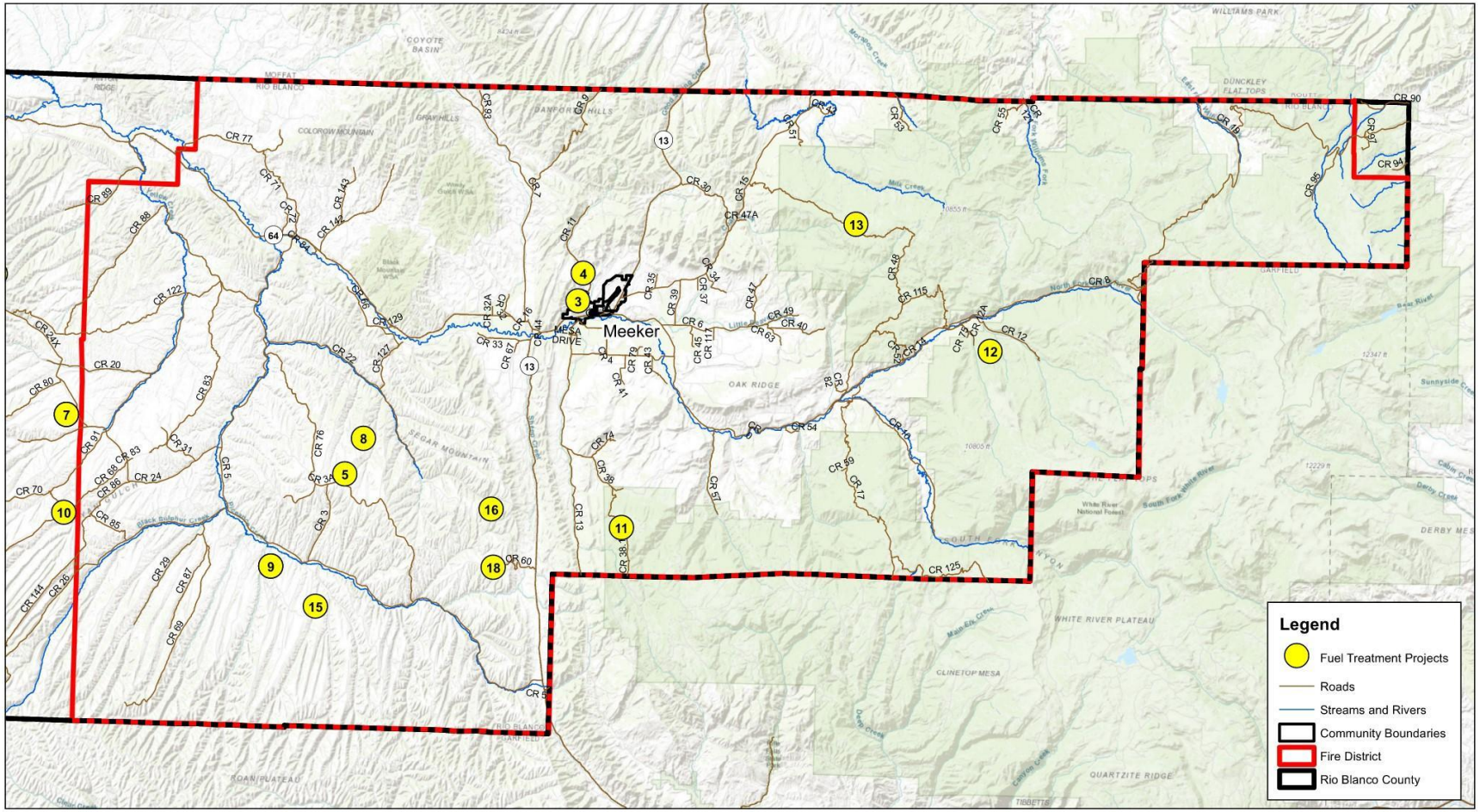
Rio Blanco - Wildfire Risk Map



Rio Blanco - WUI Map



Rio Blanco – Fuel Reduction Projects



Appendix C: Planning Process Documentation

August 22, 2023, 1st Core Planning Team Meeting

Agenda

Rio Blanco County, CO
Community Wildfire Protection Plan
1st Planning Team Meeting Agenda
August 22, 2023

1. Introductions

2. CWPP Overview – What is it, benefits of updating the plan:
    a. Opportunity to define own WUI
    b. BLM and USFS give special consideration to CWPP identified projects
    c. Additional funding opportunities
    d. Proactive approach to address local risks and concerns

3. Planning Process – Who is involved? Roles and Responsibilities?
    a. Core Planning Team –
        i. Rio Blanco County, towns, fire districts, CSFS, USFS, BLM
        ii. JEO - help facilitate the planning process, compile the data, provide a draft plan for review.
    b. Stakeholders – other state agencies, natural resources groups, others?
        i. Who needs to be invited/involved?
    c. Project Schedule
        i. Core Planning Team Meetings
        ii. 1-on-1 Meetings with Fire Districts
        iii. Survey
        iv. Public Review Period

4. Work to Discuss Today
    a. WUI definition – Review and edits to map.
    b. Wildfire Risk Assessment – Review and locations of concern discussion
    c. Plan Outline – questions, concerns, additions
    d. Draft survey questions – any changes?
    e. Capability concerns? Evacuation concerns?

5. Work for Next Time
    a. Review survey results
    b. Mitigation actions – identified in HMP, workplans from agencies, prioritize actions

Sign In Sheet

In addition to the names listed below on the sign in sheet, Eddie Smercina: Emergency Manager – Rio Blanco County, Jocelyn Mullen: Planner – Town of Rangely, Landon Smith: Fire Fuels Specialist – BLM, and Karl Dietrich: Community Planner – JEO Consulting Group Inc. all attended the meeting virtually.

Rio Blanco County CWPP
1st Planning Team Meeting
Meeker, CO – August 22, 2023

Name	Jurisdiction Represented	Phone	Email
Phil Luebbert	JEO	402-499-4154	pluebbert@jeo.com
Luke Pelloni	Meeker Fire	970 620 3742	chief@meekerrescue.com
Matt Schiltz	CSFS	970-887-3121	Matthew.Schiltz@colostate.edu
Matt Franks	Rio Blanco	970-878-9452	matt.franks@rbc.us
Carly Thomson	Town of Meeker	9708785344	carly@town.meeker.co.us
Leif Joy	RBC	970-878-9510	Leif.Joy@RBC.US
Callie Scritchfield	White River + Douglas Creek CD	970-878-9838	callie.districts@gmail.com
Liz Chandler	WRIW I	970-984-2728	liz.districts@gmail.com
Chazz Lakin	CSFS	970-216-1796	chazz.lakin@colostate.edu
Curtis Keetch	USFS White River NF	970-366-0669	curtis.keetch@usda.gov

Meeting Outcome

There were several outcomes from this first Core Planning Team meeting. During the meeting there was an initial discussion about determining WUI areas in the county. After the discussion, it was decided that the initial draft WUI would contain areas within one mile of the highways and other major transportation routes, within a half a mile of oil and gas infrastructure, within one mile of major waterways, within communities, and within half a mile of communication towers. Initial wildfire risk maps were presented, and the team had preliminary discussions about wildfire areas of concern. An important outcome from this meeting was finalization of the public survey. JEO provided a draft survey that all members of the team were able to provide comments on. After the meeting JEO was able to take those comments and provide a finalized survey that went out with water bills for the Town of Meeker and Town of Rangely.

Fire District & Town Meetings – Example Agenda

Rio Blanco County CWPP
1-on-1 Meeting Agenda
Rio Blanco Fire Protection District
Town of Meeker

1. Introductions

2. Wildland Urban Interface Map
   - WUI Determination

3. Wildfire Risk Map
   - Locations of Concern

4. Data Needed from FPD and Community
   - Insurance Service Office (ISO) Fire Hazard Ratings
   - Fire District & Community Resources and Training Needs
   - Past Risk Reduction Projects and Activities Update
   - Proposed Fuel Projects
     - Any projects currently in the works?
     - What is needed in the future?
   - Evacuation Planning
     - Please send any current evacuation maps and information to JEO.
   - Plans, Assessments, and Mutual Aid
     - Please send any current plans, assessments, and mutual aid agreements to JEO.
   - New Development

5. Next Steps

6. Contact Information
   - Phil Luebbert, *pluebbert@jeo.com,* (402) 474-8768
   - Karl Dietrich, *kdietrich@jeo.com*, (402) 742-7213

JEO CONSULTING GROUP INC
JEO ARCHITECTURE INC

p: 402.435.3080
f: 402.435.4110

2000 Q Street, Suite 500
Lincoln, Nebraska 68503

jeo.com

Meeting Outcomes

Each fire district and town meeting had three main outcomes. The first was a WUI discussion. During the meetings an updated draft WUI map was provided and additional areas to include were identified. From that information a draft county wide WUI was then able to be created.

The second outcome was identifying wildfire risk locations of concern. Each fire district and community were given a wildfire risk map from the Colorado Forest Atlas and asked to identify other risk locations of concern. Those identified areas were added to the plan as a bulleted list and narrative.

The third outcome was updating projects from the previous CWPP and identifying new fuel reduction projects. Each fire district and community were asked to provide a list of projects, their location, priority level (high, medium, low), and any collaborative efforts. This list of projects was then combined into a county-wide table and map.

December 7, 2023, 2nd Core Planning Team Meeting

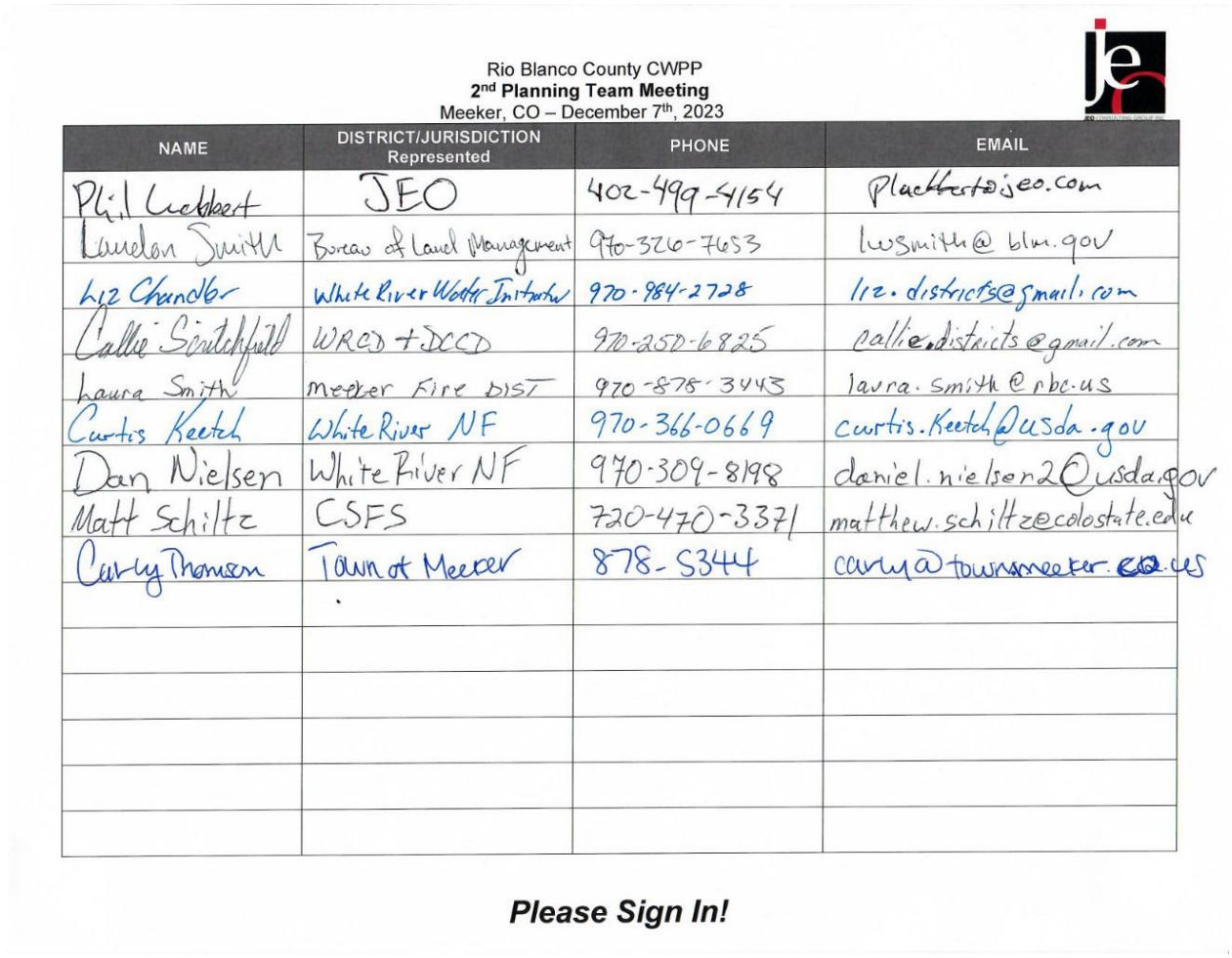
Agenda

Rio Blanco County, CO
Community Wildfire Protection Plan
2nd Planning Team Meeting Agenda
December 7th, 2023

1. Introductions
2. Summary of Last Meeting
3. Survey Results & Additional Outreach
4. Summary of 1-on-1 Meetings
    a. WUI Map
    b. Locations of Concern
    c. Resources and Training Needs
    d. Updated Actions from Current Plan
    e. Proposed Actions
    f. Evacuation Discussion
5. Review of Updated WUI map
6. Fuels Treatments & Mitigation Action Discussion
    a. Prioritization of projects
    b. What projects do you need assistance with?
    c. What projects need additional coordination?
    d. Send Karl completed projects in the last 5-10 years
7. Next Steps and Project Schedule
    a. Final Draft Review
    b. Public Review
    c. Adoption and approvals

Sign In Sheet

In addition to the names listed below on the sign in sheet, Lisa Piering: Town Manager – Town of Rangely, Jamie Statezny: District Ranger – USFS – Medicine Bow-Routt National Forests & Thunder Basin National Grassland, Chazz Lakin: Wildfire Resilience Coordinator – CSFS Todd Ruffner: Wildfire Mitigation Program Specialist – CSFS, and Karl Dietrich: Community Planner – JEO Consulting Group Inc. all attended the meeting virtually. Eddie Smercina: Emergency Manager – Rio Blanco County, Leif Joy: County Surveyor – Rio Blanco County, and Larry Jones: Interim County Manager – Rio Blanco County all attended in person but did not sign in.



Rio Blanco County CWPP
2nd Planning Team Meeting
Meeker, CO – December 7th, 2023

NAME	DISTRICT/JURISDICTION Represented	PHONE	EMAIL
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Please Sign In!

Meeting Outcome

The first outcome of the second and final Core Planning Team Meeting was to discuss the public survey lack of responses and identify other public outreach opportunities. During the meeting, participants determined that targeted stakeholder meetings might work better than the survey. During those meetings the public and stakeholders would be provided a short executive summary of the CWPP and be able to provide comments.

The second outcome of the meeting was reviewing the list of proposed fuel reduction projects, and determining if there were any other wildfire mitigation projects to include in the plan. Participants were given the county-wide fuel reduction projects and map. Projects were then further discussed and finalized. After the meeting JEO was able to update the fuel reduction projects list/map and add other wildfire mitigation actions as tables in the plan.

Public Survey

Public Survey Mailing Flyer



We Need Your Input!

Complete the Public Survey by scanning the code below with your phone's camera.

Or visit:
https://forms.office.com/r/KdPMq27SBg

The Town of Rangely and the Rangely Rual Fire Protection District are participating in the Rio Blanco County Community Wildfire Protection Plan (CWPP) update. A CWPP identifies specific wildfire risks facing communities and fire districts within Rio Blanco County. It then outlines mitigation projects and fuel treatment projects to reduce those risks. By having an updated CWPP the county and fire districts become prioritized for federal and state funding opportunities related to wildfire mitigation.

As part of the CWPP, a public survey was created to include residents in the planning process. The survey covers a range of wildfire topics and allows you to inform the plan. Be a part of the planning process by scanning the QR Code at left and filling out the survey! Hard copy surveys are also available at the Town Hall.

Public Survey Responses

1. Where do you live?

More Details

Town of Meeker	11
Town of Rangely	25
Unincorporated Rio Blanco Cou...	6
Other	1



2. Do you know what the Wildland Urban Interface (WUI) is?

More Details

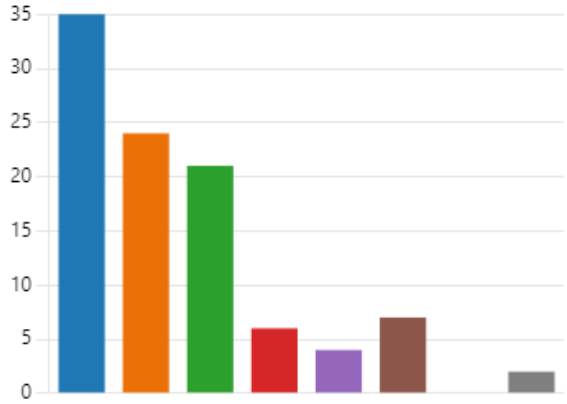
Yes	11
No	32



3. To the best of your knowledge, what are the greatest contributing factors to wildfire risk in your area?

More Details

Weather and climate conditions ...	35
Human actions	24
Dead vegetation buildup	21
Tree density	6
Housing density and/or buildin...	4
Dilapidated structures	7
Energy infrastructure	0
Other	2



4. Are you aware of the emergency notification systems available and are you participating in them?

More Details

Yes and I am signed up	28
Yes and I am NOT signed up	3
No and I am not signed up	12



5. If not, why are you not signed up for emergency notification systems?

More Details Insights

14
Responses

Latest Responses
"*Unaware of the existence of such*"

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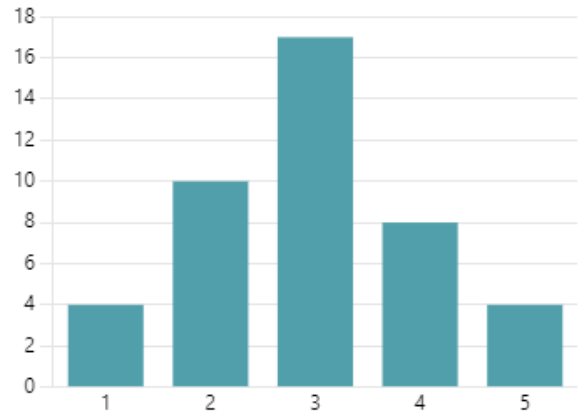
5 respondents (**36**%) answered **sign** for this question.



6. Rank the level of concern that wildfire will impact you. (1=Lowest Concern, 5=Highest Concern)

More Details Insights

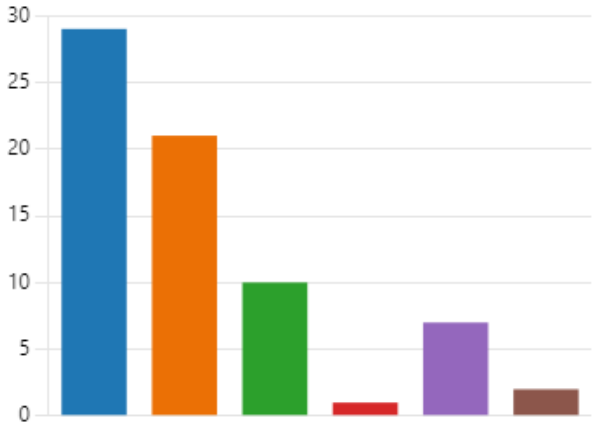
2.95
Average Rating



7. What actions have you taken to prepare for evacuation?

More Details

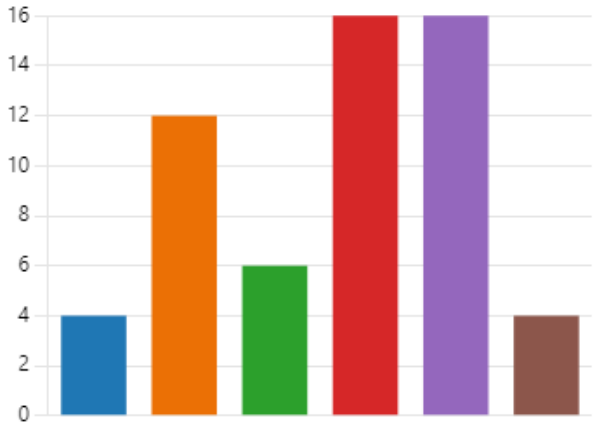
Signed up for emergency notific...	29
Identified possible evacuation o...	21
Created an evacuation "go-bag"...	10
Created an evacuation plan for l...	1
None of the above	7
Other	2



8. What would be your biggest concerns if you need to evacuate?

More Details

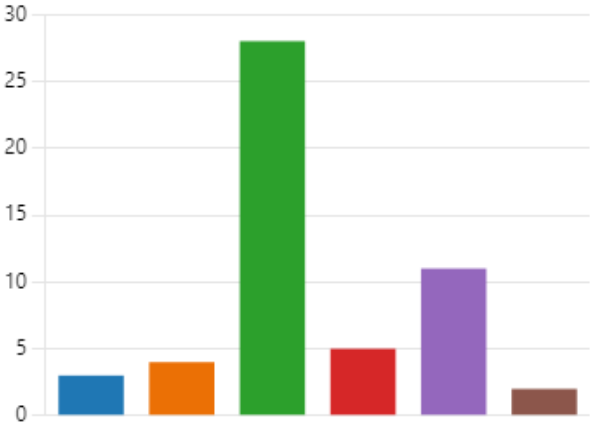
Inability to evacuate (no vehicle,...	4
Lack of information on where to...	12
Too few egress routes	6
Not knowing when to evacuate	16
No concerns with evacuating	16
Other	4



9. What measures have you taken to protect your home or property from wildfire?

More Details

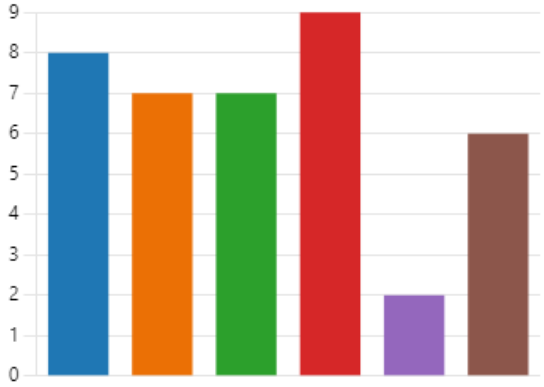
Built structure(s) or home with fi...	3
Retrofitted property with fire res...	4
Cleared litter/debris/vegetation/...	28
Installed sprinklers/fire suppress...	5
None of the above	11
Other	2



10. If you haven't taken measures to protect your home or property from wildfire, what are barriers to do so?

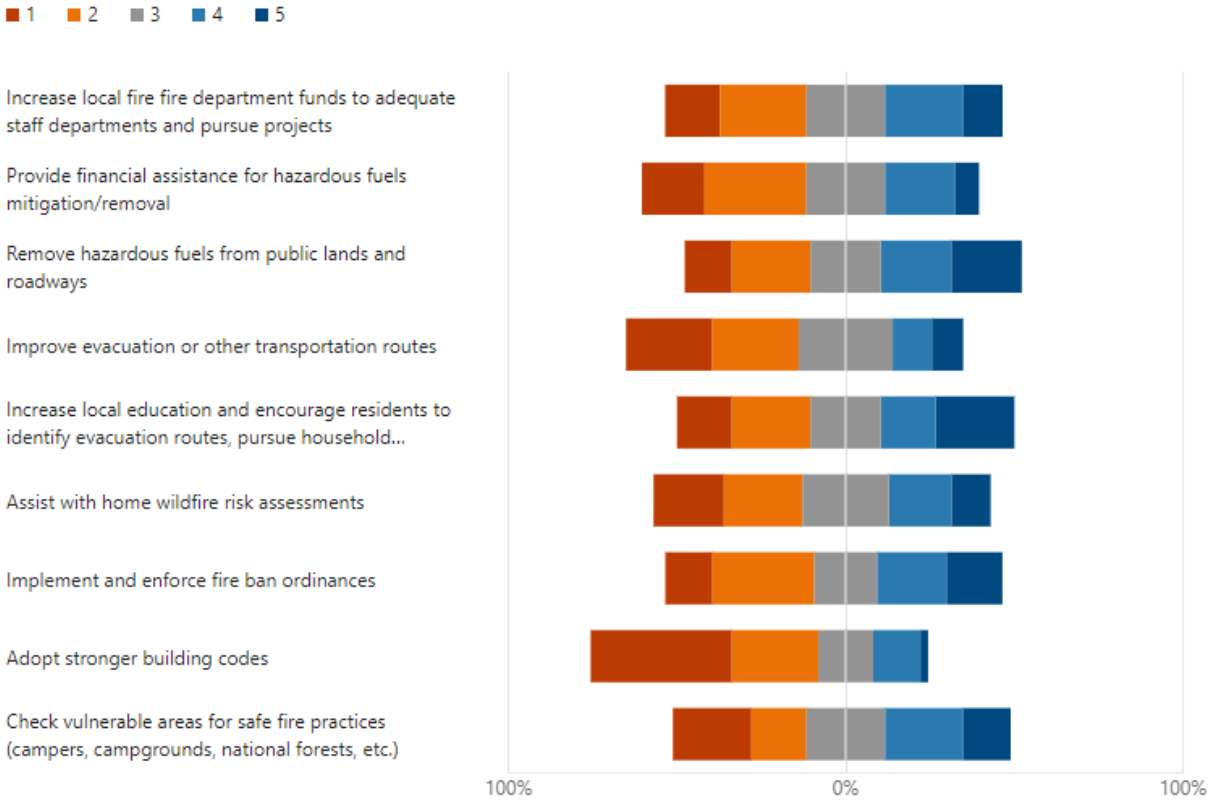
More Details

Cost or lack of financial resources	8
Lack of direction/knowledge	7
Lack of home ownership/rent pr...	7
Surrounding areas/neighbors p...	9
Limited opportunity for mitigati...	2
Other	6



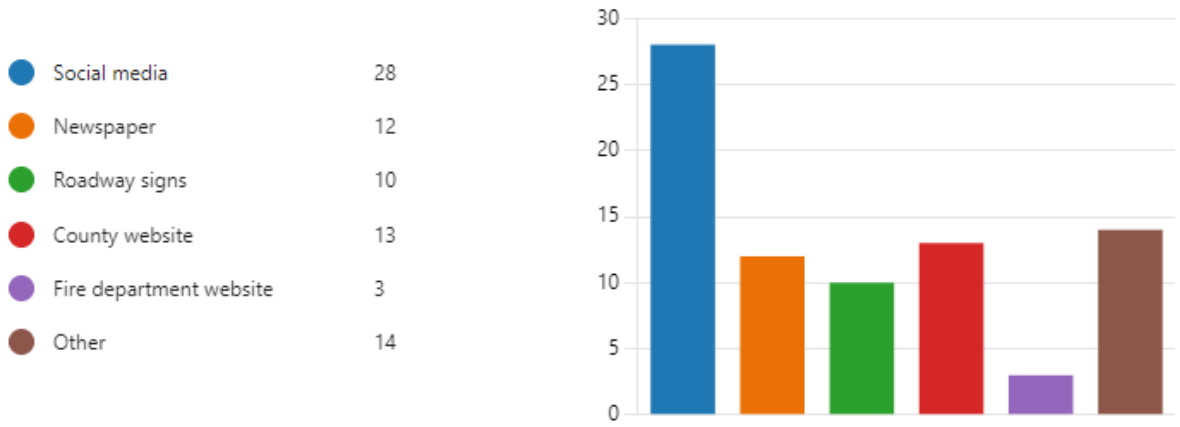
11. What would you like to see the county and local fire districts do in the future to better protect people, livestock, buildings, and infrastructure from future wildfires? (1=Not Important, 5=Very Important)

More Details



12. Where do you get your wildfire information?

More Details



13. How would you describe your level of support for wildfire mitigation efforts?

More Details

I strongly support wildfire mitig...	16
I am usually supportive of most ...	15
Neutral	10
I am usually NOT supportive of ...	1
Funds and time should be spent...	1



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Appendix D: Glossary of Wildfire Terms

Aerial Fuels Standing and supported live and dead combustibles not in direct contact with the ground and consisting mainly of foliage, twigs, branches, stems, cones, bark, and vines.

Aspect Cardinal direction towards which a slope faces.

Chain Unit of measure in land survey, equal to 66 feet (20 M) (80 chains equal 1 mile). Commonly used to report fire perimeters and other fireline distances, this unit is popular in fire management because of its convenience in calculating acreage (e.g., 10 square chains equal one acre).

Chimney A steep gully or canyon conducive to channeling strong convective currents, potentially resulting in dangerous increases in rates of fire spread and fireline intensity.

Crown Fire A fire that advances from top to top of trees or shrubs more or less independent of a surface fire. Crown fires are sometimes classed as running or dependent to distinguish the degree of independence from the surface fire.

Dead Fuels Fuels with no living tissue in which moisture content is governed almost entirely by absorption or evaporation of atmospheric moisture (relative humidity and precipitation).

Defensible Space An area either natural or manmade where material capable of causing a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildland fire and the loss of life, property, or resources. In practice, “defensible space” is defined as an area a minimum of 30 feet around a structure that is cleared of flammable brush or vegetation.

Direct Attack Any treatment applied directly to burning fuel such as wetting, smothering, or chemically quenching the fire or by physically separating the burning from the unburned fuel.

Fire Behavior The manner in which a fire reacts to the influences of fuel, weather, and topography.

Fire Danger Sum of constant danger and variable danger factors affecting the inception, spread, and resistance to control, and subsequent fire damage; often expressed as an index.

Fire Front The part of a fire within which continuous flaming combustion is taking place. Unless otherwise specified, the fire front is assumed to be the leading edge of the fire perimeter. In ground fires, the fire front may be mainly smoldering combustion.

Fire Hazard A fuel complex, defined by volume, type condition, arrangement, and location, that determines the degree of ease of ignition and of resistance to control.

Fire Intensity A general term relating to the heat energy released by a fire.

Fire Regime Description of the patterns of fire occurrences, frequency, size, severity, and sometimes vegetation and fire effects as well, in a given area or ecosystem. A fire regime is a generalization based on fire histories at individual sites. Fire regimes can often be described as cycles because some parts of history usually get repeated, and the repetitions can be counted and measured, such as fire return interval.

Fire Risk The chance of fire starting, as determined by the presence and activity of causative agents.

Fire Severity Degree to which a site has been altered or disrupted by fire; loosely, a product of fire intensity and residence time.

Fire Weather Weather conditions that influence fire ignition, behavior, and suppression. Flame Length The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface), an indicator of fire intensity.

Flaming Front That zone of a moving fire where the combustion is primarily flaming. Behind this flaming zone combustion is primarily glowing or involves the burning out of larger fuels (greater than about 3 inches in diameter). Light fuels typically have a shallow flaming front, whereas heavy fuels have a deeper front.

Fuel Any combustible material, especially petroleum-based products and wildland fuels. Combustible material that includes vegetation such as grass, leaves, ground litter, plants, shrubs, and trees that feed a fire. Not all vegetation is necessarily considered fuel. Deciduous vegetation such as aspen actually serves more as a barrier to fire spread and many shrubs are only available as fuels when they are drought-stressed.

Fuel Break A natural or manmade change in fuel characteristics that affects fire behavior so that fires burning into them can be more readily controlled.

Fuel Loading The amount of fuel present expressed quantitatively in terms of weight of fuel per unit area. This may be available fuel (consumable fuel) or total fuel and is usually dry weight.

Fuel Type An identifiable association of fuel elements of a distinctive plant species, form, size, arrangement, or other characteristics that will cause a predictable rate of fire spread or difficulty of control under specified weather conditions.

Ground Fire Fire that consumes the organic material beneath the surface litter ground, such as a peat fire.

Ground Fuel All combustible materials below the surface litter, including duff, tree or shrub roots, punky wood, peat, and sawdust that normally support a glowing combustion without flame.

Indirect Attack A method of suppression in which the control line is located some considerable distance away from the fire's active edge. Generally done in the case of a fast-spreading or high-intensity fire and to utilize natural or constructed firebreaks or fuel breaks and favorable breaks in the topography. The intervening fuel is usually backfired; but occasionally the main fire is allowed to burn to the line, depending on conditions.

Intensity A measure of the rate of heat released by a fire. It includes both radiant and convectional heat.

Initial Attack A planned response to a wildfire given the wildfire's potential fire behavior. The objective of the initial attack is to stop the fire and put it out in a manner consistent with firefighter and public safety and values to be protected.

Ladder Fuels Fuels which provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. They help initiate and assure the continuation of crowning.

Live Fuels Living plants, such as trees, grasses, and shrubs, in which the seasonal moisture content cycle is controlled largely by internal physiological mechanisms, rather than by external weather influences.

One-Hour Timelag Fuels Fuels consisting of dead herbaceous plants and roundwood less than about ¼ inch (6.4 mm) in diameter. Also included is the uppermost layer of needles or leaves on the forest floor.

One-Hundred Hour Timelag Fuels Dead fuels consisting of roundwood in the size range of 1 to 3 inches (2.5 to 7.6 cm) in diameter and very roughly the layer of litter extending from approximately ¾ of an inch (1.9 cm) to 4 inches (10 cm) below the surface.

One-Thousand Hour Timelag Fuels Dead fuels consisting of roundwood 3 to 8 inches in diameter and the layer of the forest floor more than about 4 inches below the surface.

Prescribed Fire Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements (where applicable) must be met, prior to ignition.

Rate of Spread The relative activity of a fire in extending its horizontal dimensions. It is expressed as a rate of increase of the total perimeter of the fire, rate of forward spread of the fire front, or rate of increase in area, depending on the intended use of the information. Usually, it is expressed in chains or acres per hour for a specific period in the fire’s history.

Surface Fire Fire that burns loose debris on the surface, which includes dead branches, leaves, and low vegetation.

Surface Fuel Fuels lying on or near the surface of the ground, consisting of leaf and needle litter, dead branch material, downed logs, bark, tree cones, and low stature living plants.

Ten-Hour Timelag Fuels Dead fuels consisting of roundwood ¼ to l inch (0.6 to 2.5 cm) in diameter and, very roughly, the layer of litter extending from immediately below the surface to ¾ inch (1.9 cm) below the surface.

Topography The configuration of the earth's surface including its relief and the position of its natural and man-made features.

Torching The burning of the foliage of a single tree or a small group of trees, from the bottom up.

Wildfire An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.

Wildfire Susceptibility Index A metric that defines the probability of wildfire occurrence and its predicted rate of spread once an ignition occurs.

Wildfire Intensity Index A measure for the potential for high-intensity wildfire occurrence as defined by flame length and crown fire.

Wildland Fire Any non-structure fire that occurs in the wildland. Three distinct types of wildland fire have been defined and include wildfire, wildland fire use, and prescribed fire.

Wildland Fire for Resource Benefit The application of the appropriate management response to naturally ignited wildland fires to accomplish specific resource management objectives in pre-defined designated areas outlined in Fire Management Plans.