



# **Eagle County Hazard Mitigation Plan**

**2019-2024**

# Eagle County Hazard Mitigation Plan

Encompassing the following entities:



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## INTRODUCTION

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### Purpose

Natural hazards such as wildfire, avalanche, severe winter storms and others are common to the mountainous regions of Colorado and can have significant impacts on every aspect of life in Eagle County. The purpose of this plan is to provide local officials with a tool to guide policies and actions that can be implemented to reduce risk and future losses from natural and man-made hazards. This plan will help ensure that Eagle County remains a safe place to live and work and to provide a framework for addressing potential hazards through hazard mitigation planning.

The county is vulnerable to several hazards that are identified, profiled and analyzed in this plan. Wildfire, severe winter weather, drought, landslides, flooding, lightning, severe wind and avalanches are among the hazards that can have a significant impact on the county based upon the results of a community risk survey completed by community members and emergency personnel. This plan identifies goals and objectives for reducing risk to these high ranking hazards as well as hazards ranked medium and low. The Hazard Mitigation Plan will be formally adopted by the Eagle County Board of County Commissioners and all the governing bodies of each participating jurisdiction. The plan will be updated and revised within a five-year time frame or as required by the Federal Emergency Management Agency (FEMA).

Formal approval of this plan by FEMA also ensures that participating jurisdictions in Eagle County will remain eligible for federal grant funding under FEMA's Hazard Mitigation Assistance (HMA) program to include the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation Program (PDMP) and Flood Mitigation Assistance (FMA) program. Participation in the multi-hazard mitigation planning process also allows jurisdictions to earn planning credits for the National Flood Insurance Program's Community Rating System (CRS).

### Background and Scope

The Federal Emergency Management Agency (FEMA) defines hazard mitigation as "any sustained action taken to reduce or eliminate long-term risk to human life and property from a hazard event." Many disasters are predictable, and much of the damage caused by these events can be alleviated or even eliminated by implementing cost-effective hazard mitigation measures.

Each year in the United States (U.S.), disasters take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. While some communities are less hazard-prone than others, there are no hazard-free communities and all communities face some degree of risk from natural and man-made disasters. As the costs of recovering from natural disasters continue to rise, many communities have sharpened their interest in identifying effective ways to reduce vulnerability to hazards.

Hazard mitigation planning is the process through which hazards that threaten communities are identified, likely impacts of those hazards are determined, mitigation goals are set, and appropriate strategies to lessen impacts are determined, prioritized, and implemented. Hazard mitigation plans assist communities in reducing risk from hazards by identifying resources, information, and strategies for risk reduction. In addition to creating safer communities, hazard mitigation can protect infrastructure, limit property damage, reduce public-sector losses, and minimize social and economic disruptions.

This plan documents the local hazard mitigation planning process, identifies relevant hazards and risks, and outlines the strategies that will be used to decrease vulnerability and increase resilience and sustainability. Information in this plan is intended for use by local officials to help guide mitigation activities and inform decisions on growth and land use policies as they relate to exposure to risks from natural and man-made hazards. The plan was developed using a collaborative effort of county, municipal and fire officials and a cross-section of representatives throughout the community with expertise in a range of subjects related to mitigating the impacts of natural hazards.

This plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000. While the act emphasized the need for mitigation plans and more coordinated mitigation planning and implementation efforts, the regulations established the requirements that local hazard mitigation plans must meet in order for a local jurisdiction to be eligible for certain federal disaster assistance and hazard mitigation funding under the Robert T. Stafford Disaster Relief and Emergency Act. Because Eagle County is subject to many kinds of hazards, access to these programs is vital.

## Goals and Objectives

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The goals and objectives of this hazard mitigation plan are to:

### **Goal 1: Protect life, property and the environment by reducing the impact of natural and human-caused hazards in Eagle County.**

#### **Objectives:**

- A. Enhance assessment of multi-hazard risk to life, property and the environment to identify areas within Eagle County that are at particular risk from catastrophic loss due to wildfires, floods, avalanche and other hazards.
- B. Develop and implement action plans to reduce potential loss of life, property, critical infrastructure and valued resources while protecting the safety of the public and emergency responders.
- C. Provide framework for implementation and management of mitigation actions identified by this plan.
- D. Increase public education and awareness of hazards and risk reduction measures.

### **Goal 2: Minimize economic losses and speed recovery and redevelopment following future disaster events.**

#### **Objectives:**

- A. Strengthen disaster resiliency of government, business and community members.
- B. Promote and conduct continuity of operations and continuity of governance planning.
- C. Reduce financial exposure of county and municipal governments and fire protection districts.

### **Goal 3: Implement the mitigation actions identified in this plan.**

#### **Objectives:**

- A. Engage collaborative partners, community organizations, businesses and others
- B. Commit to hazard mitigation principles and integrate mitigation activities into existing and new community plans and policies.
- C. Comply with federal and state legislation and guidance for local hazard mitigation planning.
- D. Proactively prepare to minimize secondary hazards associated with expected events.
- E. Monitor, evaluate, and update the mitigation plan on an annual basis and modify plans as necessary.

## Planning Requirements for Funding Eligibility

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To better protect the nation from disasters, the U.S. Congress passed the Robert T. Stafford Disaster Relief and Emergency Assistance Act, enacted as the Disaster Mitigation Act of 2000 (DMA 2000). With this legislation, the federal government placed renewed emphasis on pre-disaster mitigation of potential hazards. Most significant to state and local governments under the DMA 2000 are its amendments to Sections 203 (Pre-Disaster Hazard Mitigation) and 322 (Mitigation Planning).

Section 203 of the DMA 2000 establishes a "National Pre-Disaster Mitigation Fund" to support a program that will "provide technical and financial assistance to state and local governments to assist in the implementation of pre-disaster hazard mitigation measures that are cost-effective and designed to reduce injuries, loss of life, and damage and destruction of property, including damage to critical services and facilities under the jurisdiction of the state or local governments."

Section 322 of the DMA 2000 provides a new and revitalized approach to mitigation planning by:

- Establishing a requirement and delivering new guidance for state, local and tribal mitigation plans;
- Providing for states to receive an increased percentage of HMGP funds (from 15-20%) if, at the time of the declaration of a major disaster, they have in effect an approved State Mitigation Plan that meets the criteria defined in the law; and
- Authorizing up to seven percent (7.0%) of the Hazard Mitigation Grant Program (HMGP) funds available to a state to be used for development of state, local and tribal mitigation plans.

FEMA-approved hazard mitigation plans qualify communities for the following federal mitigation grant programs:

- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation Program (PDMD)
- Flood Mitigation Assistance (FMA) Program

### **Hazard Mitigation Grant Program (HMGP)**

The Hazard Mitigation Grant Program (HMGP) provides grants to states, tribes, and local entities to implement long term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. Projects must provide a long-term solution to a problem, for example, elevation of a home to reduce the risk of flood damages as opposed to purchasing supplies to fight the flood. In addition, a project's potential savings must be more than the cost of implementing the project.

HMGP funds may be used to protect property or to purchase property that has been subjected to, or is in danger of, repetitive damage. The amount of funding available for HMGP under a disaster declaration is limited. The program may provide a state or tribe with up to 15 percent (15%) of the total disaster grants awarded by FEMA. The cost-share eligibility requirement for this grant is 75 percent (75%) federal/25 percent (25%) non-federal. Funding from other federal sources cannot be used for the 25 percent share with one exception. Funding provided to states under the Community Development Block Grant (CDBG) program from the Department of Housing and Urban Development can be used to meet the non-federal share requirement.

### **Pre-Disaster Mitigation Program (PDMP)**

The Pre-Disaster Mitigation Program (PDMP) provides funds to states, tribes, and local entities, including public universities, for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event. Grants are awarded on a nationally competitive basis. Like HMGP funding, a PDMP project's potential savings must

be more than the cost of implementing the project. In addition, funds may be used to protect either public or private property or to purchase property that has been subjected to, or is in danger of, repetitive damage. The cost share eligibility requirements for this grant is 75 percent (75%) federal/25 percent (25%) non-federal. The funding available under this program varies annually but we have seen significant growth in the last three years. FEMA made \$90,000,000 available nationally in 2016 and 2017 but increased the amount to \$235,200,000 in 2018.

**Flood Mitigation Assistance (FMA) Grant Program**

The goal of the FMA grant program is to reduce or eliminate flood insurance claims under the National Flood Insurance Program (NFIP). Particular emphasis for this program is placed on mitigating repetitive loss properties. Repetitive loss properties are properties for which two or more NFIP losses of at least \$1,000 each have been paid within any 10-year period since 1978. Grant funding is available for three types of grants, including planning, project, and technical assistance. Project grants, which use the majority of the program’s total funding, are awarded to states, tribes, and local entities for planning and technical assistance and/or to apply mitigation measures to reduce flood losses to properties insured under the NFIP. The cost share eligibility requirements for this grant is 75 percent (75%) federal/25 percent (25%) non-federal. In 2017 and in 2018, \$160 million was allocated for FMA program grants nationwide.

**Participating Jurisdictions**

The Eagle County Hazard Mitigation Plan was developed by a multi-disciplined group representing the County, the jurisdictions which adopted this plan, and other subject matter experts who possess a wide variety of technical expertise and community knowledge. Each jurisdiction requesting approval of the plan must document that it has participated in the development of the plan, submitted mitigation projects for inclusion in the plan, and have the plan formally adopted by their governing body. Eagle County residents contributed to plan development by participating in an online risk assessment survey and by providing valuable input to the draft plan. Project management was provided by Eagle County Emergency Management with technical planning assistance from the Colorado Division of Homeland Security & Emergency Management (DHSEM).

The collaborative effort used to develop this plan demonstrates the ongoing commitment of Eagle County and its partners to reduce risks to people and property posed by natural and man-made hazards as well as to maintain eligibility for federal funding. The following table lists the Eagle County Hazard Mitigation Planning Participants and Stakeholders:

<b>Eagle County Hazard Mitigation Planning Participants</b>	
<b>Eagle County</b>	
County Administration	Emergency Management
Assessor’s Office	GIS
Sheriff’s Office	Road and Bridge
Community Development	Airport
Sustainable Communities	Eagle River Water and Sanitation District
County Paramedic Services	Public and Environmental Health



<b>Towns and Metropolitan Districts</b>	
Town of Avon	Town of Minturn
Town of Basalt	Town of Red Cliff
Town of Gypsum	Town of Vail
Eagle Vail Metropolitan District	Beaver Creek Metropolitan District
Arrowhead Metropolitan District	Edwards Metropolitan District
Cordillera Metropolitan District	Town of Eagle
<b>Fire Protection Districts &amp; Volunteer Fire Departments</b>	
Basalt and Rural Fire Protection District	Greater Eagle Fire Protection District
Eagle River Fire Protection District	Gypsum Fire Protection District
Rock Creek Volunteer Fire Department	
<b>Surrounding Counties</b>	
Pitkin County Sheriff	Garfield County
Summit County Brian	Routt County
Lake County	Grand County
<b>Colorado State Participants</b>	
Colorado Division of Fire Prevention and Control	Colorado Department of Local Affairs
Colorado Department of Natural Resources	Colorado Division of Parks and Wildlife
Colorado Division of Homeland Security and Emergency Management	Colorado State Forest Service
Colorado Water Conservation Board	Colorado State Forest Service
<b>National Participants</b>	
U.S. Bureau of Land Management	U. S. Forest Service
National Weather Service	

## **Plan Organization**

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The Eagle County Hazard Mitigation Plan follows a format consistent with those adopted by FEMA and the State of Colorado. The updated 2019 Eagle County Hazard Mitigation Plan is organized as follows:

### **Introduction to Hazard Mitigation Planning**

Describes the plan's purpose, participating jurisdictions, hazard mitigation planning requirements, and federal hazard mitigation programs.

### **Planning Process**

Describes the process used to develop the updated plan, including how it was prepared, who was involved in the process, and how the public was involved.

### **Community Profile**

Provides a general description of Eagle County and its local jurisdictions and districts, including their location, geography, climate, history, population, economy and government structures.

### **Hazard Identification and Risk Assessment**

Identifies and profiles the hazards that could affect Eagle County based on probability and potential magnitude, lists the historical disaster declarations in the county, and describes the potential effects of climate change and impact on mitigation planning.

### **Capability Assessment**

Assesses county capabilities related to hazard mitigation, including existing policies, plans and programs in the participating jurisdictions that are related to hazard mitigation; provides an inventory of critical facilities and other community assets, and describes how the updated plan will be incorporated into existing planning mechanisms.

### **Mitigation Strategy**

Identifies status of previous mitigation actions and future prioritized actions and mitigation strategies to mitigate hazards in each participating jurisdiction based on the risk assessment and other data sources.

### **Plan Implementation and Maintenance**

Provides a formal process for monitoring, evaluating and updating the plan.

### **Appendices**

## PLANNING PROCESS AND METHODOLOGY

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This section describes the hazard mitigation planning process undertaken by Eagle County to update the hazard mitigation plan and create the framework for continuous plan improvement. Eagle County utilized a planning methodology based on best practices and guidance from FEMA and the Colorado Division of Emergency Management.

This updated version of the Eagle County Hazard Mitigation Plan is the third revision of a plan originally prepared as a regional document in cooperation with Pitkin County (2005) and subsequently updated as a plan for Eagle County and its local partners exclusively (2012). This updated plan builds on previous versions, incorporating current hazard research, studies and information.

### Organizing the Planning Effort

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The planning process began with the solicitation for participation by the Eagle County Emergency Manager to county, town, special district, state and federal stakeholders to invite them to participate in the planning process. Emergency management colleagues in surrounding counties as well as state and federal partners were informed about the project and invited to participate in the Kickoff Meeting and Mitigation Actions Workshop scheduled on September 12, 2018. The invitation can be found in [Appendix H: Supporting Documents](#).

Prior to this meeting, participants were sent an electronic copy of the draft plan, with the ability to review and edit portions of the plan via the use of Google Documents. Participants were also sent several surveys prior to the kickoff meeting to collect data on hazard prioritization, capability assessments, flood insurance, and other data required for plan development. Participants were encouraged to make updates to the draft plan in the Google environment where changes could be tracked in real time and edits could be tied to specific authors to track and verify participation from all participating jurisdictions and stakeholders.

Each jurisdiction that chose to participate in the planning process and development of the plan was required to meet minimum plan participation requirements of attending at least one planning meeting. In addition, each jurisdiction committed to participate in the plan update and provided a Letter of Commitment to reflect this. Each jurisdiction's letter can be found in [Appendix H: Supporting Documents](#).

The county planning effort began with a kickoff meeting that included remote participation via a [Youtube](#) feed on September 12, 2018. During this meeting, Eagle County confirmed participant contact information, clarified roles and responsibilities, shared planning requirements and deadlines, and shared data collected by surveys for hazard prioritization, capability assessments and flood insurance status as well as next steps for the work plan that would guide plan development.

### Planning Team

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The planning process began with the solicitation for participation by the Eagle County Emergency Manager to county, town, special district, state and federal stakeholders to invite them to participate in the planning process. Emergency management colleagues in surrounding counties as well as state and Federal partners were informed about the project and invited to participate in the Kickoff Meeting and Mitigation Actions Workshop scheduled on September 12, 2018. The county provided an opportunity for neighboring counties, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, nonprofits and community members to be involved in the planning process. Participants

provided data through online surveys and requests for information, including plans, policies, building codes, and other jurisdictional resources that incorporate mitigation planning content.

Planning team participants, including their affiliations and contact information, can be found in [Appendix A: Eagle County Hazard Mitigation Planning Team](#).

The Eagle County Emergency Manager coordinated planning efforts and worked to accomplish the following:

- Oversee, manage, and document completion of all project tasks
- Serve as lead coordinating agency
- Assist with collection of documents, GIS data and other information
- Coordinate logistics for all project meetings
- Hosting and managing project collaboration and sharing
- Responding to general inquiries from the public, stakeholders, etc.
- Coordinating with all participating jurisdictions Key representatives at this meeting agreed to act as members of the Hazard Mitigation Planning Team (HMPT).

Planning Team members participated in the following activities:

- Participate in planning meeting(s)
- Submit data, make decisions on plan process and content
- Update plan content for their jurisdiction
- Complete all required worksheets
- Identify mitigation actions for the plan
- Review and comment on plan drafts
- Inform the public, local officials and other interested parties about the planning process and provide opportunity for them to comment on the plan
- Facilitate formal adoption of the Hazard Mitigation Plan in their jurisdiction

The planning meeting agenda is included in [Appendix H: Supporting Documents](#) and links to the Google surveys and worksheets can be found in [Appendix F: Hazard Mitigation Data Collection Surveys](#).

## **Review of Current Plans, Studies and Reports**

Eagle County and the participating jurisdictions reviewed and referenced a variety of comprehensive planning documents, such as land use and general plans, emergency operations plans, and municipal ordinances and building codes during the planning process. Many jurisdictions and municipalities have plans in place that address mitigation efforts and the planning team worked to ensure that these efforts were not duplicated. For example, members of the Eagle County Wildfire Council have worked together over the last several years to develop and implement community based forestry and fuel reduction projects; yearly interagency training events; regular public forums; on forest health and FireWise concepts; updates to Eagle County Land Use Regulations; open burning guidelines and protocols, and revisions to the Eagle County Community Wildfire Protection Plan (CWPP). A list of local plans, ordinances, staffing and programs that were reviewed can be found under the [Mitigation Capabilities Section](#) of this plan.

## Public Involvement

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A community survey was developed to provide Eagle County residents and businesses with the opportunity to provide feedback on hazard mitigation and response. The survey, conducted in English and Spanish, was posted on the Eagle County website and in the local newspaper to solicit participation. A total of 48 people responded to the survey. This was an increase from the 22 participants who completed the 2012 public survey for the previous hazard mitigation plan.

Survey questions were drafted not only to get feedback and input regarding public perceptions on hazards within each jurisdiction, but also to help address future public outreach and awareness regarding:

- How to protect people and property prior to, during and after an emergency
- Signing up for county alerts and how to get information in an emergency
- Education on identified hazards in the community and potential mitigation and climate adaptation strategies

The community's opinions of the hazards most threatening to their environment were used to identify and prioritize hazards and direct mitigation efforts. Public involvement also helped determine critical infrastructure subject to hazard impact. Sample survey forms and tabulated survey results are attached to the Plan as [Appendix B: Public Risk Assessment Survey](#). A draft of the plan was also posted to the Eagle County website to comment on the plan prior to it being finalized and approved.

## Identifying the Hazards and Assessing the Risk

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The planning effort began with a review and update of all sections of the previous plan. All sections of the plan were analyzed and revised where appropriate and each section was updated to be in compliance with Federal requirements as well as to reflect changes within each participating jurisdiction over the past five years. Updates to this plan were based on research from a wide variety of sources, historical perspectives and future projections of vulnerability and resource capacity. Updates were completed using the most current state and federal guidance, including FEMA's Local Mitigation Planning Handbook (March 2013), to ensure that the plan met federal requirements.

The planning team participated in several Google Form surveys to identify and profile hazards that pose a risk to Eagle County. Hazards captured in the previous plan were reviewed as well as hazards which are required to be reviewed by FEMA following their methodology. The planning team then assessed the county's vulnerability to these hazards, if applicable, and examined the capabilities in place to mitigate them. The planning team was able to quickly submit and capture data for analysis as a result of the online survey process and use of Google tools for online collaboration and communication.

During the September kickoff meeting, the planning team reviewed the goals from the previous plan and developed revised goals and objectives to guide mitigation planning efforts. The team discussed past events, impacts, and future probability for each hazard in the county's hazard mitigation plan as well as factors (i.e., occurrences, probability of future occurrences, magnitude and severity) that may have changed over time. The survey data collected was used to create hazard profiles for each identified hazard in Eagle County. This data was shared with planning team members to confirm the likely impacts of future hazard events in each of the participating jurisdictions.

The vulnerability assessment was updated to include an updated inventory of assets at risk to natural hazards, including the total number and value of structures; critical facilities and infrastructure; natural, historic and

cultural assets; and economic assets. The capability assessment identified existing mitigation capabilities of participating jurisdictions, including programs, policies, regulations, ordinances, and plans that mitigate or could be used to mitigate risk to disasters. Participating jurisdictions submitted information by Google Form on their regulatory, personnel, fiscal, and technical capabilities as well as ongoing initiatives related to interagency coordination and public outreach. The team then developed and prioritized mitigation strategies and actions, removing completed or low priority projects listed in the 2012 plan for the next 5-year period. Lessons learned from completed projects were discussed among team members.

### **Plan Development, Maintenance and Adoption**

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Based on the results of the risk assessment and data collection surveys, planning team discussions, and the mitigation actions identified, a draft of the plan was prepared and distributed for review and comment in Google Documents. This enabled participants to provide real time feedback during the plan development process. Feedback from participating jurisdictions and stakeholders was integrated into the public draft, which was posted on the county's website to collect final public input before the final draft was produced and shared with the Colorado Division of Homeland Security & Emergency Management and FEMA Region VIII to review and approve contingent upon final adoption by the Eagle County Board of County Commissioners and the other participating jurisdictions.

## COMMUNITY PROFILES

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The following pages contain detailed information about the communities and special districts in Eagle County, their vulnerabilities and risks:

### Eagle County Community Profile

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#### Eagle County



Eagle County is a western Colorado county that has made a transition from a mining and agricultural economy to a predominantly tourist economy which supports world-class recreational activities. Communities within the county are popular with second homeowners (48% of the homes in Eagle County are not primary residences) causing a significant portion of the population to be part-time residents.

Land use projections and high property values indicate that residential and commercial property trends will continue to include development in the wildland-urban interface. This fact increases risk from hazards such as wildfire, avalanche and rock slides, and places significant demands on emergency planning and response resources.

### **Geography**

Eagle County, Colorado comprises a land area of 1,701 square miles or 1,088,485 acres with elevations ranging from about 6,000 feet to more than 14,000 feet above sea level. More than 82% of Eagle County's land is public, including National Forests, wilderness areas, U.S. Bureau of Land Management (BLM) properties, and state and local public lands. Within the county, the U.S. Forest Service manages 595,860 acres of the White River National Forest, and the Bureau of Land Management manages 247,751 acres of land. Along the northeast boundary is the Eagle's Nest Wilderness Area, in the southeast quadrant is the Holy Cross Wilderness Area, and a small piece of Flat Tops Wilderness Area is in the northwest corner. These wilderness areas all belong to the White River National Forest. There are several State Wildlife and Resource Management Areas and also Sylvan Lake State Park. The Continental Divide runs along a portion of the southern boundary, and the Colorado Trail (a non-motorized use trail) crosses the southeast corner of the county. Eagle County is predominantly situated in the Eagle and Colorado River Valleys with the Town of Basalt and El Jebel area located in the Roaring Fork River Valley. Since Basalt is geographically connected more with Pitkin County (1/3 of the Town of Basalt lies within Pitkin County), it has chosen to align with Pitkin County's plan as opposed to the Eagle County plan.

### **History**

The Ute Indians claimed Eagle County lands for summer hunting and fishing grounds before Europeans explored the area. The first reliable account of European presence in the Eagle River Valley was in 1840 when Kit Carson guided the Fremont party through the region. Fortune hunters and settlers scoured the state, striking lead carbonate ore in Leadville in 1874. The strike brought many prospectors to the valley, and by 1879, a permanent camp was established and the town of Red Cliff was born. Eagle County was carved from Summit County in 1883, and Red Cliff, named for the surrounding red quartzite cliffs, was the first county seat. The county government moved west to the town of Eagle in 1921. The evolution of Vail from a quiet sheep pasture to an international resort is credited to the famous 10th Mountain Division ski troops who were introduced to the valley while training at Camp Hale in the 1940s. Following World War II, a group of former Army buddies returned to the Gore Creek Valley to fulfill their collective dream...to develop a ski resort. Vail later emerged as a ski giant and the county has flourished ever since.

### **Airport**

The Eagle County Regional Airport is a public airport located in the Town of Gypsum, Colorado. The airport serves Eagle County and visitors to nearby Aspen, Vail and Beaver Creek ski resorts. The History Channel rated Eagle County Regional Airport as # 8 on its list of Most Extreme Airports in July 2010 due to the altitude, weather variability, an approach through mountainous terrain and challenging departure procedures. The airport is highly seasonal, and most of its scheduled flights operate during the winter. "Visitors travel to Colorado on commercial airline flights and general aviation aircraft to conduct business or vacation in the state. Annually, 196,000 visitors arrive in Colorado via Eagle County Regional Airport". The total quantifiable impact on the local economy from the airport in 2013 totaled \$635,900,000. In addition, the Eagle County Regional Airport created 6,294 jobs, paying \$217,511,273 in payroll. (2013 Economic Impact Study of Colorado Airports).



**Economy**

Average per capita income in 2017 for Eagle County was \$38,604 which ranked 4th in the state. By comparison, Colorado's 2009 per capita income was \$29,697. In Eagle County, the majority of jobs (80%) are in wage and salary employment. Self-employment accounts for the remaining jobs (20%).

**Demographics**

As of July 2017, Eagle County has an estimated population of 54,772 according to the Colorado State Demography Office, this reflects a 5.12% increase since 2010. Eagle County encompasses seven communities, which include the incorporated municipalities of Avon, Eagle, Gypsum, Minturn, Red Cliff, Vail and a portion of Basalt. Edwards and El Jebel are two significant unincorporated community centers located in Eagle County with a total estimated population of approximately 24,000. In 2017, approximately 55% of residents resided in Avon, Basalt, Eagle, Gypsum, Minturn, Red Cliff, and Vail, while 45% of residents resided in unincorporated Eagle County.

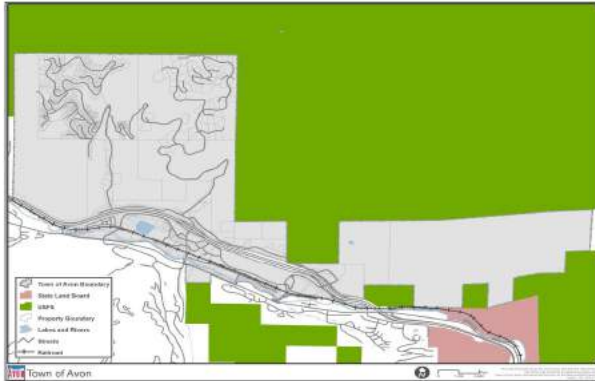
**Emergency Services**

Eagle County is prepared to respond to emergency incidents with first responders well trained in incident management, law enforcement, structural and wildland firefighting, emergency medical services, hazardous materials, flood fighting, technical rescue, animal rescue, wilderness search and rescue as well as other disciplines.

## Town of Avon Community Profile

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### Town of Avon



The Town of Avon was incorporated in 1978 and is located in east central Eagle County. It has a population of 6541 year round residents and 3500 part time residents. The Town of Avon boundaries encompass 8 square miles. Avon is located 20 miles east of Eagle at 7,400 feet above sea level adjacent to Interstate 70, U.S. Highway 6, and the Eagle River. Avon is the gateway to the Beaver Creek Resort which lies about two miles south of the town.

Primary residents number approximately 6,447 and the median age of residents in Avon is 31.1.

The climate of Avon is semi-arid with an average annual precipitation total of around 20 inches. Normal temperatures range from summer highs of upper 70's to winter lows in the single digits. The vegetation in the Avon area varies between lodgepole pine, aspen, spruce, juniper, sagebrush, service berry and mountain mahogany on the north side of Interstate 70 and the south side of Highway 6 to typical riparian habitat along the Eagle River.

## Town of Basalt Community Profile

*Note: The Town of Basalt is not an adopting jurisdiction in the Eagle County Hazard Mitigation Plan. It is already included in the Pitkin County plan. The Town is included here with information borrowed from the Pitkin County plan for reference only because it is located in both Counties.*

### Town of Basalt



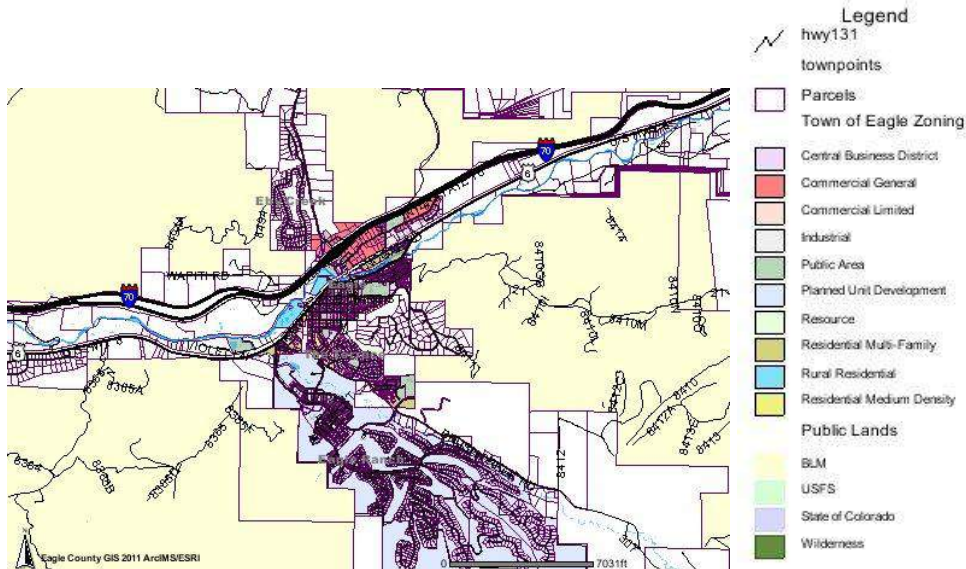
Basalt began as a railroad town and was known as Aspen Junction until 1895, when the name was changed to Basalt. This name was taken from the basaltic rock formation of Black Mountain (now known as Basalt Mountain) located to the north of the town. The original settlement was actually called Fryingpan Town and was located on the south side of the Fryingpan River, near the old charcoal kilns; portions of which are still visible.

In 1887, the railroad established a new town site on the north side of the Frying-pan River, and the residents of the old town relocated to it, leaving the original town that eventually disappeared. Basalt was officially incorporated during the summer of 1901. Since that time, the town has gone through numerous changes and expansions.

Primary residents number approximately 3,857 and the median age of residents in Basalt is 36.6.

Basalt, Colorado gets an average of 15 inches of rain, 86 inches of snow per year with high temperatures around 85 degrees and low temperatures in January around 10 degrees.

## Town of Eagle Community Profile

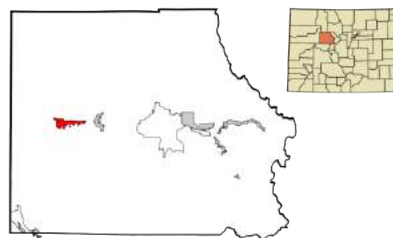
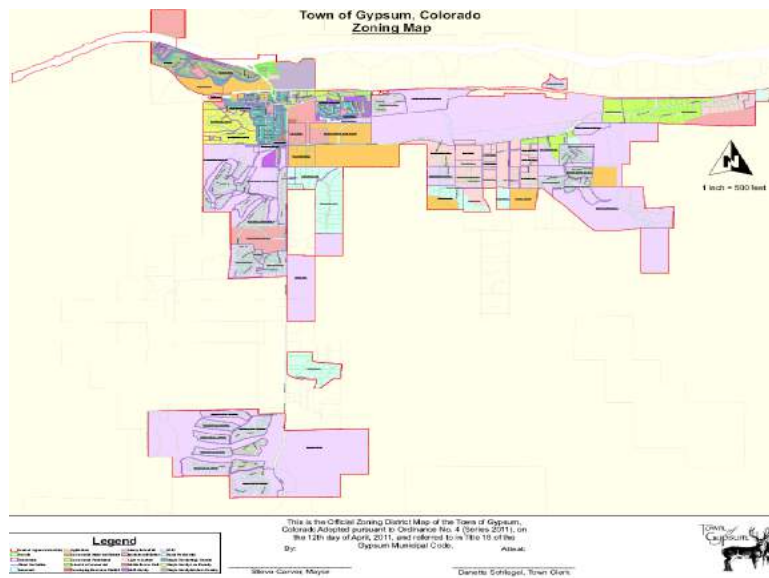


The Town of Eagle was established in 1887 and incorporated in 1905. It is located in the western portion of Eagle County. In 1921, Eagle became the county seat of Eagle County. It has an estimated population of 6,867 residents as of July 2017, and sits at an elevation of 6,600 feet above sea level. Eagle is 135 miles west of Denver on Interstate 70. The Town of Eagle boundaries encompass 4.5 square miles and approximately 1,020 acres are town-owned open space. Primary residents number approximately 6,508 and the median age of residents in Eagle is 33.8.

There are over 290 days of sunshine per year and the average temperatures range from 35 degrees in January to a high of 85 in July. The average rainfall is about 2 inches per month from May through July while the typical snowfall is 10-12 inches per month from December through April. There are miles of hiking and biking trails, multiple public parks including the Town Park with an outdoor stage venue. There is a pool and ice rink, bike skills park, golf course, 5 hotels, 1 motel, 1 bed and breakfast, shopping, and dining. Kayaking, fly fishing, rafting, and canoeing are all within the Town limits as well. Eagle is an access point to Sylvan Lake State Park, the 10<sup>th</sup> Mountain division hut system, endless snowmobile trails, and backcountry skiing access.

## Town of Gypsum Community Profile

### Town of Gypsum

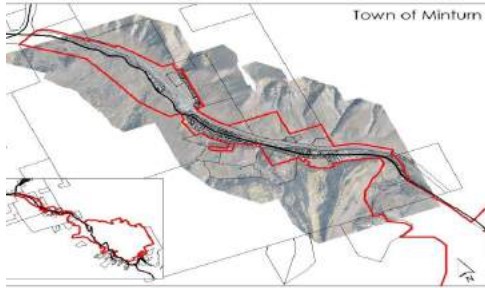


The Town of Gypsum was incorporated in 1911 and is located in the western portion of Eagle County. The 2017 census indicates a population of 7,117 and the current town boundary encompasses 8.8 square miles. Elevations within the Town of Gypsum range from 6,200 to 6,800 feet above sea level and Gypsum is home to the Eagle County Regional Airport. Primary residents number approximately 6,477 and the median age of residents in Gypsum is 31.3. The Town of Gypsum lies along both Gypsum Creek and the Eagle River, just south of the Interstate 70 corridor. Summers in the area are warm to hot in the valleys and cool in the surrounding mountains, with average daily temperatures ranging from 67 to 86 degrees Fahrenheit. Winters are usually milder and shorter as compared with the rest of Eagle County. Native vegetation in Gypsum consists mainly of grasses, forbs, woody shrubs, pinyon pines, juniper trees and other small conifers. Most undeveloped lands within the Gypsum Creek Valley consist of cattle ranches with flood irrigated hay fields.

## Town of Minturn Community Profile

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### Town of Minturn



The Town of Minturn is located along the banks of the Eagle River approximately two miles south of the intersection of U.S. Highway 24 and Interstate 70. The population of the town in 2016 was approximately 1,027 residents, a 2% increase from 2010.

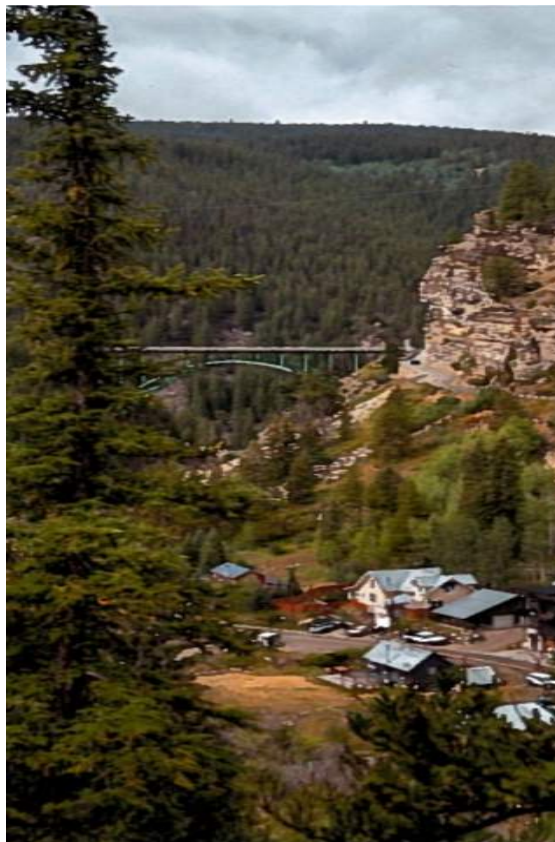
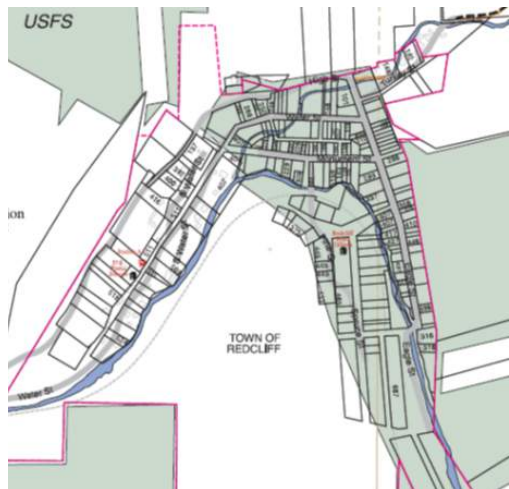
Minturn's oldest families settled at the confluence of Gore Creek and the Eagle River in the late 1800's. Some created homesteads and farmed the land, while others mined silver in the mountains high above town. With the arrival of the Denver & Rio Grande Railroad in 1887, Minturn quickly developed into a booming crossroads for transportation and industry. By the turn of the century, a growing population of mining and railroad workers and their families raised the demand for business and services in town. In response, the town was incorporated on November 15, 1904. Today, the total number of primary residents is approximately 1,027 and the median age of residents in Minturn is 36.1.

The climate of Minturn is semi-arid with an average annual precipitation total of approximately 20 inches. Temperature ranges from highs in the mid to upper 70's in the summer and teens and 20's in the winter. The vegetation in Minturn consists primarily of lodgepole pine and various sized aspen stands.

## Town of Red Cliff Community Profile

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### Town of Red Cliff



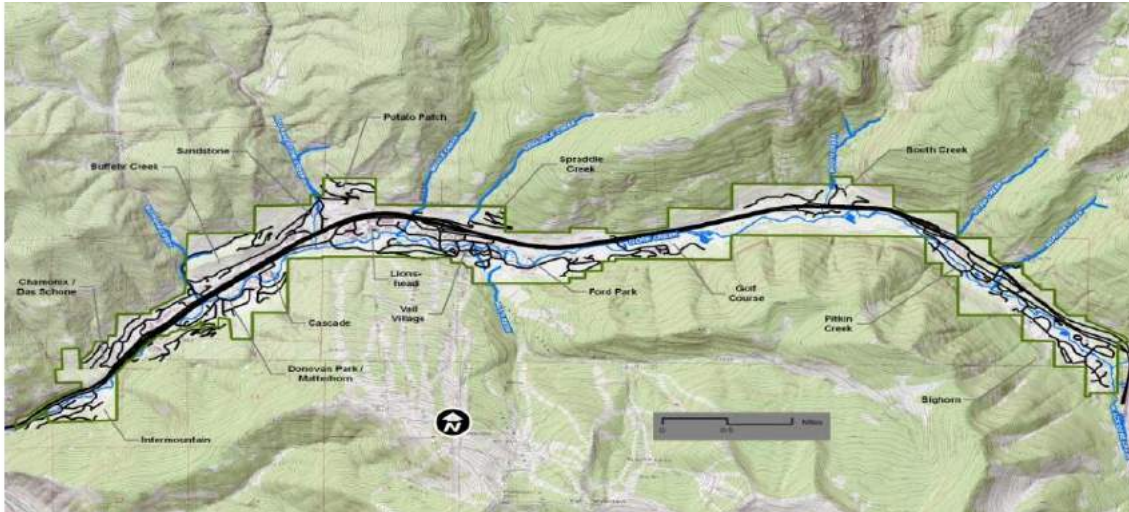
The Town of Red Cliff is located in southeast Eagle County and has an estimated 2016 population of 299. Red Cliff is the oldest town in Eagle County. It was the first County Seat for Summit County, which included the current areas of Summit and Eagle Counties. Red Cliff is located 25 miles southeast of Eagle at 8,650 feet above sea level. Red Cliff boomed at the turn of the 20<sup>th</sup> century as a mining town with saloons, a bank, sawmills and an opera house. The town was mapped and patented in 1883 by the U.S. government.

Primary residents number approximately 267 and the median age of residents in Red Cliff is 38.5.

The climate of Red Cliff is semi-arid with an average annual precipitation total of around 20 inches. Temperature ranges from highs in the upper 60's to low 70's in the summer and teens and 20's in the winter. The vegetation in the Red Cliff area consists primarily of lodgepole pine and aspen with an understory of serviceberry and mountain mahogany.

## Town of Vail Community Profile

### Town of Vail



The Town of Vail is located along Interstate 70, 100 miles west of Denver and 35 miles east of the Eagle County Regional Airport. Vail is generally recognized as being 8,150 feet above sea level (ASL) with elevations in town ranging from 7780 feet (ASL) to 9,420 feet (ASL).

Vail is 8.5 miles in length with an area of 4.6 square miles, and is surrounded by 350,000 acres of White River National Forest; primarily consisting of aspen and lodgepole pine, much of which has been affected by either pine or spruce beetle infestation.

Once a sheep-raising and lettuce-growing region at the western edge of the Gore Range Mountains, Vail is now best known as the premier ski resort in North America, attracting more than one million skiers each season. On the heels of its success as a resort, Vail has evolved into an appealing recreation-friendly alpine community now comprised of approximately 5,483 full-time residents and an estimated 5,000 part-time residents. Vail receives more than 370 inches of snow and records almost 300 days of sunshine each year, with temperatures averaging 75 degrees in the summer and 45 degrees in the winter.



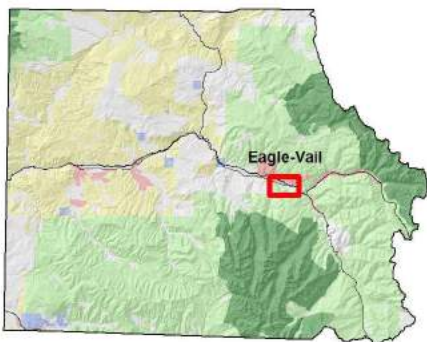
## Eagle-Vail Metropolitan District Community Profile

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The unincorporated area of Eagle-Vail is located in the eastern portion of Eagle County and has an estimated population of 2,887 according to the 2000 census. The area was not returned separately by census enumerators in 2010. Eagle-Vail is located on Interstate 70 between the towns of Avon and Vail, just west of US-24. Eagle-Vail is at an elevation of around 7600 feet.

The community was originally platted in the early 1970's. The lands that comprise Eagle-Vail were once agricultural farms and cattle ranches. During 1963, Jack Oleson assembled and purchased various parcels of farm and ranch lands from the original homesteaders in the area and created a cattle ranch where he raised Polled Herefords and grew crops including feed hay for livestock. In 1972, Fred Green of Grouse Mountain Associates purchased the property from Oleson. Shortly thereafter, Green and his partners submitted a request to Eagle County for the Eagle-Vail Planned Unit Development, which became the very first PUD to be created in Eagle County. The next decade saw Eagle-Vail develop Filings #1 and #2, the Eagle-Vail Commercial Service Center, the Whiskey Hill Subdivision and Stone Creek Meadows subdivision. By 1981, Green had finished with a majority of the development and conveyed the golf course, several other amenities and open space parcels to the Eagle-Vail Metro District. In 1989, Green's company sold its final holdings, including the Community Park site, to the Metro District.

The community continues to offer recreational facilities including a golf course, a par 3 golf course, a swimming pool, tennis courts, hiking paths, a community building and other amenities. It is governed by a 10 member "joint board" comprised of the Eagle-Vail Metropolitan District and the Eagle-Vail Property Owners Association.



The climate of Eagle-Vail is semi-arid with an average annual precipitation total of around 20 inches. Temperature ranges from highs in the upper 60's to low 70's in the summer and teens and 20's in the winter. The vegetation in the Eagle-Vail area consists primarily of Ponderosa and lodgepole pine and aspen with an understory of serviceberry and mountain mahogany.

## Beaver Creek Metropolitan District Community Profile

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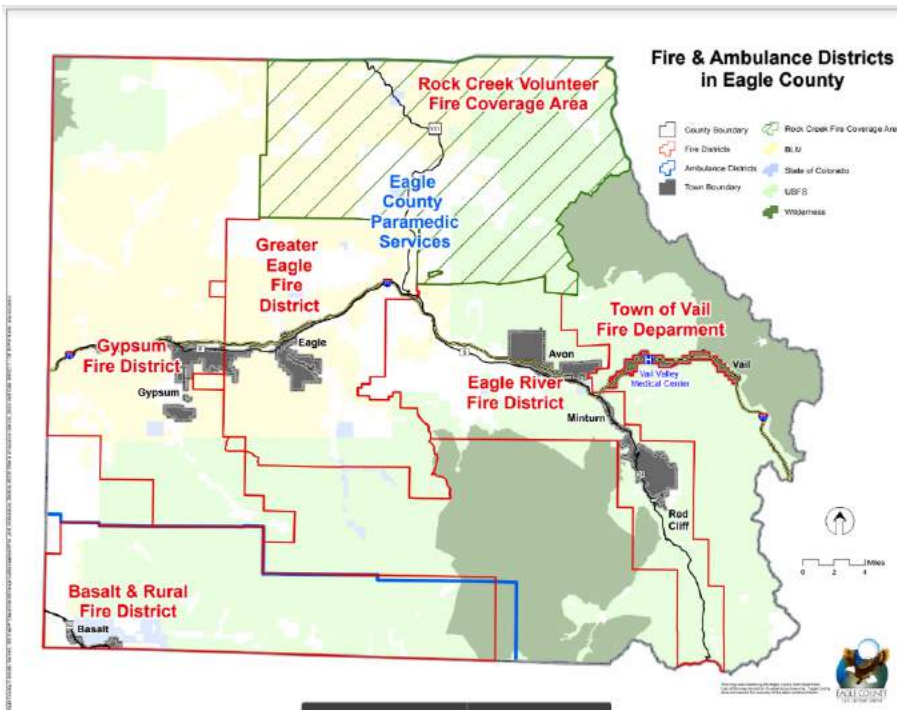
The Beaver Creek area was settled about 1865. Tucked away in Colorado's Rocky Mountains, Beaver Creek Resort has had a rich history since it first opened to the public in 1980. Located in Eagle County, Beaver Creek is a major ski resort owned and operated by Vail Associates. When Denver won the bid for the 1976 Winter Olympics, Beaver Creek would have hosted the alpine skiing events. Beaver Creek ski area operates on National Forest System lands under special use permit to the White River National Forest. The The Beaver Creek Metropolitan District was founded in 1978 to provide municipal services and fund capital improvements associated with domestic water systems, streets and drainage systems, fire protection systems, public safety, cable television relay and translator systems, public parks and recreation and transportation. The board consists of five elected members. Many of the services the district provides are contracted out such as water, fire, public safety and transportation. A full time manager oversees the management and performance of these contracted services.



The climate is semi-arid with an average annual precipitation total of around 20 inches. Normal temperatures range from summer highs of upper 70's to winter lows in the single digits. The vegetation in the area varies between lodgepole pine, aspen, spruce, juniper, sagebrush, serviceberry and mountain mahogany on the north side of Interstate 70 and the south side of Highway 6 to typical riparian habitat along the Eagle River.

## Eagle County Fire Districts

### Fire/EMS map



The following fire protection districts from Eagle County participated in the planning process: Gypsum Fire Protection District, Greater Eagle Fire Protection District, and Eagle River Fire Protection District. The fire service agencies in Eagle County are prepared to handle a wide range of emergency situations. In preparing to handle the routine emergency situations for which they are tasked, fire service agencies are involved in pre-emergency planning to identify hazard potentials in their areas. As a result of these pre-planning efforts, the fire districts are usually knowledgeable of high risk areas, populations at risk, building layouts, amounts and types of hazardous materials, etc.

### Eagle River Fire Protection District Community Profile

The Eagle River Fire Protection District (ERFPD) covers approximately 186 square miles and proudly serves the following areas and communities: Tennessee Pass, Camp Hale, Red Cliff, Minturn, Eagle-Vail, Avon, Mountain Star, Wildridge, Beaver Creek (by contractual agreement), Bachelor Gulch, Arrowhead, Homestead, Edwards, Lake Creek, Singletree, Pilgrim Downs, Cordillera, Bellyache Ridge, Red Sky Ranch and associated portions of Interstate 70, U.S. Hwy 6 & Hwy 24. Organized in 2000 as a regional fire district, ERFPD is a professional, full-service fire service agency with five full-time staffed fire stations (one by contractual agreement) equipped to protect residences, businesses, rural areas, high-rise resort hotels and forested areas throughout the District.

ERFPD responds to all risks including acute medical emergencies, hazardous materials releases, technical rescue and extrication incidents, as well as suppression of structural and wildland fires. The District employs 63 full-time firefighters and five administrative staff. Additional assistance is available through mutual aid agreements with Greater Eagle, Vail, and Gypsum fire departments, as well as support from the Upper Colorado River Interagency Fire Management Unit (UCRIFMU) and from adjacent counties.

## **Gypsum Fire Protection District Community Profile**

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The Gypsum Fire Protection District is a combination agency of paid and volunteer firefighters with a citizens' fire corps that assist in a myriad of functions. There are 8 full-time and 6 part-time paid firefighters along with 30 volunteer firefighters. This department is an all hazard first responder agency. Their call volume continues to grow and outpace revenue or resources needed to implement the desired programs.

The boundaries for the district extend roughly from Hanging lake tunnel on Interstate 70 (mile marker 125), the Eastern portion of Garfield county, all of the Sweetwater drainage and to 142.5 on Interstate 70, and South for the entire Gypsum Creek drainage north to Burns area. It is an area of approximately 455 square miles. The permanent year round population served by the District is approximately 8000. However, like much of Eagle County, that population figure increases during ski season as well as the summer and fall months due to recreational opportunities, especially on weekends and holidays. Structures in the District are a mix of single family residences/ranches, agriculture, to very large industrial buildings and airport hangers and typical small town communities.

## **Greater Eagle Fire Protection District Community Profile**

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Greater Eagle Fire Protection District was created in 1976. It is a combination department consisting of 18 full-time paid employees; two part-time employees and approximately 30 volunteers. The District provides structure protection; EMS; urban interface and wildland firefighting; ice and river rescue; HazMat response; technical rope rescue; motor vehicle crash response and other services as deemed necessary. The District is also deeply involved in numerous community projects. Communities under the umbrella of Greater Eagle Fire Protection District include Eagle; portions of Gypsum; portions of Wolcott; Fulford; portions of Sylvan Lake State Park; and portions of unincorporated Eagle County, including extensive BLM & U.S. Forest Service land. This is an area of approximately 196 square miles. The response area for Greater Eagle Fire Protection District roughly includes Interstate 70 from mile marker 157 to 142.5; Highway 131 to mile marker 9; South to Eagle County line; North to Routt County line. The District operates out of one station located in Eagle. Responding apparatus include: One structural pumper; one rescue pumper; one tower ladder; one tactical tender; one type-3 engine; 2 type-4 engines; one type-6 engine; and one HazMat trailer (as an operational member of Eagle County HazMat Team).

## HAZARD IDENTIFICATION & RISK ASSESSMENT

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Eagle County is vulnerable to a wide variety of natural and man-made hazards that threaten life and property. Damage to critical facilities and disruption of vital services caused by natural hazards can have a significant impact on our communities. Furthermore, recent local and national events establish that risks exist from human-caused hazards ranging from accidents to domestic and international terrorism. This section discusses all hazards with potential impact on the county.

The planning team considered a comprehensive list of hazards and used risk assessment activities to prioritize certain hazards for mitigation actions on a jurisdictional basis. Some hazards have significant loss potential for the county, and these hazards are identified separately as Prioritized Hazards. Other hazards with less potential impact or with less effective mitigation action possibilities are discussed later in this section and are referred to as 'Other Hazards'.

In this plan, the determination of the Prioritized Hazards was made through a multi-step risk assessment process combining statistical modeling with more qualitative assessment activities. These qualitative risk tasks consisted of interviews and surveys of emergency response and planning professionals, surveying county residents and independent historical research, which drew information from many sources. Through this process, certain hazards were determined to pose the greatest threats to the planning area and were prioritized as discussed in this section.

### Hazard Profiles

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Although these prioritized hazards affect the entire county, potential impact from each hazard varies by jurisdiction. Risk assessment activities conducted during this project provided the planning team with the information needed to establish risk from each hazard for the jurisdictions covered by this plan. The impact from each hazard on each participating jurisdiction is summarized in the Community Profiles section of this document as well as the vulnerability and risk assessment chart at the end of this section.

### Wildfire

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Wildfires are an ongoing concern for Eagle County. Fire conditions arise from a combination of hot weather, an accumulation of vegetation and other fuel, and low moisture content in the air. When combined with high winds and years of drought and beetle killed trees, these conditions increase the potential for a wildfire to occur.

A fire along the Wildland Urban Interface (WUI) can result in major losses of property and structures. For the purpose of this plan, the WUI is defined as the line, area, or zone where structures and other human development meet or intermingle with undeveloped lands or vegetative fuel. WUI zones in Eagle County can be a combination of public and privately owned properties, and include lands within town boundaries and intermixed communities in unincorporated areas.

Wildfires can start suddenly due to lightning or human causes. Small fires can grow rapidly when adequate fuels coincide with weather and topography favorable to fire. Wildfires can last from several hours to several months. Seasonal patterns, temperature patterns, precipitation patterns, and growth are all factors that influence wildfire behavior and intensity. Another contributing factor to fuel loads in the forest are standing trees killed by pine bark beetles, which have been affecting the forests of southwest Colorado since 2002. Oil and gas drilling activities have also increased the chance of ignitions in the western part of the County.

## Wildfire History

Eagle County and western Colorado have historically been prone to wildfires, but in the past, wildfires have occurred mostly in remote areas and were of minimal concern. Prior to 1985, several of the largest wildfires in Colorado occurred in Eagle County. In 1975, the Red Dirt fire burned 4,200 acres in Eagle County and was considered the largest Colorado wildfire at the time until surpassed by the Emerald Lake fire in 1980. Forest growth, housing developments, drought, and insect epidemics have contributed to the ever increasing risk of a catastrophic wildfire event.

In 2002, the Panorama fire burned 1,590-acres in Garfield and Eagle counties. It spread to 1,500 acres in less than five hours, destroyed three residences and two outbuildings. All the structures were located in an area about a quarter square mile in size, west of Spring Park Reservoir, and about a mile east of where the fire began.

2018 marked one of the worst wildfire seasons in Colorado. Five of the twenty largest fires in Colorado history occurred in 2018 and thirteen of the twenty largest fires in Colorado have occurred since 2010. In 2018, Eagle County experienced three wildfires – the Bocco Fire in June 2018, the Two Elk Fire near Minturn in September 2018 and one of Eagle County’s most damaging fires on record in July 2018 - the Lake Christine Fire. The Lake Christine fire burned 12,588 acres, destroyed 3 homes and resulted in the evacuation of over 300 residents. Total suppression costs were estimated at \$18,035,000 with another \$1,000,000 in indirect costs. Private and non-federal public land recovery and mitigation costs are expected to exceed \$1,500,000.

Since August 1950, 10 wildfire events were reported for Eagle County:

Number of County/Zone areas affected:	4
Number of Days with Event:	9
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	0
Number of Days with Event and Property Damage:	3
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	1

National Climatic Data Center Wildfire Events

## Wildfire Locations

The [risk assessment](#) determined that wildfires pose a significant threat to many areas of Eagle County. Recreational activities in Eagle County place more people in wildland areas as does continued development in the WUI. Part time residents and visitors to these areas are often inadequately educated or prepared for wildfire issues. Eagle County maintains a comprehensive online [wildfire risk map](#) that is the guiding document for mitigation actions. The Wildland Fire maps found under [Appendix C: Wildfire Hazard Area Profiles](#) illustrates clearly where the WUI communities within Eagle County converge with areas showing a high potential for wildfire. The map combines GIS data related to slope, aspect, elevation, vegetation type/density, and then rates any given area Low, Moderate, High, or Extreme wildfire hazard. This map provides fire managers a starting point for prescriptive fire mitigation efforts, and helps guide subsequent projects in Eagle County.

### Wildfire Risk

Jurisdiction	Location (Jurisdictional Area Affected)	Maximum Probable Extent (Magnitude/Strength)	Probability of Future Events	Overall Significance
Eagle County	Significant	Severe	Highly Likely	High
Beaver Creek Metropolitan District	Extensive	Extreme	Highly Likely	High
Eagle Vail Metropolitan District	Extensive	Extreme	Highly Likely	High
Town of Avon	Extensive	Extreme	Highly Likely	High
Town of Eagle	Limited	Moderate	Occasional	Medium
Town of Gypsum	Significant	Extreme	Likely	High
Town of Minturn	Extensive	Moderate	Occasional	Medium
Town of Red Cliff	Significant	Severe	Likely	High
Town of Vail	Extensive	Extreme	Likely	High
Greater Eagle Fire Protection District	Extensive	Severe	Highly Likely	High
Eagle River Fire Protection District	Extensive	Severe	Highly Likely	High
Basalt & Rural Fire Protection District	Extensive	Severe	Likely	High
Gypsum Fire Protection District	Extensive	Extreme	Highly Likely	High

## Floods

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According to the National Oceanographic and Atmospheric Agency (NOAA), flash floods in the United States are responsible for more deaths than any other thunderstorm phenomena. Year to year in Colorado, only lightning is more deadly. Flash flooding usually is the byproduct of very heavy rains in a short period of time over a small geographic area, all of which combine to cause small streams and otherwise dry drainages to turn violent. Flooding as a natural hazard is a long-recognized problem Eagle County, and the extreme terrain in the area increases the potential for severe flooding. Seasonal flooding occurs during the spring when the mountain snowpack starts its melting process and heavy rainfall sometimes combines with the runoff and causes some rivers and streams to swell out of their banks.

Eagle County is a participant in the National Flood Insurance Program (NFIP). As a condition to participating in the NFIP, each member has committed to restrict the building of structures in the flood-hazard areas delineated by FEMA Flood-Insurance-Rate Map (DFIRM) panels. In Eagle County, the unincorporated areas along with the towns of Avon, Basalt, Gypsum, Minturn, Red Cliff, Eagle and Vail are included in the program.

### Flood Locations

New Eagle County Floodplain Maps were adopted by the Board of County Commissioners on Jan. 4, 2005, and were adopted by FEMA on December 4, 2007. The new maps replace 25 year old maps that no longer represent current conditions. The maps cover the Eagle River from Dowd Junction to its confluence with the Colorado River, the Colorado River from its confluence with the Eagle River to the Garfield County line, and the portion of the Roaring Fork River located in Eagle County. The new floodplain maps are listed by river.

Several floodplain studies are available in the Eagle County Engineering Department. Available studies include:

- [Flood Information Report of the Eagle and Colorado Rivers](#)
- [Flood Information Report of the Roaring Fork River](#)
- Supporting Study for the Letter of Map Revision for Brush Creek and Abrams Creek
- Supporting Study for the Letter of Map Revision for the Eagle River at Brett Ranch
- [Flood Insurance Study, Eagle County Colorado and Incorporated Areas](#)

*(flood plain map examples can be found in appendix D)*

The area adjacent to a river channel is its floodplain. In its common usage, “floodplain” most often refers to the area most at risk of flooding from the “100-year flood”; a flood that has a 1 percent (1%) chance in any given year of being equaled or exceeded. Other types of floods include general rain floods, thunderstorm-generated flash floods, alluvial fan flooding, dam failure floods and local drainage floods. The 100-year flood is the national standard to which communities regulate their floodplains through the National Flood Insurance Program.

Some flooding can be predicted by weather reports, but many times smaller flash floods are a result of a microburst system, which simply overwhelms both natural and constructed drainage systems. Such failures sometimes cause excessive damage to towns and industry in the flooded areas. Emergency services, transportation, power, water and wastewater services, business and hazardous materials storage may be disrupted and can affect the population located in or near the flooded area.

### Flood History

Eagle County has experienced significant seasonal floods in 1918, 1921, 1957, 1983, 1984, 1995 and 2010. The 1957 flood was determined to be a 50-year event and the 2010 flood was deemed a 100-year event. In 2010 the Town of Vail experienced flood damage to numerous structures, both private and public. The Town of Gypsum experienced



some erosion problems which threatened a wastewater treatment facility and Eagle County had part of a roadway collapse after flood water undermined the embankment.

A Presidential Disaster (DR-1186-CO) was declared in Eagle County due to the flooding of 1984.

A flash flood along the Colorado River and Sweetwater Creek in 2013 covered 14 miles of roadway with between three and six feet of mud, inundated a Bureau of Land Management campground and impacted pastureland and irrigation infrastructure.

In 2008, several concerned citizens contacted the County for assistance with floodplain questions along Stone Creek. The original mapping effort for Stone Creek was performed in the early 1980's, and was not accurate in regards to the location of the Eagle-Vail Subdivision. Specifically, there are areas of Elk Lane, Deer Boulevard, and other areas that are shown to be within the regulatory floodplain. In these areas, the regulatory floodplain is completely outside of Stone Creek and Golf Club Creek.

Because of these mapping inaccuracies, many residents were being assessed mandatory floodplain insurance by their lenders, as required under the National Flood Insurance Reform Act of 1994. This resulted in substantially large flood insurance premiums for an area that has a very low probability of flooding; much lower than properties located adjacent to waterways.

Based upon the mapping inaccuracies, it was determined by FEMA that the appropriate method to correct the mapping inaccuracies would be the Letter of Map Revision (LOMR) process and that a Letter of Map Amendment (LOMA) would no longer be accepted. The LOMR process is much more involved, as it requires that the entire stream system be mapped and surveyed, the hydrology and hydraulics be studied, a numerical model be utilized to predict the proposed Special Flood Hazard Area (SFHA), proposed maps created, and then submitted.

The revised LOMR did have approximately 16 structures within the SFHA, as well as numerous structures within a Shaded X zone that has a moderate flood risk. As a result, a FMA grant application was submitted in December 2009. FEMA awarded the grant in 2011 and Eagle County used the funds to improve the flood conveyance of the stream channel and improve a flood bypass channel and diversion structure.

The Stone Creek Flood Hazard Mitigation Project was designed and bid in 2012/2013, and the Project construction was completed in October of 2014 with the following funding:

- Eagle-Vail Property Owners Association (EVPOA) - Up to \$30,000; 12.5% of project cost.
- Eagle County - Up to \$30,000; 12.5% of project cost.
- FEMA Flood Mitigation Assistance Grant - Up to \$180,000; 75% of project cost.

A LOMR was prepared and submitted to FEMA to revise mapping along Stone Creek after the improvements were constructed. The LOMR was accepted by FEMA and became effective in February 2016 removing 6 structures from the special flood hazard area and reducing the flood hazard to 65 homes in the shaded Zone X area of "moderate risk".

Eagle County is also home to several dams, and is the inundation zone for several dams in adjoining counties which if damaged could prove to be severely disruptive and even deadly. Class I and Class II dams are defined as follows:

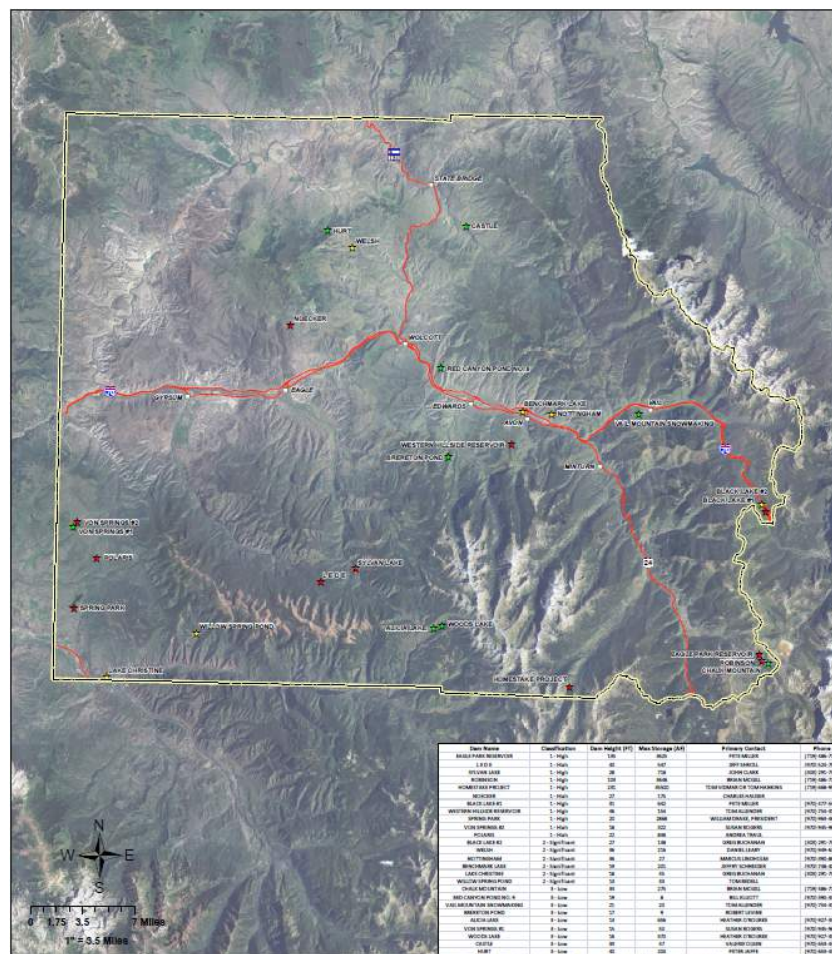
**High Hazard:**

A dam is considered a High Hazard Dam when failure would result in probable loss of human life.

The Colorado Division of Water Resources lists eleven High Hazard Dams: Eagle Park Reservoir, LEDE Reservoir, Sylvan Lake, Robinson Lake, Homestake Reservoir, Noecker Reservoir, Black Lake # 1, Western Hillside Reservoir, Spring Park Reservoir, Von Springs #2 Reservoir and Polaris Reservoir located in Eagle County.

**Significant Hazard:**

Significant damage is expected, but not loss of human life. The phrase “Significant damage” refers to structural damage where humans live, work or recreate, or to public or private facilities exclusive of unpaved roads and picnic areas. “Damage” refers to rendering these structures uninhabitable or inoperable. Eagle County has six Significant Hazard dams.



Colorado Division of Water Resources

In addition to dams located in Eagle County there are twelve High Hazard and fourteen Significant Hazard dams in surrounding counties with potential to impact Eagle County.

The communities impacted by potential flooding is demonstrated by the floodplain maps found under [Appendix D: Flood Plain Summary Maps](#)

**Flood Risk**

<b>Jurisdiction</b>	<b>Location (Jurisdictional Area Affected)</b>	<b>Maximum Probable Extent (Magnitude/Strength)</b>	<b>Probability of Future Events</b>	<b>Overall Significance</b>
Eagle County	Limited	Moderate	Occasional	Medium
Beaver Creek Metropolitan District	Limited	Moderate	Occasional	Medium
Eagle Vail Metropolitan District	Limited	Moderate	Occasional	Medium
Town of Avon	Limited	Moderate	Occasional	Medium
Town of Eagle	Negligible	Weak	Unlikely	Low
Town of Gypsum	Negligible	Severe	Occasional	Low
Town of Minturn	Limited	Moderate	Occasional	Low
Town of Red Cliff	Limited	Moderate	Likely	Low
Town of Vail	Negligible	Moderate	Likely	Medium
Greater Eagle Fire Protection District	Limited	Severe	Occasional	Medium
Eagle River Fire Protection District	Limited	Severe	Occasional	Medium
Basalt & Rural Fire Protection District	Significant	Moderate	Occasional	Medium
Gypsum Fire Protection District	Significant	Moderate	Occasional	Medium

## Severe Winter Weather

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The weather of Eagle County is typical of Colorado's mountain areas. Sunny days and clear blue skies often give way to severe conditions and significant snowfall accumulations. Average December and January highs are 35-degrees Fahrenheit, while lows during those coldest months average about 8-degrees Fahrenheit.

### Severe Winter Weather Locations

Winter Storms occur frequently in all areas of Eagle County, and they vary significantly in size, strength, intensity, duration and impact. Winter road conditions pose the greatest hazard during winter storms, particularly when it impacts Interstate 70 and the few State highways running through Eagle County, which are the most important corridors for the transport of people and the provisions needed for the continuity of normal life. A disruption or blockage due to vehicle crashes on these roads can cause major disruptions to Eagle County and beyond.

The recreational areas of Eagle County are also impacted by severe winter storms. Hunters, skiers, hikers, snowmobilers and others are sometimes trapped in the backcountry by sudden or unpredicted storms. When these victims are stranded in remote areas, rescue personnel can be endangered and costly supplies and specialized equipment are sometimes needed for response.

### Severe Winter History

Since August 1950, a total of 410 winter storm events were reported in Eagle County:

Number of County/Zone areas affected:	6
Number of Days with Event:	276
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	1
Number of Days with Event and Property Damage:	0
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	1

#### National Climatic Data Center Wildfire Events

Since 1980, Eagle County has not experienced Presidential or SBA Disaster Declarations for severe winter weather, however, winter storms do have the potential for significant impact on residents' safety, critical infrastructure and vital services as discussed in the Risk Assessment section of this report.

### Severe Winter Weather Risk

Jurisdiction	Location (Jurisdictional Area Affected)	Maximum Probable Extent (Magnitude/Strength)	Probability of Future Events	Overall Significance
Eagle County	Significant	Severe	Highly Likely	High
Beaver Creek Metropolitan District	Extensive	Severe	Highly Likely	High
Eagle Vail Metropolitan District	Extensive	Extreme	Highly Likely	High
Town of Avon	Extensive	Extreme	Highly Likely	High
Town of Eagle	Limited	Moderate	Occasional	Medium
Town of Gypsum	Extensive	Moderate	Occasional	Low
Town of Minturn	Significant	Moderate	Occasional	Low
Town of Red Cliff	Extensive	Moderate	Likely	Medium
Town of Vail	Extensive	Severe	Highly Likely	Medium
Greater Eagle FPD	Significant	Severe	Highly Likely	High
Eagle River FPD	Significant	Severe	Highly Likely	High
Basalt & Rural FPD	Significant	Severe	Highly Likely	High
Gypsum FPD	Significant	Severe	Highly Likely	High

## Landslides

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Landslides, including rock fall and other debris flow, as a natural hazard exist in almost every state in the United States, and are a serious geologic hazard. They sometimes present a threat to human life, but most often result in a disruption of everyday services, including emergency response capabilities. Landslides can and do block transportation routes, dam creeks and drainages and contaminate water supplies. When these hazards affect transportation routes they are frequently expensive to clean-up and can have significant economic impact to the area.

FEMA describes debris flows, sometimes referred to as mudslides, mudflows, lahars, or debris avalanches, as common types of fast-moving landslides. These flows most frequently occur during or after periods of intense rainfall or rapid snow melt. They typically start on steep hillsides as shallow flows that liquefy and accelerate to speeds that of about 10 miles per hour, but can exceed 35 miles per hour. Debris flows have a consistency ranging from watery mud to thick, rocky mud that can carry large items such as boulders, trees and cars and can damage road surfaces. Flows from many different sources can combine in channels, and can increase in destructive power. These flows continue and grow in volume with the addition of water, sand, mud, boulders, trees and other materials. When the flows reach flatter ground, the debris spreads over a broad area, sometimes accumulating in thick deposits that can wreak havoc and cause significant destruction in developed areas.

### Landslide History

In 2002, an update to Colorado's Landslide plan was completed, and it identified several areas of vulnerability in Eagle County. Colorado's plan compiled these areas into different priorities described in three distinct categories or tiers based upon the criticality of the threat. The three categories are further described as:

- Tier One listings are serious cases needing immediate or ongoing action or attention because of the severity of potential impacts.
- Tier Two listings are very significant but less severe; or where adequate information and/or some mitigation actions have taken place; or where current development pressures are less extreme.
- Tier Three listings are similar to Tier Two but with less severe consequences or primarily local impact.

In 2004, 2010 and 2016, rockslides damaged and closed Interstate 70 in Glenwood Canyon. Although this event was not in Eagle County, the rockslides created widespread problems in providing normal services in the county. The 2016 rockfall event completely closed the Interstate for five days requiring a three-hour detour route for many commuters.

### Landslide Locations

Landslides are a significant problem in Eagle County according to the State's 2019 mitigation plan. The Vail area alone has 20 locations designated as high hazard earth flow areas. In 1984, six major earth flows occurred which affected the town and private property. The Dowd Junction landslide at the intersection of Interstate 70 and highways 6 and 24 is another area of significant concern. A landslide here could threaten the highway and dam the Eagle River. During the late 1970's and early 1980's, several slides caused road blockages on Interstate 70 and US Highway 6. The Meadow Mountain slide between Minturn and Dowd Junction has been moving for about 35 years and caused considerable damage to Highway 6 in 1984 and also covered the railroad tracks near Minturn. Historically, other Eagle County areas threatened by landslides include Shrine Pass, Basalt, Sweetwater, Beaver Creek and Red Cliff.

**Figure 10 Landslide photo**



**House built in a flood plain at the toe of a landslide near Wolcott. Photo by D. Noe**

Rockfalls, sinkholes, subsidence, swelling or expansive soils and debris flows are geologic hazards related to landslides. Many of the soils located in the Colorado, Eagle, and Roaring Fork River Valleys below an elevation of 8,000 can have a collapse potential. Foundation movement is generally tolerated unless there is a source of water, such as water line breaks, that result in deep wetting, and could cause substantial settlement and foundation failure. Furthermore, the Eagle Valley Evaporite formation consists of soils that are high in water soluble minerals. Sinkholes and subsidence depressions are present in areas where the Eagle Valley Evaporite is at or near the surface. Sinkholes are typically 10 to 50 feet in diameter with depths between 2 to 10 feet. Subsidence depressions are considerably larger and can span several acres to several hundred acres. Sinkholes can appear in areas that are flood irrigated, but are also present in non-irrigated areas. Locations in Eagle County at risk of landslides are identified in [Appendix E: Landslide Inventory Maps](#)

### Landslide Risk

<b>Jurisdiction</b>	<b>Location (Jurisdictional Area Affected)</b>	<b>Maximum Probable Extent (Magnitude/Strength)</b>	<b>Probability of Future Events</b>	<b>Overall Significance</b>
Eagle County	Limited	Weak	Occasional	Medium
Beaver Creek Metropolitan District	Limited	Moderate	Occasional	Medium
Eagle Vail Metropolitan District	Negligible	Weak	Unlikely	Low
Town of Avon	Limited	Moderate	Occasional	Medium
Town of Eagle	Negligible	Weak	Unlikely	Low
Town of Gypsum	Negligible	Severe	Unlikely	Low
Town of Minturn	Negligible	Weak	Occasional	Low
Town of Red Cliff	Significant	Severe	Occasional	Medium
Town of Vail	Negligible	Moderate	Occasional	Medium
Greater Eagle FPD	Limited	Moderate	Occasional	Medium
Eagle River FPD	Limited	Moderate	Occasional	Medium
Basalt & Rural FPD	Limited	Moderate	Occasional	Medium
Gypsum FPD	Limited	Moderate	Occasional	Low



## Avalanche

Avalanches are a kind of slope failure that sometimes occurs on grades steeper than about 20 to 30 degrees. Avalanches can reach speeds of 200 miles per hour and can exert enough force to destroy buildings and uproot large and healthy trees. Avalanche-prone areas can be determined with some accuracy, since under normal circumstances avalanches tend to run down the same paths year after year. Exceptional weather conditions though sometimes produce avalanches that overrun normal path boundaries or create new paths. Unlike other forms of slope failure, snow avalanches can build up and be triggered on more than one occasion during a single winter season.

### Avalanche History

Since 1950, there have been 45 avalanche events reported in Eagle County:

Number of County/Zone areas affected:	4
Number of Days with Event:	43
Number of Days with Event and Death:	21
Number of Days with Event and Death or Injury:	30
Number of Days with Event and Property Damage:	7
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	1

From 1950 to 2016, Colorado experienced more than double the number of avalanche-related fatalities as the next most dangerous state. Eagle County experienced fifteen fatalities during this time. Avalanches are a very significant threat as development and recreation increase in mountain areas. Data show the incidence of Avalanches has increased, as has the number of people affected by Avalanche events. Information from Avalanche accidents shows that this hazard occurs in about one-third of the states and is a significant hazard in much of the West, where Avalanches are the most frequently occurring lethal form of mass movement. Mortality due to snow Avalanches exceeds the average mortality due to earthquakes and all other forms of slope failure combined on an annual basis. Sometimes, Avalanches pose hazards that affect a significant sector of the public, involve a number of private organizations and require cooperation and action by government agencies at the federal, state and local levels. The Avalanche hazard causes economic loss to residents, businesses, transportation systems and government agencies and can have a negative impact on the local economy of many mountain regions.

Areas of Eagle County are considered susceptible to Avalanche activity. Many of the annual visitors to these areas head into the backcountry ill-equipped and without an adequate appreciation for the dangers that Avalanches pose. Many times in the recent past people have been caught in these Avalanches and been hurt or have died. The rescue and recovery of these people is a labor-intensive and dangerous task for the emergency personnel involved.

#### Sample Event # 1: Vail Ski Area

22 Jan 2012, Five skiers entered the Prima Cornice area through the Lower Prima Cornice gate. Skiers 1, 2 and 3 began hiking or sidestepping uphill to the south along the rim of the Prima Cornice. Skiers 4 and 5 quickly decided to stop hiking and skied down about 200-300 vertical feet to a bench in the slope. Skiers 4 and 5 waited for the other three at this bench. Skiers 1, 2, and 3 continued hiking/sidestepping until they were approximately 120 linear feet uphill and to the south of the Lower Prima Cornice gate. From the rim of the Prima Cornice, they traversed south and

further out into the Prima Cornice area. The three skiers were in the Prima Cornice area at the time the avalanche released. Number Caught 3, Buried 0, Killed 1.

#### Sample Event # 2: East Vail, backcountry southeast of Vail Ski Area

07 Jan 2014, A group of four sidecountry riders assembled on the morning of January 7 . All four were equipped with avalanche safety equipment, and were aware of the danger ratings in the Colorado Avalanche Information Center (CAIC) forecast. They were all familiar with the terrain in the East Vail Chutes. The group proceeded to the bottom of Platter Lift 22, put on skins and ascended to the top of 11,816 foot Red (also known as Abrahams) at about 11:15 a.m.

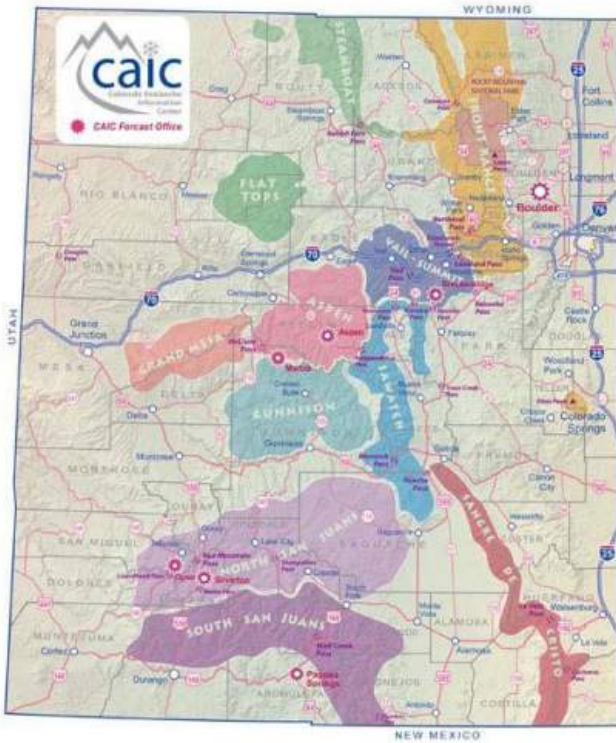
Two riders descended an avalanche path known as Tweeners. Tweeners is the northernmost of the three adjacent avalanche paths. All four riders were caught in the avalanche. Number Caught 4, Buried 0, Killed 1.

#### Sample Event # 3: Ptarmigan Hill, near Vail Pass

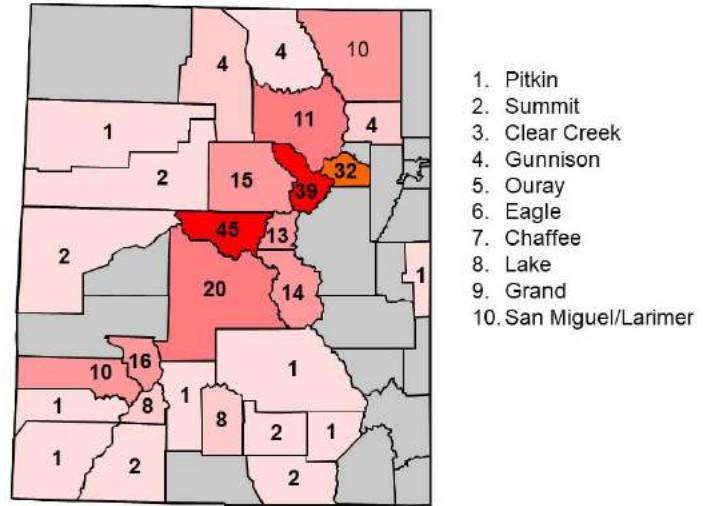
18 Apr 2013, At approximately 1pm, the three members of the group involved in this avalanche left the top of Ptarmigan Hill. One of them rode a snowmobile along a road to the bottom and waited for the two riders. Rider 1 went to the north and entered the avalanche path from the skier's right (east) side while Rider 2 went northwest above the top of the bowl to enter from the skier's left (west) side. Rider 1 waited at the top of his line for Rider 2 to come into view and remembers last seeing him near the large rock (see Figure 12) on the skier's left (west) side of the bowl. Rider 1 planned to drop off a rock below and describes seeing the snow slide off the rock as he approached it, which indicates the avalanche was moving at this time. As he landed, he remembers the snow "looking like an ocean" all around him and he was knocked down by snow that came from behind him. He fought to stand up, keep his board on the surface, and gain speed, but could not move faster than the moving debris. The speed of the flow decreased as it hit a bench part way down the avalanche path on the skier's right (east) side, and the avalanche released him into the trees below (see Figure 13). Rider 2's location at the time of the slide is unknown, but he was caught in the slide and carried down the slope and through thick vegetation. He came to rest on the surface of the snow against an 8" diameter tree near the bottom of the debris. Number Caught 2, Buried 0, Killed 1.

#### **Avalanche Locations**

The Colorado Geological Survey (CGS) and the CAIC have mapped the State's areas susceptible to avalanche activity. The CAIC forecasts backcountry avalanche and mountain weather conditions for 10 Zones in the mountains of Colorado. The Colorado Department of Transportation (CDOT) has mapped avalanche corridors on the state highway system, and the approximate number of slide paths that CDOT and CAIC crews monitor and/or control on each.



Colorado Avalanche Fatalities by County  
1950-51 to 2015-16



Source: Colorado Avalanche Information Center

### Avalanche Risk

Jurisdiction	Location (Jurisdictional Area Affected)	Maximum Probable Extent (Magnitude/ Strength)	Probability of Future Events	Overall Significance
Eagle County	Limited	Moderate	Likely	Medium
Beaver Creek Metropolitan District	Limited	Moderate	Occasional	Medium
Eagle Vail Metropolitan District	Negligible	Weak	Unlikely	Low
Town of Avon	Limited	Moderate	Occasional	Medium
Town of Eagle	Negligible	Weak	Unlikely	Low
Town of Gypsum	Negligible	Weak	Unlikely	Low
Town of Minturn	Negligible	Weak	Unlikely	Low
Town of Red Cliff	Significant	Severe	Occasional	Medium
Town of Vail	Negligible	Moderate	Occasional	Medium
Greater Eagle FPD	Significant	Moderate	Occasional	Low
Eagle River FPD	Significant	Moderate	Occasional	Low
Basalt & Rural FPD	Negligible	Weak	Occasional	Low
Gypsum FPD	Negligible	Weak	Unlikely	Low

## Drought

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Drought is a condition of climatic dryness that reduces available soil moisture and water supplies needed for sustaining plant, animal and human life systems. A lack of adequate annual precipitation and poor water conservation practices can result in drought conditions. Most natural disasters, such as floods or forest fires, occur relatively rapidly and afford little time for preparing for disaster response. Droughts are typically long-term hazard events that occur slowly, over a multi-year period, and it can be difficult to quantify when a drought begins and ends.

Due to Colorado's semiarid conditions, drought is a natural but unpredictable occurrence in the state. Single season droughts over some portion of the state are quite common. The onset of drought in western Colorado mountain counties is usually signaled by a lack of significant winter snowfall. Eagle County receives the majority of its precipitation as snow in the higher elevations during the months of November-April. Hot and dry conditions that persist from spring into summer and fall can aggravate drought conditions, making the effects of drought more pronounced as water demands increase during the growing season and summer months.

FEMA has four categories of drought:

- Meteorological drought: is defined solely on the degree of dryness, expressed as a departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales.
- Hydrological drought: is related to the effects of precipitation shortfalls on stream flows and reservoir, lake and groundwater levels.
- Agricultural drought: is defined principally in terms of soil moisture deficiencies relative to water demand of plant life, usually crops.
- Socioeconomic drought: associates the supply and demand of economic goods or services with elements of meteorological, hydrologic, and agricultural drought. Socioeconomic drought occurs when the demand for water exceeds the supply as a result of a weather related supply shortfall.

### Drought Locations

Drought affects all areas within the county with equal frequency and severity. Due to Eagle County's geographic location and climate it is highly likely that the county will experience drought conditions in the future. Drought does not usually present life safety issues or directly impact critical infrastructures such as roads, bridges, utilities, communications systems, or public safety resources. However, drought presents ongoing challenges for most Colorado communities, requiring sustained planning and conservation efforts to ensure a reliable water supply to meet current and future needs. Although communities in Eagle County have addressed conservation and water supply issues on a number of levels, the persistence of the hazard will require sustained mitigation efforts. Water supply planners must also be cognizant of the effects of climate change on the frequency and severity of future droughts.

Drought impacts are most severe for commercial, agricultural and recreational interests that rely on an uninterrupted supply of water. With total annual precipitation in Eagle County averaging only 10-11 inches per year, any decrease in moisture over a single year or for a multi-year period can have significant impacts on the tourism and recreation economy. Many Eagle County residents rely on individual ground wells and constructed water retention structures for their water resources. Local ranchers depend on ponds and ditches for livestock and irrigation of crops. Drought can also result in an increased fire danger in urban natural areas and the wildland/urban interface as well as wildland/open space areas. The reduction in vegetation due to drought exposes soil to wind and erosion. The quality of rivers and lake water can also deteriorate as a result.

### Drought History

Colorado has experienced seven multi-year droughts since 1893, with the most devastating taking place in the 1930s and 1950s. The most intense single year of drought in state history occurred in 2002, an extremely dry year imbedded in an extended dry period between 2000 and 2006. In Eagle County, several disaster declarations have been granted for drought: 2004-USDA Secretarial Disaster: S1947, 2006-USDA Secretarial Disaster: S2351, 2013-USDA Secretarial Disaster: S3548 and S3575, and in 2018-USDA Secretarial Disaster: S4386.

### Drought Risk

Jurisdiction	Location (Jurisdictional Area Affected)	Maximum Probable Extent (Magnitude/Strength)	Probability of Future Events	Overall Significance
Eagle County	Significant	Severe	Likely	High
Beaver Creek Metropolitan District	Significant	Severe	Likely	High
Eagle Vail Metropolitan District	Extensive	Extreme	Likely	High
Town of Avon	Extensive	Extreme	Highly Likely	High
Town of Eagle	Limited	Moderate	Occasional	Medium
Town of Gypsum	Extensive	Extreme	Likely	High
Town of Minturn	Significant	Moderate	Occasional	Medium
Town of Red Cliff	Limited	Weak	Highly Likely	Low
Town of Vail	Negligible	Weak	Occasional	Low

## Lightning

Lightning is an electrical discharge between positive and negative regions of a thunderstorm. Intracloud lightning is the most common type of discharge. This occurs between oppositely charged centers within the same cloud. Usually it takes place inside the cloud and looks from the outside of the cloud like a diffuse brightening that flickers. However, the flash may exit the boundary of the cloud, and a bright channel can be visible for many miles. Although not as common, cloud-to-ground lightning is the most damaging and dangerous form of lightning. Most flashes originate near the lower-negative charge center and deliver negative charge to earth. However, a large minority of flashes carry positive charge to earth. These positive flashes often occur during the dissipating stage of a thunderstorm's life. Positive flashes are also more common as a percentage of total ground strikes during the winter months. This type of lightning is particularly dangerous for several reasons. It frequently strikes away from the rain core, either ahead or behind the thunderstorm. It can strike as far as 5-10 miles from the storm in areas that most people do not consider to be a threat. Positive lightning also has a longer duration, so fires are more easily ignited. And, when positive lightning strikes, it usually carries a high peak electrical current, potentially resulting in greater damage. Lightning poses a serious risk to human life, such as outdoor recreationists and agricultural and other field workers, it can cause extensive damage to buildings and it is a frequent cause of wildfires. Eagle County experiences frequent lightning storms in the summer months from June through September.

### Lightning Locations

Lightning can occur anywhere in the county and poses a similar risk to all jurisdictions within the county. According to the National Lightning Safety Institute (NLSI), Colorado ranks third in the nation in deaths due to lightning strikes with 39 fatalities recorded between 1990 and 2003 (behind only Florida and Texas). Over the same period, Colorado also ranks third nationally in deaths per million people (behind only Utah and Wyoming). Nationwide, estimates of property damage, increased operating costs, production delays, and lost revenue from lightning and secondary effects exceed \$8-10 billion per year.

### Lightning History

Since 1950, there has only been one reported incident due to lightning in Eagle County. In August 2008, lightning struck a home in Vail and ignited a fire within the floor structure and the ceiling cavity. The fire burned through five structural floor joists. The lightning also blew apart a section of the stone chimney and sent pieces flying up to 20 feet away.

### Lightning Risk

Jurisdiction	Location (Jurisdictional Area Affected)	Maximum Probable Extent (Magnitude/Strength)	Probability of Future Events	Overall Significance
Eagle County	Significant	Moderate	Likely	Medium
Beaver Creek Metropolitan District	Significant	Moderate	Likely	Medium
Eagle Vail Metropolitan District	Extensive	Extreme	Likely	High

Town of Avon	Limited	Moderate	Occasional	Medium
Town of Eagle	Limited	Moderate	Occasional	Medium
Town of Gypsum	Extensive	Moderate	Occasional	Low
Town of Minturn	Limited	Weak	Occasional	Low
Town of Red Cliff	Significant	Moderate	Occasional	Medium
Town of Vail	Extensive	Moderate	Highly Likely	Medium

## Severe Wind

Wind is the movement of air from areas of high pressure to areas of low pressure. The greater the difference in pressure, the stronger the wind will be.

### Severe Wind Locations

Severe winds can impact all jurisdictions in the county leading to possible utility outages, debris blocking streets and waterways, downing of trees, and arcing and/or downing power lines which can lead to structure fires. In fall and winter months, high winds occur with incoming snow storms. These winds can exceed 50 to 100 mph in exposed locations and can force the closure of highways due to blowing snow and contribute to avalanches. In the spring and summer, high winds often accompany severe thunderstorms. These winds are typically straight-line winds, which are generally any thunderstorm wind that is not associated with rotation (i.e., is not a tornado). These winds can exceed 100 miles per hour (mph) and can be responsible for thunderstorm-related wind damage.

### Severe Wind History

Since 1950, 7 severe wind events have been reported in Eagle county:

Number of County/Zone areas affected:	2
Number of Days with Event:	7
Number of Days with Event and Death:	0
Number of Days with Event and Death or Injury:	0
Number of Days with Event and Property Damage:	7
Number of Days with Event and Crop Damage:	0
Number of Event Types reported:	1



### Severe Wind Risk

Jurisdiction	Location (Jurisdictional Area Affected)	Maximum Probable Extent (Magnitude/Strength)	Probability of Future Events	Overall Significance
Eagle County	Limited	Moderate	Occasional	Medium
Beaver Creek Metropolitan District	Significant	Severe	Likely	Medium
Eagle Vail Metropolitan District	Significant	Severe	Likely	High
Town of Avon	Significant	Severe	Likely	Medium
Town of Eagle	Negligible	Weak	Unlikely	Low
Town of Gypsum	Extensive	Moderate	Occasional	Low
Town of Minturn	Limited	Moderate	Likely	Low
Town of Red Cliff	Limited	Moderate	Occasional	Medium
Town of Vail	Extensive	Moderate	Highly Likely	Medium

## Disaster Declaration History in Eagle County

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Hazard	Year	Declaration Type
Flood	1984	Presidential Disaster (DR-1186-CO)
Wildfire	2002	Fire Suppression Authorization FSA-2457
Drought, Freeze, Hail	2004	USDA Secretarial Disaster: S1947
Heat, High Winds, Drought	2006	USDA Secretarial Disaster: S2351
Drought	2013	USDA Secretarial Disaster: S3548 and S3575
Wildfire	2018	Fire Management Assistance Declaration FM-5249
Drought	2018	USDA Secretarial Disaster: S4386

## Impact of Climate Change

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According to the 2014 National Climate Assessment, temperatures in the U.S. will continue to rise, heat waves will become more intense, and the frequency and intensity of extreme precipitation events will increase. The ten warmest years on record have occurred since 1997 and the Earth's surface temperatures in 2016 were the warmest since modern record keeping began in 1880 according to independent analyses by the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA). There are examples of record-setting events that have occurred in Colorado in the last five years, including the worst wildfires in state history (Black Forest Fire in 2013 and Waldo Canyon Fire in 2012) and the worst flood in state history (Northern Front Range in 2013). As the climate warms, it is expected that drought and severe weather-related hazard events will increase in both frequency and intensity. Although extreme weather events are caused by a variety of contributing factors, human-induced climate change is considered by a large majority of the scientific community to be one of those contributing factors.

Climate change in Eagle County will likely include longer summertime warm periods, earlier onset of spring snowmelt, more precipitation arriving as rain rather than snow, and longer dry periods with heavier precipitation events in between. These types of changes could exacerbate already risky wildfire conditions, place extra pressure on already stretched water providers and users, provide additional challenges to winter and summer recreation providers, as well as a decline in snowpack depth and duration which is closely linked to water availability, watershed functions and winter ecology impacting every sector important to the community.

Climate change can also affect public health by changing the frequency or severity of health problems already affected by climate and weather factors (such as increased respiratory and cardiovascular disease) and by creating new and unanticipated health risks such as an increase in infectious and vector-borne diseases. Climate warming could have profound implications for natural hazard events, including changes in the frequency, intensity, spatial

extent, duration, and timing of extreme weather and climate events, as well as public health impacts, and these factors were taken into consideration when prioritizing mitigation actions for the county.

In 2016, a group of over 30 stakeholders worked together to develop [Eagle County's Climate Action Plan](#). This plan was adopted by the Eagle County Board of County Commissioners and the towns of Avon, Basalt, Eagle, Minturn, and Vail, and by the Western Eagle County Metropolitan Recreation District. Eagle County's Climate Action Plan recommends county-wide greenhouse gas emission reduction targets of 25 percent by 2025 and 80 percent by 2050 from the Eagle County 2014 baseline inventory. Stakeholders continue to convene regularly to implement the plan's goals and strategies and monitor success through five sector-based working groups: Education and Outreach, Residential Buildings, Commercial Buildings and Industrial, Transportation and Mobility, and Materials Management and Waste Reduction.

### **Risk Assessment by Hazard Type**

A risk assessment was conducted to analyze and prioritize hazards, determine loss estimates and establish a justified basis for selection of mitigation actions. The risk assessment encompassed these activities:

- Public Input - data submitted by community members through a publicly available survey. This survey enabled citizens to provide input on hazards and hazard impact within the county. A summary of the results from this survey can be found in [Appendix B: Public Risk Assessment Survey](#).
- Hazard Summary Survey Results – data submitted by subject matter experts within each jurisdiction through a survey to identify and prioritize hazards based on geographical area impacted, probability of extent and future occurrence and overall significance of the hazard to the community. A summary of the results from this survey can be found in [Appendix G: Hazard Risk Assessment Survey Results](#)
- Identification of Critical Infrastructure – Resources, facilities and services within the planning area were evaluated for hazard impact and loss expectancy. A summary of this information can be found under the [Vulnerability Assessment section](#) of this plan.

The planning team used this information to determine vulnerabilities, prioritize hazards, and provide the basis for the mitigation actions selected.

Based on the risk assessment process and the evaluation of the potential areas involved, the magnitude of the potential hazard and the probability of occurrence, the planning team prioritized these hazards for further analysis and mitigation planning:

- |   |  |
|---|--|
| 1. Wildfire                                       | 5. Severe Wind                               |
| 2. Drought (including Erosion)                    | 6. Landslide                                 |
| 3. Lightning                                      | 7. Flood (including Dam Failure and Erosion) |
| 4. Severe Winter Weather (including Extreme Cold) | 8. Avalanche                                 |

The planning team agreed that the hazards associated with severe winter weather and extreme cold could be consolidated into one priority area as they are interrelated, as well as combining flood with dam failure and erosion and drought with erosion as well. The planning team recognized that other hazards occur periodically and may impact Eagle County however they determined that the prioritized hazards posed a greater risk on life, safety, critical infrastructure and vital services over the next 5-year period.

## CAPABILITY ASSESSMENT

### Mitigation Capabilities

Mitigation capabilities refer to the programs and policies currently in place to reduce hazard impacts, principally through the identification and implementation of cost-effective hazard mitigation measures. Capabilities can take the form of regulatory requirements (e.g., building codes or hazard-specific zoning ordinances), plans (e.g., hazard mitigation plans or stormwater master plans), certification programs (e.g., Firewise or the Community Rating System), personnel (e.g., floodplain administrators and community planners), insurance (e.g., National Flood Insurance Program), and structural projects that protect critical facilities and other property. Hazard awareness and public education programs are also proven measures for preparing citizens to cope with hazard events that cannot be avoided.

Mitigation Capability: Local Planning Documents	Eagle County	Town of Avon	Town of Eagle	Town of Gypsum	Town of Minturn	Town of Red Cliff	Town of Vail	Beaver Creek Metro	EagleV ail Metro	FPDs
<b>Comprehensive/ Master Plan</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Year adopted	2005	2017	U/K	2017	2009	2006	1982- Present	NA	U/K	NA
Does the plan address hazards?	Yes	Yes	No	No	No	No	Yes	NA	Yes	NA
Does the Plan identify projects to include in the mitigation strategy?	No	No	No	No	No	No	Yes	NA	Yes	NA
Can the plan be used to implement mitigation actions?	No	No	No	No	Yes	No	Yes	NA	Yes	NA
<b>Capital Improvement Plan</b>	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Gypsum - Yes
Year adopted	2010	2018	2019	NA	Annually	2017	Yearly	U/K	2012	Gypsum - 2016
Does the plan address hazards?	No	Yes	Yes	NA	Yes	No	Yes	No	Yes	No
Does the Plan identify projects to include in the mitigation strategy?	No	Yes	Yes	NA	No	Yes	Yes	No	Yes	No
Can the plan be used to implement mitigation actions?	No	Yes	Yes	NA	No	Yes	Yes	No	Yes	No
<b>Economic Development Plan</b>	Yes	No	No	No	Yes	No	Yes	Yes	No	No

Year adopted	2016	NA	NA	NA	2016	NA	U/K	U/K	NA	NA
Does the plan address hazards?	No	NA	NA	NA	Yes	NA	No	No	No	NA
Does the Plan identify projects to include in the mitigation strategy?	No	NA	NA	NA	No	NA	No	No	NA	NA
Can the plan be used to implement mitigation actions?	No	NA	NA	NA	Yes	NA	No	No	NA	NA
<b>Local Emergency Operations Plan</b>	Yes	Yes	No	No	No	No	Yes	Yes	No	Gypsum - Yes
Year adopted	2018	U/K	NA	NA	NA	NA	2015	U/K	U/K	2015
Does the plan address hazards?	Yes	Yes	NA	NA	NA	NA	Yes	No	NA	Yes
Does the Plan identify projects to include in the mitigation strategy?	Yes	Yes	NA	NA	NA	NA	No	No	NA	No
Can the plan be used to implement mitigation actions?	Yes	Yes	NA	NA	NA	NA	No	No	NA	Yes
<b>Continuity of Operations Plan</b>	No	No	No	No	No	No	No	No	Yes	No
Year adopted	NA	NA	NA	NA	NA	NA	NA	NA	2016	NA
Does the plan address hazards?	NA	NA	NA	NA	NA	NA	NA	No	Yes	NA
Does the Plan identify projects to include in the mitigation strategy?	NA	NA	NA	NA	NA	NA	NA	No	Yes	NA
Can the plan be used to implement mitigation actions?	NA	NA	NA	NA	NA	NA	NA	No	Yes	NA
<b>Transportation Plan</b>	Yes	Yes	No	No	No	No	Yes	Yes	No	No
Year adopted	2008	2010	NA	NA	NA	NA	2009			NA
Does the plan address hazards?	No	No	NA	NA	NA	NA	No	No	NA	NA

Does the Plan identify projects to include in the mitigation strategy?	No	No	NA	NA	NA	NA	No	No	NA	NA
Can the plan be used to implement mitigation actions?	No	No	NA	NA	NA	NA	No	No	NA	NA
<b>Stormwater Management Plan</b>	Yes	Yes	No	No	Yes	Being Developed	No	Yes	Yes	Gypsum-Yes
Year adopted	2013	1994	NA	NA	2010	NA	NA	U/K	U/K	Gypsum 2017
Does the plan address hazards?	Yes	Yes	NA	NA	Yes	Yes	NA	No	Yes	Yes
Does the Plan identify projects to include in the mitigation strategy?	Yes	Yes	NA	NA	Yes	Yes	NA	Yes	Yes	Yes
Can the plan be used to implement mitigation actions?	Yes	Yes	NA	NA	Yes	Yes	NA	No	Yes	Yes
<b>Community Wildfire Protection Plan (CWPP)</b>	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes
Year adopted	2011	NA	NA	2017	NA	NA	2018	U/K	2012	2014
Does the plan address hazards?	Yes	NA	NA	Yes	NA	NA	Yes	Yes	Yes	Yes
Does the Plan identify projects to include in the mitigation strategy?	Yes	NA	NA	No	NA	NA	Yes	Yes	Yes	Yes
Can the plan be used to implement mitigation actions?	Yes	NA	NA	Yes	NA	NA	Yes	Yes	Yes	Yes

### Community Wildfire Protection Plans

There are several Community Wildfire Protection Plans (CWPP) that have been developed in Eagle County including: Arrowhead CWPP (2008), Bachelor Gulch CWPP (2008), Beaver Creek CWPP (2007), Cordillera CWPP (2004), Eagle River Protection District CWPP (2018) Town of Vail (awaiting approval) and Eagle County CWPP (2011).

The Eagle County Community Wildfire Protection Plan was created in 2005, amended in 2010 and revised in 2011. All fire departments and districts in the county participated in and signed off on this plan. Below is a Summary of Actions Taken to Create the Eagle County CWPP and is excerpted from the plan. Note that any reference to appendices in the italicized portion refers to the Eagle County CWPP. The Eagle County CWPP contains the detailed

countywide wildfire risk assessment. All CWPP plans are available on the Colorado State Forest Service website: <https://csfs.colostate.edu/wildfire-mitigation/colorado-community-wildfire-protection-plans/>

**Eagle County Wildfire Regulations:**

In 2002, the Eagle County Interface Evaluation Zone (ECIEZ) committee was formed to introduce a collaborative approach to addressing wildfire issues in Eagle County. The initial group consisted of the Eagle County Board of County Commissioners, the Eagle County Office of Emergency Management, Eagle County Building Department, and the Northwest Colorado Council of Governments, representatives from each of the County’s five Fire Protection Districts (FPDs), USFS personnel, BLM personnel, and CSFS personnel. The committee later expanded to include town officials, homeowners association representatives, representatives from The Wilderness Society, and State Government officials. Bi-monthly meetings were convened over a two year period.

In May of 2002, Eagle County Community Development proposed amendments to chapters two and three of the Eagle County Land Use Regulations, in order to incorporate language pertaining to Wildfire Hazard Mitigation. The proposed amendments were referred to the Eagle County Planning Commission and the Roaring Fork Valley Planning Commission for their comments and recommendations. The Eagle County Board of County Commissioners held public hearings to consider comments on the proposed amendments in 2002. Comments from these hearings led the commissioners to hire a consultant to work towards completing a countywide wildfire hazard map within one year of the resolution adopting the wildfire regulations. The regulations were adopted on January 21, 2003.

**Other Local Plans**

As for other special plans, the Town of Avon has a Climate Change Plan adopted in 2016 that addresses hazards, includes projects that could be included in the county’s mitigation strategy and used to implement mitigation actions.

Mitigation Capability: Building Codes and Ordinances	Eagle County	Town of Avon	Town of Eagle	Town of Gypsum	Town of Minturn	Town of Red Cliff	Town of Vail	Beaver Creek Metro	EagleVail Metro	FPDs
<b>Building Code</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Version/Year	2016	2015	2015	2013	2012	2009	2018	NA	NA	IFC 2015 w/ amendments
Building Code Effectiveness Grading Schedule (BCEGS) Score	U/K	U/K	U/K	U/K	U/K	U/K	3R/4C	NA	NA	U/K
Fire Department ISO Rating	U/K	U/K	U/K	3/3Y	U/K	10?	2	NA	NA	3/3Y
Site plan review requirements	Yes	U/K	Yes	Yes	Yes	Yes	yes	NA	NA	Yes
<b>Zoning Ordinance</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Is the ordinance an effective measure for reducing hazard impacts?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	NA

Is the ordinance adequately administered and enforced?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NA
<b>Subdivision Ordinance</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Is the ordinance an effective measure for reducing hazard impacts?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	NA
Is the ordinance adequately administered and enforced?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	NA
<b>Floodplain Ordinance</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Is the ordinance an effective measure for reducing hazard impacts?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	NA
Is the ordinance adequately administered and enforced?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	NA
<b>Natural Hazard Specific Ordinance (Stormwater, steep slope, Wildfire)</b>	Yes	Yes	No	Yes	Yes	U/K	Yes	Yes	No	Yes	No
Is the ordinance an effective measure for reducing hazard impacts?	Yes	Yes	NA	Yes	Yes	U/K	Yes	Yes	No	Yes	NA
Is the ordinance adequately administered and enforced?	Yes	Yes	NA	Yes	Yes	U/K	Yes	Yes	No	Yes	NA
<b>Flood insurance rate maps</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Is the ordinance an effective measure for reducing hazard impacts?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	NA
Is the ordinance adequately administered and enforced?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	NA
<b>Acquisition of land for open space and public recreation uses</b>	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No
Is the ordinance an	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	Yes	No	NA



effective measure for reducing hazard impacts?										
Is the ordinance adequately administered and enforced?	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	No	NA

Mitigation Capability: Staffing and Programs	Eagle County	Town of Avon	Town of Eagle	Town of Gypsum	Town of Minturn	Town of Red Cliff	Town of Vail	Beaver Creek Metro	EagleVail Metro	FPDs
<b>Planning Commission</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Describe capability	Zoning and Design Review	Zoning and Design Review	Zoning and Design Review	Zoning and Design Review	Design Review, building code, etc	Recommendations to the BOT	Zoning	NA	Defer to Eagle County	Town of Gypsum and Eagle County
Is coordination effective?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
<b>Mitigation Planning Committee</b>	Yes	No	No	No	No	No	No	No	No	No
Describe capability	Develop this plan	NA	NA	NA	NA	NA	NA	NA	Defer to Eagle County	NA
Is coordination effective?	Yes	NA	NA	NA	NA	NA	NA	No	Yes	NA
<b>Maintenance programs to reduce risk (e.g., tree removal, clearing drainage systems, etc.)</b>	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No
Describe capability	Tree removal and drainage maint.	Yearly clearing of ditches and tree removal	Tree removal and drainage maint.	Veg. and drain. mgmt.	NA	NA	Tree removal and drainage maint.	NA	In house Maint. Dept.	NA
Is coordination effective?	Yes	Yes	Yes	Yes	NA	NA	Yes	Yes	Yes	NA
<b>Mutual Aid Agreements</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Describe capability	Agreement with fire & Sheriff	Police	Police	ECSO and GFPD	U/K	Agreement with fire & Sheriff	regional	Na	In House Admin Staff	M/A Agreements
Is coordination effective?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Chief Building Official</b>	Full Time	Full Time	Full Time	Full Time	Full Time	Part Time	Full Time	Full Time	No	Full Time
Is staffing adequate to enforce regulations?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No

Is staff trained on hazards and mitigation?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Is coordination between agencies and staff effective?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
<b>Floodplain Administrator</b>	Yes	Full Time	Full Time	Part Time	No	Part Time	Part Time	No	No	No
Is staffing adequate to enforce regulations?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	NA
Is staff trained on hazards and mitigation?	Yes	Yes	Yes	Yes	No	No	Yes	No	Yes	NA
Is coordination between agencies and staff effective?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	NA
<b>Emergency Manager</b>	Yes	No	No	No	No	No	Part Time	Full Time	No	No
Is staffing adequate to enforce regulations?	No	No	No	No	U/K	No	Yes	Yes	No	U/K
Is staff trained on hazards and mitigation?	Yes	No	No	No	U/K	No	Yes	Yes	No	Yes
Is coordination between agencies and staff effective?	Yes	No	No	No	U/K	U/K	Yes	Yes	No	Yes
<b>Community Planner</b>	Yes	Full Time	Full Time	Full Time	Part Time	Part Time	Full Time	No	No	No
Is staffing adequate to enforce regulations?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Is staff trained on hazards and mitigation?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Is coordination between agencies and staff effective?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
<b>Civil Engineer</b>	Yes	Full Time	Full Time	Full Time	Part Time	No	Full Time	No	No	No
Is staffing adequate to enforce regulations?	Yes	Yes	Yes	Yes	Yes	NA	Yes	No	No	Yes
Is staff trained on hazards and mitigation?	Yes	Yes	Yes	Yes	Yes	NA	Yes	No	No	Yes
Is coordination between agencies and staff effective?	Yes	Yes	Yes	Yes	Yes	NA	Yes	No	Yes	Yes
<b>Other Warning Systems/services (Reverse 911, outdoor warning signals, etc.)</b>	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes

Describe capability	reverse 911	reverse 911	reverse 911	reverse 911	reverse 911	NA	reverse 911	reverse 911	No	reverse 911
Has capability been used to assess/mitigate risk in the past?	Yes	Yes	Yes	Yes	Yes	NA	Yes	Yes	No	Yes
<b>Hazard Data and Information</b>	Yes	Yes	No	No	No	NA	Yes	Yes	No	Partial
Describe capability	data collection annually	No info provided	No info	No info	No info	No info	Capable	No info	No info	Public Notification: multiple routes
Has the capability been used to assess/mitigate risk in the past?	Yes	Yes	No	No	No	No	Yes	Yes	No	Yes
<b>Grant writing</b>	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No
Describe capability	No info	Staff prepares grants	No info	No info	No info	Grants have been received for fire mitigation and utilities upgrades	Capable	NA	In house staffing	No info
Has the capability been used to assess/mitigate risk in the past?	No	No	No	No	No	No	Yes	No	Yes	Yes
<b>Hazus analysis</b>	No	No	No	No	No	No	Yes	No	No	U/K
Describe capability	NA	No info	No info	No info	No info	No info	Yes	NA	NA	No info
Has capability been used to assess/mitigate risk in the past?	No	No	No	No	No	No	Yes	No	No	U/K

<b>Mitigation Capability: Funding Mechanisms</b>	<b>Eagle County</b>	<b>Town of Avon</b>	<b>Town of Eagle</b>	<b>Town of Gypsum</b>	<b>Town of Minturn</b>	<b>Town of Redcliff</b>	<b>Town of Vail</b>	<b>Beaver Creek Metro</b>	<b>EagleVail Metro</b>	<b>FPDs</b>
<b>Capital improvements project funding (access/eligibility)</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Has the funding resource been used in the past and for what type of activities?	Yes - road and bridge improvements, drainage, open space, infrastructure	Yes - Drainage and mudflow mitigation	Drainage, open space, infrastructure	Yes - Open space, infrastructure	Yes	No	Yes-fire / flood/	Yes-wildfire mitigation	Yes-flood mapping	No

Could this resource be used to fund future mitigation actions?	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	NA
<b>Authority to levy taxes for specific purposes (access/eligibility)</b>	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	No
Has the funding resource been used in the past and for what type of activities?	Yes	Yes	Yes	Yes	U/K	No	Yes	No	Yes	No
Could this resource be used to fund future mitigation actions?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
<b>Fees for water, sewer, gas or electrical service (access/eligibility)</b>	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Has the funding resource been used in the past and for what type of activities?	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Could this resource be used to fund future mitigation actions?	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No
<b>Impact fees for new development (access/eligibility)</b>	Yes	No	Yes	Yes	No	No	Yes	No	No	Non
Has the funding resource been used in the past and for what type of activities?	U/K	U/K	Yes	Yes	U/K	No	No	No	No	No
Could this resource be used to fund future mitigation actions?	Yes	U/K	Yes	Yes	U/K	U/K	No	No	No	No
<b>Stormwater utility fee (access/eligibility)</b>	No	No	No	No	No	No	No	No	No	No
Has the funding resource been used in the past and for what type of activities?	NA	NA	NA	NA	NA	NA	NA	No	No	NA
Could this resource be used to fund future mitigation actions?	NA	NA	NA	NA	NA	NA	NA	No	No	NA
<b>Incur debt through general obligation bonds and/or special tax bonds (access/eligibility)</b>	U/K	U/K	Yes	Yes	Yes	U/K	Yes	No	Yes	No
Has the funding resource been used in the past and for what type of activities?	NA	NA	Yes	Yes	No	NA	No	No	No	NA
Could this resource be used to	U/K	U/K	Yes	Yes	Yes	U/K	Yes	No	Yes	U/K

fund future mitigation actions?										
<b>Community development block grants (access/eligibility)</b>	Yes	U/K	No	No	Yes	Yes	No	No	Yes	No
Has the funding resource been used in the past and for what type of activities?	U/K	U/K	No	No	Yes	Yes	No	No	Yes	NA
Could this resource be used to fund future mitigation actions?	Yes	U/K	Yes	No	Yes	No	No	No	Yes	NA
<b>Other federal funding programs (access/eligibility)</b>	Yes	U/K	No	No	U/K	Yes	No	No	No	No
Has the funding resource been used in the past and for what type of activities?	Yes	U/K	No	U/K	No	Yes	No	No	No	U/K
Could this resource be used to fund future mitigation actions?	Yes	U/K	No	U/K	No	Yes	No	No	Yes	U/K
<b>State funding programs (access/eligibility)</b>	Yes	U/K	No	Yes	Yes	Yes	No	No	Yes	Yes
Has the funding resource been used in the past and for what type of activities?	Yes	U/K	No	Yes	Yes	Yes	No	No	Yes	No
Could this resource be used to fund future mitigation actions?	Yes	U/K	Yes	Yes	Yes	No	No	No	Yes	NA

<b>Mitigation Capability: Community Programs</b>	<b>Eagle County</b>	<b>Town of Avon</b>	<b>Town of Eagle</b>	<b>Town of Gypsum</b>	<b>Town of Minturn</b>	<b>Town of Redcliff</b>	<b>Town of Vail</b>	<b>Beaver Creek Metro</b>	<b>EagleVail Metro</b>	<b>FPDs</b>
<b>Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.</b>	Yes	Yes	No	No	No	No	No	No	Yes	Yes
Describe program/organization and how it relates to disaster resilience and mitigation	Walking Mountains and Eagle River Watershed Council	Walking Mountains and Eagle River Watershed Council	We haven't used these resources in the past.	No info	No info	No info	No info	No info	Flood Plain Mapping and Watershed Council	Gypsum Fire Auxiliary, Sweetwater community assoc. HOA's, Metro districts

Could the program/organization help implement future mitigation activities?	Yes	Yes	Yes	No	U/K	U/K	No	No	Yes	Yes
<b>Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)</b>	Yes	Yes	Yes	No	U/K	U/K	Yes	No	Yes	Yes
Describe program/organization and how it relates to disaster resilience and mitigation	Walking Mountains and Eagle River Watershed Council	Walking Mountains and Eagle River Watershed Council	We have provider outreach as a utility provider especially for water supplies.	U/K	U/K	U/K	Public outreach	U/K	Community Eblast and Newsletters	Fire Prevention week, Ready Set Go events, Home ignition zone assessments, County exercises.
Could the program/organization help implement future mitigation activities?	Yes	U/K	Yes	No	Yes	U/N	No	No	Yes	Yes
<b>Natural disaster or safety related school programs</b>	No	No	No	No	No	No	Yes	No	Yes	Yes
Describe program/organization and how it relates to disaster resilience and mitigation	NA	No info	No info	No info	No info	No info	No info	No	Yes	Public education programs throughout the year
Could the program/organization help implement future mitigation activities?	NA	U/K	Yes	No	U/K	U/K	No	No	Yes	Yes
<b>StormReady certification</b>	No	U/K	No	No	No	No	No	No	No	No
<b>FireWise Communities certification</b>	No	No	No	No	No	No	No	No	Yes	Yes
Describe program/organization and how it relates to disaster resilience and mitigation	NA					Through ERFPD, not run through town		NA	CWPP recognition	some Town and HOA's are Fire Wise
Could the program/organization help implement future mitigation activities?	NA	U/K	Yes	No	Yes	Yes	No	No	No	Yes

<b>Public-private partnership initiatives addressing disaster-related issues</b>	Yes	U/K	No	No	No	Yes	No	Yes	Yes	Yes
Describe program/organization and how it relates to disaster resilience and mitigation	outreach to residents for fire mitigation	U/K	no info	no info	no info	many brochures and some outreach to residents for fire mitigation	no info	Partnership with ERFPD	Home Owners Association Contributions and Rebates	Working with Sweetwater Assoc and Town of Gypsum to work on resiliency
Could the program/organization help implement future mitigation activities?	Yes	U/K	Yes	No	U/K	Yes	No	No	Yes	Yes

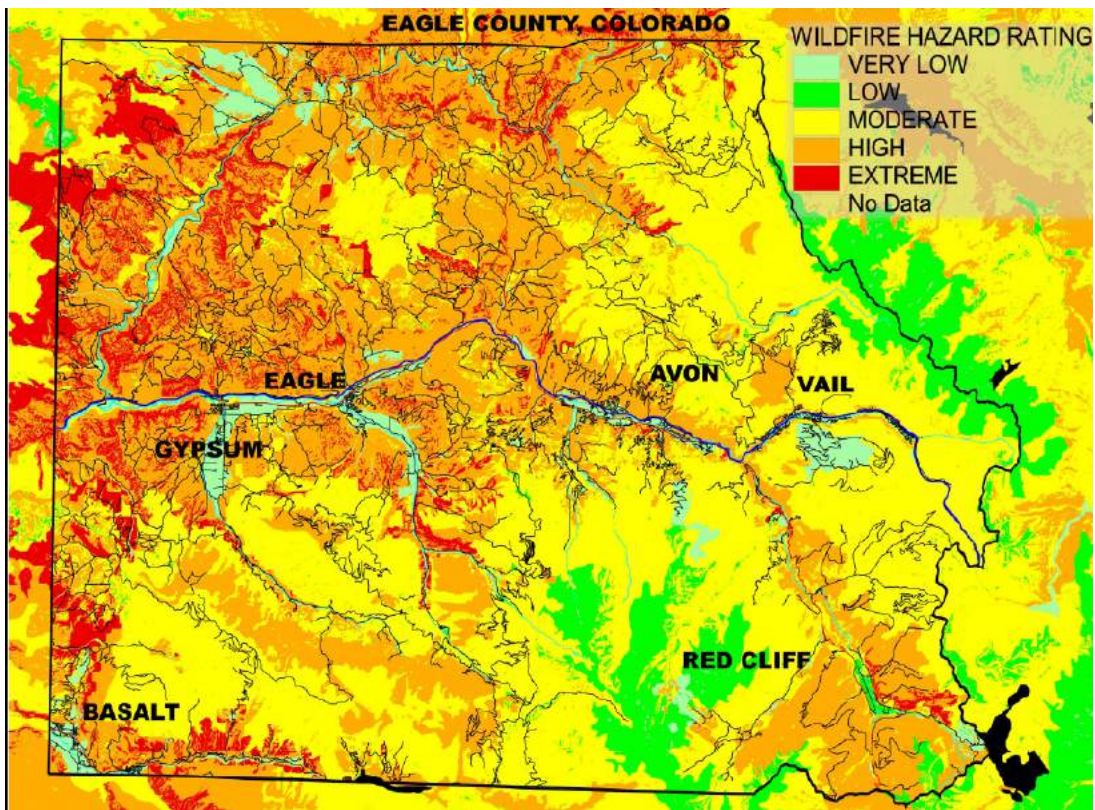
## Vulnerability Assessment

After reviewing the identified hazards and the existing mitigation capabilities, the planning team assessed the vulnerability or impact that each hazard has the potential to have on the county and the jurisdictions within the county. The vulnerability to each hazard is determined when historical frequency, current risk perception, existing mitigation capabilities, past mitigation actions, potential for life loss and the potential for property damage is analyzed.

The vulnerability of the population is rooted in a relationship between the occurrence of hazard events, the proximity of people and property to these occurrences, and the degree that a community and its members are committed and prepared to cope with these occurrences and mitigate their effects.

### Wildfire

A large proportion of Eagle County's population lives and recreates in the WUI areas and wildfires pose serious risks to residents, visitors, property and wildlife. The potential for wildfire-caused damage to structures in Eagle County is increasing as wildland fuels accumulate and greater numbers of people choose to build homes in wildfire-prone areas. As climate warming leads to longer, more intense periods of drought, the risks and impacts of wildfires are expected to grow, in turn leading to greater risks from landslides, mudflows and other geologic hazards during heavy rainfall events. Eagle County Community Wildfire Protection Plans (CWPP) provide a comprehensive and scientifically-based analysis of wildfire related hazards, risks and vulnerabilities. Any major wildfire anywhere near populated areas in Eagle County will have significant impacts on the community. After considering historical events, existing mitigation capabilities, hazard ratings from CWPPs and considering life, safety and potential economic impacts, it was determined that Eagle County is highly vulnerable to the impacts of a significant wildfire.



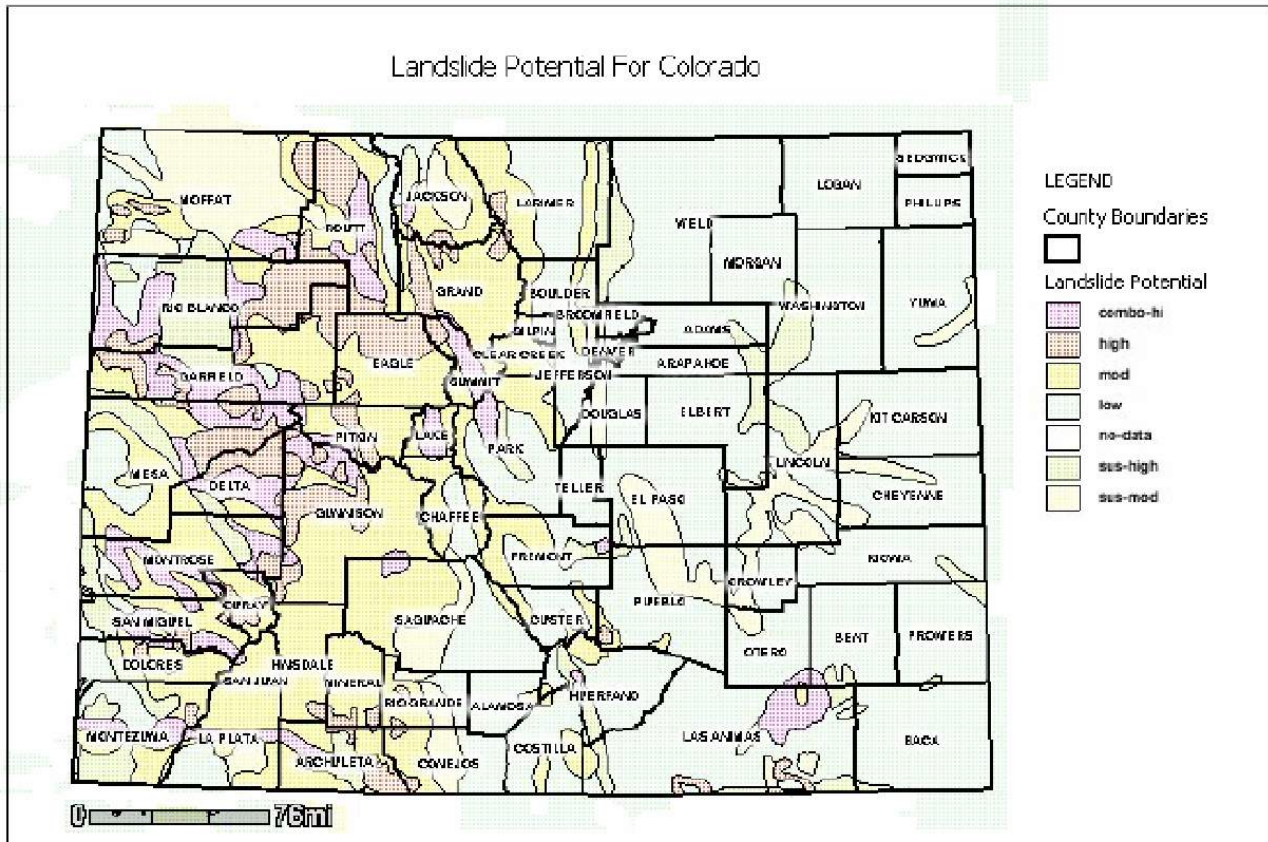


## Flooding

Although serious flood events in Eagle County are rare, severe weather and snowmelt runoff present a threat of serious flooding along rivers and creeks in the county each year. The town of Basalt has been one of the more flood-prone areas of the county due to its location at the confluence of the Roaring Fork and Fryingpan Rivers. Areas along the Colorado River and several areas along the Interstate 70 and U.S. Highway 6 corridors are prone to flash flooding. Events producing heavy rainfall are expected to increase as temperatures rise in future years, which in turn, increases the potential for flash flooding.

## Landslides, Rockslides and Other Geological Hazards

In the high country, heavy rain events reduce slope stability that can result in landslides, debris flows, mudflows, rockfalls and other types of mass movement of soil and rock. While communities in the Roaring Fork Valley have enacted strict development standards for development on slopes and hillsides, the potential for extreme precipitation events fueled by climate warming may present increased risks to people and property in Eagle County. Due to the steep terrain in most of the county, the probability of future occurrences of landslides and other geologic hazards is considered highly likely.



## Critical Infrastructure Inventory

Critical facilities and infrastructure are the structures and systems in the community that are integral to day-to-day functions and, if damaged, would have serious adverse impacts on disaster response and recovery operations. Infrastructure and facilities that are commonly considered critical include law enforcement facilities, fire service

facilities, health care facilities, ambulance services, government facilities, emergency operations centers, public shelters, transportation systems, water supply facilities, wastewater treatment facilities, agricultural production facilities, electrical power systems and other utilities. In addition, critical facilities are those that house vulnerable populations, such as schools and assisted living or senior housing. The following is a list of critical infrastructure identified within Eagle County:

<b>Medical Facilities</b>
Avon Urgent Care
Beaver Creek Medical Center
Edwards / Shaw Pavilion
Eagle Health Care Center
Gypsum Urgent - Emergent Care
Vail Health
Centura Health
Eagle County Paramedic Services Edwards Base
Eagle County Paramedic Services Traer Creek
Eagle County Paramedic Services Vail Base
Eagle County Paramedic Services Eagle Base
Eagle County Paramedic Services Gypsum Base
Basalt After Hours Clinic
<b>Transportation Critical Infrastructure</b>
Eagle County Airport
CDOT Facilities
Eagle County School District West Bus Barn (Transportation)
Eagle County School District East Bus Barn (Transportation)
<b>School Facilities</b>
Avon Elementary School
Battle Mountain High School
Berry Creek Middle School
Brush Creek Elementary School
Eagle County School District Maintenance Department
Eagle County Charter Academy
Eagle Valley Elementary
Eagle Valley High School
Eagle Valley Middle School
Edwards Elementary School
Gypsum Creek Middle School
Gypsum Elementary School
Homestake Peak School
June Creek Elementary School
Red Canyon High School (East Campus)
Red Hill Elementary School
Red Sandstone Elementary School
Stone Creek Charter School

Eagle County School District Technology Department
Vail Christian High School
Vail Christian Academy
Vail Ski & Snowboard Academy
<b>Law Enforcement Facilities</b>
Colorado State Patrol - Eagle Office
Colorado State Patrol - Dowd Office
Avon Police Department
Avon Municipal Building (Admin/Govt)
Vail Police Department/ Municipal Building
Sheriff's substation
Minturn Police Department
Basalt Police Department
<b>Public Works Facilities</b>
Vail Public Works Facility
Gypsum Wastewater Plant
Norgaard Water Treatment
Mosher Water Treatment Plant
Minturn Water Treatment Plant
Minturn Water Tank #1
Minturn Water Tank #2
Eagle Public Works Facility
Eagle Upper Basin Water Treatment Plant
Eagle Lower Basin Water Treatment Plant
Eagle Wastewater Treatment Plant
Basalt Filtration Plant
<b>Fire Fighting Facilities</b>
Basalt Fire Station 41
Basalt Fire Station 42
Basalt Fire Station 43
Basalt Fire Station 44
Eagle River Fire Protection District - Station 5
Eagle River Fire Protection District - Station 7
Eagle River Fire Protection District - Station 11
Eagle River Fire Protection District - Station 12
Eagle River Fire Protection District - Station 15
Eagle River Fire Protection District - Station 16
Gypsum Fire Protection District - Station 13
Gypsum Fire Protection District - Station 14
Rock Creek Volunteer Fire Department - Station 25
Vail Fire Station 1
Vail Fire Station 2
Vail Fire Station 3

## Natural, Historic and Cultural Resources

Eagle County abounds with natural resources that make it an attractive destination for visitors year round. There are also many historic and cultural sites throughout the County that should be protected to maintain the economic health of the County and surrounding areas. The following lists include those cultural and historic resources.

### Cultural Resources

Resource	Location
The Gerald R. Ford Amphitheater	Vail
Vilar Performing Arts Center	Beaver Creek
Eagle County Historical Society	Eagle
Walking Mountains Science Center	Avon
Colorado Ski & Snowboard Museum and Hall of Fame	Vail
Lundgren Theater	Gypsum
Betty Ford Alpine Gardens	Vail

### National Register of Historic Places listings in Eagle County, Colorado

Name on the Register	Date listed	Location	Nearest City/Town (Description)
Archeological Site 5EA484	May 10, 1982 <a href="#">(#82002299)</a>	Address Restricted	Basalt
Camp Hale Site	April 10, 1992 <a href="#">(#78003522)</a>	Between Leadville and Red Cliff 39°26'38"N 106°19'34"W	Leadville (Former Army base)
First Evangelical Lutheran Church	June 24, 1993 <a href="#">(#93000576)</a>	400 2nd St. 39°38'44"N 106°57'08"W	Gypsum
Notch Mountain Shelter	March 10, 2015 <a href="#">(#15000059)</a>	Notch Mtn. Summit, White River NF 39°28'41"N 106°27'35"W	Minturn vicinity
Red Cliff Bridge	February 4, 1985 <a href="#">(#85000204)</a>	U.S. Highway 24 39°30'29"N 106°22'34"W	Red Cliff
State Bridge	June 24, 1985 <a href="#">(#85001401)</a>	Off State Highway 131 39°51'29"N 106°38'54"W	State Bridge
Tigiwon Community House	March 10, 2015 <a href="#">(#15000060)</a>	FSR 707, Holy Cross Dist., White River NF 39°31'24"N 106°25'14"W	Minturn vicinity
Upper Brush Creek School	April 6, 2015 <a href="#">(#15000126)</a>	Between Coulter Meadow & W. Brush Cr. Rds. 39°32'09"N 106°45'10"W	Eagle vicinity (In/near Sylvan Lake State Park)

Waterwheel	April 11, 1977 (#77000372)	Southeast of McCoy at the Colorado River 39°54'10"N 106°43'00"W	McCoy
Woods Lake Resort	August 11, 1988 (#88001226)	11 miles (18 km) north of Thomasville at Woods Lake 39°25'32"N 106°37'35"W	Thomasville
Yarmony Archeological Site	May 28, 1991 (#91000615)	Address Restricted	Radium

### Demographic and Social Characteristics of Eagle County

Characteristic	Eagle County	Avon	Basalt	Eagle	Gypsum	Minturn	Red Cliff	Vail
Population	52,894	6,444	3,783	6,603	6,729	1,029	246	5,363
Median Age	35.9	31.4	43.5	35.5	39.9	40.5	39.3	39.0
Population 65 Years & Over	3,131	224	395	633	485	85	15	683
Female Population	24,830	2,955	1,830	3,274	2,966	471	147	2,363
Male Population	28,064	3,489	1,953	3,329	3,763	558	99	3,000
Average Household Size	3.00	3.07	2.24	3.38	3.07	2.68	2.96	2.35
Average Family Size	3.33	3.32	3.08	3.67	3.18	2.92	3.98	2.74
Percent of Total Population with Disabilities	4.7	1.9	3.8	5.7	5.0	10.7	4.1	3.4
Residents with Disabilities less than 18 Years	153	0	0	43	0	0	3	0
Residents with Disabilities 18-64 Years	1,574	31	94	130	277	98	3	118
Residents with Disabilities over 65 Years	733	93	48	202	60	12	4	67
Residents with Health Insurance Coverage	43,137	6,444	3,203	5,263	5,334	882	186	4,828
Residents with High School Degree (Percent)	88.8	90.6	92.3	91.6	81.2	86.2	93.1	99.1
Residents with Bachelor's Degree (Percent)	45.0	43.2	58.8	45.7	29.1	43.7	24.3	59.1

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

## Economic Assets

In addition to direct impacts and damages to critical facilities, major disasters can result in large amounts of debris, business interruptions, increased emergency response times and costs, loss of income for businesses and residents, increased demands for health services, and the need to replace roads, bridges and public buildings. After a disaster, economic recovery is the highest recovery priority, next to public health and safety. When major employers are unable to return to normal operations, long-term impacts may be felt throughout the community.

### Economic and Housing Characteristics of Eagle County, Town of Avon, Town of Basalt, Town of Eagle, Town of Gypsum, Town of Minturn, Town of Red Cliff and Town of Vail

Characteristic	Eagle County	Avon	Basalt	Eagle	Gypsum	Minturn	Red Cliff	Vail
Median Annual Household Income	78,763	56,223	71,885	111,808	79,286	68,542	72,813	73,125
Percent of Total Population that is Unemployed	3.0%	0.6%	5.0	2.1%	1.8%	2.7%	0.0%	1.4%
Percent of Families Living Below Poverty Level	5.2%	11.1%	5.2%	2.4%	4.8%	5.5%	4.3%	5.2%
Percent of Individuals Living Below Poverty Level	8.1%	11.3%	6.2%	6.6%	8.1%	11.9%	3.3%	6.1%
Total Housing Units	31,555	3,923	1,893	2,281	2,292	526	111	7,297
Occupied Housing Units	17,613	2,099	1,692	1,937	2,190	384	83	2,297
Vacant Housing Units	13,942	1,824	201	344	102	142	28	5,018
Homeowner Vacancy Rate	2.5	7.5	3.0	1.6	0.0	3.0	4.9	3.6
Rental Vacancy Rate	7.8	6.4	2.8	10.9	0.0	3.1	17.1	12.1

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

## Industry Distribution in Eagle County

Industry	Establishments	Paid employees
Total for all sectors	3,415	32,362
Agriculture, forestry, fishing and hunting	5	4
Mining, quarrying and oil/gas extraction	6	10
Utilities	6	41
Construction	663	2,803
Manufacturing	60	355
Wholesale Trade	94	541
Retail Trade	429	4,339
Transportation and warehousing	82	874
Information	39	388
Finance and insurance	117	832
Real estate and rental/leasing	409	2,042
Professional, scientific and technical services	449	1,398
Management of companies and enterprises	8	248
Administrative and support and waste management and remediation services	243	2,081
Educational services	36	328
Health care and social assistance	184	2,035
Arts, entertainment and recreation	71	4,397
Accommodation and food services	289	8,032
Other services (except public administration)	220	1,608
Industries not classified	5	6

Source: U.S. Census Bureau, 2016 County Business Patterns

## National Flood Insurance Program (NFIP) Participation

Eagle County and the Towns of Avon, Eagle, Gypsum, Minturn, Red Cliff and Vail all participate in the National Flood Insurance Program. The following tables provide NFIP participation information for each community including the number of flood insurance policies in force and number of paid losses. There are no repetitive losses in the county. Eagle County and its municipalities work to remain compliant with NFIP requirements and minimize the risk of flooding for future developments through floodplain management programs and minimize risk for existing developments through the enforcement of floodplain rules and regulations. For example, any development activity in a designated floodplain is regulated by Chapter II, Article 3 - Zone Districts of the Eagle County Land Use Regulations and requires a Floodplain Permit. As of January 7, 2014, the revised flood regulations are available in [Resolution 2014-002 - Eagle County Land Use Regulation Amendment for the Floodplain Overlay Zone District](#).

Eagle County - NFIP Participation Information			
Category	Data	Category	Data
Date Joined NFIP	11/19/1980	Number of Policies in force	87
CRS class/discount	08 / 10%	Insurance in Force	\$ 26,104,200
CAV date	5/16/2007	Number of Paid Losses	7
CAC date	2/18/2000	Total Losses Paid	\$ 22,834.83
Date of Current FIRM	12/04/2007	Substantial Damage claims since 1978	1

Town of Avon - NFIP Participation Information			
Category	Data	Category	Data
Date Joined NFIP	8/19/1987	Number of Policies in force	6
CRS class/discount	N/A	Insurance in Force	\$1,800,000
CAV date	5/10/2007	Number of Paid Losses	0
CAC date		Total Losses Paid	\$0.00
Date of Current FIRM	12/04/2007	Substantial Damage claims since 1978	0

Town of Basalt - NFIP Participation Information			
Category	Data	Category	Data
Date Joined NFIP		Number of Policies in force	134
CRS class/discount	N/A	Insurance in Force	\$423,77,000
CAV date		Number of Paid Losses	1
CAC date		Total Losses Paid	\$3,815.81
Date of Current FIRM		Substantial Damage claims since 1978	0

Town of Eagle - NFIP Participation Information			
Category	Data	Category	Data
Date Joined NFIP	3/18/1980	Number of Policies in force	2
CRS class/discount	N/A	Insurance in Force	\$392,000
CAV date	6/18/2007	Number of Paid Losses	0
CAC date		Total Losses Paid	\$0.00



Date of Current FIRM	12/04/2007	Substantial Damage claims since 1978	0
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Town of Gypsum – NFIP Participation Information			
Category	Data	Category	Data
Date Joined NFIP	9/16/1981	Number of Policies in force	77
CRS class/discount	N/A	Insurance in Force	\$21,641,500
CAV date	5/16/2007	Number of Paid Losses	2
CAC date		Total Losses Paid	\$0.00
Date of Current FIRM	12/04/2007	Substantial Damage claims since 1978	0

Town of Minturn – NFIP Participation Information			
Category	Data	Category	Data
Date Joined NFIP	09/17/1980	Number of Policies in force	10
CRS class/discount	N/A	Insurance in Force	\$3,309,200
CAV date	5/10/2007	Number of Paid Losses	1
CAC date		Total Losses Paid	\$6,034.97
Date of Current FIRM	12/04/2007	Substantial Damage claims since 1978	0

Town of Red Cliff – NFIP Participation Information			
Category	Data	Category	Data
Date Joined NFIP	04/18/1985	Number of Policies in force	10
CRS class/discount	N/A	Insurance in Force	\$2,562,000
CAV date		Number of Paid Losses	0
CAC date		Total Losses Paid	\$0.00
Date of Current FIRM	12/04/2007	Substantial Damage claims since 1978	0

Town of Vail – NFIP Participation Information			
Category	Data	Category	Data
Date Joined NFIP	05/02/1983	Number of Policies in force	163
CRS class/discount	07 / 15%	Insurance in Force	\$43,642,000
CAV date	09/25/2007	Number of Paid Losses	13
CAC date	08/10/1994	Total Losses Paid	\$146,052.15
Date of Current FIRM	12/04/2007	Substantial Damage claims since 1978	1

NFIP Policy Statistics, Colorado as of 08/31/2018

CAC = Community Assistance Contact  
CAV = Community Assistance Visit

CRS = Community Rating System  
FIRM = Flood Insurance Rate Map

NFIP = National Flood Insurance Program

## Countywide Analysis of Hazard Mitigation Areas

<b>Countywide (all areas)</b>									
Type of Units*	Number of Units			Value of Units			Number of People		
	# in Community	# in Hazard Area	% in Hazard Area	\$ in Community	\$ in Hazard Area	% in Hazard Area	# in Community	# in Hazard Area	% in Hazard Area
Residential	30,470			\$24,838,510,700			52,197		
Commercial	4,304			\$2,574,869,650					
Total	34,774			\$27,413,380,350			52,197		
<b>Wildfire Hazard (moderate, high, extreme)</b>									
Type of Units*	Number of Units			Value of Units			Number of People		
	# in Community	# in Hazard Area	% in Hazard Area	\$ in Community	\$ in Hazard Area	% in Hazard Area	# in Community	# in Hazard Area	% in Hazard Area
Residential	30,470	16,920	55.53%	\$24,838,510,700	\$13,587,384,320	54.70%	52,197	44,011	84.32%
Commercial	4,304	1,933	44.91%	\$2,574,869,650	\$1,187,136,160	46.10%			
<b>Flood Hazard</b>									
Type of Units*	Number of Units			Value of Units			Number of People		
	# in Community	# in Hazard Area	% in Hazard Area	\$ in Community	\$ in Hazard Area	% in Hazard Area	# in Community	# in Hazard Area	% in Hazard Area
Residential	30,470	311	1.02%	\$24,838,510,700	\$144,153,330	0.58%	52,197	18,640	35.71%
Commercial	4,304	50	1.16%	\$2,574,869,650	\$34,513,050	1.34%			
<b>Landslide/Rockfall Hazard</b>									
Type of Units*	Number of Units			Value of Units			Number of People		
	# in Community	# in Hazard Area	% in Hazard Area	\$ in Community	\$ in Hazard Area	% in Hazard Area	# in Community	# in Hazard Area	% in Hazard Area
Residential	30,470	12610	41.38%	\$24,838,510,700	\$11,571,130,280	46.59%	52,197	36086	69.13%
Commercial	4,304	1528	35.50%	\$2,574,869,650	\$1,209,959,480	46.99%			

## MITIGATION STRATEGIES

### Integration with Other Plans and Programs

With the update of this plan, there were many opportunities identified to integrate mitigation actions with other local plans and programs. Multiple disciplines participated in the planning team, broadening opportunities for identifying and supporting meaningful mitigation actions. Outside of formal meetings, planning team members promote mitigation plan goals by:

- attending other planning/program meetings
- participating in other planning processes
- participating in outreach opportunities to engage stakeholders

Prior to evaluating potential mitigation for the 2019 planning update, the planning team reviewed the mitigation actions identified in the table below:

Mitigation Type	Description	Examples
Local Plans and Regulations	These actions include government authorities, policies or codes that influence the way land and buildings are developed and built.	<ul style="list-style-type: none"> <li>● Comprehensive plans</li> <li>● Land use ordinances</li> <li>● Subdivision regulations</li> <li>● Development review</li> <li>● Building codes/enforcement</li> <li>● NFIP Community Rating System</li> <li>● Capital improvement programs</li> <li>● Open space preservation</li> <li>● Stormwater management plans and regulations</li> </ul>
Structure and Infrastructure Protection	These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves structural projects that reduce the impact of hazards.	<ul style="list-style-type: none"> <li>● Acquisition/removal of structures in hazard-prone areas</li> <li>● Utility undergrounding</li> <li>● Structural retrofits</li> <li>● Floodwalls and retaining walls</li> <li>● Detention/retention structures Culverts</li> <li>● Safe rooms</li> </ul>
Natural Systems Protection	These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.	<ul style="list-style-type: none"> <li>● Sediment and erosion control Stream corridor restoration</li> <li>● Forest management</li> <li>● Conservation easements</li> <li>● Wetland restoration and preservation</li> </ul>
Education and Awareness Programs	These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady or Firewise Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions.	<ul style="list-style-type: none"> <li>● Radio or television spots</li> <li>● Websites with maps and information</li> <li>● Real estate disclosure</li> <li>● Presentations to school groups or neighborhood organizations Mailings to residents in hazard prone areas</li> <li>● StormReady Communities</li> <li>● Firewise Communities</li> </ul>

Source: Local Mitigation Planning Handbook, FEMA (March 2013)

## Status of 2012 Mitigation Actions

As a part of the 2018 plan review process, jurisdictions were asked to provide a status update on the mitigation actions listed in the previous version of the plan. The following table identifies the status of mitigation actions listed in the 2012 hazard mitigation plan:

Mitigation Action	Hazard(s) Addressed	Responsible Jurisdiction	Status	Comment
Maximum Flow Study	Seasonal/ Flash Flooding	Eagle County, towns	Project delayed Anticipated completion date 10/1/2022	Project priority lost with staff turnover, project has been reprioritized for future analysis.
Maximum Flow Determination	Flooding	Eagle County	Project on schedule	Project had an undetermined timeline & has not been completed. We still see this project as having value and will attempt to prioritize it in the future.
Identify and repair/replace substandard culverts on roadway in unincorporated Eagle County	Flooding	Eagle County	Project on schedule	Project had an undetermined timeline & has not been completed. We still see this project as having value and will attempt to prioritize it in the future.
CWPP Fuel Reduction Project in Whiskey Hill area.	Wildfire	Eagle-Vail Metro/ Eagle River FPD	In process Anticipated completion date 12/31/2020	Increase homeowner awareness and increase acreage of defensible space Slow moving, steep terrain and challenging topography
Broken Bridge Removal	Seasonal/ Flash Flooding	Town of Gypsum/CDOT	Project delayed	Sale of adjacent property key to redevelopment of the area was never completed. Master plan identified repurposing of existing bridge. Project is still relevant but subject to revision
Re-hab/replacement of the High Street Bridge	Seasonal/ Flash Flooding	Town of Red Cliff	Project delayed Anticipated completion date 10/1/2020	Currently looking at funding from CDOT bridge fund
Water Street Bridge	Seasonal/ Flash Flooding	Town of Red Cliff	In process anticipated completion date 10/1/2022	Bridge girders were repaired by CDOT/Town Waiting for the bridge to have a bit lower sufficiency rating
Metcalf Gulch, Storm Drainage Improvements	Seasonal / Flash Flooding	Town of Avon	Project completed	
Nottingham Road, Debris and mudflow Prevention	Seasonal / Flash Flooding	Town of Avon	In process, anticipated completion in 2022	Master study was completed in 2018 first project scheduled to be implemented in 2019, Remaining projects budget through 2022.
Wildridge, Avalanche Prevention	Avalanche	Town of Avon	Project delayed	Yearly monitoring for avalanche risk

Metcalf Road, Rock/Landslide Prevention	Landslide/Rockfall	Town of Avon	Project delayed to 2022	Project is relevant but is minimal short term risk, longer term higher risk
CWPP Hernage Creek wildfire fuel reduction project	Wildfire	Town of Eagle/ Greater Eagle FPD	In process to be completed in 2020	Town is working on an open space master plan that will call out areas require mitigation.
Continue to adhere to floodplain management standards	Seasonal/Flash Flooding	Town of Eagle	In process to be completed in 12/31/2021	These projects will be budgeted 2020 - 2021 as well as completion of stormwater master plans. We have included a hazards section in our comprehensive plan update and the rewrite of the town's land use regulation.s
Pine Street/Harrison Ave Fuel Break	Wildfire	Town of Minturn	In Process	Still working with state on mitigation project
Continue to Manage Floodplains	Seasonal/Flash Flooding	Town of Minturn	Completed	Maps corrected and Floodplain ordinance passed by town council.
Gore Creek Stream Bank Stabilization	Seasonal/Flash Flooding	Town of Vail	In Process Estimated completion date is 12/31/2023	This project was delayed and is on-going. The town has completed the removal of sediment load from many large creek culverts over the past 5 years. Removal of sediment and cobble from Booth Creek and Bighorn Creek culverts. Difficult work environment, had to be completed the project is still relevant and should remain as on-going. by hand shovel and buckets.
Replace substandard culverts on Bighorn Creek	Seasonal/Flash Flooding	Town of Vail	Completed	This Bighorn Creek culvert was replaced with a concrete box culvert
Booth Creek Flood Damage Restoration at Spruce Way	Seasonal/Flash Flooding	Town of Vail	Completed	Streambanks have been restored and culvert improved.
Gore Creek Bridge at Vail Golf Club Hole #15 (Flood protective measures near the Heathers Condominium complex on Gore Creek)	Seasonal/Flash Flooding	Town of Vail	In Process Estimated completion date is 12/31/2019	A Bridge replacement has been designed and went out to bid. Start of construction is expected Fall 2018 with completion by Summer 2019
Vail Rockfall Mitigation	Rockfall	Town of Vail	Completed	Rockfall hazards were mitigated above new High Density affordable housing.
Remove cobble, sediment deposits along Gore Creek	Seasonal/Flash Flooding	Town of Vail	Anticipated completion date 12/31/2019	A Bridge replacement has been designed and went out to bid. Start of construction is expected Fall 2018 with completion by Summer 2019
Flood protective measures near I-70 and Pitkin Creek	Seasonal/Flash Flooding	Town of Vail	Project completed	Scour protection was added at the outlet of the Pitkin Creek I-70 Culvert

Revise CWPP for the Town of Gypsum	Wildfire	Gypsum FPD/ Town of Gypsum	Project delayed	Lack of funding and manpower resources. Held several Ready Set Go events, participated in Wildfire exercises and supported and participated in the County CWPP and the wildfire council. Financial crisis, loss of fire prevention staffing, lack of resources delayed project. Plan needs to be revised. We are participating in the County CWPP and not our own
Develop CWPP for Rock Creek Fire Department Service Area	Wildfire	Rock Creek Volunteer Fire Department	Project delayed	Volunteer fire department does not currently have a CWPP
Implement specific actions and project identified in the various CWPP's in Arrowhead, Bachelor Gulch, Beaver Creek, Cordillera and Cedar Drive	Wildfire	Eagle County/ All Fire Districts	See List Below	(See list below)
Bellyache Ridge Wildfire Mitigation - Fuels Reduction / Linked Defensible Space	Wildfire	Eagle County/ Eagle River FPD	Completed	<p>Improvements to Defensible Space: 7 acres (6 properties)</p> <ul style="list-style-type: none"> <li>-Hand and mechanical treatment near home-sites on Big Dipper Road and Little Dipper Road to create/improve defensible space.</li> <li>- Treatment – remove all lodgepole pine over 5” diameter (and over 30 ft tall); timber removed by self-loading trucks; slash masticated or piled and burned on-site. Some saw-logs (over 5” diameter) bucked into 6-10 ft lengths and left on-site for owner as firewood.</li> </ul> <p>Critical Infrastructure/Power-Line Corridor Protection: 5.5 acres</p> <ul style="list-style-type: none"> <li>-Hand and mechanical treatment along Holy Cross Energy utility easement, and private lot adjacent to Travis and Bellyache Ridge Roads</li> <li>-Treatment – remove all lodgepole pine over 5” dbh (and over 30ft tall); timber removed by self-loading trucks; slash masticated or piled and burned on-site.</li> </ul>
Eby Creek Mesa Wildfire Mitigation - Fuel Break	Wildfire	Eagle County/ Greater Eagle FPD	Completed	An additional 22 acres of pinon/juniper and sagebrush mastication connecting the hydro-axe fuel break to this project area occurred during the fall of 2011 and spring of 2012. Additional hand-treatments to improve defensible-space also occurred on 9 acres of private land within the community during 2013. The interagency collaboration associated with this ongoing project has led to a landscape scale fuel reduction of more than 85 acres near this highly risk neighborhood. The work completed over the past decade represents a coordinated effort to change fire behavior and to improve overall forest health to the area.

Missouri Heights Wildfire Mitigation - Linked Defensible Space	Wildfire	Eagle County/ Basalt & Rural FPD	Completed	<p>Linked Defensible Space: 7.5 acres</p> <p>Forest thinning for defensible space was completed across 5 private lots, in order to create a continuous area of wildland fuel reduction around structures. This type of fuel-break construction was aimed at improving fire control opportunities throughout the neighborhood by removing surface and ladder-fuels from within 100 ft of the roadway and homes, and thinning the remaining vegetation for health and vigor. Ladder-fuels associated with regenerating conifers and dead/down material was removed from the treatment area, and thinning occurred in order to achieve a minimum 10 ft canopy separation between trees, and to remove insect infested pines</p> <p>Funding ran out before we could address additional properties</p>
Big Pinon Wildfire Mitigation Project - Linked Defensible Space	Wildfire	Eagle County/ Basalt & Rural FPD	Completed	<p>Grant funding was obtained through the Colorado State Forest Service to complete a 15 acre linked-defensible space project on 6 individual private properties. Private contractors removed debris piles, hauled off material; and mulched accumulated debris along the highway side of irrigation ditch. Work was also done to remove surface material and low branches from trees along the subdivision side of the ditch; and to thin trees and remove dead and live trees on private lots to create defensible space around homes in the project area.</p>
Tennessee Pass Wildfire Mitigation Project - Roadway fuel-break and defensible space	Wildfire	Eagle County/ Eagle River FPD	Completed	<p>The primary goal of this project was to minimize fuel loading along the neighborhood's only ingress/egress route in an attempt to reduce the intensity of any approaching fire. A roadway fuel-break was created along FSR 731 by removing dead/infested lodgepole pine, and thinning remaining trees to a distance of 100 ft on either side of the roadway. Additional forest thinning for defensible space was completed around 6 private structures. Total acres treated = 15.</p>
EagleVail Wildfire Mitigation Project - Fuel-Break and Linked Defensible Space	Wildfire	Eagle County/ Eagle River FPD	Completed	<p>The purpose of this project was to conduct hazardous fuel reduction and defensible space work in the community of EagleVail, in order protect private property and the safety of Eagle-Vail residents, as well as to facilitate safe access to man-made structures by firefighters in the event of a wildfire. During the summer of 2013, approximately 3 acres of linked defensible space work was completed near homes on the southeast corner of Whiskey Hill. 2014 project work expanded on this area of fuel-reduction, creating a continuous 15 acre fuel-break along the neighborhood's</p>

				<p>eastern boarder with the White River National Forest. Within this area of fuel reduction, the continuity and arrangement of vegetation was modified to reduce the intensity of any approaching fire. Service berry and other tall shrubs were thinned so that there is a minimum of 10 feet between groupings of stems, creating a mosaic like coverage of vegetation. All remaining trees were pruned to at least 10 feet above the ground, or 1/3 their overall height. In 2014, the EagleVail Property Owners Association began offering matching funds to owners wishing to reduce wildfire hazards on their properties. To date, 12 owners have taken advantage of this program to complete defensible work on their properties, including a group of 5 owners on Elk Lane that created a linked-defensible space of approximately 5 acres. Additional work was also completed near the golf-course maintenance facility, and at The Woods Townhouses.</p>
<p>Cedar Drive Wildfire Mitigation Project - Roadway Improvement, Secondary Access, Water Supply, Fuel Reduction</p>	<p>Wildfire</p>	<p>Eagle County/ Basalt &amp; Rural FPD</p>	<p>Completed</p>	<p>A series of fatal vehicle accidents, structure fires, and a wildfire in 2008 brought attention to the poor access situation in this community. A grant was obtained by Eagle County to improve access to the 27 homes on Cedar Drive by installing guard-rails, pavement, and vehicle turn-outs at regular intervals along the road. The matching funds for this project were made available by the property owners after they formed a special improvement district to address road construction, maintenance, and wildfire mitigation. A secondary 0.8 mile egress route was created leading out of the community to the Frying Pan Road below on a neighboring private property, and an access easement was granted by the owner protecting the road in perpetuity. Additionally, improvement to defensible space were completed at 5 properties. A dry-hydrant was also installed at a nearby pond, and it is tested annually by the Basalt and Rural Fire Protection District.</p>



## 2019-2024 Proposed Mitigation Actions

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The 2019 mitigation actions identified by the planning team were selected through a collaborative process and in alignment with FEMA mitigation planning goals, objectives, and mitigation actions:

**Goals:** General guidelines that explain what you want to achieve. Goals are defined before considering how to accomplish them so that they are not dependent on the means of achievement. They are usually long-term, broad, policy-type statements.

**Objectives:** Define strategies or implementation steps to attain the identified goals and are specific and measurable.

**Mitigation Actions:** Specific actions that help achieve goals and objectives.

The planning team members identified, discussed, and prioritized potential mitigation actions. Representatives reviewing the proposed mitigation actions prioritized the various mitigation actions based on the hazard that would be mitigated, cost estimate, and benefits to completing the mitigation actions preventing further loss, and possible funding opportunities for the actions.

The planning team also discussed and identified mechanisms for each jurisdiction to integrate the following hazard mitigation initiatives into other local plans. Local jurisdictions participating in this hazard mitigation planning process agreed to include hazard mitigation into comprehensive/master plan updates, land use or zoning codes, capital improvement plans, as well as other local plan updates as appropriate to ensure that mitigation for natural hazards prioritized in this plan were taken into account.

The process of identification and analysis of mitigation alternatives allowed the planning team to come to consensus and to prioritize the recommended actions. The following section summarizes proposed mitigation actions as identified by the participating jurisdictions.

**Jurisdiction:** Eagle County

**Mitigation Action/ Project Title:** Post-fire Flood Mitigation - Lake Christine Fire Emergency Watershed Program (EWP) Projects

**Background/ Issue:** In August 2018, the USDA Natural Resources Conservation Service (NRCS) began conducting flood assessments in areas affected by the Lake Christine Fire. Colorado Department of Parks and Wildlife submitted a sponsorship agreement with the NRCS in partnership with Eagle County and town of Basalt to determine potential problem areas, recommend mitigation actions and request financial assistance for flood mitigation through the Emergency Watershed Protection Program (EWP). A list of watershed projects has been identified and congressional approval granted to completed these projects to prevent a risk to life and property. Total cost of recommended actions is \$1,226,875 with a 25% match required of approximately \$306,719.

**Ideas for Integration:** Integrate EWP projects into this hazard mitigation plan as well as existing flood planning and assessments

**Partners:** NRCS, Colorado Parks and Wildlife, Town of Basalt, Eagle County, Colorado Division of Homeland Security and Emergency Management

**Potential Funding:** NRCS Federal Funding, Colorado Parks and Wildlife, Town of Basalt, Eagle County

**Cost Estimate:** \$300,000

**Benefits:** Reduce risk of post-fire flooding

**Timeline:** FY 2019

**Priority:** 1

**Jurisdiction:** Eagle County

**Mitigation Action/ Project Title:** Flood Warning - Lake Christine Fire Rain Gauge/Weather Stations

**Background/ Issue:** There is a need for three weather stations posted near the town of Basalt, Cattle Creek and near El Jebel to monitor and provide early warning for post-fire flooding as a result of the Lake Christine burn scar created in July 2018.

**Ideas for Integration:** Integrate into county EOP plan

**Partners:** Colorado Parks and Wildlife, Town of Basalt, Eagle County, Colorado Division of Homeland Security and Emergency Management, Colorado Water Conservation Boards and the national Weather Service

**Potential Funding:** Grants, Federal support

**Cost Estimate:** \$45,000

**Benefits:** Early warning for post-fire flooding

**Timeline:** FY 2019

**Priority:** 1

**Jurisdiction:** Eagle County

**Mitigation Action/ Project Title:** Wildfire - Roaring Fork Valley Wildfire Mitigation Cost-Share Program

**Background/ Issue:** Wildfire- The Roaring Fork Valley was heavily impacted by the Lake Christine Fire in 2018. The purpose of this project is to reduce wildfire risk in Roaring Fork Valley communities, and mitigate potential threats from wildfire by offering technical assistance and incentive funding in an effort to implement defensible space and fuel-break project work in areas threatened by wildfire.

**Ideas for Integration:** Integrate this project into existing REALFire voluntary wildfire risk reduction program, providing an additional matching funds incentive for property owners to complete mitigation actions associated with a home hazard assessment.

**Partners:** FirstBank, Basalt and Rural FPD, Town of Basalt, Colorado State Forest Service

**Potential Funding:** FirstBank grant funding, Colorado State Forest Service grant funding, BLM grant funding

**Cost Estimate:** \$40,000 in FYI 2019

**Benefits:** (1) Defensible Space: reduce the risk of home ignition during a wildfire by altering the fuel loading and distribution immediately surrounding a home and driveway; (2) Landscape Treatments: the potential to change wildfire behavior, at a larger scale, such that suppression resources can be more effectively utilized during wildfire management activities; (3) Home Ignition Zone Hazard Reduction – reduce the risk of home ignition during a wildfire by “hardening” the home from ember exposure;

**Timeline:** Ongoing, implementation FY 2019

**Priority:** 5

**Jurisdiction:** Eagle County

**Mitigation Action/ Project Title:** Wildfire - REALFire Program

**Background/ Issue:** Wildfire - REALFire is a voluntary property assessment program being piloted in Eagle County. The REALFire program helps residents identify specific actions they can take on their property to reduce wildfire hazards. The program was inspired by REALTORS® engaging with residents on wildfire safety and education

**Ideas for Integration:** The REALFire® program is jointly administered by Eagle County and Vail Board of REALTORS®, and also utilizes the professional expertise and assessors from local fire departments and districts.

**Partners:** Vail Board of Realtors, Fire Protection Districts

**Potential Funding:** Funded by grants and EC general fund (through staff program admin)

**Cost Estimate:** TBD

**Benefits:** Program Benefits: Joining the REALFire® program provides residents with many benefits such as an in-depth, on-site assessment conducted by experienced fire professionals; an opportunity for property owners to identify hazards unique to their property; a detailed follow up report with mitigation actions to measurably reduce wildfire risk; and an opportunity to earn a REALFire® certificate, which could be used to enhance real estate transactions or shared with local insurance providers.

**Timeline:** Ongoing

**Priority:** 5

**Jurisdiction:** Town of Avon

**Mitigation Action/Project Title:** Wildfire - Wildridge Wildfire Mitigation

**Background/Issue:** Wildfire - Conduct Hazardous Fuels Reduction around an 800 unit subdivision. Hazardous fuels reduction is at the community level and extends up to two miles beyond the defensible space perimeters of the individual structures. Potential combination project- defensible space around structures and hazardous fuels reduction around and within the subdivision.

**Ideas for Integration:** Work with Eagle River Fire Protection District (ERFPD)

**Partners:** Eagle River Fire Protection District

**Potential Funding:** Budget

**Cost Estimate:** TBD

**Benefits:** Create a defensible space around a 800 unit subdivision

**Timeline:** TBD

**Priority:** 1

**Jurisdiction:** Town of Basalt

**Mitigation Action/Project Title:** Flooding - Implement flood conveyance improvements

**Background/Issue:** Monitor mudflow impacts on Two Rivers Rd. and prepare alert plan for Ruedi Reservoir

**Ideas for Integration:** Public Works working with Basalt & Rural Fire Protection District (BRFPD)

**Partners:** Basalt & Rural Fire Protection District (BRFPD)

**Potential Funding:** TBD

**Cost Estimate:** TBD

**Benefits:** Develop/ implement system for monitoring mudflows and mud flow impact to infrastructure in Two Rivers Road area

**Timeline:** TBD

**Priority:** 1

**Jurisdiction:** Town of Eagle

**Mitigation Action/Project Title:** Flooding - Secondary Water Treatment Plant in Eagle

**Background/Issue:** Eagle currently only has one water treatment plant. Should a natural disaster, such as flooding, occur, the town would have no back-up plan for water treatment. The town is developing plans for construction of a second water treatment plant to address concerns of the current plant located along the Eagle River.

**Ideas for Integration:** The new plant will be incorporated in the current distribution system and will utilize water rights on the Eagle River

**Partners:** CWRPDA, SRF, MWH, SGM

**Potential Funding:** SRF, CWRPDA

**Cost Estimate:** \$27,000,000

**Benefits:** Redundant water supplies, manage growth

**Timeline:** 2021

**Priority:** 1

**Jurisdiction:** Town of Gypsum

**Mitigation Action/Project Title:** Flood - Gypsum Creek Flood Mapping

**Background/Issue:** The FIRM and NFIP Map for Gypsum Creek is inaccurate

**Ideas for Integration:** A new hydrologic study has been completed in partnership with a land development project have received CLOMR from FEMA. Need to complete map revision.

**Partners:** Villas at Cotton Ranch

**Potential Funding:** Budgeted for 2019

**Cost Estimate:** \$24,000

**Benefits:** Accurate flood risk assessment for future construction and savings to owners of existing structures from the elimination of unnecessary flood insurance .

**Timeline:** 2019

**Priority:** 1

**Jurisdiction:** Town of Minturn

**Mitigation Action/Project Title:** Flood - Secondary Water Source in Minturn

**Background/Issue:** Minturn currently only has one water source for servicing municipal water. Should a natural disaster, such as flooding, occur and limit or contaminate this source, Minturn would have no back-up plan for water service.

**Ideas for Integration:** Secondary water source options being considered are a diversion on the Eagle River or an "interconnect" for the bulk purchasing of water from ERWSD

**Partners:** Possibly ERWSD, DOLA if grants are needed

**Potential Funding:** Enterprise funds, grants, bonding

**Cost Estimate:** \$4M - \$15M

**Benefits:** Consistent water service to community

**Timeline:** Present to 5 years depending on option chosen

**Priority:** 1

**Jurisdiction:** Town of Red Cliff

**Mitigation Action/Project Title:** Landslide - Rock Fall Mitigation in Red Cliff

**Background/Issue:** High Street at the entrance to the Town of Red Cliff (Hwy 24) is one of two entrance/exits to the Town. The second entrance does not allow any conveyances over 9.7 tons. Leaving the High Street entrance the only one that will allow fire engines. This area has regular rockfall and could potentially cut off our town. An extreme event would also roll/bounce below to the bridge for the only other entrance.

**Ideas for Integration:** Work with engineers to help retain the rock and/or scale the rock face.

**Partners:** Red Cliff, Eagle County, CDOT

**Potential Funding:** Partner agencies

**Cost Estimate:** TBD

**Benefits:** Ability to safely enter and leave Red Cliff

**Timeline:** TBD

**Priority:** 2

**Jurisdiction:** Town of Vail

**Mitigation Action/Project Title:** Flooding - Sundial Floodplain Restoration

**Background/Issue:** This project seeks to reconnect a disconnected section of floodplain to alleviate flood stress and erosive pressure on adjacent and downstream properties.

**Partners:** Eagle River Watershed Council, Sundial HOA, Colorado Water Conservation Board

**Potential Funding:** Eagle River Watershed Council, Town of Vail, Sundial HOA, Colorado Water Conservation Board, FEMA Flood Mitigation Assistance Grant

**Cost Estimate:** \$146,000

**Timeline:** 2020

**Priority:** 4

**Jurisdiction:** Town of Vail

**Mitigation Action/Project Title:** Flooding - Gore Creek Dowd Junction Stabilization Project

**Background/Issue:** Gore Creek runs along the Gore Valley Trail within Dowd Junction (I-70 MM 172) within a 15' deep incised narrow channel that has a boulder wall and Gore Valley Trail along the north bank and a rockery slope and Bellflower Drive along the south bank. The boulder wall has failed numerous times due to scour during spring run off causing failures of the Gore Valley Trail and exposing a 24" sanitary sewer main line that runs from Vail to Avon. The Town of Vail and Eagle River Water and Sanitation District would like to re-stabilize this section of the river to protect the Gore Valley Trail and the sanitary sewer main.

**Ideas for Integration:** Both the Town of Vail and ERWSD have integrated this into a future capital maintenance project, once fully funded.

**Partners:** Town of Vail, Eagle River Water and Sanitation District, ECO Trails

**Potential Funding:** Town of Vail, Eagle River Water and Sanitation District Budgets & ECO Trails Grant

**Cost Estimate:** \$1.3 Million

**Benefits:** Total Failure of the retaining wall will cause -the failure of the Gore Valley Trail, the only pedestrian connection into Vail from the west, the potential collapse of the 24" sanitary sewer main from Vail, causing the discharge of sewage into Gore Creek, the potential further erosion to the south bank and causing damage to Bellflower road and the creek adjacent home(s) and the potential destabilization of the existing Interstate 70 slope which lies above the Gore Valley Trail

**Timeline:** Fall 2019 or 2020

**Priority:** 1

**Jurisdiction:** Town of Vail

**Mitigation Action/Project Title:** Wildfire - West Vail Hazardous Fuels Reduction

**Background/Issue:** Substantial accumulations of hazardous fuels exist on a number of private and government owned properties in West Vail. These fuels if ignited during a wildfire would cause significant control issues and may lead to substantial structure loss.

**Ideas for Integration:** Opportunities exist to develop partnerships between Eagle County, Town of Vail and private property owners to further develop cross boundary treatment aimed at reducing community risk. Substantial hazardous fuels work has been completed in the West Vail area and these projects will tie into existing treatment decreasing overall community risk.

**Partners:** Town of Vail, Vail Fire and Emergency Services, Eagle County, private property owners

**Potential Funding:** Grants, private funding, Town of Vail

**Cost Estimate:** \$20,000

**Benefits:** Project could prevent the potential loss of high value real estate in excess of 100 times the implementation costs.

**Timeline:** It is anticipated a project covering 10 to 15 acres would be accomplished in 3 to 5 years

**Priority:** 3

**Jurisdiction:** Town of Vail

**Mitigation Action/Project Title:** Wildfire - Town of Vail Combustible Roof Replacement

**Background/Issue:** Due to legacy building codes many structures within the Town of Vail have a highly flammable roof covering of cedar shakes. In 2007 Town Council placed a ban on new combustible roof coverings and over time the problem will diminish in scope. In 2016 it was estimated that over 600 structures had wood roof coverings. Since that time an average of 25 buildings per year have replaced their wood roofs with a class A rated roof covering. At this rate it will take 24 years for all the roofs to be replaced with ignition resistant roof coverings.

**Ideas for Integration:** The Town could partner with private property owners to provide incentives to replace the roof prior to the roofs end of life.

**Partners:** Town of Vail, Vail Fire and Emergency Services, Eagle County, private property owners

**Potential Funding:** Grants

**Cost Estimate:** \$750,000 to \$1,000,000 per 10 buildings

**Benefits:** Project would significantly reduce the risk of the individual building catching fire during a wildfire. This may also break the chain of a potential urban conflagration within the community.

**Timeline:** Project would be completed as funding allowed over the next 5 to 10 years

**Priority:** 5

**Jurisdiction:** Beaver Creek Metro District

**Mitigation Action/ Project Title:** Wildfire - Beaver Creek Wildfire Mitigation

**Background/ Issue:** Need to improve forest health to mitigate future wildfires in surrounding areas

**Ideas for Integration:** Utilize anchor point plan to mitigate wildfire in Beaver Creek Metro District

**Partners:** Vail Resorts, BGMD, AVA

**Potential Funding:** TBD

**Cost Estimate:** TBD

**Timeline:** 5 year plan

**Priority:** 3

**Jurisdiction:** Eagle-Vail Metro District

**Mitigation Action/ Project Title:** Flooding - Stone Creek Restoration Project

**Background/ Issue:** Creek has deteriorated over the years and is not sustainable

**Ideas for Integration:** Improve water quality, stream flow, bank stabilization, and improve wildlife/fish habitat

**Partners:** EWRS, ERWC, EVPOA, CPW, Eagle CO Govt, ECSD

**Potential Funding:** EVPOA, GOCO Grant, EVMD,

**Cost Estimate:** \$600,000

**Benefits:** Create a healthy self sustaining stream corridor that benefits the entire Eagle River Watershed

**Timeline:** 10 year project with phase 1 starting in 2019

**Priority:** 1

**Jurisdiction:** Eagle River Fire Protection District

**Mitigation Action/ Project Title:** Wildfire - Wildridge Wildfire Mitigation

**Background/ Issue:** The neighborhood of Wildridge has been identified as at high risk for wildland fire. The ERFPD has conducted a Community Wildfire Assessment and identified focus areas for improvement.

**Ideas for Integration:** Mitigation along main access and evacuation route to Wildridge. Maintaining vegetation to decrease fire ignition from roadway that could travel up to Wildridge and Wildwood area.

- Limited private property areas do not allow for some homeowners to create sufficient defensible space or extended defensible space. Structures located on steep slopes with open areas require defensible space to be extended by 1 ½ times the normal requirement of 30 feet for grass areas, 100 feet for medium size vegetation, and 200 feet, if allowable, for large vegetation. Must be maintained during summer and fall. Areas proposed are detailed in pictures and on GIS web application.

- Work with utility company to mitigate areas around power poles.

- Avon PD is continuing to work on secondary evacuation route access and improvement

- Individual home defensible space is crucial. Specifically for homes located on steep terrain (West and South aspect is a higher risk), ridge tops, and around drainages. Helping to extend these defensible zones would greatly help reduce wildfire risk.

**Partners:** Town of Avon, Wildridge Homeowners, Eagle River Fire Protection District, Xcel Energy, USFS

**Potential Funding:** Town of Avon, USFS, grants

**Cost Estimate:** TBD, depending on scope

**Benefits:** Mitigate potential loss of homes and critical infrastructure, particularly for areas with West and South aspects on steep terrain, ridge tops and around drainages.

**Timeline:** 2019 and 2020 for immediate, annual for long term

**Priority:** 1

**Jurisdiction:** Gypsum Fire Protection District

**Mitigation Action/Project Title:** Wildfire - GFPD Power Resilience

**Background/Issue:** The Town has experienced several power outages and the power grid was compromised during the Lake Christine Fire and brought the issue to light.

**Partners:** Town of Gypsum, Eagle County

**Potential Funding:** Grants

**Cost Estimate:** \$40,000

**Benefits:** Continuity of operations and services to the community for critical facilities that provide power to all major population areas in the county.

**Timeline:** 1-3 years

**Priority:** 2

**Jurisdiction:** Gypsum Fire Protection District  
**Mitigation Action/Project Title:** Wildfire - Suppression water source availability for wildfire mitigation  
**Background/Issue:** Numerous water sources exist but are not cataloged for response to wildfire and rural structure fires  
**Partners:** Eagle County, community associations  
**Potential Funding:** Grants  
**Cost Estimate:** \$10,000  
**Benefits:** Pre-identified water sources with authorizations for wildfire mitigation  
**Timeline:** 3 years  
**Priority:** 4

**Jurisdiction:** Gypsum Fire Protection District  
**Mitigation Action/Project Title:** Wildfire - Purchase of a Type 3 Urban Interface Engine  
**Background/Issue:** The department currently does not have a type 3 engine with the dual ability to respond to structure fires and wildland fires in the jurisdiction  
**Partners:** TBD  
**Potential Funding:** TBD  
**Cost Estimate:** \$450,000  
**Benefits:** improve response to wildland fires  
**Timeline:** 1-2 years  
**Priority:** 4

**Jurisdiction:** Greater Eagle Fire Protection District  
**Mitigation Action/Project Title:** Wildfire - Highlands Mastication/Wildfire  
**Background/Issue:** To mow/ masticate around the Highlands neighborhood of Eagle Ranch. This will create a fire break that is not harsh on the eye. With this fuel break, firefighters will have a zone where they will be able to fight fire or anchor in to fire operations.  
**Partners:** Town of Eagle, Eagle Ranch HOA  
**Potential Funding:** Current funding of \$2500  
**Cost Estimate:** \$6,000  
**Benefits:** With the completion of this project we estimate over \$100 million could be saved from a wildfire. Also we hope that mud-slide and floods would greatly be reduced due to the fact that the mow line would be above some of the drainage.  
**Timeline:** By the end of 2019  
**Priority:** 2

## PLAN ADOPTION, IMPLEMENTATION AND MAINTENANCE

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### Plan Adoption

This plan was developed in accordance with current state and federal rules and regulations governing local hazard mitigation plans, including Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000 (P.L. 106-390); FEMA's Interim Final Rule published in the Federal Register on February 26, 2002 at 44 CFR Part 201.

Copies of the formal adoption of this plan for all participating jurisdictions can be found in [Appendix I: Adoption Documentation](#). With formal adoption of this plan, the jurisdictions will be requested to identify positions within their organization to meet on an annual basis to monitor, evaluate, and provide updates for this plan. The participating jurisdictions and agencies, led by Eagle County Emergency Management, will act as a forum for hazard mitigation issues, provide hazard mitigation ideas and activities to all jurisdictions, recommended actions and explore opportunities for funding for high priority projects. The authorities for participating jurisdictions have adopted the plan effective as of the dates shown in the following table:

Jurisdiction	Adopting Authority	Adoption Date
Eagle County	Board of County Commissioners	2/19/2019
Town of Avon	Avon Town Council	12/11/2018
Town of Eagle	Eagle Town Council	03/26/2019
Town of Gypsum	Gypsum Town Council	2/12/2019
Town of Minturn	Minturn Town Council	1/2/2019
Town of Red Cliff	Red Cliff Town Board of Trustees	11/20/2018
Town of Vail	Vail Town Council	3/5/2019
Gypsum Fire Protection District	Gypsum Fire Protection District Board of Directors	2/26/2019
Greater Eagle Fire Protection District	Greater Eagle Fire Protection District Board of Directors	2/20/2019
Eagle River Fire Protection District	Eagle River Fire Protection District Board of Directors	2/21/2019
EagleVail Metropolitan District	EagleVail Metropolitan District Board of Directors	12/11/2018
Beaver Creek Metropolitan District	Beaver Creek Metropolitan District Board of Directors	2/27/2019

### Plan Maintenance and Evaluation

Implementation and maintenance are critical to the success of any mitigation plan. Mitigation is most successful when it is incorporated in the day to day functions and priorities of government and in land use and development planning. It is important to maintain a constant monitoring of funding opportunities that can be leveraged to implement some of the costlier recommended actions. Specific funding opportunities that should be monitored include; special pre- and post-disaster funds, state and federal funds, and other grant programs. While this plan makes many important recommendations, the jurisdictions will need to decide which action(s) to take first. Two factors will help with making that decision; the priority assigned to the recommendations and funding availability. Low or no-cost actions most easily demonstrate progress toward successful implementation of the plan. Eagle County and the participating jurisdictions will review the plan at least annually and determine whether any significant changes have occurred requiring modifications to proposed mitigation actions and the planning document. Public input is important to the development and maintenance of the plan, and the county will continue to seek input from residents through the use of online surveys. The Eagle County Emergency Manager will facilitate the HMP planning committee's annual hazard mitigation plan review to assess progress and identify opportunities for implementing recommended actions.



## APPENDIXES

### Appendix A: Eagle County Hazard Mitigation Planning Team

Name	Position	Jurisdiction/Department	Email Address
Jeff Shroll	County Manager	Eagle County Administration	jeff.shroll@eaglecounty.us
Kelley Collier	Deputy County Manager	Eagle County Administration	kelley.collier@eaglecounty.us
Chris Lindley	Public Health Director	Eagle County Public Health & Environment	chris.lindley@eagle.county.us
Mark Chapin	County Assessor	Eagle County Assessor's Office	Mark.Chapin@eaglecounty.us
Barry Smith	Emergency Manager	Eagle County Emergency Management	barry.smith@eaglecounty.us
Dana Erpelding	Deputy Director	Eagle County Public Health & Environment	dana.erpelding@eaglecounty.us
James VanBeek	Sheriff	Eagle County	james.vanbeek@eaglecounty.us
Amy Szczesny	GIS Manager	Eagle County GIS	Amy.szczesny@eaglecounty.us
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John Harris	Director	Eagle County Road and Bridge	john.harris@eaglecounty.us,
Ben Gerdes	Director	Eagle County Community Development	ben.gerdes@eaglecounty.us
Adam Palmer	Director	Eagle County Sustainable Communities	adam.palmer@eaglecounty.us
Eric Lovgren	Wildfire Mitigation	Eagle County Sustainable Communities	Eric.Lovgren@eaglecounty.us
Kip Turner	Aviation Director	Eagle County Airport	kip.turner@eaglecounty.us
Ray Merry	Environmental Health	Eagle County Public Health & Environment	ray.merry@eaglecounty.us
Jackie Hammel	Public Health Nurse	Eagle County Public Health & Environment	jackie.hammel@eaglecounty.us
Justin Hildreth	Town Engineer	Town of Avon	Jhildreth@avon.org
Gary Padilla	Public Works Director	Town of Avon	gpadilla@avon.org
Coby Cospers	Deputy Chief of Police	Town of Avon	ccospers@avon.org
Boyd Bierbaum	Public Works Director	Town of Basalt	boyd.bierbaum@basalt.net
Ryan Mahoney	Town Manager	Town of Basalt	ryan.mahoney@basalt.net

Bryon McGinnins	Public Works Director	Town of Eagle	bryon@townofeagle.org
Jim Hancock	Town Engineer	Town of Gypsum	jim@townofgypsum.com
Jeff Shreeve	Public Works Director	Town of Gypsum	jshreeve@townofgypsum.com
Arnold Martinez	Minturn Public Works	Town of Minturn	publicworks@minturn.org
Barb Smith	Town Manager	Town of Red Cliff	manager@townofredcliff.org
Tom Kassmel	Town Engineer	Town of Vail	TKassmel@vailgov.com
Charlie Turnbull	Public Works	Town of Vail	cturnbull@vailgov.com
Greg Hall	Public Works Director	Town of Vail	ghall@vailgov.com
James Clancy	Public Safety Director	Vail Resorts	JClancy@vailresorts.com
Steven Barber	District Manager	Eagle Vail Metropolitan District	sbarber@eaglevail.org
Bill Simmons	District Manager	Beaver Creek Metropolitan District	BSimmons@beavercreekmetro.com
Matt Jones	District Manager	Arrowhead Metropolitan District	matt@rmpccpa.com
Ken Marchetti	District Manager	Edwards Metropolitan District	Ken@rmpccpa.com
Rachel Oys	District Manager	Cordillera Metropolitan District	roys@cordillerametro.org
Linn Brooks	District Manager	Eagle River Water and Sanitation District	lbrooks@erwsd.org
Chris Montera	Chief Executive Officer	Eagle County Paramedic Services	cmontera@ecparamedics.com
Scott Thompson	Fire Chief	Basalt and Rural Fire Protection District	sthompson@basaltfire.org
Karl Bauer	Fire Chief	Eagle River Fire Protection District	kbauer@eagleriverfire.org
Tracy LeClair	Community Risk Manager	Eagle River Fire Protection District	tleclair@eagleriverfire.org
Doug Cupp	Fire Chief	Greater Eagle Fire Protection District	dcupp@gefpd.org
Justin Kirkland	Fire Chief	Gypsum Fire Protection District	Justin@gypsumfd.com
Brita Horn	Fire Chief	Rock Creek Volunteer Fire Department	chiefhorn25@gmail.com
MarK Novak	Fire Chief	Vail Fire and Emergency Services	mnovak@vailgov.com
Valerie MacDonald	Emergency Manager	Pitkin County	valerie.macdonald@pitkinsheriff.com
Chris Bornholdt	Emergency Manager	Garfield County	cbornholdt@garcosheriff.com

David DeMorat	Emergency Manager	Routt County	ddemorat@co.routt.co.us
Christian Hornbaker	Emergency Manager	Grand County	chornbaker@co.grand.co.us
Mike McHargue	Emergency Manager	Lake County	mikemchargue@hotmail.com
Brian Bovaird	Emergency Manager	Summit County	Brian.Bovaird@summitcountyco.gov
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Randy McIntosh	LTC Ops	Colorado Department of Transportation	Randy.mcintosh@state.co.us,
Greg Winkler	Field Staff	Colorado Department of Local Affairs	greg.winkler@state.co.us
Perry Will		Colorado Division of Parks and Wildlife	perry.will@state.co.us
Patricia Gavelda		Colorado Division of Homeland Security and Emergency Management	patricia.gavelda@state.co.us
Chuck Vale	Field Manager	Colorado Division of Homeland Security and Emergency Management	chuck.vale@state.co.us
Mark Thompson		Colorado Division of Homeland Security and Emergency Management	markw.thompson@state.co.us
Ron Cousineau		Colorado State Forest Service	Ron.Cousineau@colostate.edu
Kevin Houck	Senior Engineer	Colorado Water Conservation Board	kevin.houck@state.co.us
Paul Douglas		U.S. Bureau of Land Management	Paul@blm.gov
Karen Schroyer		U. S. Forest Service	kschroyer@fs.fed.us
Aaron Mayville		U. S. Forest Service	awmayville@fs.fed.us
Jim Pringle		National Weather Service	james.pringle@noaa.gov

## Appendix B: Public Risk Assessment Survey

A web based community survey was conducted in both English and Spanish to assess the public opinion regarding the risks present in Eagle County.

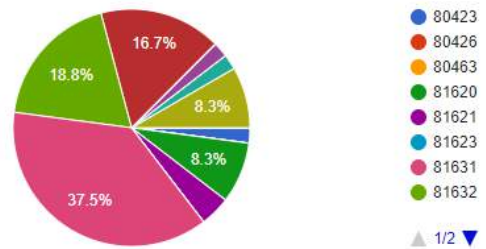


The comments and graphs highlighting the survey results are included below:

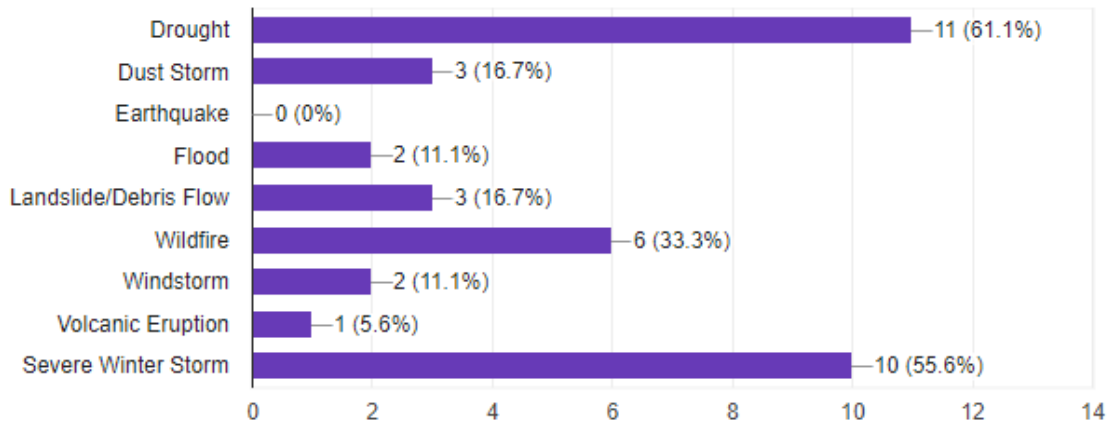
Demographic information, including age, gender, level of education, total annual household income, and zip code was collected. 37.5% of respondents live in or around the town of Eagle (81631), 18.8% of residents live in the Edwards area (81632), 16.7% live in the Gypsum or Dotsero area (81637), 8.3% live in the Vail area (81657) and 8.3% live in or around Avon (81620).

1. Zip Code of household:

48 responses

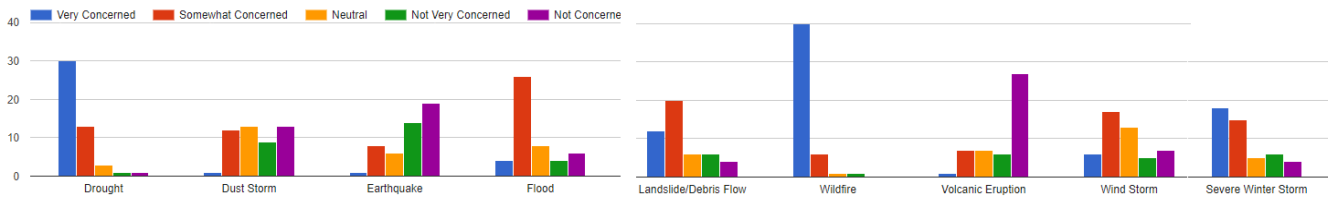


39.6% of Eagle County respondents stated that they or someone in their household has experienced a natural disaster over the past five years, and the following table outlines the types of disasters they encountered:

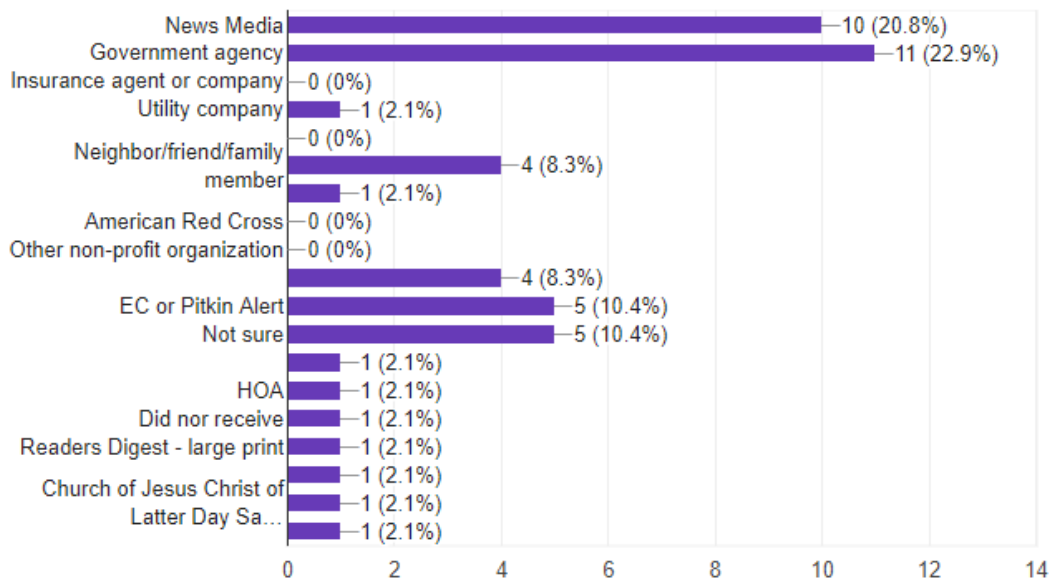


The natural disasters that raise the most concern for Eagle County residents include drought, wildfire, flooding, severe winter weather and landslides:

3. How concerned are you with the following natural disasters affecting Eagle County?



75% of respondents report that they have received information on how to keep their homes safe from natural disasters, and they cite the following sources for providing this information:



After the survey results were analyzed and used to inform planning priorities, members of the public were also encouraged to review and provide feedback on a draft of the mitigation plan before it was submitted to FEMA for approval.

[View this email in your browser](#)



## Eagle County News Release



### County seeks public input on updated Pre-Disaster Mitigation Plan draft

Nov. 20, 2018 – Following an initial comment period that took place in September this year, Eagle County Emergency Management is seeking feedback on an updated Pre-Disaster Mitigation Plan draft.

County residents are asked to review the plan at [www.eaglecounty.us/emergency](http://www.eaglecounty.us/emergency) and provide comments at [goo.gl/QuAcvo](https://goo.gl/QuAcvo). The comment form will be available until Nov. 30.

The Eagle County Pre-Disaster Mitigation Plan identifies natural and man-made hazards that are likely to impact areas of Eagle County and helps to identify measures to lessen the impacts of those hazards. The Federal Emergency Management Agency requires that this plan is updated every five years.

Contact Eagle County Emergency Management at 970-328-8818 or [emergency@eaglecounty.us](mailto:emergency@eaglecounty.us) for more information.

### Contact

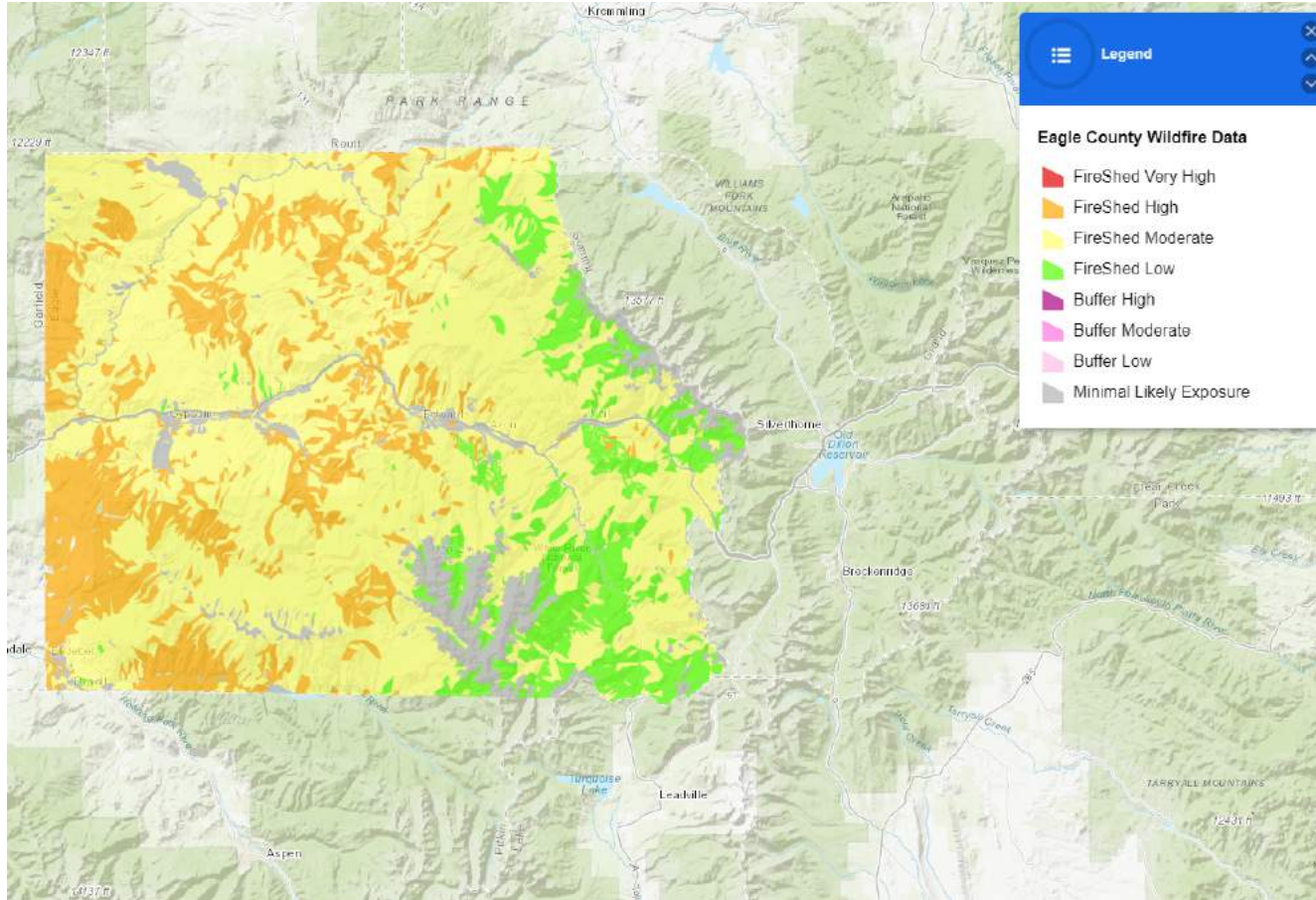
Emergency Management  
970-328-8818  
[emergency@eaglecounty.us](mailto:emergency@eaglecounty.us)

### Connect with the County

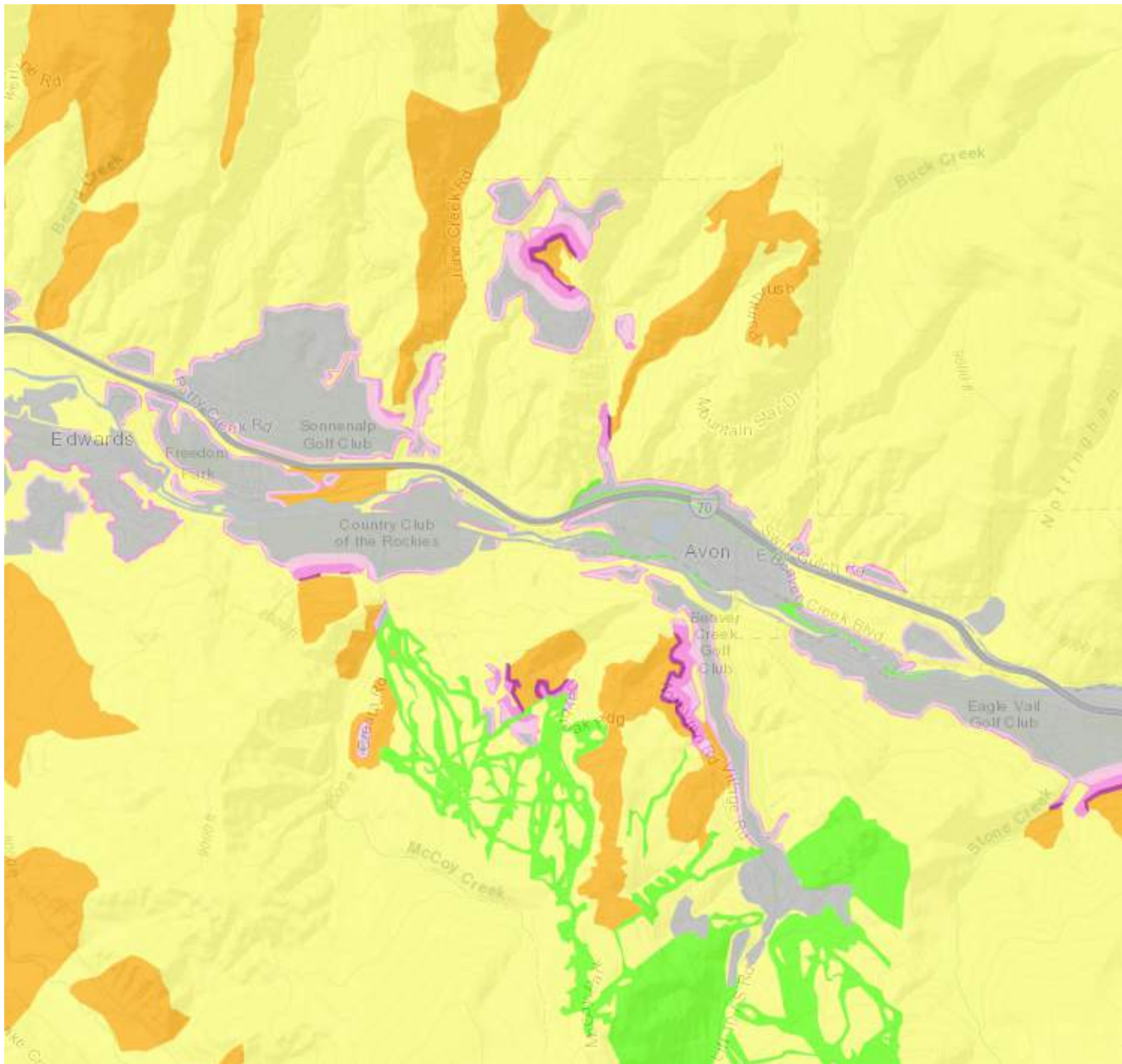
- Facebook
- Twitter
- Vimeo
- [www.eaglecounty.us](http://www.eaglecounty.us)

## Appendix C: Wildfire Hazard Area Profiles

### Eagle County

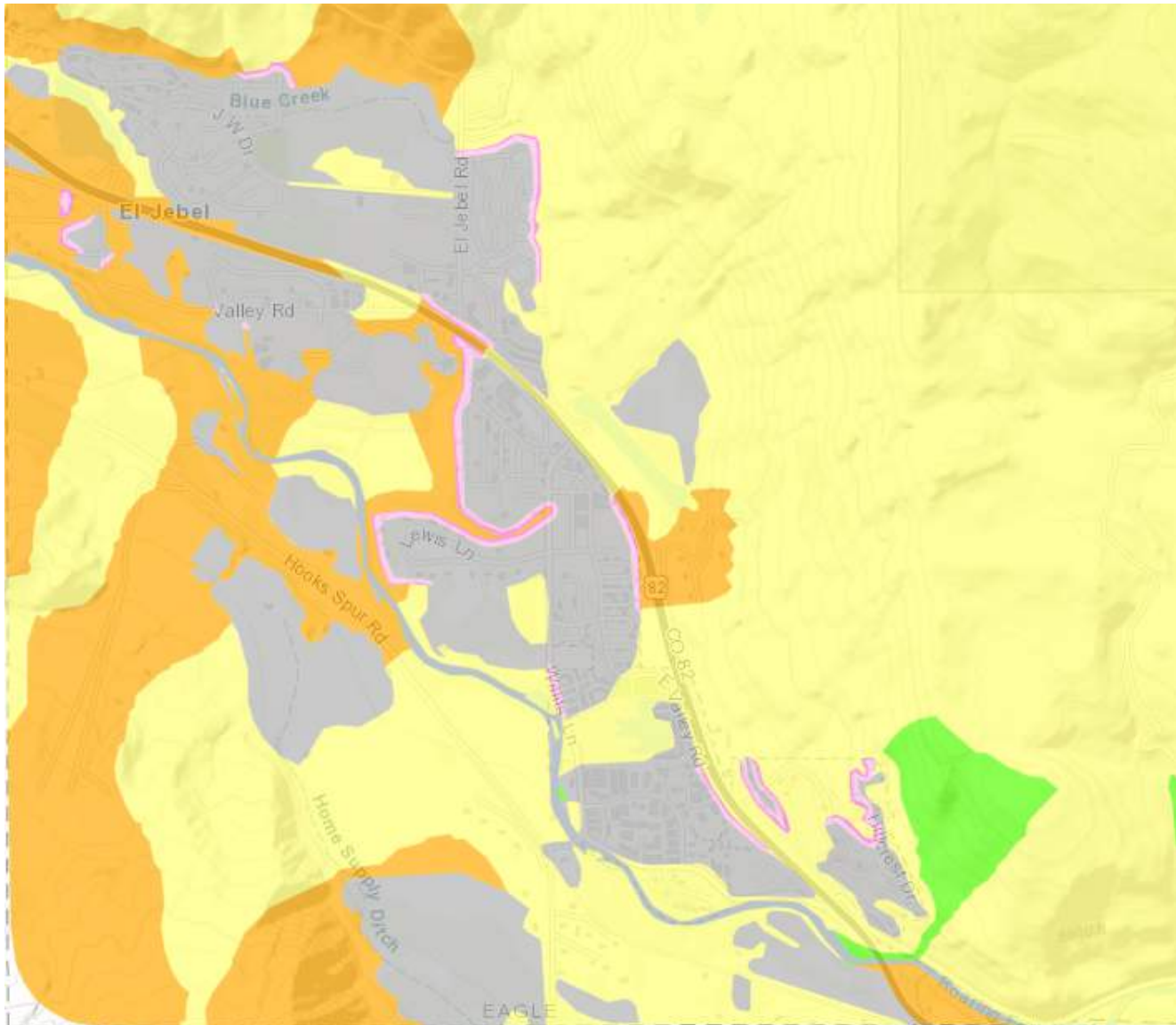


Town of Avon

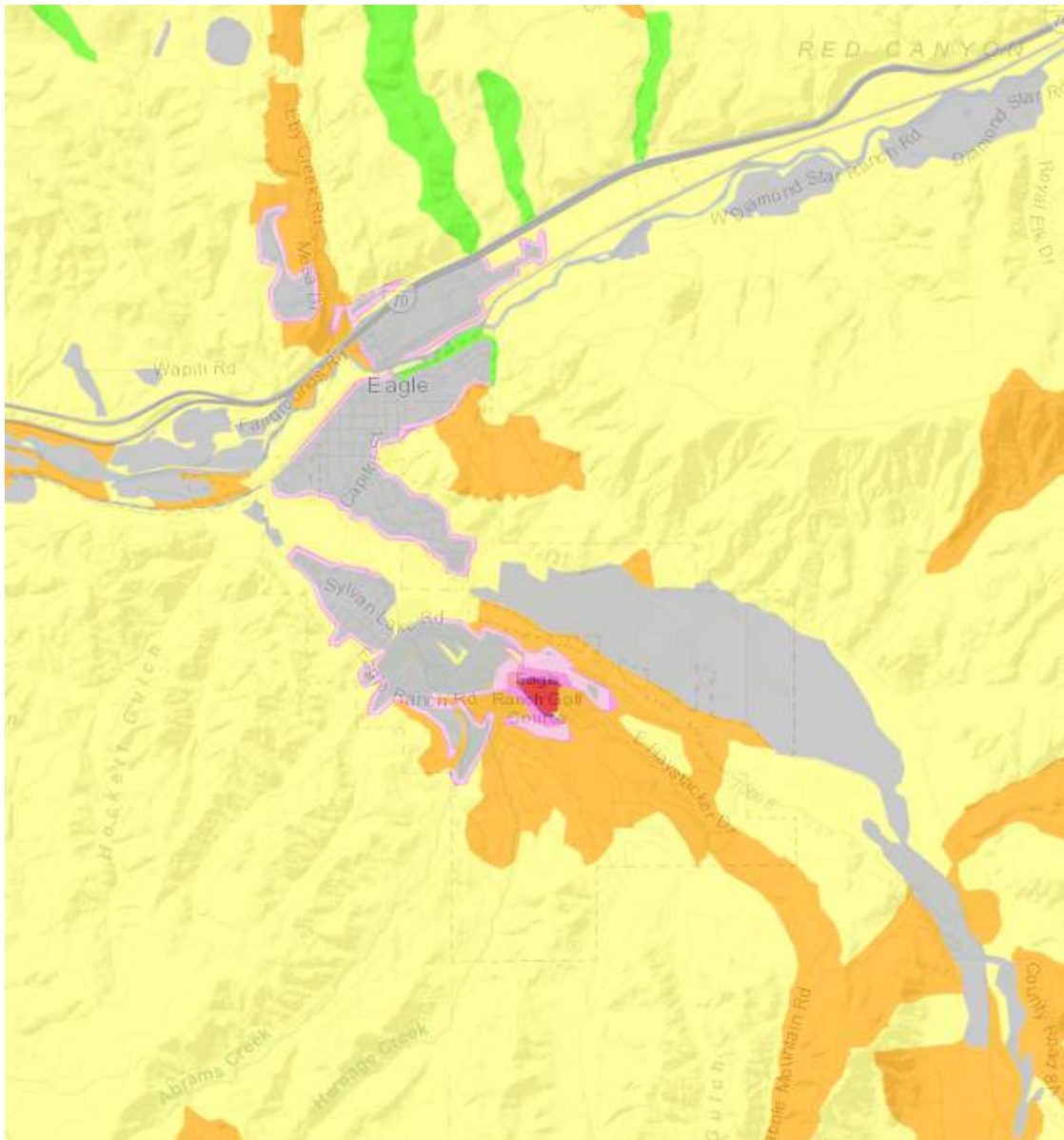




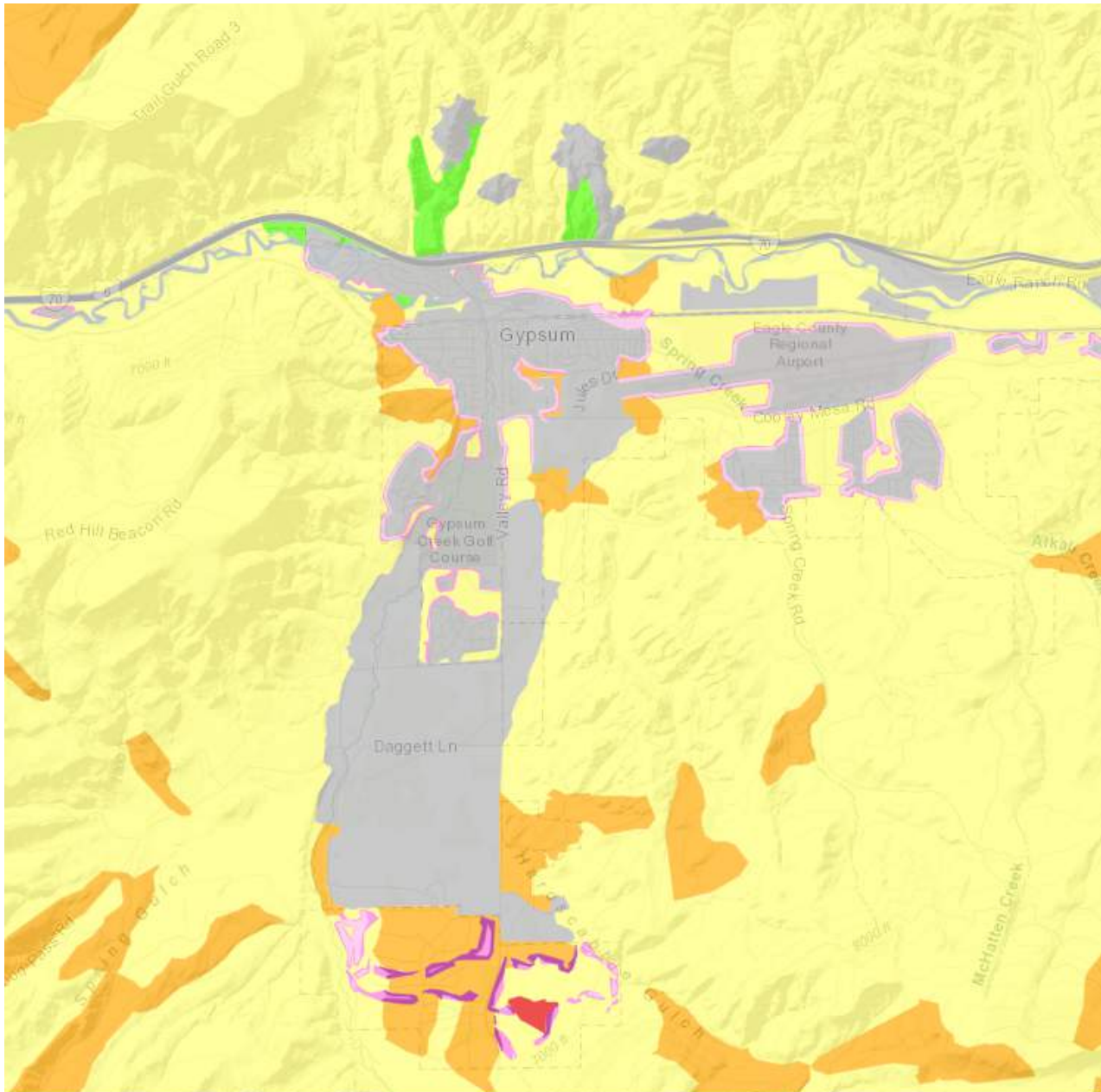
**Town of Basalt and El Jebel (unincorporated Eagle County)**



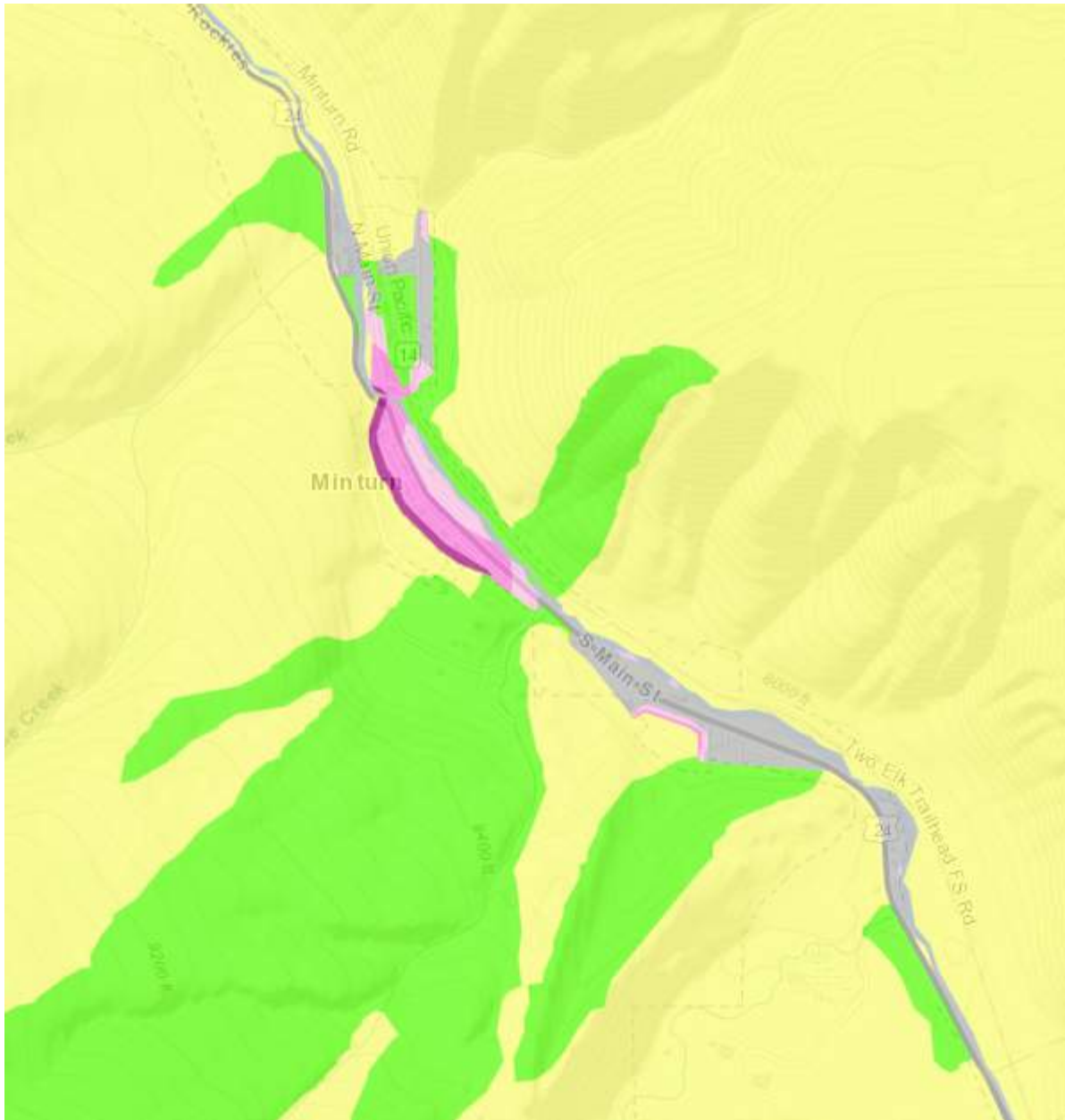
**Town of Eagle**



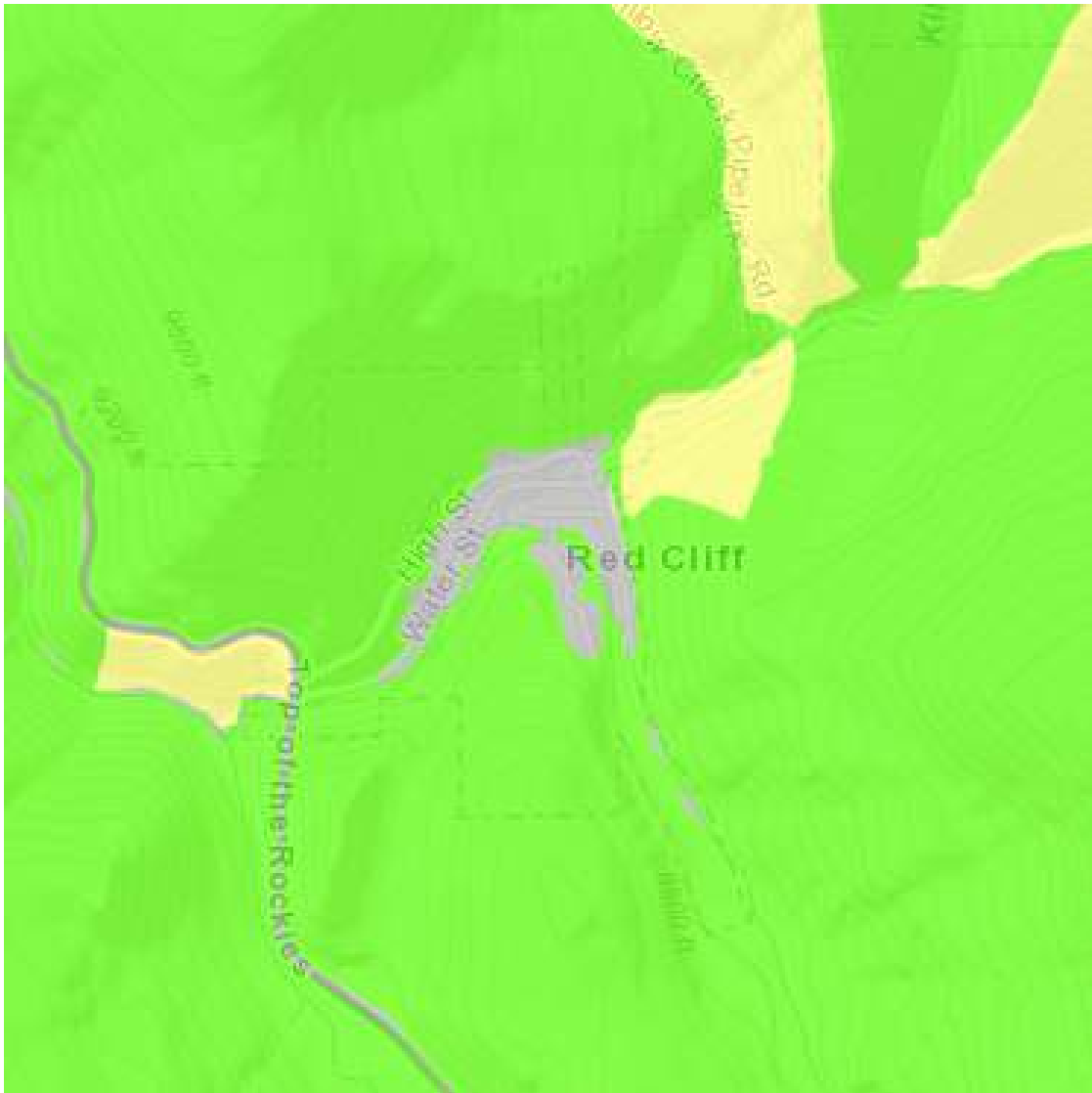
## Town of Gypsum



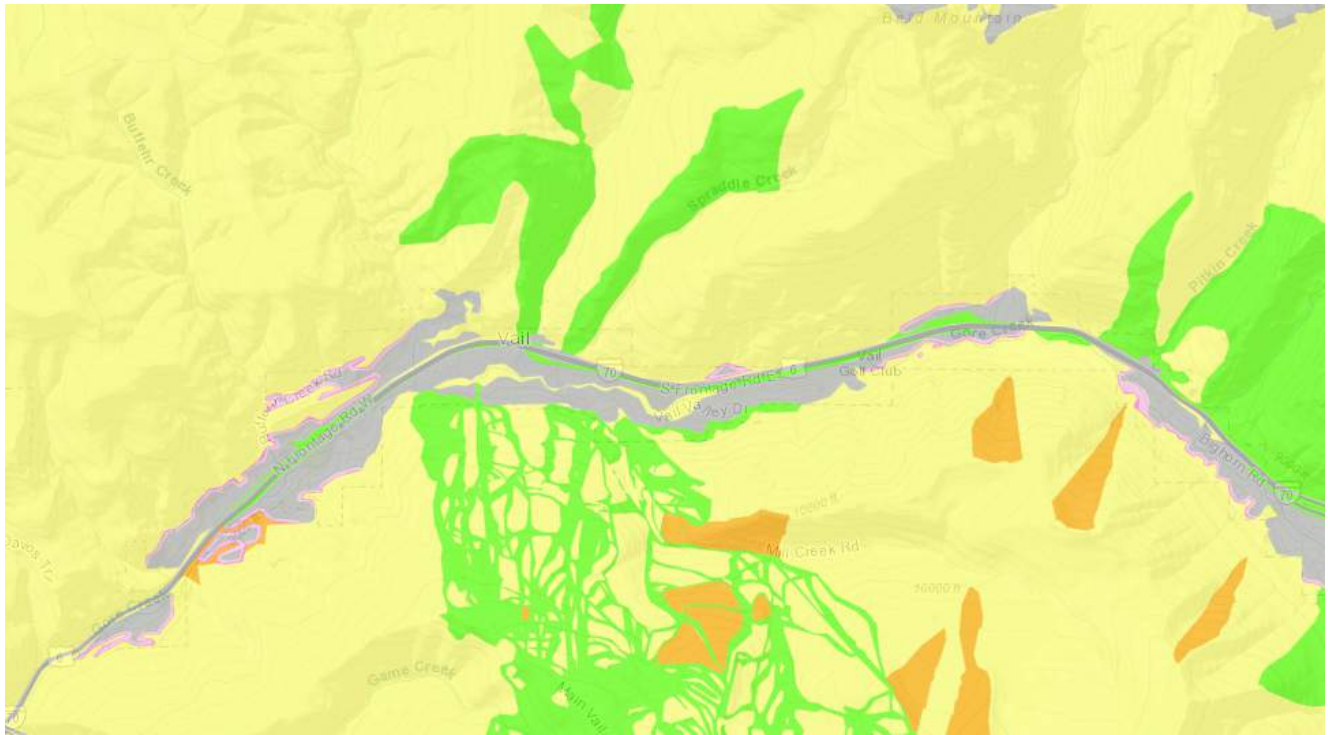
**Town of Minturn**



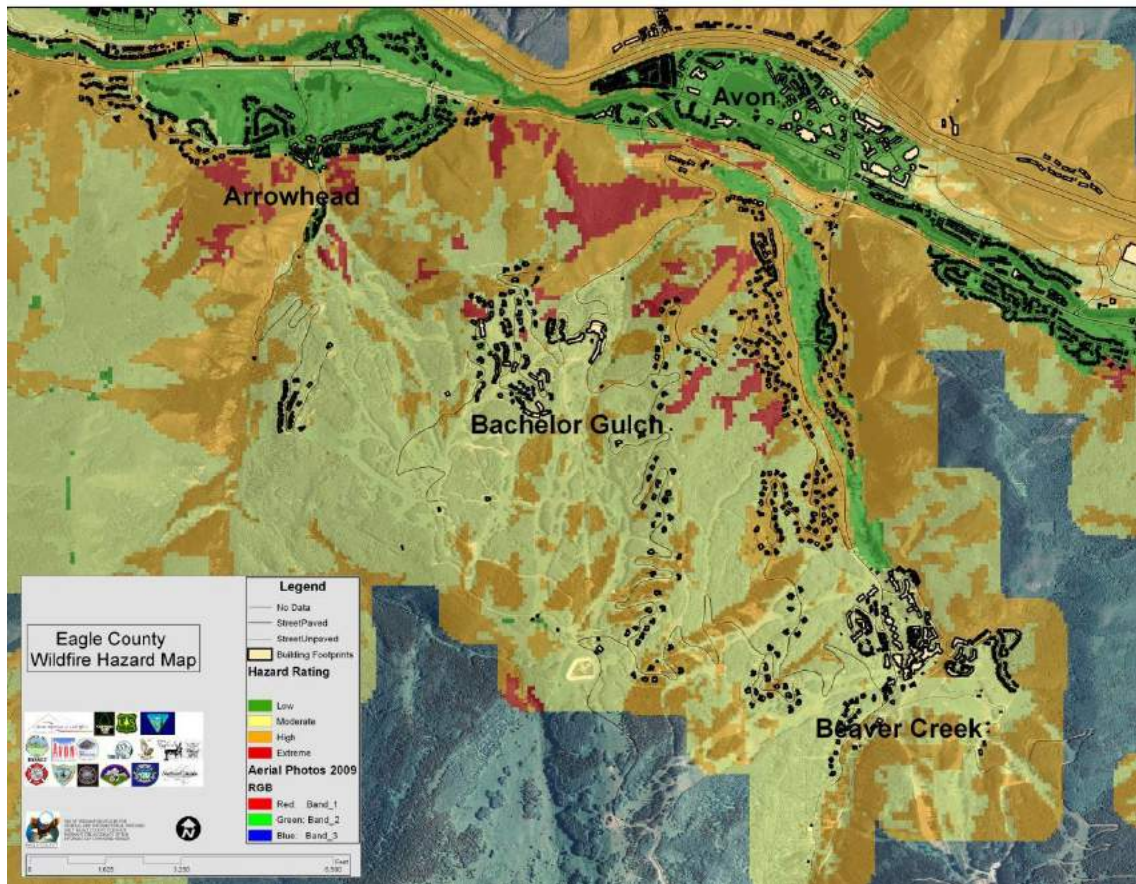
Town of Red Cliff



**Town of Vail**



## Arrowhead/Bachelor Gulch/Beaver Creek



Located south of Highway 6, between the towns of Edwards and Avon; are the gated resort communities of Arrowhead, Bachelor Gulch and Beaver Creek. The area is characterized by large second homes, and has few year-round residents. The dominant vegetation throughout these communities ranges from mature stands of quaking aspen (*Populus tremuloides*) to mixed stands of lodgepole pine (*Pinus contorta*) or Douglas fir (*Pseudotsuga menziesii*) at higher elevations; with serviceberry, sage and other shrubs at lower elevations.

### *Fire Management Objectives:*

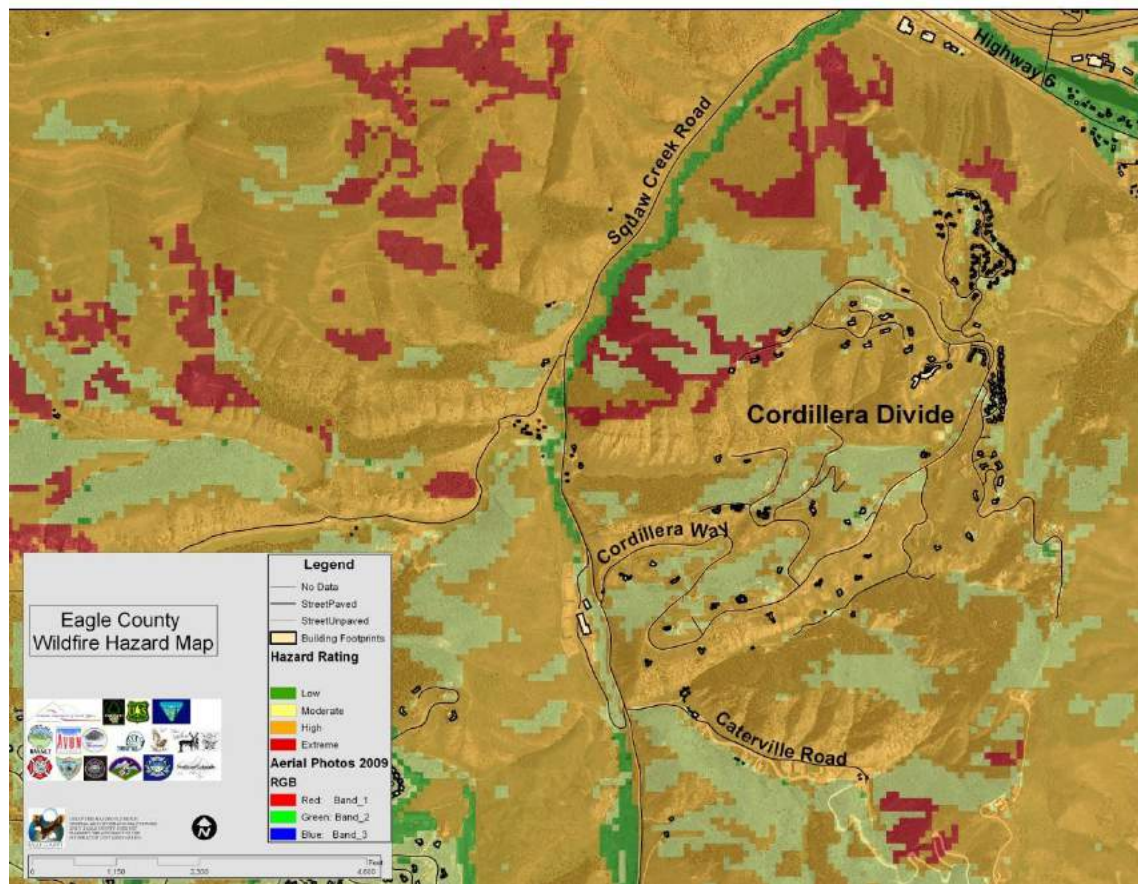
Neighborhood specific CWPP's have been developed for each of these areas. They can be viewed online at:

<http://csfs.colostate.edu/pages/documents/ArrowheadCWPP.pdf>

<http://csfs.colostate.edu/pages/documents/BachelorGulchCWPP.pdf>

<http://csfs.colostate.edu/pages/documents/BeaverCreekCWPP.pdf>

## Cordillera Divide



Cordillera is located in central Eagle County, a few miles west of Edwards, accessed by Highway 6. Cordillera is split into four residential areas: The Divide, The Ranch, The Summit, and The Valley Club. Predominant vegetation throughout the Cordillera Divide consists of quaking aspen (*Populus tremuloides*) (typically with a dense understory of serviceberry (Genus *Amelanchier*), chokecherry (*Prunus virginiana*) and other mountain shrubs), and dense stands of mixed conifers including lodgepole pine (*Pinus contorta*), subalpine fir (*Abies lasiocarpa*), Douglas-fir (*Pseudotsuga menziesii*) and Engelmann spruce (*Picea engelmannii*). Other flora that occur commonly, particularly on drier slopes, include Gambel's oak (*Quercus gambelii*), pinyon pine (*Pinus edulis*), Rocky Mountain juniper (*Juniperus scopulorum*) and various species of sagebrush (Genus *Artemesia*).

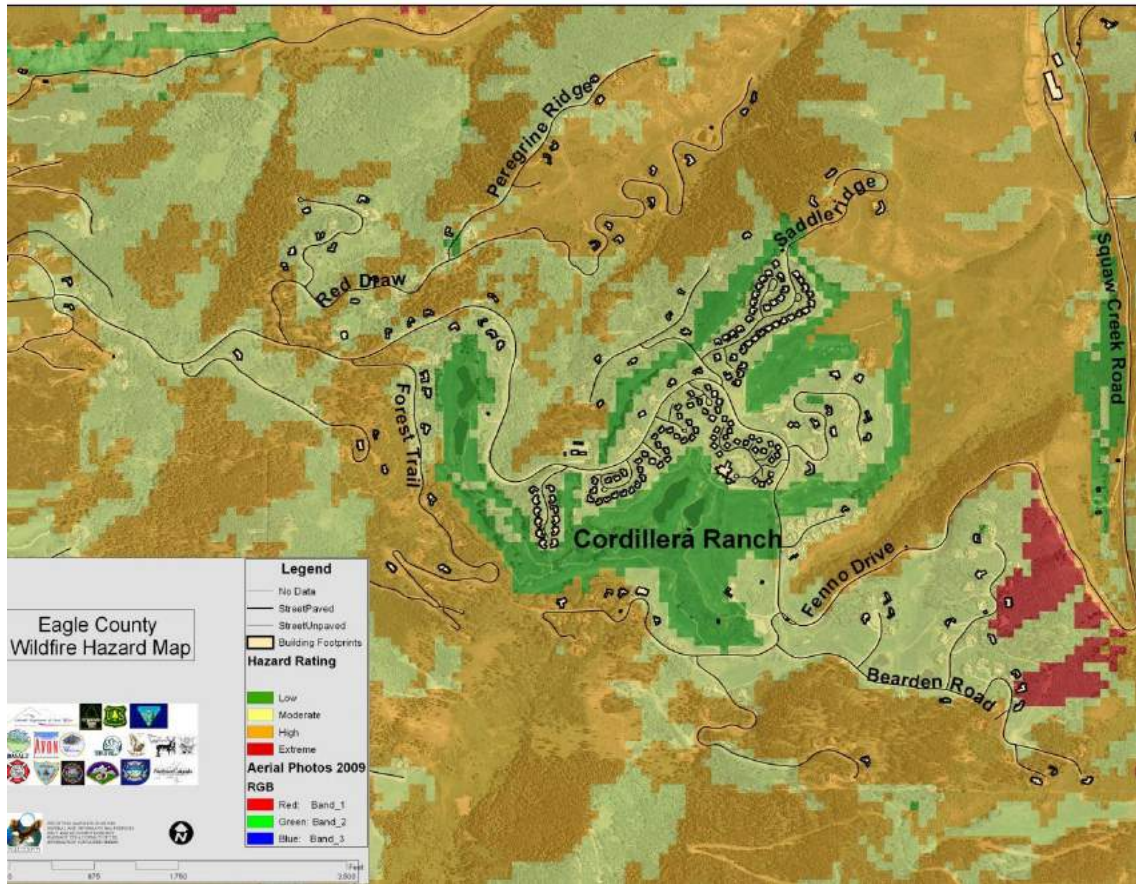
### Fire Management Objectives:

A Neighborhood specific CWPP has been developed for Cordillera. It can be viewed online at:

<http://csfs.colostate.edu/pages/documents/CordilleraCWPP.pdf>



## Cordillera - The Ranch



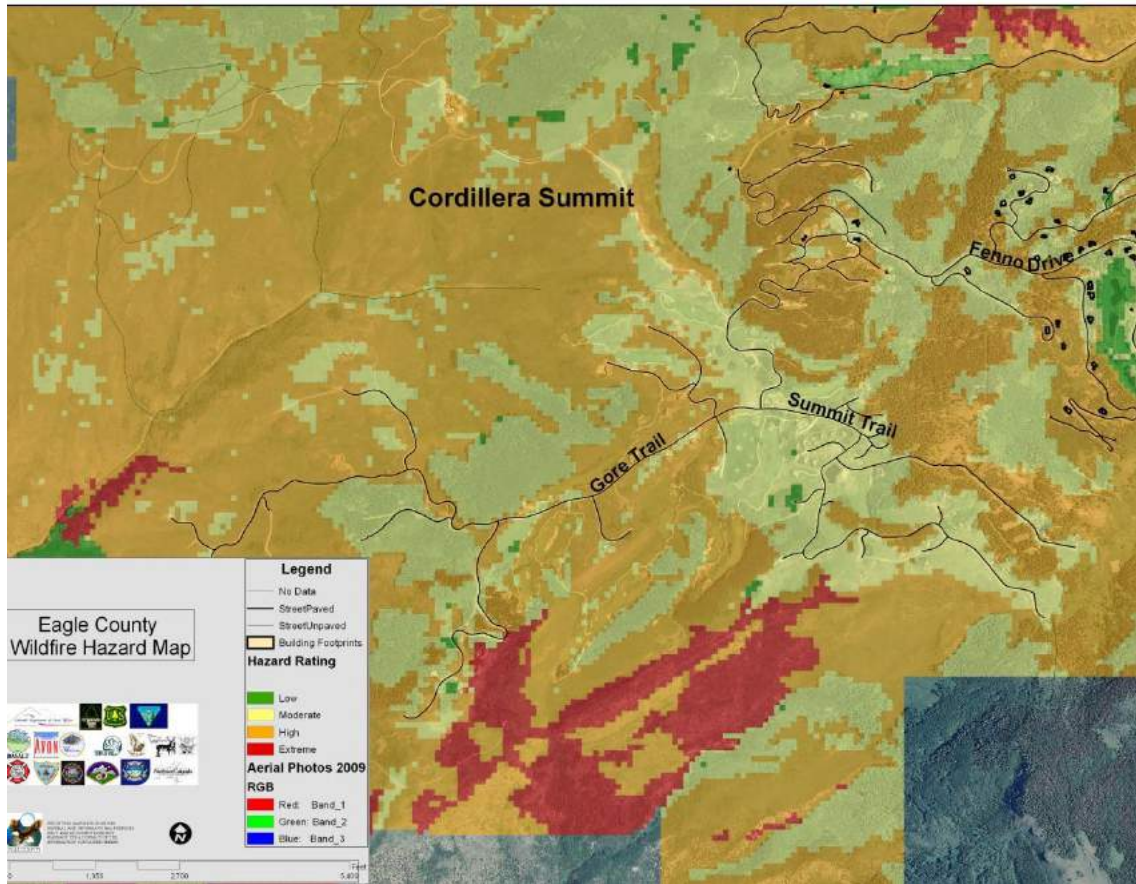
Cordillera is located in central Eagle County, a few miles west of Edwards, accessed by Highway 6. Cordillera is split into four residential areas: The Divide, The Ranch, The Summit, and The Valley Club. Predominant vegetation throughout the Cordillera Ranch consists of quaking aspen (*Populus tremuloides*) (typically with a dense understory of serviceberry (Genus *Amelanchier*), chokecherry (*Prunus virginiana*) and other mountain shrubs), and dense stands of mixed conifers including lodgepole pine (*Pinus contorta*), subalpine fir (*Abies lasiocarpa*), Douglas-fir (*Pseudotsuga menziesii*) and Engelmann spruce (*Picea engelmannii*). Other flora that occur commonly, particularly on drier slopes, include Gambel's oak (*Quercus gambelii*), pinyon pine (*Pinus edulis*), Rocky Mountain juniper (*Juniperus scopulorum*) and various species of sagebrush (Genus *Artemesia*).

### Fire Management Objectives:

A Neighborhood specific CWPP has been developed for Cordillera. It can be viewed on-line at:

<http://csfs.colostate.edu/pages/documents/CordilleraCWPP.pdf>

## Cordillera - The Summit



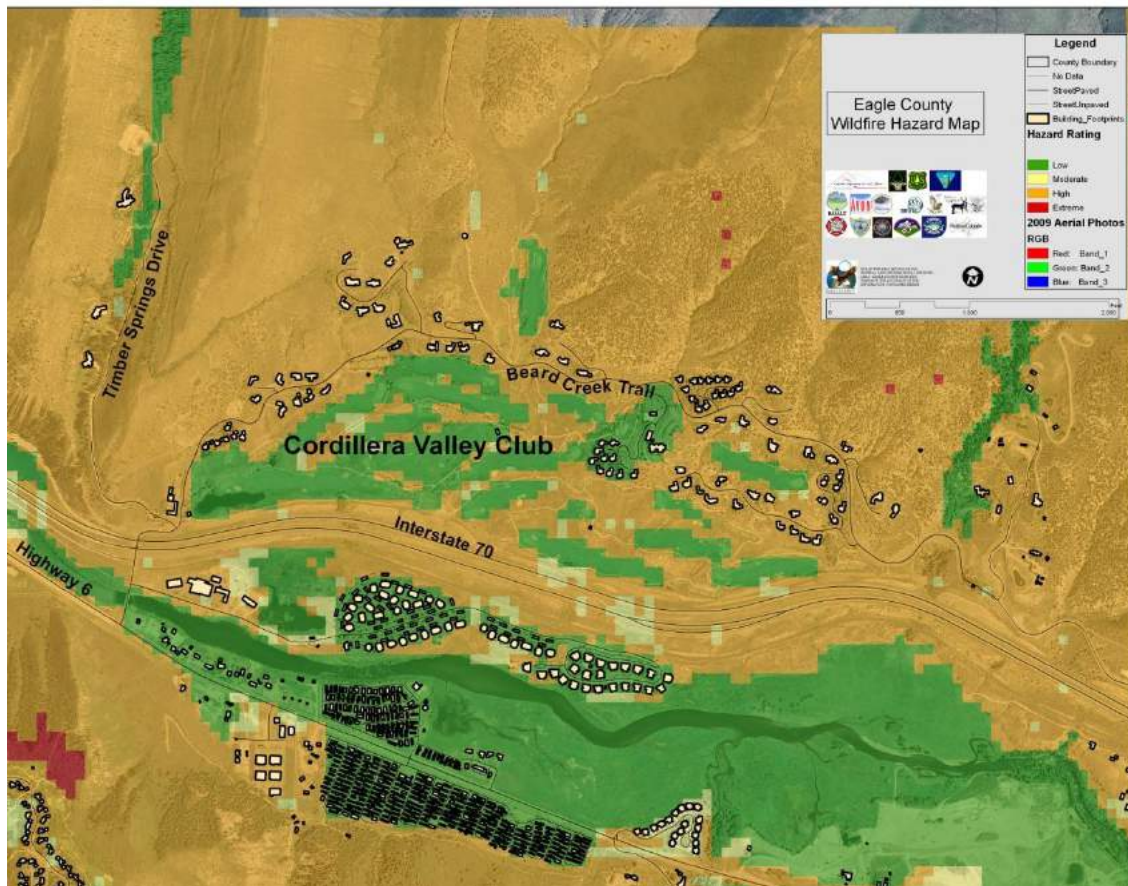
Cordillera is located in central Eagle County, a few miles west of Edwards, accessed by Highway 6. Cordillera is split into four residential areas: The Divide, The Ranch, The Summit, and The Valley Club. Predominant vegetation throughout the Cordillera Summit consists of quaking aspen (*Populus tremuloides*) (typically with a dense understory of serviceberry (Genus *Amelanchier*), chokecherry (*Prunus virginiana*) and other mountain shrubs, and dense stands of mixed conifers including lodgepole pine (*Pinus contorta*), subalpine fir (*Abies lasiocarpa*), Douglas-fir (*Pseudotsuga menziesii*) and Engelmann spruce (*Picea engelmannii*). Other flora that occur commonly, particularly on drier slopes, include Gambel's oak (*Quercus gambelii*), pinyon pine (*Pinus edulis*), Rocky Mountain juniper (*Juniperus scopulorum*) and various species of sagebrush (Genus *Artemesia*).

### *Fire Management Objectives:*

A Neighborhood specific CWPP has been developed for Cordillera. It can be viewed on-line at:

<http://csfs.colostate.edu/pages/documents/CordilleraCWPP.pdf>

## Cordillera - The Valley Club



Cordillera is located in central Eagle County, a few miles west of Edwards, accessed by Highway 6 and Beard Creek Trail. Cordillera is split into four residential areas: The Divide, The Ranch, The Summit, and The Valley Club. Predominant vegetation throughout the Cordillera Valley Club consists of Gambel's oak (*Quercus gambelii*), pinyon pine (*Pinus edulis*), Rocky Mountain juniper (*Juniperus scopulorum*) and various species of sagebrush (Genus *Artemisia*), serviceberry (Genus *Amelanchier*), chokecherry (*Prunus virginiana*) and other mountain shrubs.

### Fire Management Objectives:

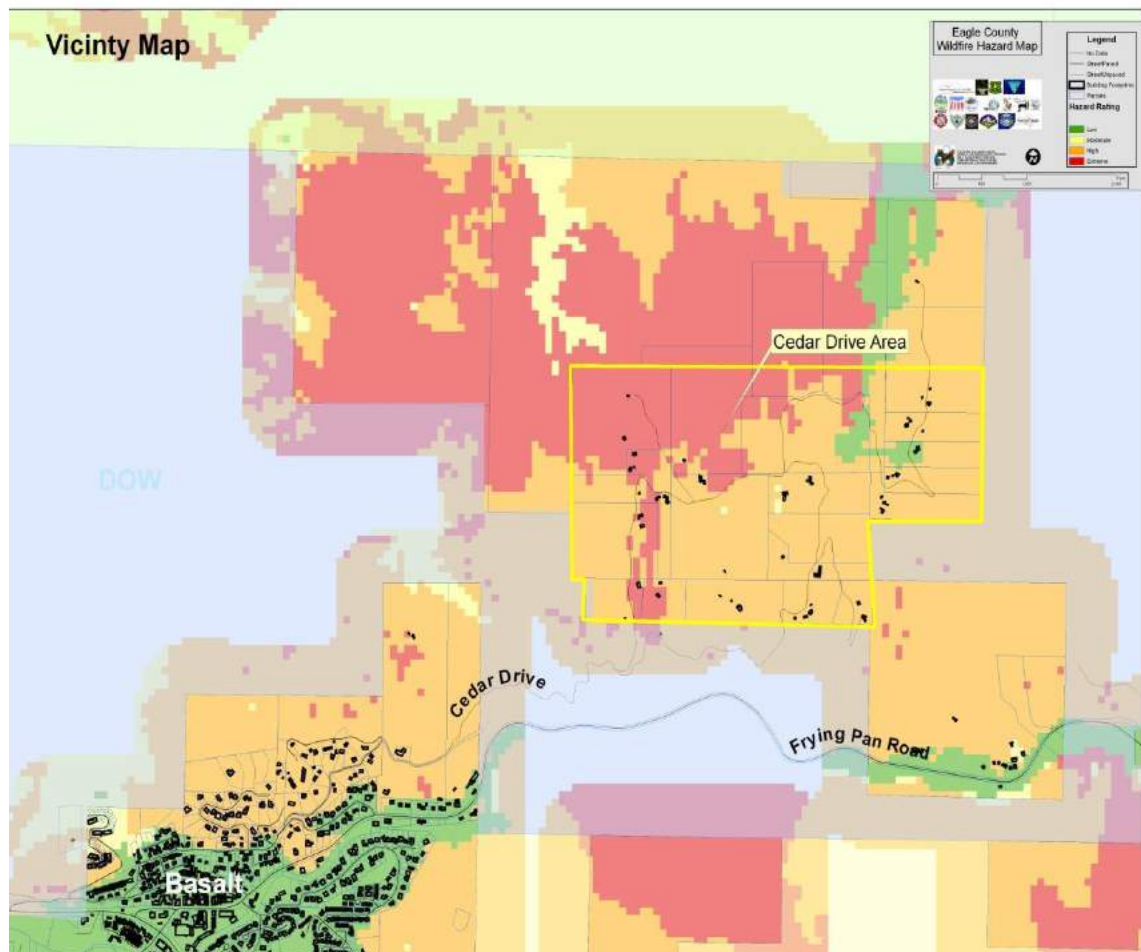
1. Hazardous Fuel Reduction: The study area is represented primarily by four fuel models (Anderson FM): FM 1, 2, 4, 6; other fuel models exist, but not in quantities sufficient to significantly influence fire behavior in the WUI. Cordillera Valley Club fuels can be characterized by old growth trees and mature tall shrubs. In general, the area is comprised of significant surface fuels with continuous stands of pinon/juniper surrounding the neighborhood. The Valley Club is a golf-course community, so fuels near homes are broken-up by irrigated fairways.

*Defensible Space:* Many new homes in the study area have adequate defensible space; most of the older homes in the Valley Club have a combination of native and ornamental conifers and other flammable vegetation too close to the house (*ie. within the home ignition zone of 30ft*). Some homes have irrigated

lawns, but they account for a small portion of the overall landscape. At a minimum, fuel reduction within the home ignition zone should be implemented at every home-site in the Cordillera Valley Club.

2. Fire Resistant Construction: Homes built in the Valley Club after 2006 have fire resistant decking, roofing and siding per the Eagle County Wildfire Regulations (*see figure 1, page 27*). Many, if not all, of the homes built in the Valley Club prior to 2006 have wood shake roofing and conventional (non-fire rated) decks. Remodels and new construction in the study area will have to adhere to Eagle County's Building Requirements for Wildfire Areas requiring the use of fire resistant building materials.

### Basalt - Cedar Drive



The area commonly referred to as Cedar Drive is a neighborhood located approximately 4 miles East of Basalt, Colorado (*figure 1*). The subdivision has one primary access point from Basalt via Cedar/Basalt Mountain Drive. The dominant vegetation throughout the study area is Pinyon Pine (*Pinus edulis*) and Rocky Mountain Juniper (*Juniperous scopulorum*) with short grass and sage/oak-brush understory, varying in coverage from uniformly dispersed Pinyon-juniper stands to continuous stands with significant ladder fuels. General topography in the area can be characterized by steep slopes, with homes located on ridgelines and near natural chimney features.

*Fire Management Objectives:*

1. **Hazardous Fuel Reduction:** The study area is represented primarily by 4 fuel models (Anderson FM): FM 1, 2, 4, 6. Other fuel models exist, but not in quantities sufficient to significantly influence fire behavior in the WUI. Cedar Drive fuels can be characterized by old growth trees and mature tall shrubs. In general, the area is comprised of closed canopy pinon/juniper stands, with little to no surface fuels at lower elevations; and mature tall shrubs (primarily sage and gambel oak) at the upper reaches of the neighborhood.

*Defensible Space:* Most homes in the study area have little to no defensible space; there is a lack of available water and poor access to the home-sites. Many homes have a combination of native and ornamental conifers and other flammable vegetation too close to the house (*ie. within the home ignition zone of 30ft*). At a minimum, fuel reduction within the home ignition zone should be implemented at every home-site on Cedar Drive.

*Fuels Breaks:* The neighborhood is built at the foot of Basalt Mountain, and is characterized by extremely steep slopes (*Average Slope 30+%*), with numerous ravines and natural chimney features. Many homes are built on the edge these ridgelines or ravines. Landscape fuel reduction projects should seek to protect the only ingress/egress point to the area via Cedar Drive.

2. **Improve Fire Fighting Infrastructure/Response:**

*Water:* There is very little available water on Cedar Drive; limited to a few small ponds and draught points along the creek running through the neighborhood. A large community cistern (minimum 10,000 gal) to provide additional water for fire suppression within Cedar Drive will improve firefighting capabilities and minimize water shuttling along the one point of access to the neighborhood. On-site water storage is vital to protecting homes during a wildfire. Additional water storage should be installed at every home on Cedar Drive.

*Safety Zones:* Reliable safety zones are at a premium within the Cedar Drive neighborhood, but some do exist. There is a large meadow of the area at the entrance to Basalt Mountain Ranch. This would be a good location for a large tank or cistern. Given the poor access and fuels below this part of the neighborhood, it is of paramount importance to maintain this area as a viable safety zone. The tall-grass in the meadow should be cut, or have animals graze on it, during fire season to keep it low to the ground.

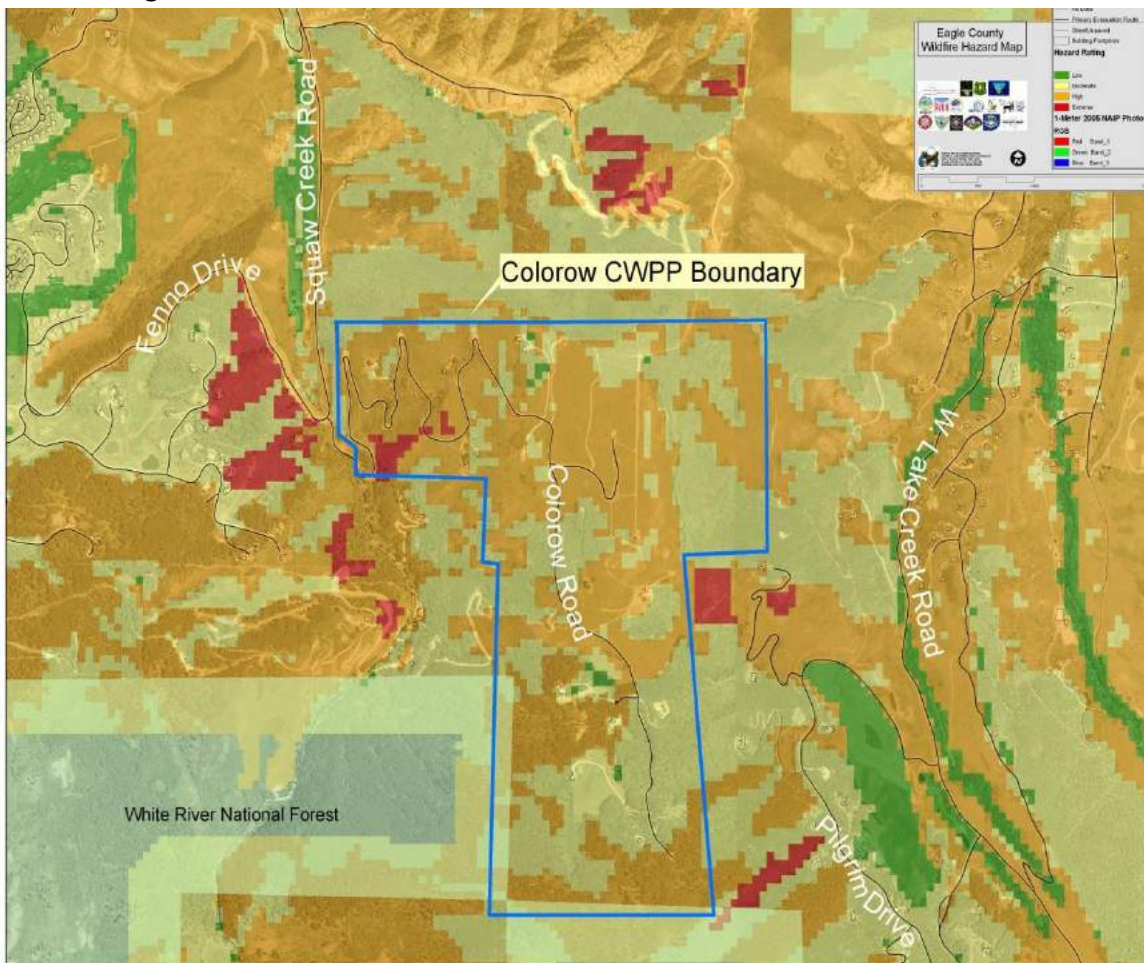
3. **Improve Access:** Access to the neighborhood is extremely poor. Property owners and emergency responders are forced to enter/exit the neighborhood via a single-lane dirt road, with several switchbacks and severe drop-offs from the roadway. In 2008, a wildland fire trapped residents when the only route in and out of the neighborhood was compromised.

*Secondary Access (Egress):* A non-maintained 4WD road connects Cedar Drive to the Frying Pan Road via an adjacent property. The road is less than 0.8 miles in length and can be accessed from the end of

Basalt Mountain Drive. This non-maintained road is in need of improvement in order to accommodate 4WD vehicles, and potentially Type VI engines. Road improvements and access easements should be investigated and implemented in order to create a viable secondary access point to the neighborhood.

*Primary Access (Ingress):* Road improvements to the lower section of Cedar Drive are vital to protect the life safety of homeowners and emergency responders entering the area. Wherever possible, road widths should be increased and emergency turn-outs should be created to facilitate traffic flow both in and out of the area during a fire. Guardrails should be installed at several points along the road to protect large fire-fighting apparatus from slipping off the driving surface.

### **Colorow Neighborhood**



Colorow is a residential neighborhood in unincorporated Eagle County approximately 6 miles from Edwards, Colorado. The community is made up of approximately 20 home sites within the WUI, and borders public lands on its western and southern boundaries. The area is considered to be in a Montane Zone (6,000 – 10,000 ft), of the western slope of the Central Rockies of Colorado.<sup>1</sup> The dominant vegetation throughout the upper reaches of the study area is Aspen (*Populus tremuloides*) with short grass and mixed tall-shrub understory. Significant stands of conifers also exist throughout the study area. These stands are dominated by lodgepole pine (*Pinus contorta*) or

Douglas fir (*Pseudotsuga menziesii*). Small sections of riparian vegetation are present near water sources and drainages. Native and non-native ornamental grass, trees, and shrubs of various types can be found near home-sites as elements of residential landscaping. Serviceberry, sage, and other tall shrubs are common at lower elevations at high densities and dominate the area surrounding the one access point to the neighborhood (Colorow Road)

*Fire Management Objectives:*

1. Hazardous Fuel Reduction: The study area is represented primarily by seven fuel models (Anderson FM): FM 1, 2, 5, 6, 8, 10, 40); other fuel models exist, but not in quantities sufficient to significantly influence fire behavior in the WUI. Colorow fuels are characterized by old growth trees and mature tall shrubs. In general, the area is comprised of significant surface fuels with a continuous, mixed conifer or aspen canopy.

*Defensible Space:* Most homes in the study area have adequate defensible space; however there is a lack of available water and poor access to many of the home-sites. Many homes have a combination of native and ornamental conifers and other flammable vegetation too close to the house (*ie. within the home ignition zone of 30ft*). Some homes have irrigated lawns, but they account for a small portion of the overall landscape. At a minimum, fuel reduction within the home ignition zone should be implemented at every home-site in Colorow.

*Fuels Breaks:* The neighborhood is built on a hillside, characterized by steep slopes (*Average Slope 20-30%*), with numerous ravines and natural chimney features. Many homes are built on the edge these ridgelines or ravines. Landscape fuel reduction projects should seek to protect the only ingress/egress point to the area via Colorow Road. Hazardous fuel build-up associated with Mtn. Pine Beetle mortality in the lodgepole pine stands surrounding the neighborhood should be addressed with increased timber harvesting over the next decade.

2. Improve Fire Fighting Infrastructure/Response:

*Water:* There is very little available water in Colorow; limited to dry-hydrants at 3 locations (approx. 10,000 gal/each) and a few small ponds and draught points along Squaw Creek Road. A large community cistern to provide additional water for fire suppression within Colorow will improve firefighting capabilities and minimize water shuttling along the one point of access to the neighborhood.

*Safety Zones:* Reliable safety zones are at a premium within the Colorow neighborhood, but some do exist. There is a large meadow surrounded by aspen at the upper reaches of Colorow Road, within 0.5 miles of the escape route connecting to Pilgrim Downs. This would be a good location for a large tank or cistern. Given the poor access and fuels below this part of the neighborhood, it is of paramount importance to maintain this area as a viable safety zone. The tall-grass in the meadow should be cut, or have animals graze on it, during fire season to keep it low to the ground.

3. Improve Access: There is one primary access point to the Colorow neighborhood via Colorow Road; this will also be the only way in/out during a mandatory evacuation of the neighborhood.

*Secondary Access (Egress):* A non-maintained 4WD road connects Colorow to the Pilgrim Downs

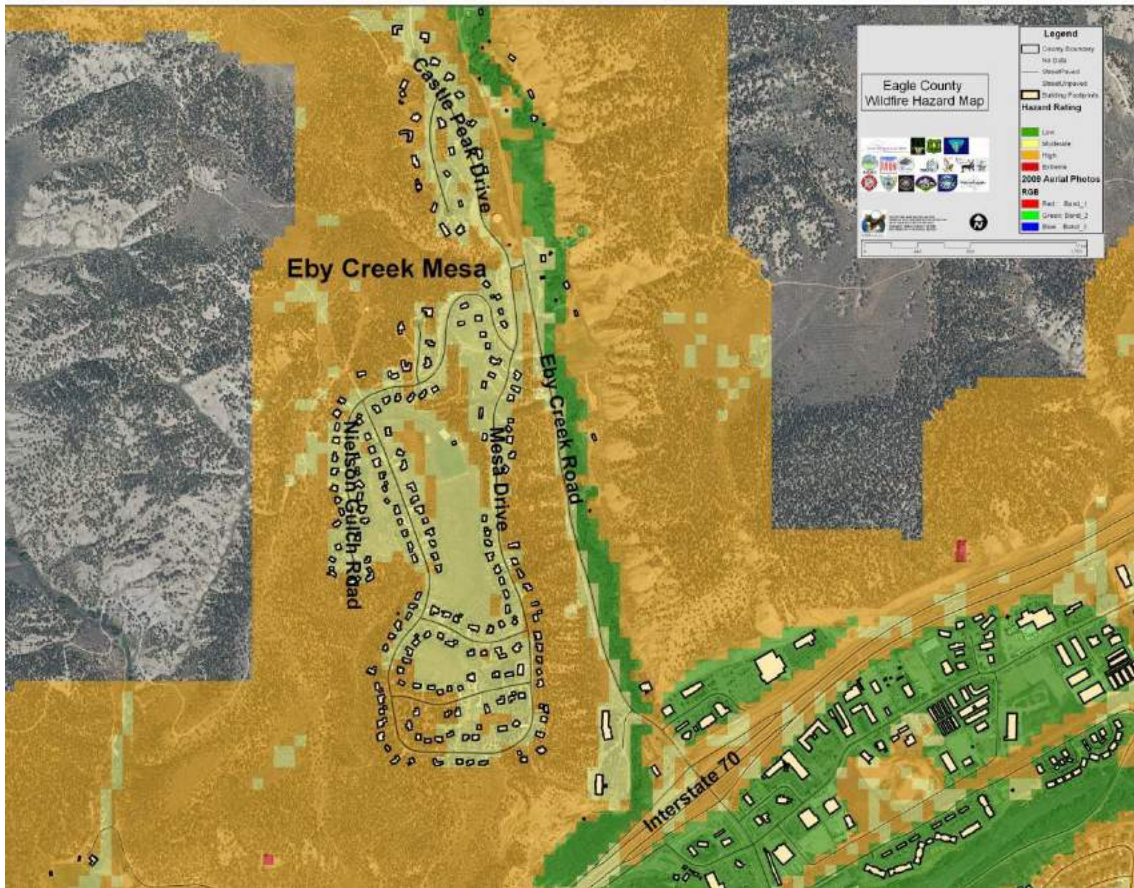
subdivision. The road is less than 0.5 miles in length and can be accessed from two points on the 2000 block of Colorow Road. This non-maintained road is in need of improvement in order to accommodate 4WD vehicles, and potentially Type VI engines. There is a series of old logging roads connecting Colorow to Pilgrim Downs through public and private properties. Road improvements and access easements should be investigated and implemented in order to create a viable secondary access point to the neighborhood.

Figure 20 Colorow





## Eby Creek Mesa Subdivision



The Eby Creek Mesa Subdivision is located approximately one mile north of Eagle, Colorado. The subdivision is accessed by heading north from Interstate 70 via Eby Creek Road. The area is considered to be in a Montane zone (6,000 – 10,000 ft), of the western slope of the Central Rockies of Colorado<sup>1</sup>. The dominant vegetation throughout the study area is Pinyon Pine (*Pinus edulis*) and Rocky Mountain Juniper (*Juniperous scopulorum*) with short grass and sagebrush understory, varying in coverage from uniformly dispersed Pinyon-juniper stands to continuous stands with significant ladder fuels. Small sections of riparian vegetation are present near water sources and drainages. Native and non-native ornamental grass, trees, and shrubs of various types can be found near home-sites as elements of residential landscaping. Invasion of the noxious weed Cheatgrass (*Bromus secalinus*) is evident throughout the subdivision in areas of recent disturbance. Cheatgrass is a concern to fire fighters as it matures in early summer and can significantly add to rates of fire spread.

### **Fire Management Objectives:**

1. **Hazardous Fuel Reduction:** The study area is represented primarily by seven fuel models (Anderson FM): FM 1, 2, 4, 6. Other fuel models exist, but not in quantities sufficient to significantly influence fire behavior in the WUI. Eby Creek fuels vary from light to moderate loads of grasses and shrubs. Tall grass and mature sagebrush can be found throughout the study area in the neighborhood open-space parcels, as well as patches of mature pinyon-juniper.

*Defensible Space:* Most homes in the study area have adequate defensible space; however several older

homes on the neighborhood boundaries have mature trees too close to the house (*ie. within the home ignition zone of 30ft*). At a minimum, fuel reduction within the home ignition zone should be implemented at every home-site in Eby Creek.

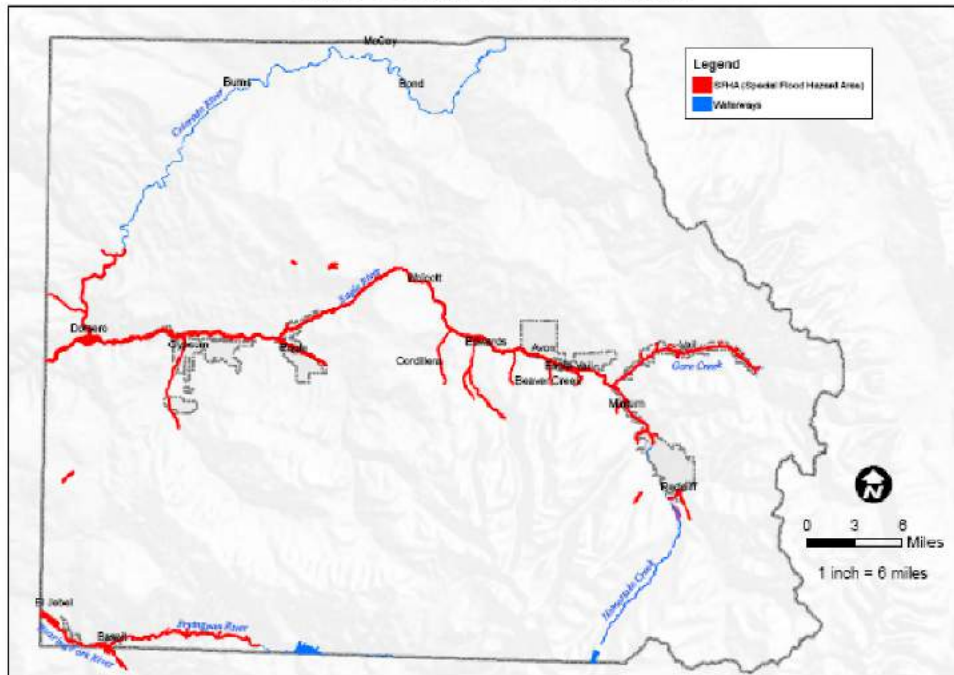
*Fuels Breaks:* In 2004, a 55 acre fuel break was created on the western edge of the neighborhood through adjacent BLM managed lands. In 2006 a 9 acre hand treatment of the area known as Neilson Gulch was completed on HOA open-space within the neighborhood (*see figure 3, page 30*). Long-term maintenance of these treatment areas will be needed in order to maintain effective fuel-breaks. Future landscape fuel reduction projects should seek to expand on existing treatment areas, specifically towards the northern reaches of the neighborhood.

2. **Improve Access:** There is one primary access point to the Eby Creek Mesa neighborhood via Eby Creek Road; this will also be the only way in/out during a mandatory evacuation of the neighborhood.

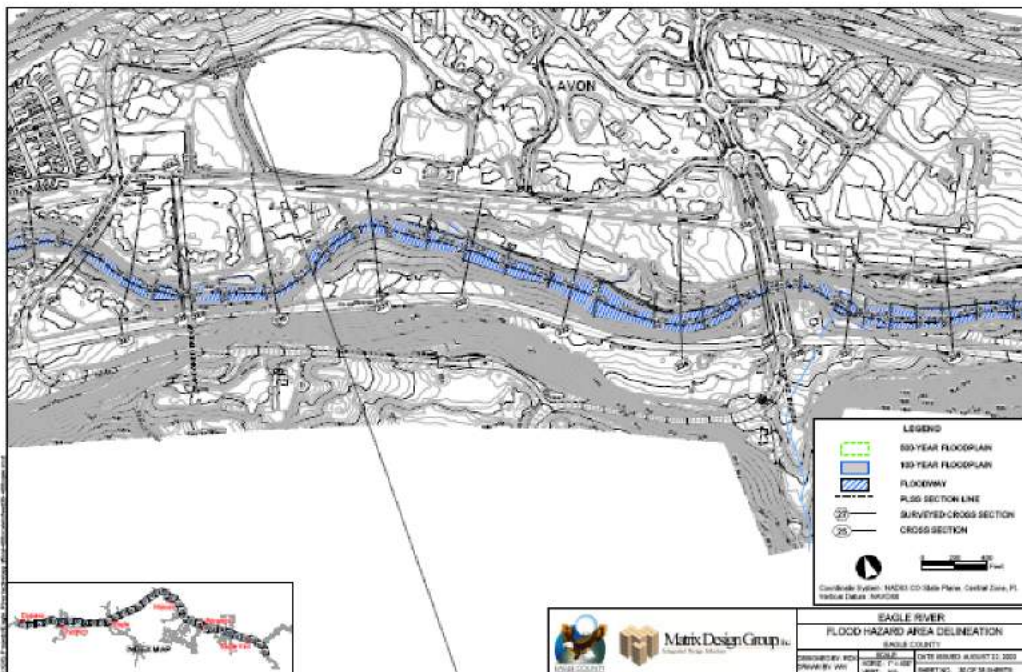
*Secondary Access (Egress):* a non-maintained, 4WD road connects Eby Creek to ranch-lands north of the subdivision. The road is less than 0.8 miles in length and can be accessed from Neilson Gulch Road at the intersection with Mesa Drive. This non-maintained road is in need of improvement in order to accommodate 4WD vehicles, and potentially Type VI engines. Road improvements and access easements should be investigated and implemented in order to create a viable secondary access point to the neighborhood.

Appendix D: Flood Plain Summary Maps

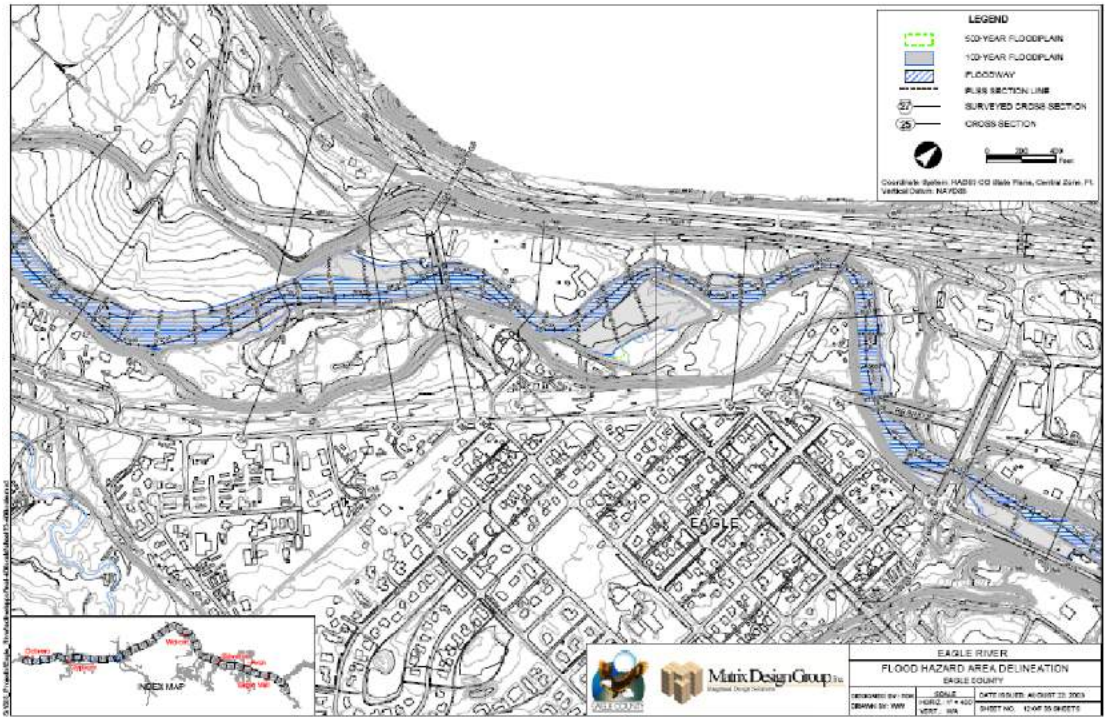
Eagle County Flood Mapping



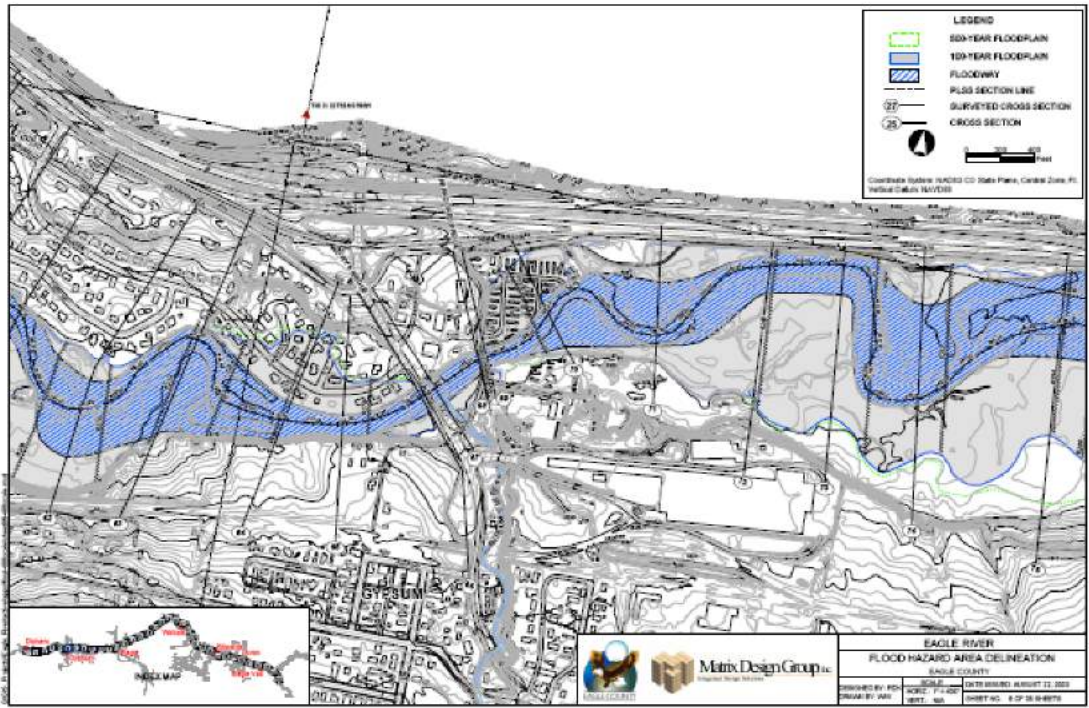
Town of Avon:



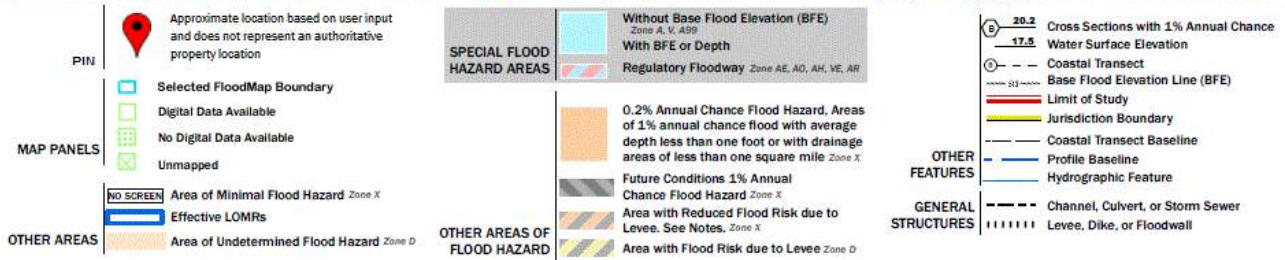
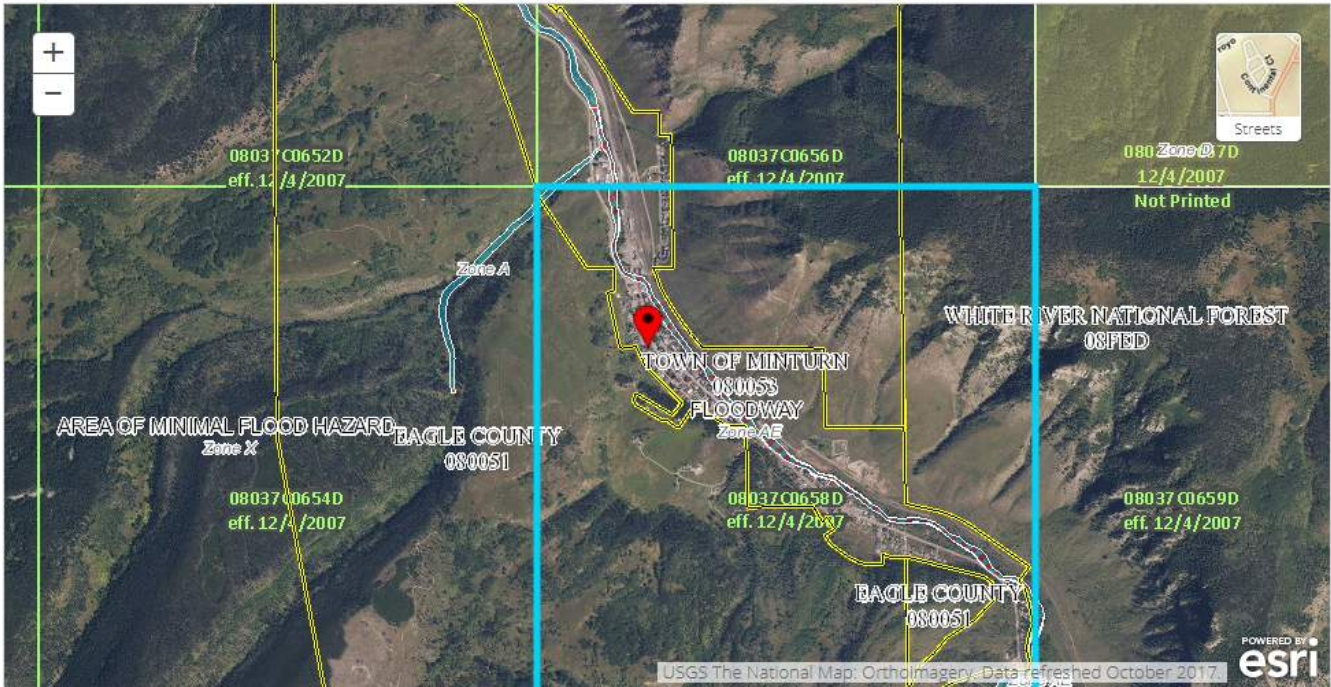
**Town of Eagle:**



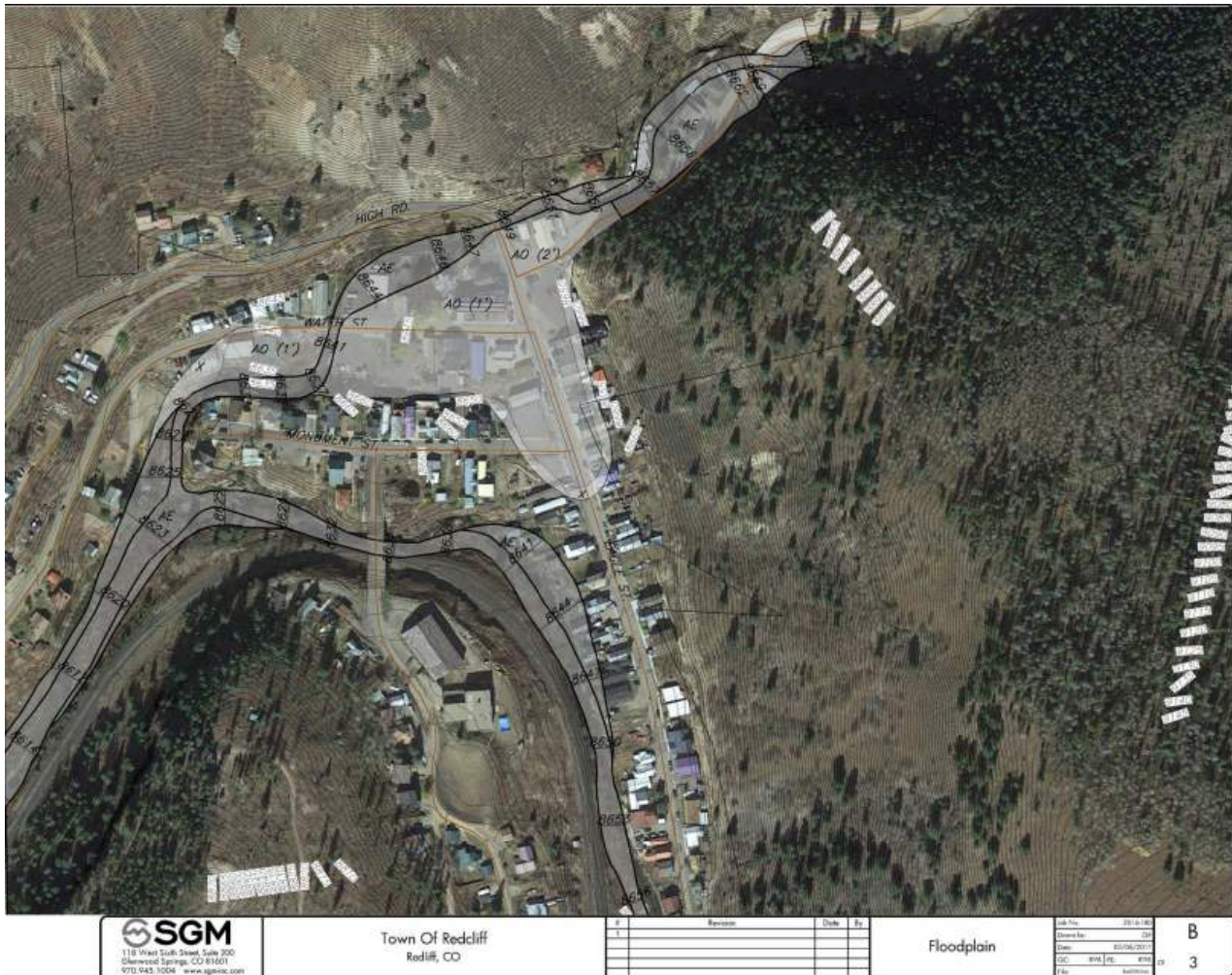
**Town of Gypsum:**



Town of Minturn:



Town of Red Cliff:



**SGM**  
 118 West South Street, Suite 200  
 Glenwood Springs, CO 81601  
 970.943.1004 www.sgmco.com

Town Of Redcliff  
 Rediff, CO

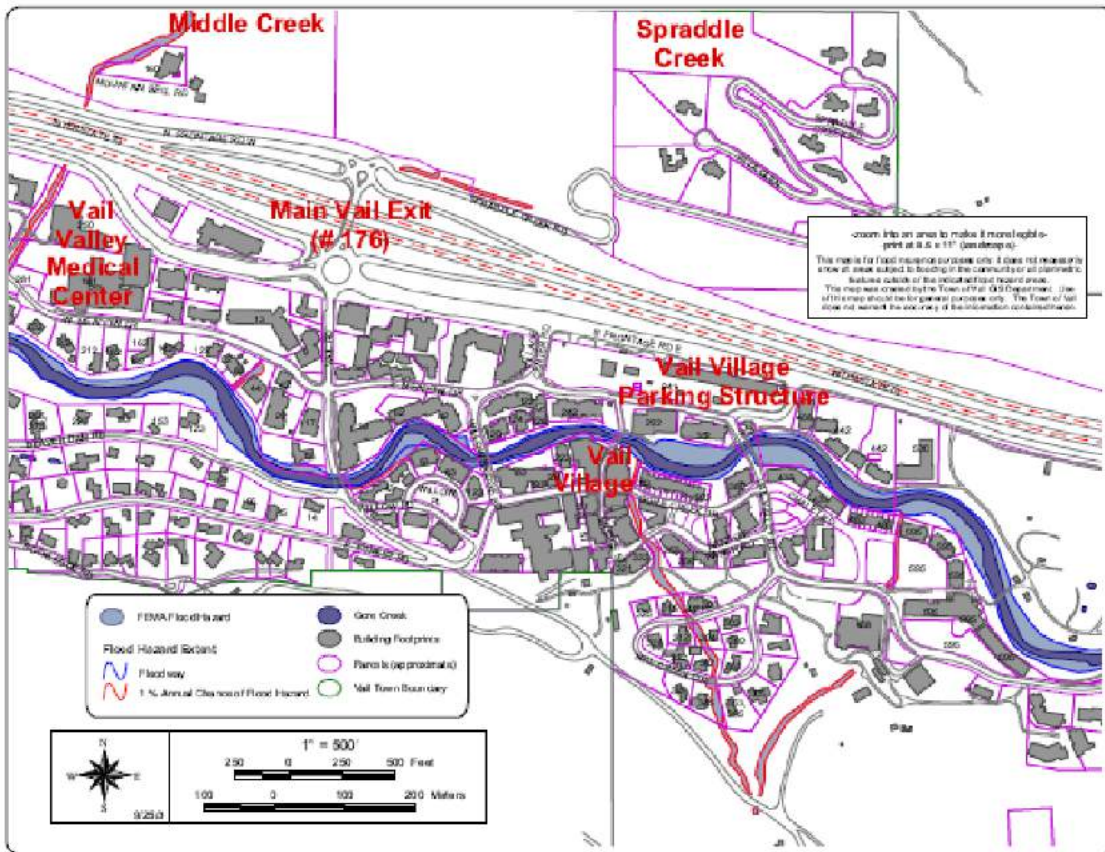
#	Revision	Date	By
1			

Floodplain

Job No.	201-0140
Drawn by	CSJ
Date	05/06/2019
Scale	AS SHOWN
File	20190506

**B**  
**3**

Town of Vail:



Detailed flood plain mapping can be viewed at the following sites;

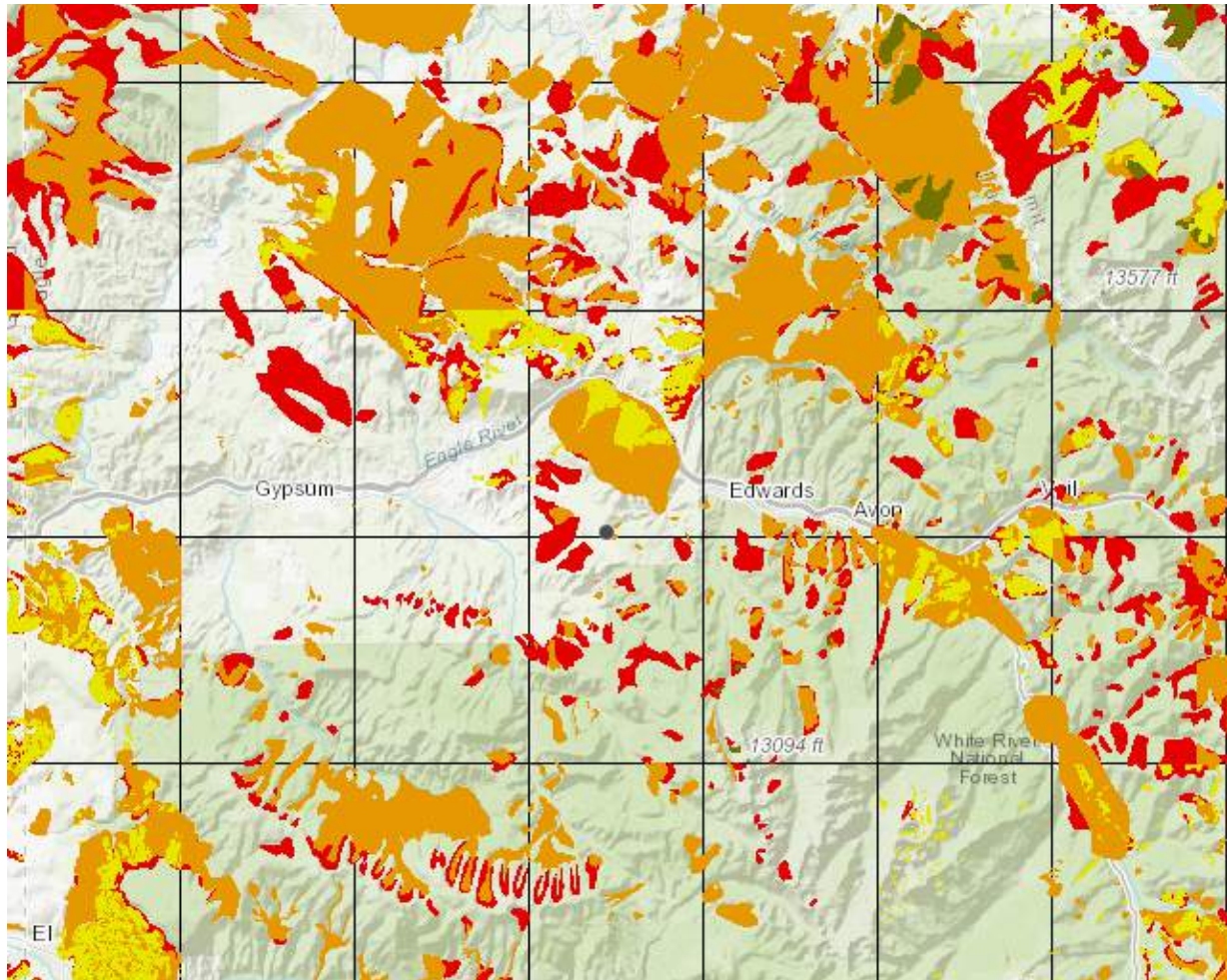
[http://www.eaglecounty.us/Engineering/Floodplain\\_Mapping/](http://www.eaglecounty.us/Engineering/Floodplain_Mapping/)

<http://tov.maps.arcgis.com/apps/webappviewer/index.html?id=bcb0656c8c814532b622fb0c444f1f58>

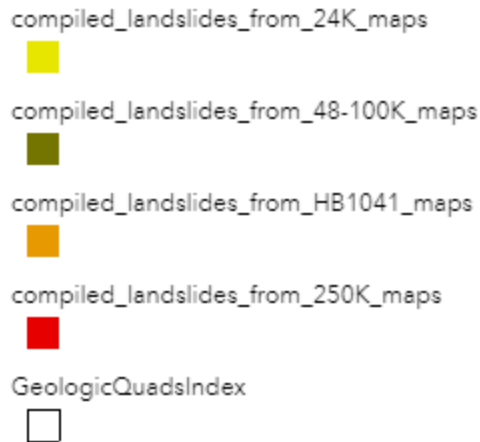


## Appendix E: Landslide Inventory Map

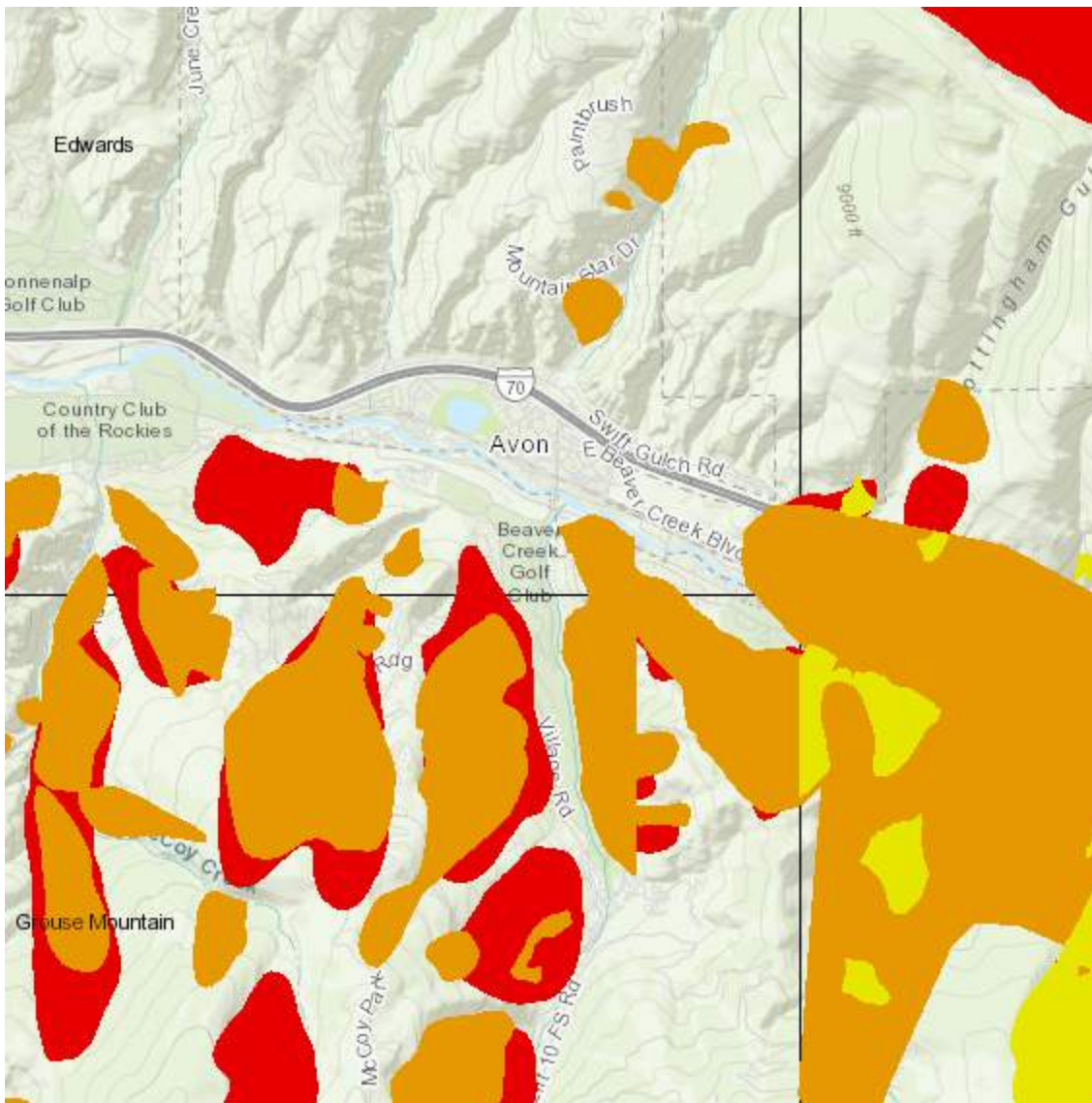
### Eagle County



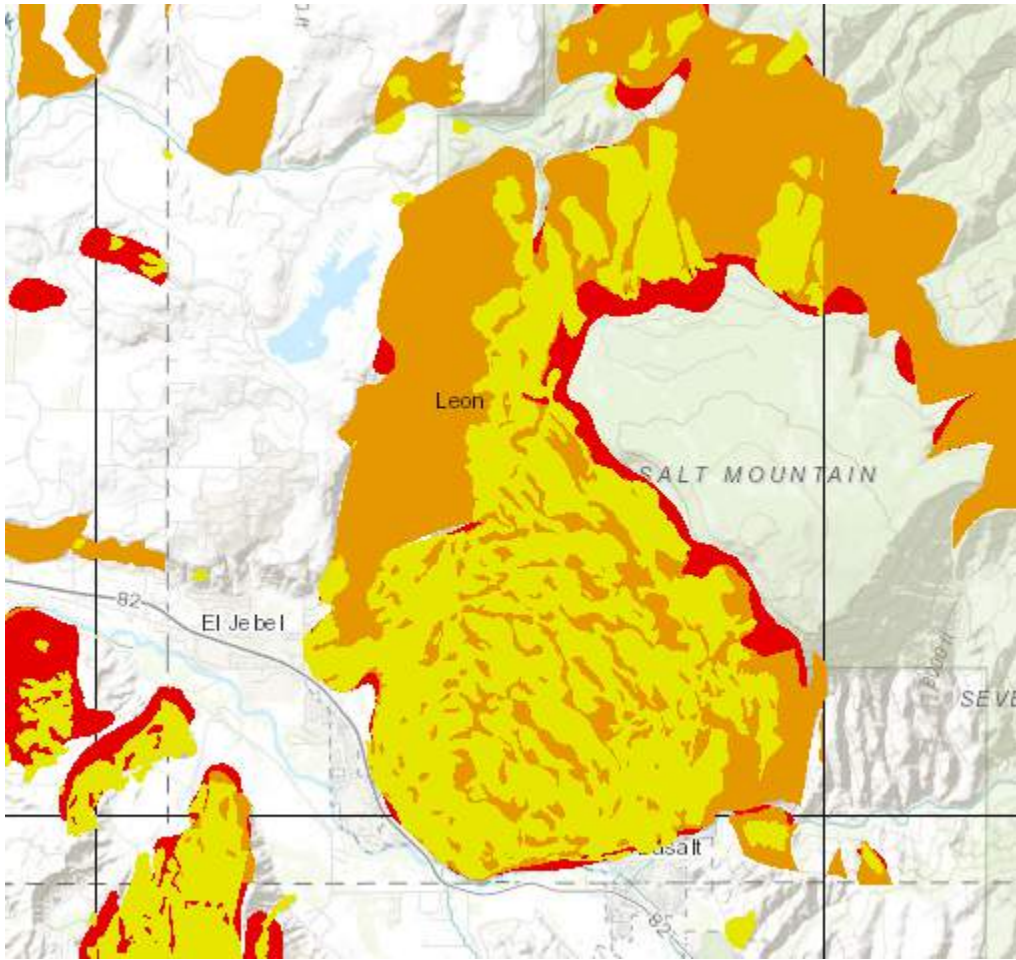
Colorado Geological Survey - Landslide inventory



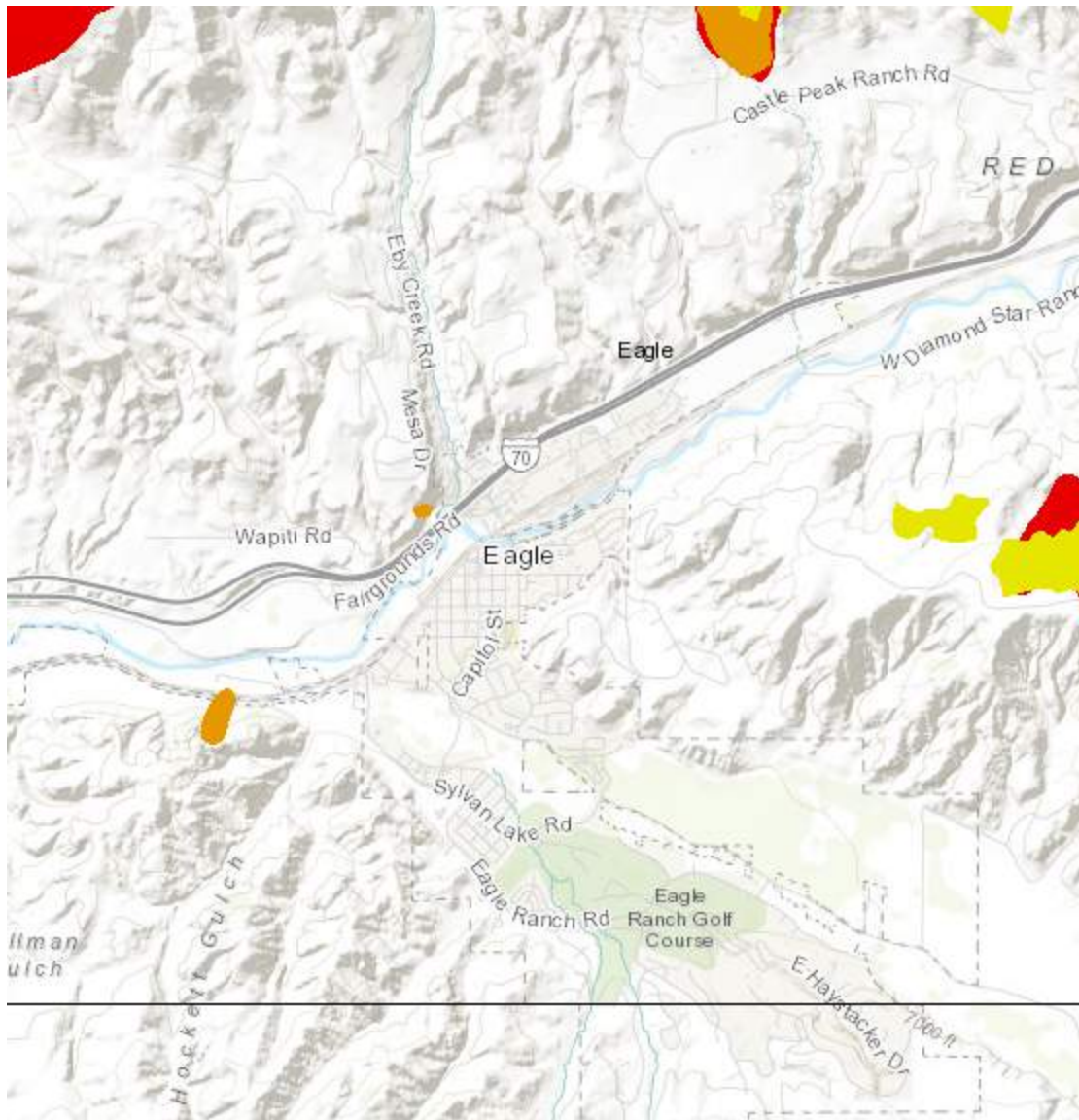
Town of Avon



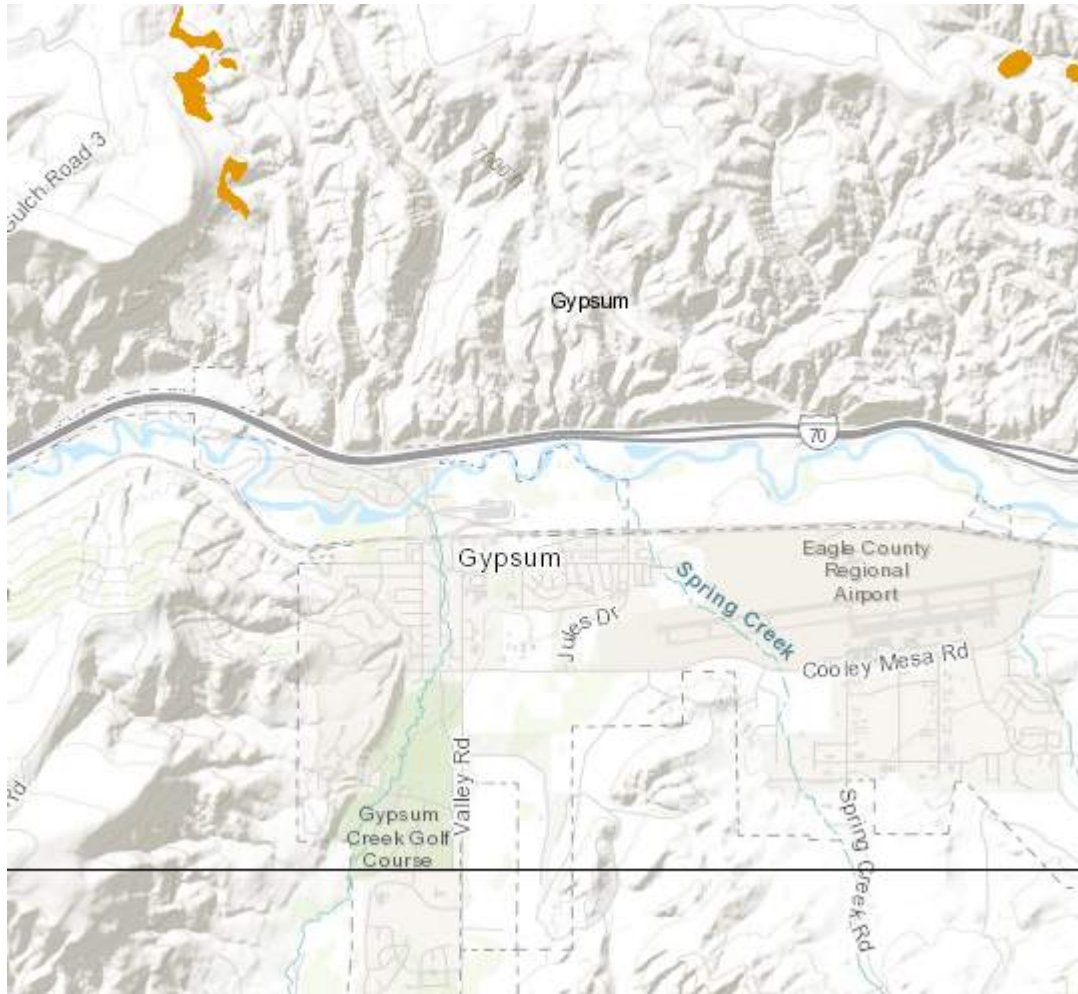
**Town of Basalt**



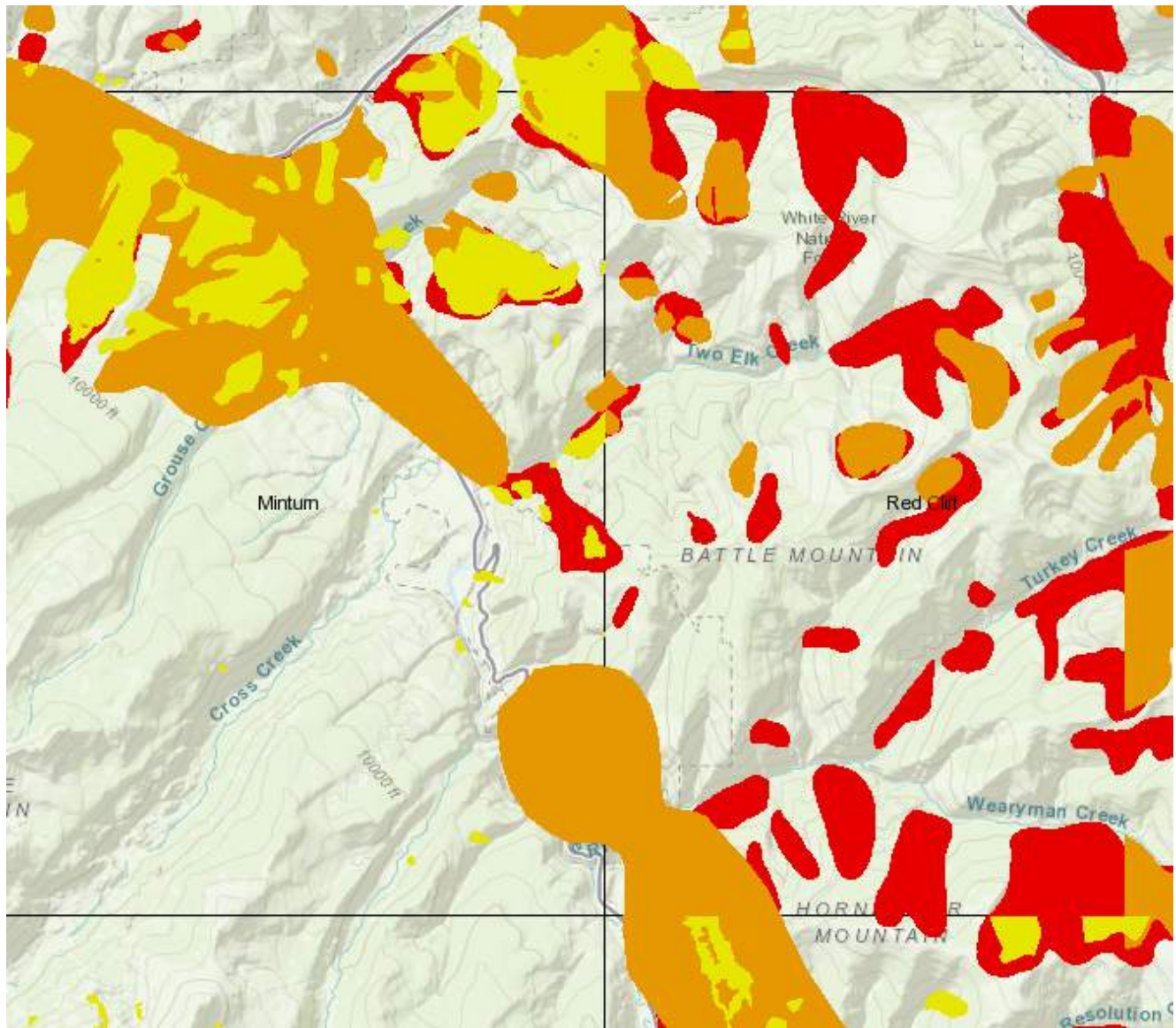
Town of Eagle



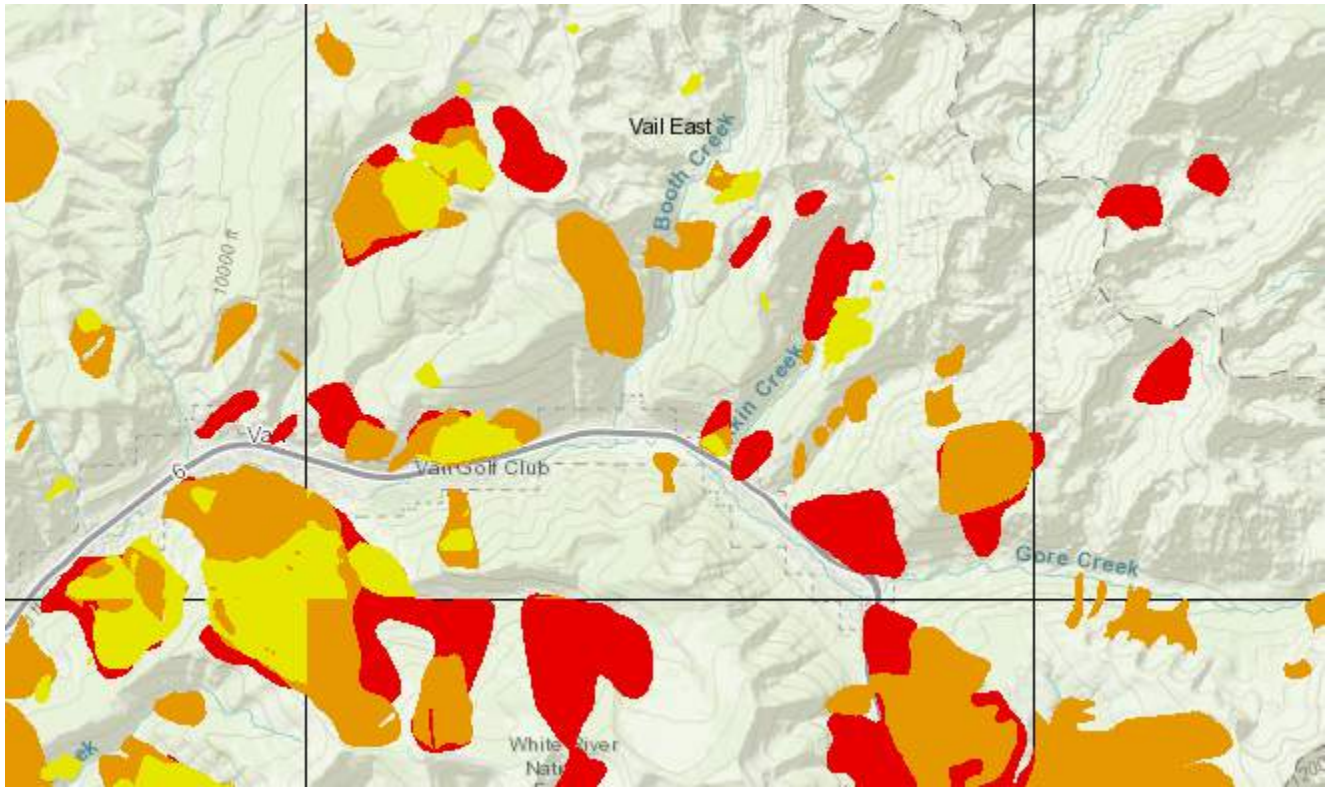
Town of Gypsum



Towns of Minturn and Red Cliff



Town of Vail



## Appendix F: Hazard Mitigation Data Collection Surveys

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[Capability Assessment Worksheet](#)

[Eagle County Risk Assessment \(Public Survey\)](#)

[Hazard Summary Worksheet](#)

[Mitigation Action Progress Report](#)

[National Flood Insurance Program Worksheet](#)

[Safe Growth Audit Survey](#)

The image shows two overlapping worksheet forms. The background form is the 'Hazards Summary Worksheet', and the foreground form is the 'Capability Assessment Worksheet'. Both forms have a purple header and a white body with purple accents.

**Hazards Summary Worksheet**

Use this worksheet to summarize hazard description information and identify which hazards are most significant to the planning area. The definitions provided on the following pages may be modified to meet local needs and methods.

\* Required

Jurisdiction \*

Choose

**Hazard**

**Avalanche**

Location (Jurisdictional Area Affected)

Choose

Choose

Unlikely: Less than 1 percent probability of occurrence

Occasional: 1 to 10 percent probability of occurrence

Likely: 10 to 90 percent probability of occurrence in the

Highly Likely: 90 to 100 percent probability of occurrence

**Capability Assessment Worksheet**

Local mitigation capabilities are existing authorities, policies, programs and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in this worksheet as completely as possible for your jurisdiction.

\* Required

Jurisdiction: \*

Choose

**Planning and Regulatory**

Planning and Regulatory capabilities are the plans, policies, codes and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

**Plans**

Comprehensive/Master Plan

Yes

No

Year adopted



## Appendix G: Hazard Risk Assessment Survey Results

The tables on the following pages summarize which hazards were identified as the most significant to various jurisdictions in Eagle County. The definitions for each section are provided below. The Eagle County hazard identification and prioritizations were made by aggregating the hazard assessment survey data for all participating jurisdictions.

### Location

<b>Negligible:</b>	Less than 10 percent of planning area or isolated single-point occurrences
<b>Limited:</b>	11 to 25 percent of planning area or limited single-point occurrences
<b>Significant:</b>	26 to 75 percent of planning area or frequent single-point occurrences
<b>Extensive:</b>	76 to 100 percent of planning area or consistent single-point occurrences

### Maximum Probable Extent

<b>Weak:</b>	Limited classification on scientific scale, slow speed of onset or short duration of event, resulting in little to no damage.
<b>Moderate:</b>	Moderate classification on scientific scale, moderate speed of onset or moderate duration of event, resulting in some damage and loss of services for days.
<b>Severe:</b>	Severe classification on scientific scale, fast speed of onset or long duration of event, resulting in devastating damage and loss of services for weeks or months.
<b>Extreme:</b>	Extreme classification on scientific scale, immediate speed of onset or extended duration of event, resulting in catastrophic damage and uninhabitable conditions.

### Probability of Future Events

<b>Unlikely:</b>	Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than every 100 years
<b>Occasional:</b>	1-10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years
<b>Likely:</b>	10-90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years
<b>Highly Likely:</b>	90-100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year

### Overall Significance

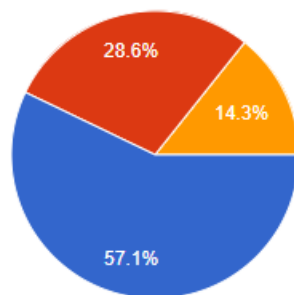
<b>Low:</b>	Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for hazards with a minimal or unknown record of occurrence or for hazards with a minimal mitigation potential.
<b>Medium:</b>	The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but a very low probability rating.
<b>High:</b>	The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with

severe strength over a significant to extensive portion of the planning area.

## Avalanche

### Location (Jurisdictional Area Affected)

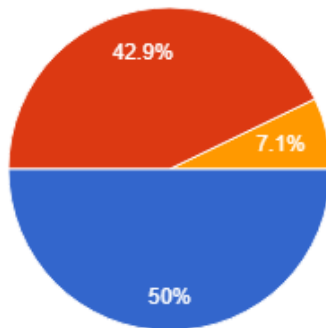
14 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

### Maximum Probable Extent (Magnitude/Strength)

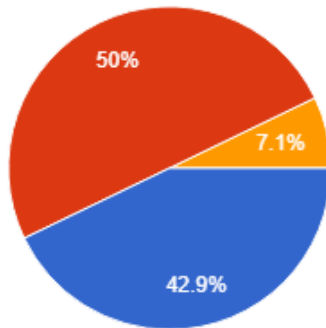
14 responses



- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...

## Possibility of Future Events

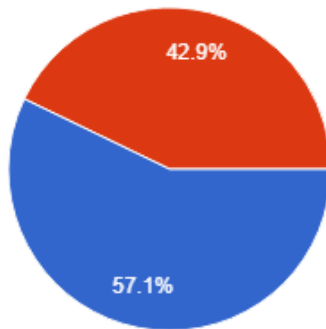
14 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

14 responses

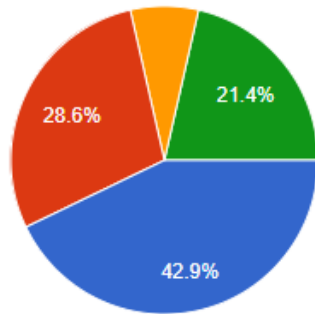


- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

### Location (Jurisdictional Area Affected)



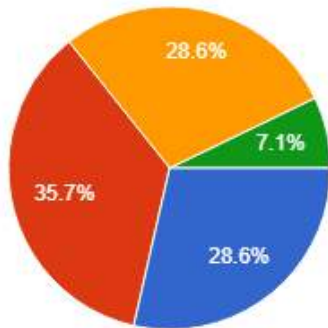
14 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

### Maximum Probable Extent (Magnitude/Strength)

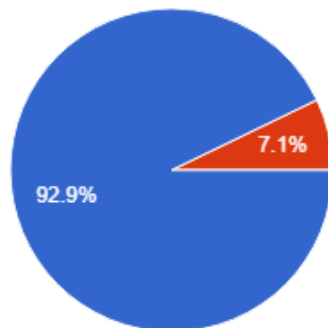
14 responses



- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...

## Possibility of Future Events

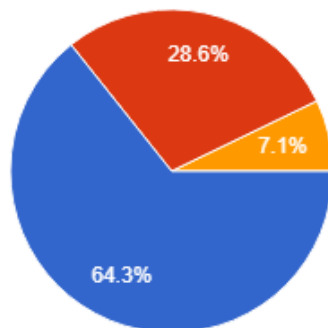
14 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

14 responses

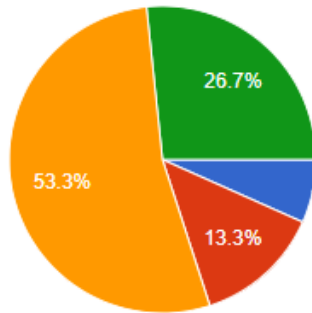


- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

Drought

### Location (Jurisdictional Area Affected)

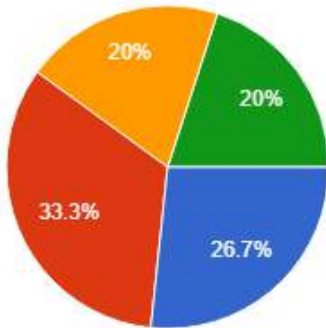
15 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

### Maximum Probable Extent (Magnitude/Strength)

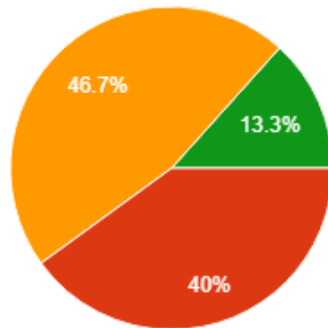
15 responses



- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...

## Possibility of Future Events

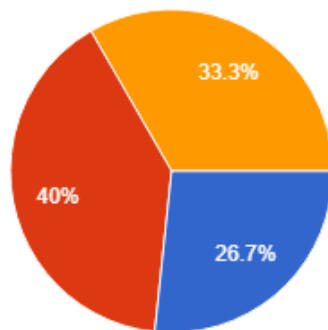
15 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

15 responses

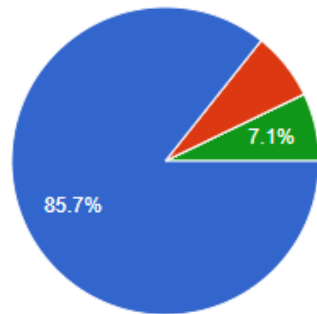


- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

# Earthquake

## Location (Jurisdictional Area Affected)

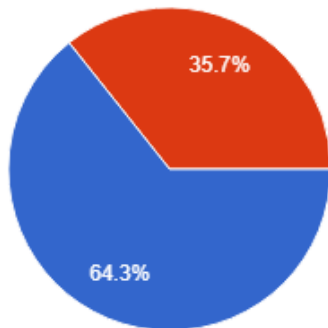
14 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

## Maximum Probable Extent (Magnitude/Strength)

14 responses

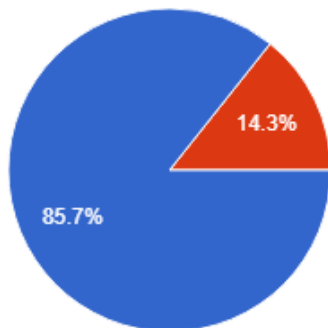


- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...



## Possibility of Future Events

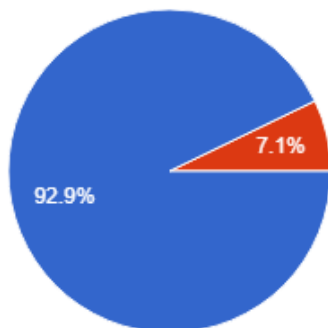
14 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

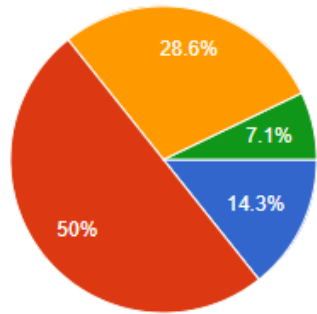
14 responses



- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

### Location (Jurisdictional Area Affected)

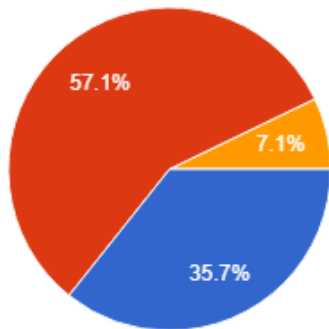
14 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

### Maximum Probable Extent (Magnitude/Strength)

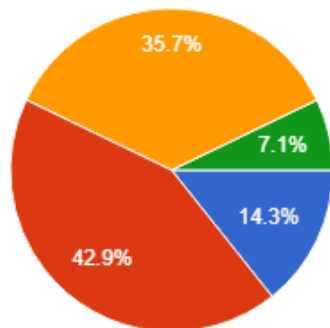
14 responses



- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...

## Possibility of Future Events

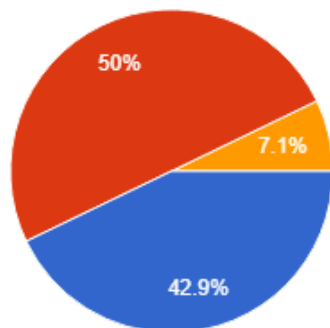
14 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

14 responses

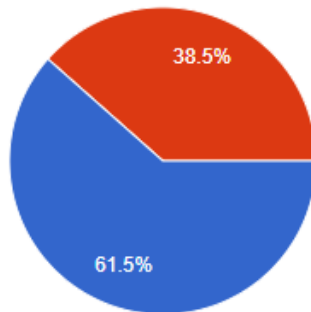


- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

## Expansive Soils

### Location (Jurisdictional Area Affected)

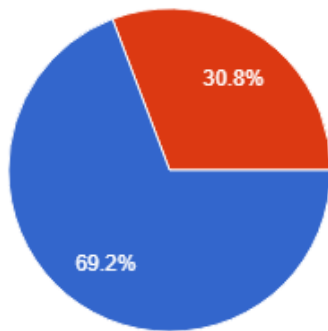
13 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-point occurrences
- Extensive: 76 to 100 percent of planning area or consistent single-point occurrences

### Maximum Probable Extent (Magnitude/Strength)

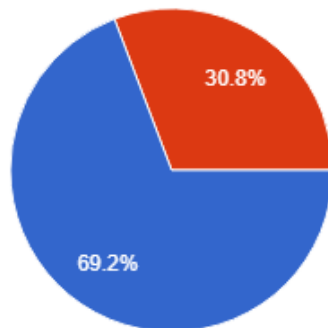
13 responses



- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting in minimal damage
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event, resulting in moderate damage
- Severe: Severe classification on scientific scale, fast speed of onset or long duration of event, resulting in severe damage
- Extreme: Extreme classification on scientific scale, immediate speed of onset or very long duration of event, resulting in extreme damage

## Possibility of Future Events

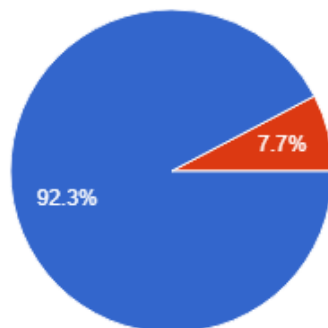
13 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

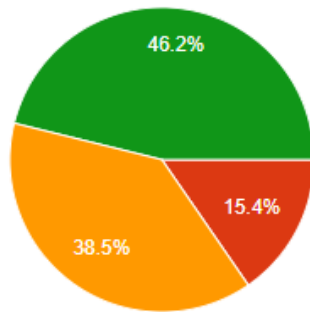
13 responses



- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

### Location (Jurisdictional Area Affected)

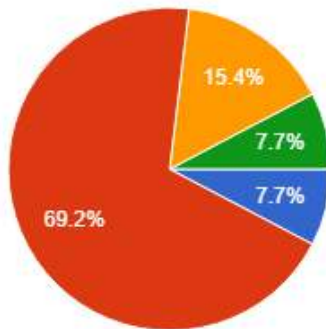
13 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

### Maximum Probable Extent (Magnitude/Strength)

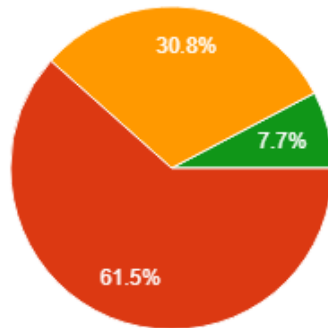
13 responses



- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...

## Possibility of Future Events

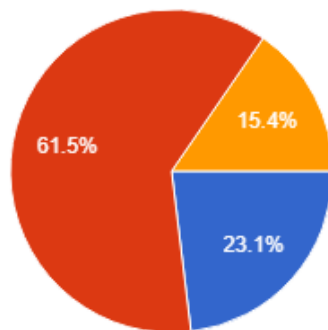
13 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

13 responses

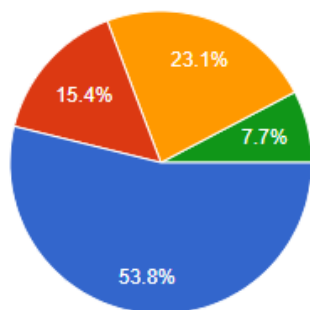


- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently fall in the high classifications or the event is likely/highly likely to occur with severe impacts.

## Extreme Heat

### Location (Jurisdictional Area Affected)

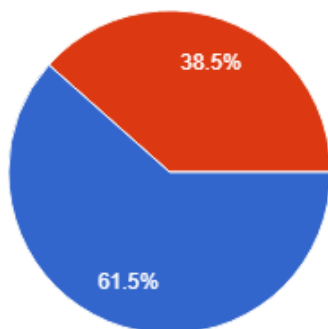
13 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

### Maximum Probable Extent (Magnitude/Strength)

13 responses

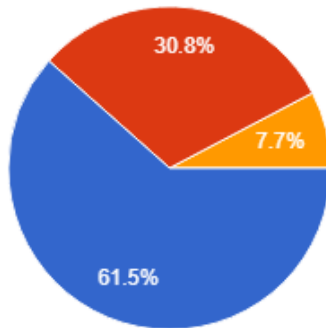


- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...



## Possibility of Future Events

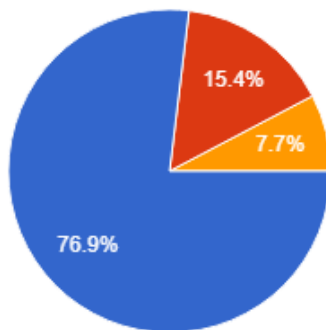
13 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

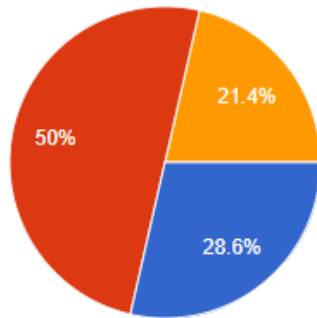
13 responses



- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

### Location (Jurisdictional Area Affected)

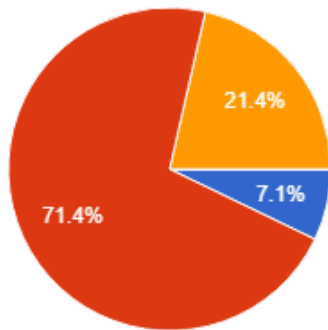
14 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

### Maximum Probable Extent (Magnitude/Strength)

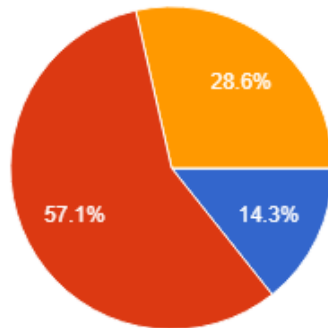
14 responses



- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...

## Possibility of Future Events

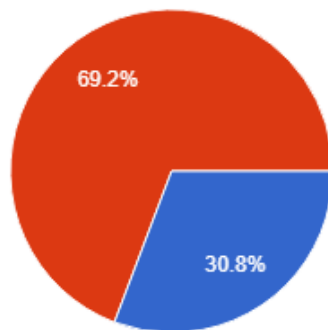
14 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

13 responses

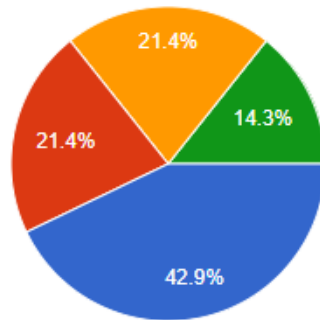


- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

Hail

### Location (Jurisdictional Area Affected)

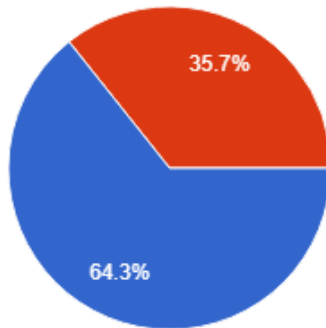
14 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

### Maximum Probable Extent (Magnitude/Strength)

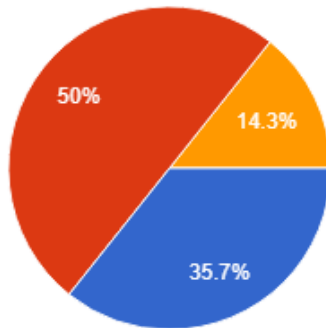
14 responses



- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...

## Possibility of Future Events

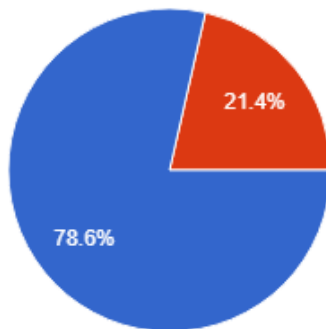
14 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

14 responses

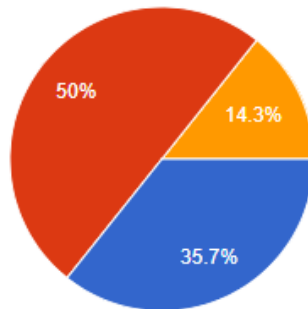


- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

## Landslide

### Location (Jurisdictional Area Affected)

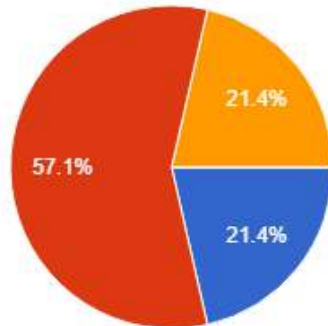
14 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

### Maximum Probable Extent (Magnitude/Strength)

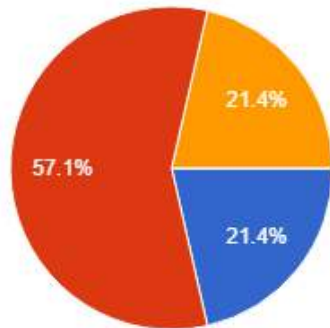
14 responses



- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...

## Possibility of Future Events

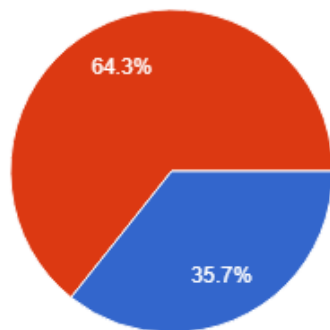
14 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

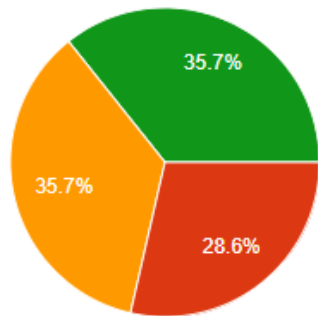
14 responses



- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

### Location (Jurisdictional Area Affected)

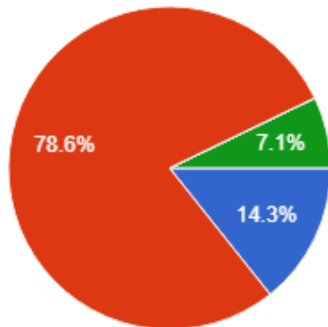
14 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

### Maximum Probable Extent (Magnitude/Strength)

14 responses

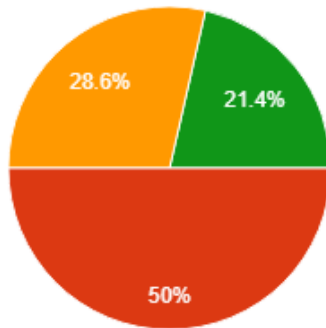


- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...



## Possibility of Future Events

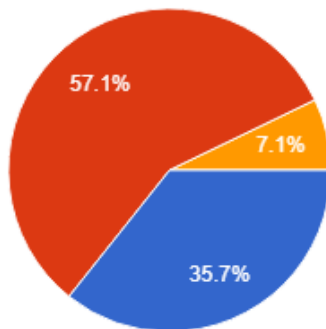
14 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

14 responses

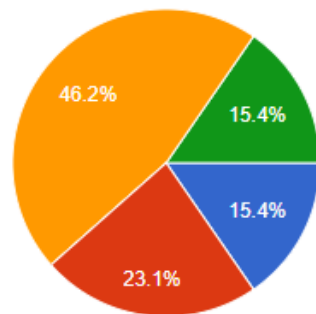


- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

## Severe Wind

### Location (Jurisdictional Area Affected)

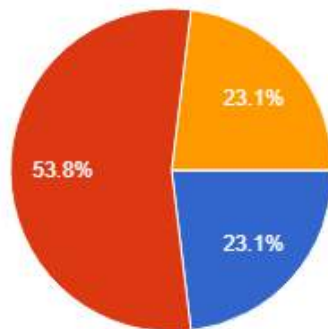
13 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

### Maximum Probable Extent (Magnitude/Strength)

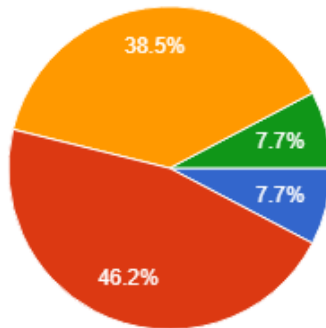
13 responses



- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...

## Possibility of Future Events

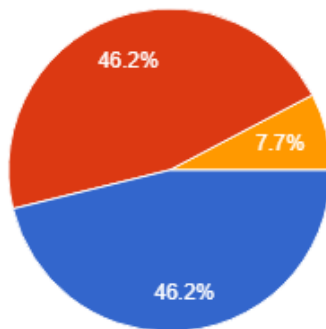
13 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

13 responses

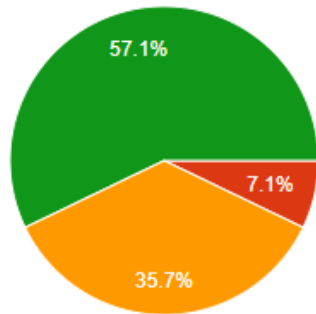


- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

## Severe Winter Weather

### Location (Jurisdictional Area Affected)

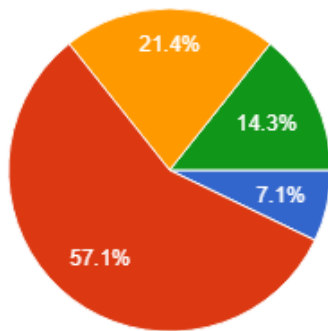
14 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

### Maximum Probable Extent (Magnitude/Strength)

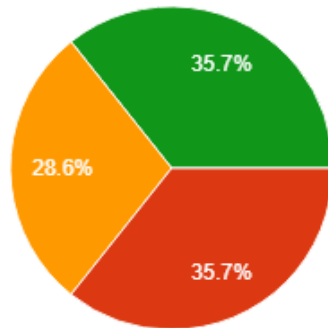
14 responses



- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...

## Possibility of Future Events

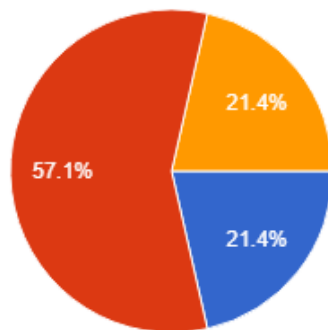
14 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

14 responses

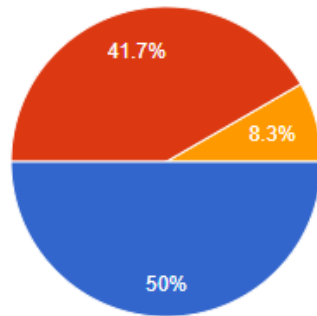


- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

**Subsidence**

### Location (Jurisdictional Area Affected)

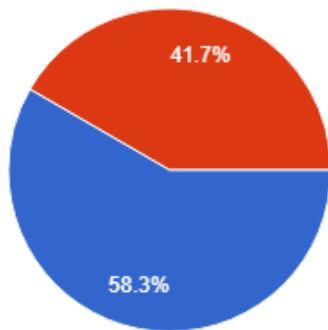
12 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

### Maximum Probable Extent (Magnitude/Strength)

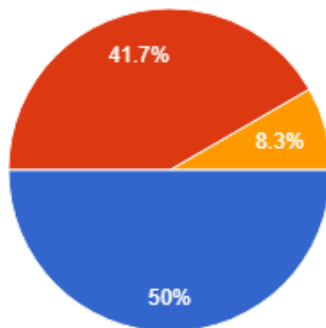
12 responses



- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...

## Possibility of Future Events

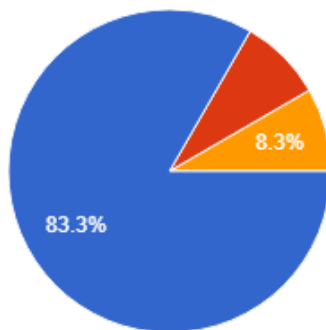
12 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of less than 1 year.

## Overall Significance

12 responses

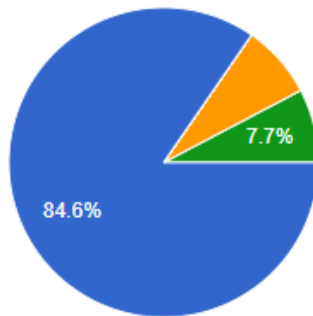


- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
- Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating.
- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

Tornado

### Location (Jurisdictional Area Affected)

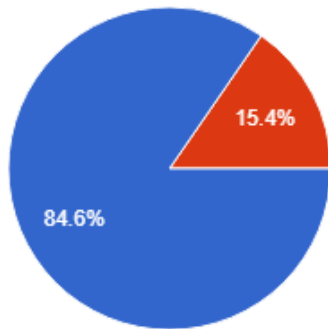
13 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
- Limited: 11 to 25 percent of planning area or limited single-point occurrences
- Significant: 26 to 75 percent of planning area or frequent single-point occurrences
- Extensive: 76 to 100 percent of planning area or consistent single-point occurrences

### Maximum Probable Extent (Magnitude/Strength)

13 responses



- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting in limited damage
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event, resulting in moderate damage
- Severe: Severe classification on scientific scale, fast speed of onset or severe duration of event, resulting in severe damage
- Extreme: Extreme classification on scientific scale, immediate speed of onset or extreme duration of event, resulting in extreme damage



## Possibility of Future Events

13 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
- Occasional: 1 to 10 percent probability of occurrence in the next year or a recurrence interval of 11 to 100 years.
- Likely: 10 to 90 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.
- Highly Likely: 90 to 100 percent probability of occurrence in the next year or a recurrence interval of 1 to 10 years.

## Overall Significance

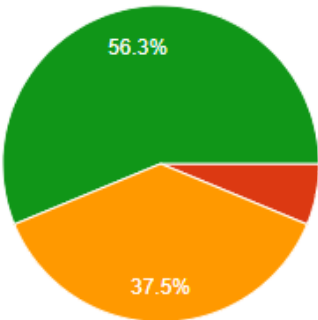
13 responses



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- High: The criteria consistently falls in the high classifications or the event is likely/highly likely to occur with severe impacts.

### Location (Jurisdictional Area Affected)

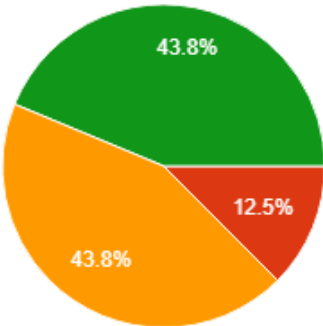
16 responses



- Negligible: Less than 10 percent of planning area or isolated single-point occurrences
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- Significant: 26 to 75 percent of planning area or frequent single-poi...
- Extensive: 76 to 100 percent of planning area or consistent single-p...

### Maximum Probable Extent (Magnitude/Strength)

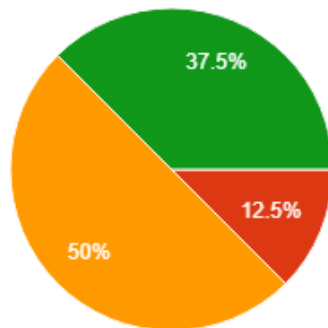
16 responses



- Weak: Limited classification on scientific scale, slow speed of onset or short duration of event, resulting i...
- Moderate: Moderate classification on scientific scale, moderate speed of onset or moderate duration of event...
- Severe: Severe classification on scientific scale, fast speed of onset...
- Extreme: Extreme classification on scientific scale, immediate speed of...

## Possibility of Future Events

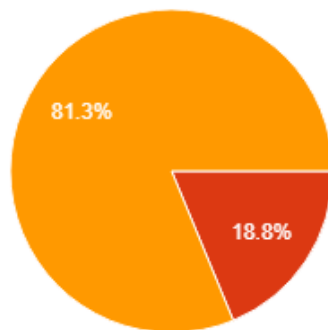
16 responses



- Unlikely: Less than 1 percent probability of occurrence in the next year or a recurrence interval of greater than 100 years.
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## Overall Significance

16 responses



- Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for historical events.
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## Appendix H: Supporting Documentation

### Eagle County Mitigation Planning Meeting Invitation

#### Disaster Planning meeting

Barry Smith <barry.smith@eaglecounty.us>

Thu, Aug 9, 2018 at 3:13 PM

To: John Harris <john.harris@eaglecounty.us>, Aaron W -FS Mayville <awmayville@fs.fed.us>, Adam Palmer <adam.palmer@eaglecounty.us>, Amy Szczesny <Amy.szczesny@eaglecounty.us>, Ben Gerdes <ben.gerdes@eaglecounty.us>, Benjamin Moyer <benjamin.moyer@noaa.gov>, Bill Simmons <BSimmons@beavercreekmetro.com>, Boyd Bierbaum <boyd.bierbaum@basalt.net>, Brian Bovaird <Brian.Bovaird@summitcountyco.gov>, Bryon McGinnins <bryon@townofeagle.org>, Charlie Turnbull <cturnbull@vailgov.com>, Chris Bornholdt <cbornholdt@garcosheriff.com>, Chris Lindley <chris.lindley@eaglecounty.us>, Chris Montera <cmontera@ecparamedics.com>, Christian Hornbaker <chornbaker@co.grand.co.us>, Chuck Toms <evmdtoms@gmail.com>, Dana Erpelding <Dana.Erpelding@eaglecounty.us>, David 'Mo DeMorat <ddemorat@co.routt.co.us>, Douglas\_Paul <Douglas\_Paul@blm.gov>, Eric Lovgren <Eric.Lovgren@eaglecounty.us>, Gary Padilla <gpadilla@avon.org>, "Gavelda - Cdps, Patricia" <patricia.gavelda@state.co.us>, Greg Hall <ghall@vailgov.com>, Greg Winkler <greg.winkler@state.co.us>, James Clancy <JClancy@vailresorts.com>, Jeff Shreeve <jshreeve@townofgypsum.com>, Jeff Shroll <jeff.shroll@eaglecounty.us>, Jim Hancock <jim@townofgypsum.com>, Justin Hildreth <Jhildreth@avon.org>, Karen Schroyer <kschroyer@fs.fed.us>, Kelley Collier <kelley.collier@eaglecounty.us>, Ken Marchetti <Ken@rmpccpa.com>, Linn Brooks <lbrooks@erwsd.org>, Mark Chapin <Mark.Chapin@eaglecounty.us>, Mark Thompson - CDPS <markw.thompson@state.co.us>, Matt Jones <matt@rmpccpa.com>, Mike McHargue <mikemchargue@hotmail.com>, Minturn Public Works <publicworks@minturn.org>, Perry Will <perry.will@state.co.us>, Rachel Oys <roys@cordillerametro.org>, Randy McIntosh <Randy.mcintosh@state.co.us>, Ron Cousineau <Ron.Cousineau@colostate.edu>, Ryan Mahoney <ryan.mahoney@basalt.net>, Scott Fleming <scott.fleming@eaglecounty.us>, Tom Kassmel <TKassmel@vailgov.com>, Valerie MacDonald <valerie.macdonald@pitkinsheriff.com>

Eagle County must update our Pre-Disaster Mitigation Plan (PDMP) in 2018 to ensure that our county, municipalities and special districts are eligible for pre- and post- disaster FEMA funding moving forward. The Lake Christine Fire is a reminder that natural disasters can occur at any time and we need to be prepared to respond and recover from these events to foster safe and resilient communities. If you are receiving this email, you have been identified as a key representative for mitigation planning in or surrounding Eagle County. Your participation will ensure that your town or district is represented and is eligible for FEMA funds to prevent and/or respond to a disaster or that you are a key partner in these efforts.

An initial meeting will be held on September 12, 2018 from 1:30-3:30 in the Eagle County Emergency Operations Center (EOC) to give you more background on mitigation planning requirements, roles and responsibilities for planning participants and to discuss next steps in the planning process.

Prior to this meeting, we are asking that you complete some homework:

Complete and submit a letter of commitment (see attached template) no later than Thursday, August 23rd (two weeks from today).

Send any local planning documents or policies that may include mitigation activities to me before September 12 (we do not want to recreate any work that has been completed by your jurisdiction).

Review the previous Eagle County PDMP to become familiar with the content. You can edit this document to update information for your jurisdiction, but this will not be required until after the meeting on September 12.

Start thinking about what mitigation projects you would like to submit in the plan for your jurisdiction. FEMA has put together a list of [Mitigation Ideas](#) that you may find useful.

We are on a tight timeline to complete this plan and get FEMA approval by the end of the year, so we will be asking everyone to commit to meeting specific deadlines throughout this planning process. We are looking forward to your participation and to developing a mitigation plan that is representative and beneficial to all of the unique and diverse municipalities and districts within Eagle County. Please feel free to reach out with any questions you may have regarding the mitigation planning process and I look forward to seeing you on September 12th.

Thank you,

Barry

--

Barry Smith  
P.O. Box 850  
Eagle, CO 81631  
970-328-3545 Office

# Mitigation Planning Meeting Agenda

## 2018 Eagle County Hazard Mitigation Planning Workshop Meeting Agenda

**September 12, 2018 1:30-3:30 p.m.**  
**Eagle County Government Building, Garden Room**

### Facilitators:

Barry Smith, Eagle County Emergency Manager  
Mark Thompson, CDHSEM Mitigation Planning Specialist

Participating Jurisdictions: See [electronic sign in sheet](#)

<b>1:30-1:40</b>	<b>Introductions</b>
<b>1:40-2:00</b>	<b>Hazard Mitigation Overview</b> Disaster Mitigation Act of 2000 (DMA 2000) Local Government Planning Requirements Benefits of Hazard Mitigation Planning Hazard Mitigation Project Examples Recent History of Mitigation Grants in Colorado
<b>2:00-2:20</b>	<b>Hazard Mitigation Plan Update Process</b> Project Timeline (Key Steps and Milestones) Role of Eagle County Hazard Mitigation Planning Team Strategy for Public Involvement Plan Format and Content Resources and References FEMA Crosswalk
<b>2:20-2:50</b>	<b>Risk Assessment Review and Discussion</b> Review 2018 Survey Data
<b>2:50-3:20</b>	<b>Breakout Session</b> Feedback on Mitigation Plan Goals and Objectives Prioritize Hazards for Eagle County Set 2018-2023 Mitigation Goals, Objectives & Projects (Preliminary Discussion)
<b>3:20-3:30</b>	<b>Q&amp;A and Homework Assignments</b> <ol style="list-style-type: none"><li>1. Complete Surveys by 9/30/2018</li><li>2. Update/confirm the accuracy of the content relevant to your jurisdiction (see table of contents)</li><li>3. Complete at least one new Mitigation Action with Mitigation Action Evaluation Worksheet and Mitigation Action Worksheet by 10/15/2018</li><li>4. Final approval of draft by planning team (10/31/2018)</li><li>5. Provide documentation of adoption by your jurisdiction's governing body by 12/15/2018</li></ol>

## Meeting Attendance Sheet

Meeting attendance was tracked electronically using a Google Sheet that contains notation on planning meeting and survey participation for each jurisdiction. This Google Sheet can be found at:

[https://docs.google.com/spreadsheets/d/1YBn-vSmVBhmQh7cm\\_ic-FhosGERmpVmxy8Uu60eciBU/edit#gid=0](https://docs.google.com/spreadsheets/d/1YBn-vSmVBhmQh7cm_ic-FhosGERmpVmxy8Uu60eciBU/edit#gid=0)

Name	Position	Jurisdiction/Department	Email Address	Sept 12 Meeting Participant
Jeff Shroll	County Manager	Eagle County Administration	jeff.shroll@eaglecounty.us	No
Kelley Collier	Deputy County Manager	Eagle County Administration	kelley.collier@eaglecounty.us	No
Chris Lindley	Public Health Director	Eagle County Public Health & Environment	chris.lindley@eaglecounty.us	No
Mark Chapin	County Assessor	Eagle County Assessor's Office	Mark.Chapin@eaglecounty.us	Yes
Barry Smith	Emergency Manager	Eagle County Emergency Management	barry.smith@eaglecounty.us	Yes
Dana Erpelding	Deputy Public Health Director	Eagle County Public Health & Environment	dana.erpelding@eaglecounty.us	Yes
Amy Szczesny	GIS Manager	Eagle County GIS	Amy.szczesny@eaglecounty.us	Yes
Scott Fleming	GIS Specialist	Eagle County GIS	scott.fleming@eaglecounty.us	Yes
John Harris	Director	Eagle County Road and Bridge	john.harris@eaglecounty.us	No
Ben Gerdes	Director	Eagle County Community Development	ben.gerdes@eaglecounty.us	Yes
Adam Palmer	Director	Eagle County Sustainable Communities	adam.palmer@eaglecounty.us	Yes
Eric Lovgren	Wildfire Mitigation Coordinator	Eagle County Sustainable Communities	Eric.Lovgren@eaglecounty.us	No
James Van Beek	Sheriff	Eagle County Sheriff's Office	james.vanbeek@eaglecounty.us	Yes
Kip Turner	Aviation Director	Eagle County Airport	kip.turner@eaglecounty.us	No
Ray Merry	Environmental Health Manager	Eagle County Public Health & Environment	ray.merry@eaglecounty.us	Yes
Jackie Hammel	Public Health Nurse	Eagle County Public Health & Environment	jackie.hammel@eaglecounty.us	Yes
Justin Hildreth	Town Engineer	Town of Avon	Jhildreth@avon.org	Yes
Gary Padilla	Public Works Director	Town of Avon	gpadilla@avon.org	No
Coby Cosper	Deputy Chief of Police	Town of Avon	ccosper@avon.org	Yes
Boyd Bierbaum	Public Works Director	Town of Basalt	boyd.bierbaum@basalt.net	No
Ryan Mahoney	Town Manager	Town of Basalt	ryan.mahoney@basalt.net	No
Bryon McGinnins	Public Works Director	Town of Eagle	bryon@townofeagle.org	No
Jim Hancock	Town Engineer	Town of Gypsum	jim@townofgypsum.com	Yes
Jeff Shreeve	Public Works Director	Town of Gypsum	jshreeve@townofgypsum.com	No
Arnold Martinez	Minturn Public Works	Town of Minturn	publicworks@minturn.org	No
Barb Smith	Town Manager	Town of Red Cliff	manager@townofredcliff.org	No
Tom Kassmel	Town Engineer	Town of Vail	TKassmel@vailgov.com	Yes
Charlie Turnbull	Public Works	Town of Vail	cturnbull@vailgov.com	No
Greg Hall	Public Works Director	Town of Vail	ghall@vailgov.com	No
James Clancy	Public Safety Director	Vail Resorts	JClancy@vailresorts.com	Yes
Steven Barber	District Manager	Eagle Vail Metropolitan District	sbarber@eaglevail.org	Yes
Bill Simmons	District Manager	Beaver Creek Metropolitan District	BSimmons@beavercreekmetro.com	No
Ken Marchetti	District Manager	Edwards Metropolitan District	Ken@rmpccpa.com	No
Rachel Oys	District Manager	Cordillera Metropolitan District	roys@cordillerametro.org	No
Linn Brooks	District Manager	Eagle River Water and Sanitation District	lbrooks@erwsd.org	No
Chris Montera	Chief Executive Officer	Eagle County Paramedic Services	cmontera@ecparamedics.com	No
Scott Thompson	Fire Chief	Basalt and Rural Fire Protection District	sthompson@basaltfire.org	No
Karl Bauer	Fire Chief	Eagle River Fire Protection District	kbauer@eagleriverfire.org	No
Tracy LeClair	Community Risk Manager	Eagle River Fire Protection District	tclair@eagleriverfire.org	Yes
Doug Cupp	Fire Chief	Greater Eagle Fire Protection District	dcupp@gefpd.org	Yes
Justin Kirkland	Fire Chief	Gypsum Fire Protection District	Justin@gypsumfd.com	Yes
Brita Horn	Fire Chief	Rock Creek Volunteer Fire Department	chiefhorn25@gmail.com	No
Mark Novak	Fire Chief	Vail Fire and Emergency Services	mnovak@vailgov.com	Yes
Valerie MacDonald	Emergency Manager	Pitkin County	valerie.macdonald@pitkinsheriff.com	No
Chris Bornholdt	Emergency Manager	Garfield County	cbornholdt@garcosheriff.com	No
David DeMorat	Emergency Manager	Routt County	ddemorat@co.routt.co.us	No
Christian Hornbaker	Emergency Manager	Grand County	chornbaker@co.grand.co.us	No
Mike McHargue	Emergency Manager	Lake County	mikemchargue@hotmail.com	Yes
Brian Bovaird	Emergency Manager	Summit County	Brian.Bovaird@summitcountyco.gov	Yes
Ryan McCulley	Fire Management Officer	Colorado Department of Fire Prevention and Control	Ryan.McCulley@state.co.us	No
Randy McIntosh	LTC Ops	Colorado Department of Transportation	Randy.mcintosh@state.co.us	No
Greg Winkler	Field Staff	Colorado Department of Local Affairs	greg.winkler@state.co.us	No
Perry Will		Colorado Department of Parks and Wildlife	perry.will@state.co.us	No
Patricia Gavelda		Colorado Division of Homeland Security & Emergency M	patricia.gavelda@state.co.us	No
Chuck Vale	Field Manager	Colorado Division of Homeland Security & Emergency M	chuck.vale@state.co.us	Yes
Mark Thompson		Colorado Division of Homeland Security & Emergency M	markw.thompson@state.co.us	Yes
Ron Cousineau		Colorado State Forest Service	Ron.Cousineau@colostate.edu	No
Kevin Houck	Senior Engineer	Colorado Water Conservation Board	kevin.houck@state.co.us	No
Paul Douglas		U.S. Bureau of Land Management	Paul@blm.gov	No
Karen Schroyer		U.S. Forest Service	kschroyer@fs.fed.us	No
Aaron Mayville		U.S. Forest Service	awmayville@fs.fed.us	No
Jim Pringle		National Weather Service	james.pringle@noaa.gov	Yes
James Clancy	Director	Beaver Creek Metropolitan District	jclancy@vailresorts.com	Yes
Nicole Trujillo	Administrative Safety and Materials Coordinator	Eagle County Road and Bridge	nicole.trujillo@eaglecounty.us	Yes
Michelle Metteer	Town Manager	Town of Minturn	manager@minturn.org	No
Brandy Reitter	Town Manager	Town of Eagle	brandy.reitter@townofeagle.org	Yes
John Romanin	Manager	Red Sky Ranch	jromanin@vailresorts.com	Yes

## **Mitigation Planning Meeting Video**

The Eagle County Disaster Mitigation Planning Meeting held on September 12, 2018 was streamed live on YouTube during the meeting with the opportunity for partners to participate remotely. The meeting was also recorded to enable planning participants to view the meeting at a later date. The meeting video can be found at:

[https://www.youtube.com/edit?video\\_id=nVas-QNZ\\_IQ](https://www.youtube.com/edit?video_id=nVas-QNZ_IQ)

---

## Letters of Commitment



75 South Frontage Road West  
Vail, Colorado 81657  
vailgov.com

970.479.2100  
970.479.2157 fax

Date 8-23-2018

Eagle County Emergency Management  
Attn: Barry Smith  
P.O. Box 850  
Eagle, CO 81631

RE: Letter of Intent to Participate in 2018 Pre-Disaster Mitigation Planning

Barry,

Through this letter the Town of Vail wishes to participate in the 2018 Pre-Disaster Mitigation Plan process as an Adopting Entity to update our Local Multi-hazard Mitigation Plan.

We commit to implementing this planning process by:

- Designating key personnel to the planning team
- Identifying vulnerabilities for your jurisdiction
- Helping to develop potential mitigation strategies for your jurisdiction
- Promoting community resilience and hazard mitigation in your jurisdiction

Thank you,



Greg Clifton  
Town Manager,  
Town of Vail





# GYPSUM FIRE PROTECTION DISTRICT

PO Box 243, 511 2<sup>nd</sup> Street Gypsum, Colorado 81637  
Phone: 970 524 7101



Date 9/12/18

Eagle County Emergency Management  
Attn: Barry Smith  
P.O. Box 850  
Eagle, CO 81631

RE: Letter of Intent to Participate in 2018 Pre-Disaster Mitigation Planning

Barry;

Through this letter the Gypsum Fire Protection District wishes to participate in the 2018 Pre-Disaster Mitigation Plan process as an Adopting Entity to update our Local Multi-hazard Mitigation Plan. Our current plan was approved on January 3, 2013 and is set to expire on January 3, 2018.

We commit to implementing this planning process by:

- Designating the following personnel to the planning team;
  - Justin Kirkland, Fire Chief
- Addressing at a minimum the following vulnerabilities in the Gypsum Fire Protection District;
  - Wildfire
  - Flooding/Landslides
- Helping to develop potential mitigation strategies for our jurisdiction
- Promoting community resilience and hazard mitigation in our jurisdiction
- Seeking adoption of the plan the resolution of our governing body

Thank you,

*Justin Kirkland*

Justin Kirkland  
Fire Chief



## EagleVail Metropolitan District

---

Date: August 13, 2018

Eagle County Emergency Management  
Attn: Barry Smith  
P.O. Box 850  
Eagle, CO 81631

RE: Letter of Intent to Participate in 2018 Pre-Disaster Mitigation Planning

Barry;

Through this letter the EagleVail Metropolitan District wishes to participate in the 2018 Pre-Disaster Mitigation Plan process as an Adopting Entity to update our Local Multi-hazard Mitigation Plan. Our current plan was approved on January 3, 2013 and is set to expire on January 3, 2018.

We commit to implementing this planning process by:

- Designating key personnel to the planning team
- Identifying vulnerabilities for our jurisdiction
- Helping to develop potential mitigation strategies for our jurisdiction
- Promoting community resilience and hazard mitigation in our jurisdiction
- Seeking adoption of the plan the resolution of our governing body

Suggested key personnel include;

- Elected Officials
- Community Planners
- Flood plain Managers
- Water providers
- Public Works Managers
- Building Officials
- Planning Commission Members
- Neighborhood Groups
- Nonprofit Organizations
- Colleges and Universities
- Cultural Institutions
- Business Leaders

Thank you,

Steven H. Barber  
General Manager  
EagleVail Metropolitan District

Date 8-21-2018

Eagle County Emergency Management  
Attn: Barry Smith  
P.O. Box 850  
Eagle, CO 81631

RE: Letter of Intent to Participate in 2018 Pre-Disaster Mitigation Planning

Barry;

Through this letter the town/city/district of Beaver Creek wishes to participate in the 2018 Pre-Disaster Mitigation Plan process as an Adopting Entity to update our Local Multi-hazard Mitigation Plan.

We commit to implementing this planning process by:

- Designating key personnel to the planning team
- Identifying vulnerabilities for your jurisdiction
- Helping to develop potential mitigation strategies for your jurisdiction
- Promoting community resilience and hazard mitigation in your jurisdiction

Suggested key personnel include;

- Elected Officials
- Community Planners
- Water providers
- Public Works Managers
- Building Officials
- Planning Commission Members
- Neighborhood Groups
- Nonprofit Organizations
- Cultural Institutions
- Business Leaders

Thank you,



Bill Simmons  
General Manager,  
Beaver Creek Metro District



August 31, 2016

Eagle County Emergency Management  
Attn: Barry Smith  
P.O. Box 850  
Eagle, CO 81631

RE: Letter of Intent to Participate in 2018 Pre-Disaster Mitigation Planning

Barry;

Through this letter the Town of Avon wishes to participate in the 2018 Pre-Disaster Mitigation Plan process as an Adopting Entity to update our Local Multi-hazard Mitigation Plan. Our current plan was approved on January 3, 2013 and is set to expire on January 3, 2018.

We commit to implementing this planning process by:

- Designating key personnel to the planning team
- Identifying vulnerabilities for your jurisdiction
- Helping to develop potential mitigation strategies for your jurisdiction
- Promoting community resilience and hazard mitigation in your jurisdiction

As part of the planning process, will include the following key personnel:

- Elected Officials
- Community Planners
- Flood plain Managers
- Water providers
- Public Works Managers
- Building Officials
- Planning Commission Members
- Neighborhood Groups
- Nonprofit Organizations
- Cultural Institutions
- Business Leaders

Thank you,

A handwritten signature in black ink, appearing to read "Justin Hildreth", with a long horizontal flourish extending to the right.

Justin Hildreth, PE  
Town Engineer



Via Email

September 22, 2016  
Eagle County Emergency Management  
Attn: Barry Smith  
P.O. Box 850  
Eagle, CO 81631

RE: Letter of Intent to Participate in 2018 Pre-Disaster Mitigation Planning

Barry;

Through this letter the Town of Gypsum declares its intent to participate in the 2018 Pre-Disaster Mitigation Plan process as an Adopting Entity to update our Local Multi-hazard Mitigation Plan. Our current plan was approved on January 3, 2013 and is set to expire on January 3, 2018.

We commit to implementing this planning process by:

- Designating key personnel to the planning team
- Identifying vulnerabilities for your jurisdiction
- Helping to develop potential mitigation strategies for your jurisdiction
- Promoting community resilience and hazard mitigation in your jurisdiction

Key personnel may include;

- Elected Officials
- Community Planners
- Flood plain Managers
- Water providers
- Public Works Managers
- Building Officials
- Planning Commission Members
- Neighborhood Groups
- Nonprofit Organizations
- Colleges and Universities
- Cultural Institutions
- Business Leaders

Thank you,

Jim Hancock, Engineer, Town of Gypsum

Date August 20, 2018

Eagle County Emergency Management  
Attn: Barry Smith  
P.O. Box 850  
Eagle, CO 81631

RE: Letter of Intent to Participate in 2018 Pre-Disaster Mitigation Planning

Barry;

Through this letter the town/city/district of BASA wishes to participate in the 2018 Pre-Disaster Mitigation Plan process as an Adopting Entity to update our Local Multi-hazard Mitigation Plan. Our current plan was approved on January 3, 2013 and is set to expire on January 3, 2018.

We commit to implementing this planning process by:

- Designating key personnel to the planning team
- Identifying vulnerabilities for our jurisdiction
- Helping to develop potential mitigation strategies for our jurisdiction
- Promoting community resilience and hazard mitigation in our jurisdiction
- Seeking adoption of the plan the resolution of our governing body

Suggested key personnel include;

- Elected Officials
- Community Planners
- Flood plain Managers
- Water providers
- Public Works Managers
- Building Officials
- Planning Commission Members
- Neighborhood Groups
- Nonprofit Organizations
- Colleges and Universities
- Cultural Institutions
- Business Leaders

Thank you

  
Chief Executive Officer

March 2, 2017

Eagle County Emergency Management  
Attn: Barry Smith  
P.O. Box 850  
Eagle, CO 81631



RE: Letter of Intent to Participate in 2018 Pre-Disaster Mitigation Planning

Barry:

Through this letter the Town of Red Cliff wishes to participate in the 2018 Pre-Disaster Mitigation Plan process as an Adopting Entity to update our Local Multi-hazard Mitigation Plan. Our current plan was approved on January 3, 2013 and is set to expire on January 3, 2018.

We commit to implementing this planning process by:

- Designating key personnel to the planning team
- Identifying vulnerabilities for our jurisdiction
- Helping to develop potential mitigation strategies for our jurisdiction
- Promoting community resilience and hazard mitigation in our jurisdiction

Suggested key personnel include:

- Elected Officials
- Community Planners
- Flood plain Managers
- Water providers
- Public Works Managers
- Building Officials
- Planning Commission Members
- Neighborhood Groups
- Business Leaders

Thank you for including us.

Best Regards:

A handwritten signature in blue ink, appearing to read "Barb Smith", with a long, sweeping underline that extends to the right.

Barb Smith  
Town Administrator & Clerk

Town of Red Cliff                      400 Pine Street, PO Box 40                      Red Cliff, CO 81649  
phone: 970/827-5303    fax: 970/827-5300    email: [Manager@townofredcliff.org](mailto:Manager@townofredcliff.org)



October 26, 2018

Eagle County Emergency Management  
Attn: Barry Smith  
P.O. Box 850  
Eagle, CO 81631

RE: Letter of Intent to Participate in 2018 Pre-Disaster Mitigation Planning

Barry;

Through this letter the Eagle River Fire Protection District wishes to participate in the 2018 Pre-Disaster Mitigation Plan process as an Adopting Entity to update the Eagle County Local Multi-hazard Mitigation Plan. The current plan was approved on January 3, 2013 and expired on January 3, 2018.

We commit to implementing this planning process by:

- Designating key personnel to the planning team
- Identifying vulnerabilities for our jurisdiction
- Helping to develop potential mitigation strategies for our jurisdiction
- Promoting community resilience and hazard mitigation in our jurisdiction
- Seeking adoption of the plan via resolution of our governing body

Suggested key personnel include;

- Elected Officials
- Community Planners
- Floodplain Managers
- Water providers
- Public Works Managers
- Building Officials
- Planning Commission Members
- Neighborhood Groups
- Nonprofit Organizations
- Colleges and Universities
- Cultural Institutions
- Business Leaders

Thank you,



Karl Bauer  
General Manager and Fire Chief

*Eagle River Fire Protection District is a professional fire service agency and proudly serves Tennessee Pass, Camp Hale, Red Cliff, Minturn, EagleVail, Avon, Mountain Star, Wildridge, Beaver Creek (by contractual agreement), Bachelor Gulch, Arrowhead, Homestead, Edwards, Lake Creek, Singletree, Pilgrim Downs, Cordillera, Bellyache Ridge, Red Sky Ranch and associated portions of I-70, Hwy 6 & 24.*





October 15, 2018

Eagle County Emergency Management  
Attn: Barry Smith  
P.O. Box 850  
Eagle, CO 81631

RE: Letter of Intent to Participate in 2018 Pre-Disaster Mitigation Planning

Barry;

Through this letter the Town of Eagle wishes to participate in the 2018 Pre-Disaster Mitigation Plan process as an Adopting Entity to update our Local Multi-hazard Mitigation Plan. Our current plan was approved on January 3, 2013 and expired on January 3, 2018.

We commit to implementing this planning process by:

- Designating key personnel to the planning team
- Identifying vulnerabilities for our jurisdiction
- Helping to develop potential mitigation strategies for our jurisdiction
- Promoting community resilience and hazard mitigation in our jurisdiction
- Seeking adoption of the plan the resolution of our governing body

Suggested key personnel include;

- Elected Officials
- Community Planners
- Floodplain Managers
- Water providers
- Public Works Managers
- Building Officials
- Planning Commission Members
- Neighborhood Groups
- Nonprofit Organizations
- Colleges and Universities
- Cultural Institutions
- Business Leaders

Thank you,

A handwritten signature in cursive script that reads "Brandy Reitter".

Brandy Reitter, Town Manager  
Town of Eagle, CO

Michelle Metteer  
Town Manager  
P.O. Box 309 | 302 Pine Street  
Minturn, CO 81645  
970-827-5645  
[manager@minturn.org](mailto:manager@minturn.org)  
[www.minturn.org](http://www.minturn.org)



Town Council  
Mayor – Matt Scherr  
Mayor Pro Tem – Earle Bidez  
Council Members:  
Terry Armistead  
George Brodin  
Brian Eggleton  
John Widerman  
Chelsea Winters

---

October 15, 2018

Eagle County Emergency Management  
Attn: Barry Smith  
P.O. Box 850  
Eagle, CO 81631

RE: Letter of Intent to Participate in 2018 Pre-Disaster Mitigation Planning

Barry;

Through this letter the town of Minturn, CO wishes to participate in the 2018 Pre-Disaster Mitigation Plan process as an Adopting Entity to update our Local Multi-hazard Mitigation Plan. Our current plan was approved on January 3, 2013 and expired on January 3, 2018.

We commit to implementing this planning process by:

- Designating key personnel to the planning team
- Identifying vulnerabilities for our jurisdiction
- Helping to develop potential mitigation strategies for our jurisdiction
- Promoting community resilience and hazard mitigation in our jurisdiction
- Seeking adoption of the plan the resolution of our governing body

Suggested key personnel include;

- Elected Officials
- Community Planners
- Floodplain Managers
- Water providers
- Public Works Managers
- Building Officials
- Planning Commission Members
- Neighborhood Groups
- Nonprofit Organizations
- Colleges and Universities
- Cultural Institutions
- Business Leaders

Thank you,

A handwritten signature in blue ink, appearing to read "Michelle Metteer".

Michelle Metteer  
Town Manager  
Minturn, Colorado

## GREATER EAGLE FIRE PROTECTION DISTRICT



Eagle County Emergency Management  
Attn: Barry Smith  
P.O. Box 850  
Eagle, CO 81631

RE: Letter of Intent to Participate in 2018 Pre-Disaster Mitigation Planning

Barry,

Through this letter the Greater Eagle Fire Protection District wishes to participate in the 2018 Pre-Disaster Mitigation Plan process as an Adopting Entity to update our Local Multi-hazard Mitigation Plan. Our current plan was approved on January 3, 2013 and expired on January 3, 2018.

We commit to implementing this planning process by:

- Designating key personnel to the planning team
- Identifying vulnerabilities for our jurisdiction
- Helping to develop potential mitigation strategies for our jurisdiction
- Promoting community resilience and hazard mitigation in our jurisdiction
- Seeking adoption of the plan the resolution of our governing body

Suggested key personnel include;

- Elected Officials
- Community Planners
- Floodplain Managers
- Water providers
- Public Works Managers
- Building Officials
- Planning Commission Members
- Neighborhood Groups
- Nonprofit Organizations
- Colleges and Universities
- Cultural Institutions
- Business Leaders

Thank you,

Doug Cupp  
Fire Chief, Greater Eagle Fire Protection District

## Appendix I: Adoption Documentation

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**RESOLUTION NO. 18-31  
AUTHORIZING THE ADOPTION OF THE  
2018 EAGLE COUNTY, CO  
HAZARD MITIGATION PLAN**

**WHEREAS**, all jurisdictions within Eagle County, Colorado have exposure to natural hazards that increase the risk to life, property, environment, and the County and local economy; and

**WHEREAS**; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

**WHEREAS**, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

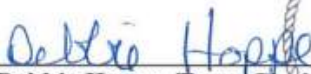
**WHEREAS**; Eagle County along with a coalition of municipalities and special districts with like planning objectives has been formed to create consistent mitigation strategies within Eagle County; and


**WHEREAS**, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy.

**NOW, THEREFORE, the Avon Town Council, hereby RESOLVES** to adopt the 2018 Eagle County Hazard Mitigation Plan (the "Plan"), as approved by FEMA in its entirety, as the jurisdiction's Natural Hazard Mitigation Plan, and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.

**ADOPTED December 11, 2018 by the AVON TOWN COUNCIL**

By:   
\_\_\_\_\_  
Jennie Fancher, Mayor

Attest:   
\_\_\_\_\_  
Debbie Hoppe, Town Clerk

The seal is circular with a double-line border. The outer ring contains the text "TOWN OF AVON" at the top and "COLORADO" at the bottom. In the center of the seal, the word "SEAL" is written in a bold, serif font.

**RESOLUTION 10, SERIES 2018**

**A RESOLUTION OF THE TRUSTEES OF THE TOWN OF RED CLIFF  
AUTHORIZING THE ADOPTION OF THE 2018 EAGLE COUNTY, CO  
HAZARD MITIGATION PLAN UPDATE**

WHEREAS, all jurisdictions within Eagle County, Colorado have exposure to natural hazards that increase the risk to life, property, environment, and the County and local economy; and

WHEREAS; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

WHEREAS, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

WHEREAS; Eagle County along with a coalition of municipalities and special districts with like planning objectives has been formed to create consistent mitigation strategies within Eagle County; and

WHEREAS, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy;


**NOW, THEREFORE, BE IT RESOLVED** that the Town of Red Cliff:

- 1) Adopts as approved by FEMA in its entirety, the 2018 Eagle County Hazard Mitigation Plan (the "Plan") as the jurisdiction's Natural Hazard Mitigation Plan, and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.
- 2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.
- 3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.
- 4) Will continue its support of the Mitigation Planning Committee as described within the Plan.
- 5) Will help to promote and support the mitigation successes of all participants in this Plan.
- 6) Will incorporate mitigation planning as an integral component of government and partner operations.
- 7) Will provide an update of the Plan in conjunction with the County no less than every five years.

The Resolution was adopted by majority vote of the Board of Trustees of the Town of Red Cliff this 20th day of November, 2018.



ATTEST:

  
Lorenzo Sandoval, Mayor

  
Barb Smith, Town Administrator/Clerk

**TOWN OF MINTURN  
RESOLUTION 02 - SERIES 2019**

**A RESOLUTION ADOPTING THE 2018 EAGLE COUNTY, CO  
HAZARD MITIGATION PLAN UPDATE AND AUTHORIZING THE MAYOR OF THE  
TOWN OF MINTURN TO SIGN OF THE APPROVED AGREEMENT**

**WHEREAS**, all jurisdictions within Eagle County, Colorado have exposure to natural hazards that increase the risk to life, property, environment, and the County and local economy; and

**WHEREAS**; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

**WHEREAS**, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

**WHEREAS**; Eagle County along with a coalition of municipalities and special districts with like planning objectives has been formed to create consistent mitigation strategies within Eagle County; and

**WHEREAS**, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy;

**NOW, THEREFORE, BE IT RESOLVED** that the Town of Minturn, CO.:

- 1) Adopts as approved by FEMA in its entirety, the 2018 Eagle County Hazard Mitigation Plan (the "Plan") as the jurisdiction's Natural Hazard Mitigation Plan, and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.
- 2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.
- 3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.
- 4) Will continue its support of the Mitigation Planning Committee as described within the Plan.
- 5) Will help to promote and support the mitigation successes of all participants in this Plan.

- 6) Will incorporate mitigation planning as an integral component of government and partner operations.
- 7) Will provide an update of the Plan in conjunction with the County no less than every five years.

**INTRODUCED, READ, APPROVED, ADOPTED AND RESOLVED this 2nd day of January, 2019.**

TOWN OF MINTURN

By:   
Mayor

ATTEST:

  
Town Clerk



**A RESOLUTION OF THE Governing Body OF THE EagleVail Metropolitan District  
AUTHORIZING THE ADOPTION OF THE 2018 EAGLE COUNTY, CO  
HAZARD MITIGATION PLAN UPDATE**

WHEREAS, all jurisdictions within Eagle County, Colorado have exposure to natural hazards that increase the risk to life, property, environment, and the County and local economy; and

WHEREAS; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

WHEREAS, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

WHEREAS; Eagle County along with a coalition of municipalities and special districts with like planning objectives has been formed to create consistent mitigation strategies within Eagle County; and

WHEREAS, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy;

**NOW, THEREFORE, BE IT RESOLVED** that the EagleVail Metropolitan District:

- 1) Adopts as approved by FEMA in its entirety, the 2018 Eagle County Hazard Mitigation Plan (the "Plan") as the jurisdiction's Natural Hazard Mitigation Plan, and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.
- 2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.
- 3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.
- 4) Will continue its support of the Mitigation Planning Committee as described within the Plan.
- 5) Will help to promote and support the mitigation successes of all participants in this Plan.
- 6) Will incorporate mitigation planning as an integral component of government and partner operations.
- 7) Will provide an update of the Plan in conjunction with the County no less than every five years.

**PASSED AND ADOPTED on this** 11 day of December, 2018,

 Chivusa  
EagleVail Metropolitan District



---

**TOWN OF GYPSUM  
RESOLUTION NO. 07 (SERIES 2019)**

**A RESOLUTION ADOPTING THE 2018-2023 EAGLE COUNTY, CO  
HAZARD MITIGATION PLAN UPDATE AND AUTHORIZING THE MAYOR OF THE  
TOWN OF GYPSUM TO SIGN OF THE APPROVED AGREEMENT**

**WHEREAS**, all jurisdictions within Eagle County, Colorado have exposure to natural hazards that increase the risk to life, property, environment, and the County and local economy; and

**WHEREAS**; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

**WHEREAS**, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

**WHEREAS**; Eagle County along with a coalition of municipalities and special districts with like planning objectives has been formed to create consistent mitigation strategies within Eagle County; and

**WHEREAS**, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy;

**NOW, THEREFORE, BE IT RESOLVED** that the Town of Gypsum, CO.:

- 1) Adopts as approved by FEMA in its entirety, the 2018-2023 Eagle County Hazard Mitigation Plan (the "Plan") as the jurisdiction's Natural Hazard Mitigation Plan, and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.
- 2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.
- 3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.
- 4) Will continue its support of the Mitigation Planning Committee as described within the Plan.
- 5) Will help to promote and support the mitigation successes of all participants in this Plan.
- 6) Will incorporate mitigation planning as an integral component of government and partner operations.

7) Will provide an update of the Plan in conjunction with the County no less than every five years.

**INTRODUCED, READ, APPROVED, ADOPTED AND RESOLVED this 12 day of February, 2019.**

TOWN OF GYPSUM

By:   
\_\_\_\_\_  
Mayor

ATTEST:

  
\_\_\_\_\_  
Town Clerk



**EAGLE RIVER FIRE PROTECTION DISTRICT**

**A RESOLUTION ADOPTING THE 2018 EAGLE COUNTY, CO  
HAZARD MITIGATION PLAN UPDATE AND AUTHORIZING THE CHAIR OF THE  
EAGLE RIVER FIRE PROTECTION DISTRICT TO SIGN OF THE APPROVED  
AGREEMENT**

**WHEREAS**, all jurisdictions within Eagle County, Colorado have exposure to natural hazards that increase the risk to life, property, environment, and the County and local economy; and

**WHEREAS**; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

**WHEREAS**, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

**WHEREAS**; Eagle County along with a coalition of municipalities and special districts with like planning objectives has been formed to create consistent mitigation strategies within Eagle County; and

**WHEREAS**, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy;

**NOW, THEREFORE, BE IT RESOLVED** that the Eagle River Fire Protection District, CO.:

- 1) Adopts as approved by FEMA in its entirety, the 2018 Eagle County Hazard Mitigation Plan (the "Plan") as the jurisdiction's Natural Hazard Mitigation Plan, and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.
- 2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.
- 3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.
- 4) Will continue its support of the Mitigation Planning Committee as described within the Plan.
- 5) Will help to promote and support the mitigation successes of all participants in this Plan.

6) Will incorporate mitigation planning as an integral component of government and partner operations.

7) Will provide an update of the Plan in conjunction with the County no less than every five years.

**INTRODUCED, READ, APPROVED, ADOPTED AND RESOLVED this 21st day of February, 2019.**

EAGLE RIVER FIRE PROTECTION DISTRICT

By:  
Chair



ATTEST:

  
Secretary ~~Acting~~

**A RESOLUTION ADOPTING THE 2018 EAGLE COUNTY, CO  
HAZARD MITIGATION PLAN UPDATE AND AUTHORIZING THE CHAIR OF THE  
GYPSUM FIRE PROTECTION DISTRICT TO SIGN OF THE APPROVED  
AGREEMENT**

**WHEREAS**, all jurisdictions within Eagle County, Colorado have exposure to natural hazards that increase the risk to life, property, environment, and the County and local economy; and

**WHEREAS**; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

**WHEREAS**, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

**WHEREAS**; Eagle County along with a coalition of municipalities and special districts with like planning objectives has been formed to create consistent mitigation strategies within Eagle County; and

**WHEREAS**, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy;

**NOW, THEREFORE, BE IT RESOLVED** that the Gypsum Fire Protection District, CO.:

- 1) Adopts as approved by FEMA in its entirety, the 2018 Eagle County Hazard Mitigation Plan (the "Plan") as the jurisdiction's Natural Hazard Mitigation Plan, and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.
- 2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.
- 3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.
- 4) Will continue its support of the Mitigation Planning Committee as described within the Plan.
- 5) Will help to promote and support the mitigation successes of all participants in this Plan.

6) Will incorporate mitigation planning as an integral component of government and partner operations.

7) Will provide an update of the Plan in conjunction with the County no less than every five years.

**INTRODUCED, READ, APPROVED, ADOPTED AND RESOLVED this 26th day of February, 2019.**

GYPSUM FIRE PROTECTION DISTRICT

By:   
Chair

ATTEST:

  
Secretary

Commissioner CHANDLER-ARMY moved adoption  
of the following Resolution:

**BOARD OF COUNTY COMMISSIONERS  
COUNTY OF EAGLE, STATE OF COLORADO**

**RESOLUTION No. 2019- 007**

**RESOLUTION ADOPTING THE 2018 EAGLE COUNTY  
HAZARD MITIGATION PLAN UPDATE**

WHEREAS, all jurisdictions within Eagle County, Colorado have exposure to natural or human caused hazards such as wildfires, flooding and other disasters that increase the risk to life, property, environment, the County, and the local economy; and

WHEREAS pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property which is positive for the overall good and welfare of the community; and

WHEREAS, The Federal Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs in order for jurisdictions to be eligible for future pre-disaster and post-disaster federal funding for mitigation purposes; and

WHEREAS, such Act requires updates to these local plans every five (5) years;  
and

WHEREAS; Eagle County formed a coalition of municipalities and special districts with like planning objectives to create consistent mitigation strategies within Eagle County; and

WHEREAS, the coalition has completed a planning process that engaged the public, assessed the risk and vulnerability to the impacts of natural hazards, developed a mitigation strategy consistent with a set of uniform goals and objectives, and created a plan for implementing, evaluating and revising this strategy through development of this revision to the existing Hazard Mitigation Plan.

**NOW, THEREFORE, be it resolved by the Board of County Commissioners  
of the County of Eagle, State of Colorado:**

**THAT**, the Board of County Commissioners for Eagle County ("Board") hereby adopts as approved by FEMA in its entirety, the 2018 Eagle County Hazard Mitigation Plan (the "Plan") as the jurisdiction's Hazard Mitigation Plan attached hereto as Exhibit A, and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.

**THAT** the County will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.

**THAT** the County will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.

**THAT** the County will continue its support of the Mitigation Planning Committee as described within the Plan.

**THAT** the County will help to promote and support the mitigation successes of all participants in this Plan.

**THAT** the County will incorporate mitigation planning as an integral component of government and partner operations.

**THAT** the County will provide an update of the Plan in conjunction with the other jurisdictions within the County no less than every five years.

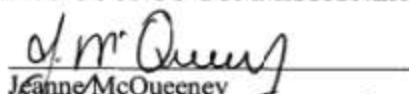

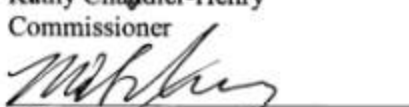
**THAT** the Board hereby finds, determines, and declares that this Resolution is necessary for the health, safety and welfare of the Citizens of Eagle County.

**MOVED, READ and ADOPTED** by the Board of County Commissioners of the County of Eagle, State of Colorado, at its regular meeting held the 19<sup>th</sup> day of February, 2019.

ATTEST:

  
Regina O'Brien  
Clerk to the Board of  
County Commissioners

COUNTY OF EAGLE, STATE OF  
COLORADO, by and Through Its  
BOARD OF COUNTY COMMISSIONERS

By:   
Jeanne McQueeney  
Chairman  
  
Kathy Chandler-Henry  
Commissioner  
  
Matt Scherr  
Commissioner



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**RESOLUTION AUTHORIZING THE  
ADOPTION OF THE 2019 EAGLE COUNTY, CO  
HAZARD MITIGATION PLAN**

**WHEREAS**, all jurisdictions within Eagle County, Colorado have exposure to natural hazards that increase the risk to life, property, environment, and the County and local economy; and

**WHEREAS**; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and


**WHEREAS**, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

**WHEREAS**; the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy.

**NOW, THEREFORE, the Beaver Creek Metropolitan District, hereby RESOLVES** to adopt the 2019 Eagle County Hazard Mitigation Plan (the "Plan"), as approved by FEMA in its entirety, as the jurisdiction's Natural Hazard Mitigation Plan, and resolves to execute any appropriate actions identified in the Plan that pertain to this jurisdiction.

**ADOPTED February 27, 2019 by the Beaver Creek Metropolitan District Board of Directors**

By:   
Jim Fraser, Board President

Attest:   
Steve Friedman, Vice President

**RESOLUTION NO. 13**  
**Series of 2019**

**A RESOLUTION ADOPTING THE 2018 EAGLE COUNTY, CO HAZARD MITIGATION PLAN UPDATE**

WHEREAS, Eagle County may be at risk natural or human caused hazards such as wildfires, flooding and others with the potential for the loss of life and significant property damage;

WHEREAS, all jurisdictions within Eagle County, Colorado have exposure to natural hazards that increase the risk to life, property, environment, and the County and local economy;

WHEREAS; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property;

WHEREAS, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs;

WHEREAS; Eagle County along with a coalition of municipalities and special districts with like planning objectives has been formed to create consistent mitigation strategies within Eagle County;

WHEREAS, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy; and

WHEREAS, the Council finds and determines that the Eagle County Pre-Disaster Mitigation Plan is necessary and will promote the health, safety, morals, and general welfare of the Town.

NOW THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF VAIL, COLORADO THAT:

1) Adopts as approved by FEMA in its entirety, the 2018 Eagle County Hazard Mitigation Plan (the "Plan") as the jurisdiction's Natural Hazard Mitigation Plan, and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.

2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.

3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.

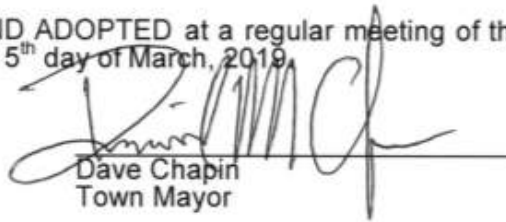
4) Will continue its support of the Mitigation Planning Committee as described within the Plan.

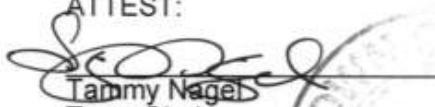
5) Will help to promote and support the mitigation successes of all participants in this Plan.

6) Will incorporate mitigation planning as an integral component of government and partner operations.

7) Will provide an update of the Plan in conjunction with the County no less than every five years.

INTRODUCED, PASSED AND ADOPTED at a regular meeting of the Town Council of the Town of Vail held this 5<sup>th</sup> day of March, 2019.

  
Dave Chapin  
Town Mayor

ATTEST:  
  
Tammy Nagel  
Town Clerk



**RESOLUTION 2019-5**

**A RESOLUTION ADOPTING THE 2018 EAGLE COUNTY, CO  
HAZARD MITIGATION PLAN UPDATE AND AUTHORIZING THE CHAIRMAN OF  
GREATER EAGLE FIRE PROTECTION DISTRICT TO SIGN  
THE APPROVED AGREEMENT**

**WHEREAS**, all jurisdictions within Eagle County, Colorado have exposure to natural hazards that increase the risk to life, property, environment, and the County and local economy; and

**WHEREAS**; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

**WHEREAS**, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

**WHEREAS**; Eagle County along with a coalition of municipalities and special districts with like planning objectives has been formed to create consistent mitigation strategies within Eagle County; and

**WHEREAS**, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy;

**NOW, THEREFORE, BE IT RESOLVED** that the Greater Eagle Fire Protection District, Eagle, Colorado:

- 1) Adopts as approved by FEMA in its entirety, the 2018 Eagle County Hazard Mitigation Plan (the "Plan") as the jurisdiction's Natural Hazard Mitigation Plan, and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.
- 2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.
- 3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.
- 4) Will continue its support of the Mitigation Planning Committee as described within the Plan.
- 5) Will help to promote and support the mitigation successes of all participants in this Plan.

6) Will incorporate mitigation planning as an integral component of government and partner operations.

7) Will provide an update of the Plan in conjunction with the County no less than every five years.

**INTRODUCED, READ, APPROVED, ADOPTED AND RESOLVED this 20th day of February, 2019.**

**GREATER EAGLE FIRE PROTECTION DISTRICT**

By: \_\_\_\_\_

Eric Peterson, Chairman

ATTEST:

Eric Cellom, Secretary

**RESOLUTION NO. 17**  
**(Series of 2019)**

**A RESOLUTION OF THE BOARD OF TRUSTEES OF EAGLE, COLORADO**  
**ADOPTING THE 2018 EAGLE COUNTY, CO HAZARD MITIGATION PLAN UPDATE**

WHEREAS, all jurisdictions within Eagle County, Colorado have exposure to natural hazards that increase the risk to life, property, environment, and the County and local economy;

WHEREAS; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property;

WHEREAS, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs;

WHEREAS; Eagle County along with a coalition of municipalities and special districts with like planning objectives has been formed to create consistent mitigation strategies within Eagle County; and

WHEREAS, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE TOWN OF EAGLE, COLORADO:

- 1) Adopts as approved by FEMA in its entirety, the 2018 Eagle County Hazard Mitigation Plan (the "Plan") as the jurisdiction's Natural Hazard Mitigation Plan and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.
- 2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.
- 3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.
- 4) Will continue its support of the Mitigation Planning Committee as described within the Plan.
- 5) Will help to promote and support the mitigation successes of all participants in this Plan.
- 6) Will incorporate mitigation planning as an integral component of government and partner operations.

7) Will provide an update of the Plan in conjunction with the County no less than every five years.

INTRODUCED, READ, PASSED, AND ADOPTED at a regular meeting of the Board of Trustees of the Town of Eagle, Colorado, held on March 26, 2019.

TOWN OF EAGLE, COLORADO

By:   
Anne McKibbin, Mayor

ATTEST:

  
Jenny Rakow, Town Clerk



## Appendix J: FEMA Approval

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U.S. Department of Homeland Security  
Region VIII  
Denver Federal Center, Building 710  
P.O. Box 25267  
Denver, CO 80225-0267



**FEMA**

R8-MT

April 2, 2019

Jeanne McQueeney, Chair  
Eagle County Board of County Commissioners  
P.O. Box 850  
500 Broadway  
Eagle, Colorado 81631

Dear Chair McQueeney:

We are pleased to announce the approval of the Eagle County Hazard Mitigation Plan 2018 Update as meeting the requirements of the Stafford Act and Title 44 Code of Federal Regulations §201.6 for a local hazard mitigation plan. The plan approval extends to Eagle County; Towns of Avon, Eagle, Gypsum, Minturn, Red Cliff, and Vail; Beaver Creek Metropolitan District, Eagle-Vail Metropolitan District, Eagle River Fire Protection District, Greater Eagle Fire Protection District, and Gypsum Fire Protection District.

The jurisdictions are hereby eligible for FEMA Hazard Mitigation Assistance grant programs. All requests for funding will be evaluated individually according to the specific eligibility and other requirements of the particular programs under which the application is submitted. Approved mitigation plans may be eligible for points under the National Flood Insurance Program Community Rating System.

The plan is approved through April 1, 2024. A local jurisdiction must revise its plan and resubmit it for approval within five years to continue to be eligible for mitigation project grant funding. We have provided recommendations for the next plan update on the enclosed Plan Review Tool.

We wish to thank the jurisdictions for participating in the process and commend your continued commitment to mitigation planning. Please contact Steve Boand, State Hazard Mitigation Officer, Colorado Department of Emergency Services, at [steven.boand@state.co.us](mailto:steven.boand@state.co.us) or (303) 915-6063 with any questions on the plan approval or mitigation grant programs.

Sincerely,

  
Jeanine D. Petterson  
Mitigation Division Director

Enclosure

cc: Steve Boand, State Hazard Mitigation Officer, Colorado Department of Homeland Security and Emergency Management



## LOCAL MITIGATION PLAN REVIEW TOOL

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The [Regulation Checklist](#) provides a summary of FEMA’s evaluation of whether the Plan has addressed all requirements.
- The [Plan Assessment](#) identifies the plan’s strengths as well as documents areas for future improvement.
- The [Multi-jurisdiction Summary Sheet](#) is an optional worksheet that can be used to document how each jurisdiction met the requirements of each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

<b>Jurisdiction:</b> Eagle County, CO	<b>Title of Plan:</b> Hazard Mitigation Plan 2018	<b>Date of Plan:</b> 11/19/2018
<b>Local Point of Contact:</b> Dana Erpelding	<b>Address:</b> PO Box 850 500 Broadway Eagle, CO 81631	<b>E-Mail:</b> Dana.erpelding@eaglecounty.us
<b>Title:</b> Deputy Director		
<b>Agency:</b> Department of Public Health		
<b>Phone Number:</b> (970) 328-8818		

<b>State Reviewer:</b> Patricia L. Gavelda	<b>Title:</b> DHSEM Local Hazard Mitigation Planning Program Manager;	<b>Date:</b> 11/20/2018; 12/6/2018; 12/20/2018
Mark W. Thompson	Mitigation Planning Specialist	

<b>FEMA Reviewer:</b> Nicole Aimone	<b>Title:</b> Senior Planner	<b>Date:</b> 2/20/2019
<b>Date Received in FEMA Region VIII</b>	11/21/2018	
<b>Plan Not Approved</b>		
<b>Plan Approvable Pending Adoption</b>	2/20/2019	
<b>Plan Approved</b>	4/2/2019	

**SECTION 1:  
MULTI-JURISDICTION SUMMARY SHEET**

MULTI-JURISDICTION SUMMARY SHEET									
#	Jurisdiction Name	Jurisdiction Type	Jurisdiction Contact	Email	Requirements Met (Y/N)				
					A. Planning Process	B. HIRA	C. Mitigation Strategy	D. Update Rqmts.	E. Adoption Resolution
1	Eagle County	County	Dana Erpelding	<a href="mailto:Dana_erpelding@eaglecounty.us">Dana_erpelding@eaglecounty.us</a>	Y	Y	Y	Y	Y
2	Town of Avon	Home Rule Municipality	Justin Hildreth	<a href="mailto:jhildreth@avon.org">jhildreth@avon.org</a>	Y	Y	Y	Y	Y
3	Town of Eagle	Statutory Town	Bryon McGinnins	<a href="mailto:bryon@townofeagle.org">bryon@townofeagle.org</a>	Y	Y	Y	Y	Y
4	Town of Gypsum	Home Rule Municipality	Jim Hancock	<a href="mailto:jim@townofgypsum.com">jim@townofgypsum.com</a>	Y	Y	Y	Y	Y
5	Town of Minturn	Home Rule Municipality	Michelle Metteer	<a href="mailto:manager@minturn.org">manager@minturn.org</a>	Y	Y	Y	Y	Y
6	Town of Red Cliff	Statutory Town	Barb Smith	<a href="mailto:manager@townofredcliff.org">manager@townofredcliff.org</a>	Y	Y	Y	Y	Y
7	Town of Vail	Home Rule Municipality	Tom Kassmel	<a href="mailto:TKassmel@vailgov.com">TKassmel@vailgov.com</a>	Y	Y	Y	Y	Y
8	Beaver Creek Metropolitan District	Special District	Bill Simmons	<a href="mailto:BSimmons@beavercreekmetro.com">BSimmons@beavercreekmetro.com</a>	Y	Y	Y	Y	Y
9	Eagle-Vail Metropolitan District	Special District	Steven Barber	<a href="mailto:sbarber@eaglevail.org">sbarber@eaglevail.org</a>	Y	Y	Y	Y	Y
10	Eagle River Fire Protection District	Special District	Karl Bauer	<a href="mailto:kbauer@eagleriverfire.org">kbauer@eagleriverfire.org</a>	Y	Y	Y	Y	Y
11	Greater Eagle Fire Protection District	Special District	Doug Cupp	<a href="mailto:dcupp@gefpd.org">dcupp@gefpd.org</a>	Y	Y	Y	Y	Y
12	Gypsum Fire Protection District	Special District	Justin Kirkland	<a href="mailto:Justin@gypsumfd.com">Justin@gypsumfd.com</a>	Y	Y	Y	Y	Y

**SECTION 2:  
REGULATION CHECKLIST**

<b>REGULATION CHECKLIST</b>		<b>Location in Plan</b> (section and/or page number)	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>				
<b>ELEMENT A. PLANNING PROCESS</b>				
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	Pg. 5-28	X		
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	Pg. 5-28; Appendix H (165-183)	X		
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Pg. 13; App B (93-95)	X		
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	Pg. 12; 52-55	X		
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	Pg. 89	X		
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	Pg. 89	X		
<b>ELEMENT A: REQUIRED REVISIONS</b>				
<b>ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT</b>				
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	Pg. 29-51; App C (96-115); App D (116-121); App E (122-128)	X		
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	Pg. 29-51; App G (130-164)	X		
B3. Is there a description of each identified hazard’s impact on the community as well as an overall summary of the community’s vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	Pg. 29-51; 64-66; 75	X		
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	Pg. 73-74	X		

<b>REGULATION CHECKLIST</b>		<b>Location in Plan</b> (section and/or page number)	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>				
<b><u>ELEMENT B: REQUIRED REVISIONS</u></b>				
<b>ELEMENT C. MITIGATION STRATEGY</b>				
C1. Does the plan document each jurisdiction’s existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	Pg. 52-63	X		
C2. Does the Plan address each jurisdiction’s participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	Pg. 73-74	X		
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Pg. 6	X		
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	Pg. 82-88	X		
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	Pg. 82	X		
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	Pg. 89	X		
<b><u>ELEMENT C: REQUIRED REVISIONS</u></b>				
<b>ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION</b> (applicable to plan updates only)				
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Pg. 15-28	X		
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Pg. 77-81	X		
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	Pg. 5-6; 29; 50-51; App B App G	X		
<b><u>ELEMENT D: REQUIRED REVISIONS</u></b>				

<b>REGULATION CHECKLIST</b>		<b>Location in Plan</b>	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>		<b>(section and/or page number)</b>		
<b>ELEMENT E. PLAN ADOPTION</b>				
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))			NA	
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	App I (Pg. 184)		X	
<b><u>ELEMENT E: REQUIRED REVISIONS</u></b>				
<b>ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)</b>				
F1.				
F2.				
<b><u>ELEMENT F: REQUIRED REVISIONS</u></b>				

**SECTION 3:  
PLAN ASSESSMENT**

**A. Plan Strengths and Opportunities for Improvement**

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

**Element A: Planning Process**

**Strength:** This planning process was noteworthy in its use of distributed online collaboration. Hopefully it will set a trend because it met all of the process requirements but potentially eliminated “planning fatigue,” which often detracts from planning participation. The planning committee should be commended for its sense of urgency to complete this plan during the latter part of 2018.

**Element B: Hazard Identification and Risk Assessment**

**Strength:** One of the main strengths to highlight for this plan is the incorporation of existing risk information instead of re-creating it during this process. That allowed the planning team to quickly refine the HIRA update and focus on the mitigation strategy, which is the main effort of the plan. Additionally, this plan’s HIRA is brief but detailed enough to make the plan understandable for anyone who reads it. The lack of a large amount of technical terms and information should encourage non-practitioners to actually read and digest the plan.

**Opportunity:** Consider utilizing GIS data of hazards, people, and structures during the annual review process to simplify the exposure and vulnerability update in the next plan.

**Element C: Mitigation Strategy**

**Strength:** The mitigation strategy in this plan is succinct but clearly addresses the identified hazards in the plan.

**B. Resources for Implementing Your Approved Plan**

**FEMA Fire Prevention and Safety Grants.** The Fire Prevention and Safety Grants (FP&S) are part of the Assistance to Firefighters Grants, and are administered by the FEMA. FP&S Grants support projects that enhance the safety of the public and firefighters from fire and related hazards. The primary goal is to target high-risk populations and reduce injury and prevent death. Eligibility includes fire departments, national, regional, state, and local organizations, Native American tribal organizations, and/or community organizations recognized for their experience and expertise in fire prevention and safety programs and activities. Private non-profit and public organizations are also eligible. Interested applicants are advised to check the website periodically for announcements of grant availability. More information: <https://www.fema.gov/welcome-assistance-firefighters-grant-program>

**Community Planning Assistance for Wildfire.** Established in 2015 by Headwaters Economics and Wildfire Planning International, Community Planning Assistance for Wildfire (CPAW) works with communities to reduce wildfire risks through improved land use planning. CPAW is a grant-funded

program providing communities with professional assistance from foresters, planners, economists and wildfire risk modelers to integrate wildfire mitigation into the development planning process. All services and recommendations are site-specific and come at no cost to the community. More information: <http://planningforwildfire.org/what-we-do/>

**Urban and Community Forestry (UCF) Program.** A cooperative program of the U.S. Forest Service that focuses on the stewardship of urban natural resources. With 80 percent of the nation's population in urban areas, there are strong environmental, social, and economic cases to be made for the conservation of green spaces to guide growth and revitalize city centers and older suburbs. UCF responds to the needs of urban areas by maintaining, restoring, and improving urban forest ecosystems on more than 70 million acres. Through these efforts the program encourages and promotes the creation of healthier, more livable urban environments across the nation. These grant programs are focused on issues and landscapes of national importance and prioritized through state and regional assessments. Information: <http://www.fs.fed.us/managing-land/urban-forests/ucf>

**Western Wildland Urban Interface Grants.** The National Fire Plan (NFP) is a long-term strategy for reducing the effects of catastrophic wildfires throughout the nation. The Division of Forestry's NFP Program is implemented within the Division's Fire and Aviation Program through the existing USDA Forest Service, State & Private Forestry, State Fire Assistance Program.

Congress has provided increased funding assistance to states through the U.S. Forest Service State and Private Forestry programs since 2001. The focus of much of this additional funding was mitigating risk in WUI areas. In the West, the State Fire Assistance funding is available and awarded through a competitive process with emphasis on hazard fuel reduction, information and education, and community and homeowner action. This portion of the National Fire Plan was developed to assist interface communities manage the unique hazards they find around them. Long-term solutions to interface challenges require informing and educating people who live in these areas about what they and their local organizations can do to mitigate these hazards.

The 10-Year Comprehensive Strategy focuses on assisting people and communities in the WUI to moderate the threat of catastrophic fire through the four broad goals of improving prevention and suppression, reducing hazardous fuels, restoring fire-adapted ecosystems, and promoting community assistance. The Western States Wildland Urban Interface Grant may be used to apply for financial assistance towards hazardous fuels and educational projects within the four goals of: improved prevention, reduction of hazardous fuels, restoration of fire-adapted ecosystems and promotion of community assistance. Information: <https://www.westernforesters.org/sites/default/files/2017-WUI-Applications-Instructions-and-Criteria-CLEAN-COPY-002b.pdf>

**U.S. Fish & Wildlife Service, Rural Fire Assistance Grants.** Each year, the U.S. Fish & Wildlife Service (FWS) provides Rural Fire Assistance (RFA) grants to neighboring community fire departments to enhance local wildfire protection, purchase equipment, and train volunteer firefighters. Service fire staff also assist directly with community projects. These efforts reduce the risk to human life and better permit FWS firefighters to interact and work with community fire organizations when fighting wildfires. The Department of the Interior (DOI) receives an appropriated budget each year for an RFA grant program. The maximum award per grant is \$20,000. The [DOI assistance program](#) targets rural

and volunteer fire departments that routinely help fight fire on or near DOI lands. More information: [http://www.fws.gov/fire/living\\_with\\_fire/rural\\_fire\\_assistance.shtml](http://www.fws.gov/fire/living_with_fire/rural_fire_assistance.shtml)

**U.S. Bureau of Land Management, Community Assistance Program.** BLM provides funds to communities through assistance agreements to complete mitigation projects, education and planning within the WUI. More information: [http://www.blm.gov/nifc/st/en/prog/fire/community\\_assistance.html](http://www.blm.gov/nifc/st/en/prog/fire/community_assistance.html)

**Fire Management Assistance Program.** This program is authorized under Section 420 of the Stafford Act. It allows for the mitigation, management, and control of fires burning on publicly or privately owned forest or grasslands that threaten destruction that would constitute a major disaster. More information: <http://www.fema.gov/fire-management-assistance-grant-program>

**NOAA Office of Education Grants.** The Office of Education supports formal, informal and non-formal education projects and programs through competitively awarded grants and cooperative agreements to a variety of educational institutions and organizations in the United States. More information: <http://www.noaa.gov/office-education/grants>

**NRCS Environmental Quality Incentives Program (EQIP).** The Environmental Quality Incentives Program, administered through the NRCS, is a cost-share program that provides financial and technical assistance to agricultural producers to plan and implement conservation practices that improve soil, water, plant, animal, air and related natural resources on agricultural land and non-industrial private forestland. Owners of land in agricultural or forest production or persons who are engaged in livestock, agricultural or forest production on eligible land and that have a natural resource concern on that land may apply to participate in EQIP. Eligible land includes cropland, rangeland, pastureland, non-industrial private forestland and other farm or ranch lands. EQUIP is another funding mechanism for landowner fuel reduction projects. More information: <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/>

**U.S. Department of Agriculture, Community Facilities Loans and Grants.** Provides grants (and loans) to cities, counties, states and other public entities to improve community facilities for essential services to rural residents. Projects can include fire and rescue services; funds have been provided to purchase fire-fighting equipment for rural areas. No match is required. More information: [http://www.usda.gov/wps/portal/usda/usdahome?navid=GRANTS\\_LOANS](http://www.usda.gov/wps/portal/usda/usdahome?navid=GRANTS_LOANS)

**Community Development Block Grants (CDBG).** The U.S. Department of Commerce administers the CDBG program which are intended to provide low and moderate-income households with viable communities, including decent housing, as suitable living environment, and expanded economic opportunities. Eligible activities include community facilities and improvements, roads and infrastructure, housing rehabilitation and preservation, development activities, public services, economic development, planning, and administration. Public improvements may include flood and drainage improvements. In limited instances, and during the times of "urgent need" (e.g. post disaster) as defined by the CDBG National Objectives, CDBG funding may be used to acquire a property located in a floodplain that was severely damaged by a recent flood, demolish a structure severely damaged by an earthquake, or repair a public facility severely damaged by a hazard event. CDBG funds can be used to match FEMA grants. More Information:



<http://www.hud.gov/offices/cpd/communitydevelopment/programs/>

**FEMA: Building Science.** The Building Science branch develops and produces multi-hazard mitigation publications, guidance materials, tools, technical bulletins, and recovery advisories that incorporate the most up-to-date building codes, floodproofing requirements, seismic design standards, and wind design requirements for new construction and the repair of existing buildings. To learn more, visit:

<https://www.fema.gov/building-science>

**EPA: Smart Growth in Small Towns and Rural Communities.** EPA has consolidated resources just for small towns and rural communities to help them achieve their goals for growth and development while maintaining their distinctive rural character. To learn more, visit:

<https://www.epa.gov/smartgrowth/smart-growth-small-towns-and-rural-communities>

**EPA: Hazard Mitigation for Natural Disasters: A Starter Guide for Water and Wastewater Utilities.**

The EPA released guidance on how to mitigate natural disasters specifically for water and wastewater utilities. For more information,

visit: <https://www.epa.gov/waterutilityresponse/hazard-mitigation-natural-disasters>

**STAR Community Rating System.** Consider measuring your mitigation success by participating in the STAR Community Rating System. Local leaders can use the STAR Community Rating System to assess how sustainable they are, set goals for moving ahead and measure progress along the way.

To get started, go to <http://www.starcommunities.org/get-started>

**Beyond the Basics: Best Practices in Local Mitigation Planning.** The product of a 5-year research study where the Coastal Hazards Center and the Center for Sustainable Community Design analyzed local mitigation plans to assess their content and quality. The website features numerous examples and best practices that were drawn from the analyzed plans. Visit: <http://mitigationguide.org/>

**Flood Economics.** The Economist Intelligence Unit analyzed case studies and state-level mitigation data in order to gain a better understanding of the economic imperatives for investment in flood mitigation. To learn more, visit: <http://floodeconomics.com/>

**Headwaters Economics.** Headwaters Economics is an independent, nonprofit research group that works to improve community development and land management decisions in the West. To learn more, visit: <https://headwaterseconomics.org/>