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FINAL

Teller County Multi-Jurisdictional Hazard Mitigation Plan

January 2021



Prepared for:

Teller County Office of Emergency Management

Prepared by:

wsp

Teller County
Multi-Jurisdictional Hazard Mitigation Plan

January 2021

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Teller County 2021 Hazard Mitigation Plan

Part 1: Planning Process Overview

Planning Process Overview

1. Introduction to Hazard Mitigation Planning

1.1 The Big Picture

Hazard mitigation is the use of long- and short-term strategies to reduce or alleviate the loss of life, personal injury, and property damage that can result from a disaster. There are multiple approaches, including but not limited to, planning, policy changes, programs, and projects. The responsibility for hazard mitigation lies with many, including private property owners, business and industry, and local, state, and the federal government. Mitigation plans are vital to breaking the cycle of disaster damage, reconstruction, and repeated damage (Federal Emergency Management Agency, 2020b).

Prior to 2000, federal disaster funding in the U.S. focused on relief and recovery, with a limited budget for hazard mitigation planning. The federal 2000 Stafford Act amendments, commonly referred to as the Disaster Mitigation Act or DMA, was established in 2000 and required state and local governments to develop Hazard Mitigation Plans (HMPs) as a condition for receiving disaster-related federal grant assistance (Public Law 106-390, approved by Congress on October 10, 2000). The Act emphasized the importance of community preparedness and hazard mitigation planning before disasters occur.

The DMA encouraged state and local authorities to work together on pre-disaster planning. Furthermore, it promoted "sustainable hazard mitigation," including sound natural resource management and regional economic and social resilience. The Act recognized that communities need to understand hazards and mitigation in the broadest possible social and economic context. Additionally, the DMA called for an enhanced planning network to help local governments articulate precise mitigation needs, which results in rapid fund allocation and cost-effective risk reduction projects.

1.2 Local Concerns

Teller County residents live in an environment with natural and human-made hazards. Hazards that occur relatively often, possibly multiple times in one person's life, such as extreme weather, wildfires, and flooding. Other risks are less frequent, although they have the potential to be large to catastrophic, like major landslides, tornados, or earthquakes. Whether natural hazard events occur frequently or infrequently, these hazards can present a risk to each individual's life, health, property, and wellbeing. On a significant scale, natural and human-made hazards may impact the economy, the supply chain for goods and services, employment, ecosystem services (for example, the production of food and water, climate regulation, and recreational benefits), and a community's overall quality of life.

1.3 Purposes for Hazard Mitigation Planning

To effectively alleviate natural hazard risks to life, personal injury, and property damage throughout the region, Teller County continually updates its HMP, identifying and prioritizing critical mitigation actions. The Teller County HMP also enables the County and its planning partners to maintain eligibility for disaster-related federal grant assistance, per DMA 2000. Teller County planning partners include the City of Victor, City of Cripple Creek, City of Woodland Park, and the Four Mile Fire Protection District (FPD). Points of contact for each planning partner are listed in Table 1-1.

Table 1-1

2021 Multi-Jurisdictional Hazard Mitigation Plan Update Participating Jurisdictions					
Planning Partner	**Jurisdiction Type**	**Point of Contact**	**Mailing Address**	**Email**	**Phone**
Teller County	County	Don Angell	112 N. A Street, Cripple Creek, CO 80813	angelld@co.teller.co.us	719-686-7990
City of Cripple Creek	City	Ray White	337 E. Bennett Ave. P.O. Box 430 Cripple Creek, CO 80813	rwhite@cripple-creek.co.us	719-689-2502
City of Woodland Park	City	Commander Andrew Leibbrand	911 Tamarac Parkway, Woodland Park, CO 80863	aleibbrand@city-woodlandpark.org	719-393-5420
City of Victor	City	Richard Mann	500 Victor Avenue P. O. Box 86 Victor, Colorado 80860	rmann@cityofvictor.com	719-250-3817
Four Mile Fire Protection District	Special Hazards District	Chief Jay Teague	8437 Teller County Road 11, Florissant, CO 80816	4milechief@gmail.com	719-689-3417

1.4 Who Will Benefit from this Plan?

Teller County residents and businesses are the ultimate beneficiaries of the County HMP. The plan strives to reduce hazard risks to everyone that lives, works, and visits the County. The HMP provides a viable framework for all foreseeable natural hazards that may impact the planning area. The goals and actions listed in the HMP lay the groundwork for plan development, partnerships, and implementation. Resources and background information in the HMP helps users identify and assess hazard risks and local capabilities for addressing those risks. Plan development requires key stakeholder participation to ensure the plan has representation from every member and organization affected by the HMP. Including stakeholders in plan development creates buy-in from all members, allows the County to address

questions and concerns before the plan is finalized, and builds vital partnerships and relationships prior to an actual disaster.

1.5 Contents of this Plan

The HMP has three primary sections:

- Part 1 – Planning Process Overview
- Part 2 – Risk Assessment
- Part 3 – Mitigation Strategy

Each part addresses federal requirements relevant to that section. Applicable DMA compliance requirements are cited at the beginning of subsections to illustrate compliance clearly.

The following appendices include information and data to support Parts 1-3:

- Appendix A – Mitigation Actions
- Appendix B – Mitigation Strategy Evaluation and Mitigation Action Evaluation Forms
- Appendix C – Plan Adoption Resolutions from Planning Partners and FEMA Approval Documents
- Appendix D – Planning Process and Public Outreach
- Appendix E – Maps and Risk Assessment Materials
- Appendix F – Acronyms
- Appendix G – Definitions
- Appendix H – References

2. Plan Update

2.1 The Previous Plan

Teller County was awarded a grant from the Colorado Division of Emergency Management and the Colorado Water Conservation Board to prepare the 2015 Teller County HMP update. The County hired a consultant to prepare the plan with oversight from planning partners and a steering committee. There are five principal phases covered in the development process: organization, risk assessment, public involvement, plan development, and adoption. The committee was the primary vehicle for public participation. Plan preparation began in 2013, and the plan received formal approval by the Federal Emergency Management Agency (FEMA) on September 3, 2015.

The plan identified a guiding principle, four goals, and eight objectives; 36 mitigation initiatives were designed to meet these targets. Each initiative was prioritized based on an individual cost-benefit analysis. The Planning Committee that developed the initial HMP followed the plan's maintenance section, which included an annual review and mitigation action assessment.

2.2 Why Update?

The Code of Federal Regulations (CFR), 44 CFR, stipulates HMPs must describe the method and schedule for monitoring, evaluating, and updating the plan. DMA compliance is also contingent on meeting this regulation. A jurisdiction with no plan or an expired plan is not eligible for elements of federal funding under the Robert T. Stafford Act, that require a current HMP. A pre-established schedule for updates ensures the plan will be regularly reevaluated = to monitor implemented mitigation actions and determine the effect of the action on the hazard risk. The level of impact indicates if the action was successful,

partially effective, or had no effect. If there is room for improvement, then a new or revised strategy will need to be developed.

2.3 The Updated Plan—What is Different

There are significant enhancements in this 2021 update thanks to the most current, best-available data and advances in technology, especially in Part 2 – Risk Assessments. The 2021 revision followed the same planning process used in the 2015 plan update. Substantial changes between the 2015 and 2021 include:

- The 2019–2021 Novel Coronavirus (COVID-19) hit a peak in the U.S. in March of 2020. At that time, many state and local government agencies moved all possible staff and operations to work remotely and restricted public gatherings over ten people. U.S. Center for Disease Control and federal guidance and recommendations changed rapidly between March to June. Therefore, much of the response planning was conducted virtually on the fly through webinars and email communications. To support future disaster planning efforts, and to avoid a similar situation, planning process documents are in Appendix B.
- In the 2015 HMP, the risk hazard profiles for Hazardous Materials and Subsidence, Sinkholes, and Soil Erosion were limited. These sections have been expanded to full hazard profiles in the 2021 update, including vulnerability and exposure assessments.
- The Capability Assessment in Section 5 was reorganized and streamlined to align with the Colorado Division of Homeland Security and Emergency Management (DHSEM) standards.
- The Capabilities Assessment outlines hazard mitigation implementation tools and resources available to the County and its partners.
- Part 2 – Risk Assessment in the 2021 update includes events that occurred between 2015 and 2021, as well as hazard impacts due to climate change, land use, and socioeconomic conditions that resulted in increased or decreased vulnerability to hazards in Teller County.
- The COVID-19 global pandemic revealed a new hazard for Teller County. The new Epidemic hazard profile in Chapter 11 of the 2021 HMP discusses Teller County's exposure and vulnerability to current and potential future epidemics.
- The County and its partners recognize planning priorities changed since 2015. The 2021 HMP moved ongoing public education and outreach activities out of the mitigation strategy and into the Plan Implementation, Chapter 21. The current revision emphasizes actionable mitigation strategies focused on long-term hazard risk reduction (Chapters 18-20). Actions related to disaster preparedness or response are not carried forward in the 2021 plan update and may be addressed in County and local emergency plans.
- The 2021 Part 3 – Mitigation Strategy includes new actions and actions carried forward from the 2015 HMP. Part 3 incorporates FEMA lifelines and the State's resiliency prioritization criteria; these are tools that FEMA and the DHSEM designed to prioritize and assess the effectiveness of hazard mitigation actions. The FEMA lifelines and State resiliency prioritization criteria each action would address are included in Appendix A.
- All 2021 HMP participating jurisdictions have an annex in the updated plan, including the cities of Victor, Woodland Park, and Cripple Creek and the Four Mile Fire Protection District (FPD). These annexes provide details about each jurisdiction's capabilities, risks, and location-specific mitigation strategies.

3. Plan Methodology

3.1 Formation of the Project Team and the HMC

Following County procurement procedures, Teller County contracted Ecology and Environment, Inc. (E & E) to assist with them in developing and implementing the 2021 HMP update. The County and its planning partners formed a Hazard Mitigation Committee (HMC) that participated in the planning process by informing the risk assessment, developing new mitigation actions, and participating in stakeholder/public outreach. E & E drafted the HMP update, new jurisdictional annexes, and facilitated public meetings, reporting directly to the County's project manager.

Hazard mitigation planning is one of the best ways to enhance collaboration and gain support among parties whose interests can be affected by hazard losses. By working together, a broad range of stakeholders can identify and create partnerships that pool resources to achieve a shared vision for the community. The HMC oversees and contributes to all phases of the plan update. Appendix D lists the representatives from participating jurisdictions and other stakeholders who participated in the plan update.

3.2 Defining the Planning Area

The planning area includes all areas within Teller County, including the participating jurisdictions of Victor, Cripple Creek, Woodland Park, and the Four Mile Fire FPD.

3.3 Review of Plan Goals and Objectives

The County and its planning partners reviewed and updated the guiding principle and series of goals and objectives laid out in the 2015 HMP to guide the development of the 2021 plan update and identification and prioritization of mitigation actions. The guiding principle focuses on the range of mitigation goals, objectives, and actions to be considered. The guiding principle for the 2021 plan update is:

> *Through public and private partnerships among local, state, and federal partners, reduce the risk to natural hazards in order to ensure the health, safety, welfare, and economic sustainability of the community.*

The HMC was formed to participate in and oversee the development of the 2021 plan update and to review the goals and objectives in the 2015 HMP. The HMC determined the previous goals and objectives continued to meet planning priorities. Therefore, the goals and objectives in the 2021 plan update remain the same. Achievement of these goals and objectives defines the effectiveness of a mitigation strategy. The plan goals and objectives guided mitigation strategy priorities for the participating jurisdictions in the 2021 plan update. Jurisdictions included the City of Victor, City of Cripple Creek, City of Woodland Park, and Four Mile FPD.

The goals and objectives for the 2021 HMP update are listed below. These are general guidelines that provide a framework for identifying more detailed objectives and actions. Objectives are steps the County intends to complete to achieve the plan goals. Objectives will also help measure the effectiveness of the County's mitigation strategy and actions.

- **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
    - **Objective 1a:** Increase safety and disaster resilience in Teller County communities.

  - **Objective 1b:** Maintain essential services, facilities, and infrastructures before, during, and after hazard events.
- **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
  - **Objective 2a:** Reduce the vulnerability of structures, homes, and businesses.
  - **Objective 2b:** Encourage businesses, the public, and the community overall to reduce their vulnerability to identified hazards within Teller County.
- **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
  - **Objective 3a:** Strengthen and support Countywide disaster and emergency response efforts.
  - **Objective 3b:** Protect, maintain, and reduce the vulnerability of critical facilities, infrastructure, and essential services.
- **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.
  - **Objective 4a:** Maintain and enhance community information sharing.
  - **Objective 4b:** Maintain public education outreach efforts.

The hazards covered in the plan were ranked by the HMC following Meeting #1 as shown in the table below. The HMC confirmed these hazard rankings during HMC Meeting #2.

Table 3-1

Teller County - Local Hazards							
	Probability 1=lowest, 5=highest	*Magnitude 1=lowest, 5=highest*	*Onset 1=slowest, 5=fastest*	*Duration 1=shortest, 5=longest*	*Change in Risk ↑ ↓ ↔ since 2015*	*Average*	*Rank*
Wildfire	5.00	4.00	4.00	3.00	↔	4.33	1
Thunderstorms High Winds and Hail	5.00	4.00	3.00	2.00	↑	4.00	2
Landslide	4.00	2.00	5.00	2.00	↑	3.67	3
Tornado	3.00	3.00	5.00	1.00	↑	3.67	3
Hazardous Materials	3.00	2.00	5.00	1.00	↑	3.33	5
Severe Winter Weather	5.00	2.00	3.00	2.00	↑	3.33	5

Epidemic/ Pandemic	3.00	5.00	2.00	5.00	↑	3.33	5
Drought and Extreme Temperature	4.00	2.00	3.00	4.00	↑	3.00	8
Subsidence Sink Holes and Soil Erosion	3.00	1.00	5.00	2.00	↑	3.00	8
Dam Failure	1.00	2.00	5.00	1.00	↑	2.67	10
Earthquake	1.00	2.00	5.00	3.00	↑	2.67	10
Flood	3.00	2.00	3.00	1.00	↔	2.67	10

The HMC adopted the aggregated list of hazards in Table 1, which are discussed at length in Part 2 – Risk Assessment and addressed in Part 3 – Mitigation Strategy.

3.4 Coordination with Other Agencies

44 CFR requires that organizations provide opportunities for community involvement in the planning process. Community participants can include but are not limited to neighboring communities, local and regional agencies involved in hazard mitigation, agencies with authority to regulate development, businesses, academia, and other private and nonprofit interests (Section 201.6(b)(2)). This task was accomplished by the project team as follows:

- Planning Committee Involvement – Agency representatives were invited to be participants on the Planning Committee.
- Agency Notification – The following agencies were invited to participate in the update process from the beginning and kept apprised of plan development milestones:

    - DHSEM
    - Colorado State Patrol
    - Pikes Peak Regional Office of Emergency Management
    - Incorporated municipalities in Teller County
    - Teller County Fire Protection Districts (FPDs)
    - Cripple Creek and Victor Gold Mine
    - American Red Cross
    - Community organizations, including Pikes Peak Community Foundation and Teller Senior Coalition

Agencies received workshop announcements and workshop agendas by e-mail throughout the plan update process. These notifications proved to be beneficial when these agencies supported the effort by attending workshops or providing feedback.

Pre-Adoption Review

All the agencies listed in Table 1 had an opportunity and the means to review and comment on this plan update. Teller County hosted a webpage for public review of the 2021 HMP update. The County emailed each planning partner to notify them when the draft plan was available for review and invited them to the draft plan review workshop. Additionally, an email went out to surrounding jurisdictions, including Chafee County, Park County, and El Paso County, inviting them to review and comment on the draft plan. Lastly, the complete draft plan was sent to DHSEM and FEMA Region VIII for a pre-adoption review to ensure program compliance.

3.5 Review of Existing Programs

44 CFR states that hazard mitigation planning must include review and incorporation, if appropriate, of existing plans, studies, reports, and technical information (Section 201.6(b)(3)). Section 5.7 of this plan provides a review of laws and ordinances applicable to the planning area that can affect hazard mitigation initiatives. Aside from these laws and regulations, the following programs also involve planning area mitigations:

- Teller County Strategic Plan (2019-2034)
- Teller County Growth Management Plan, 2020
- Teller County Wildfire Council Community Mitigation Assistance Team (CMAT) Report, 2020
- 4-Mile Regional Action Plan, 1998
- Teller County Community Wildfire Protection Plan, 2011
- Teller County Parks, Trails and Open Space Master Plan, 1997
- Teller County Heavy Services Action Plan (HSAP)
- Florissant Regional Plan, 1998
- Southeast Teller Regional Plan, 2004
- Teller County Emergency Operations Plan
- Teller County Land Use Regulations, 2008
- Teller County Operations Plan, 2019
- Teller County and Western El Paso County Broadband, 2016

All of the above listed plans were reviewed and considered in the development of the HMP. The primary plans that were incorporated in Part 2 and Part 3 of this HMP include the Teller County Strategic Plan, Growth Management Plan, Community Wildfire Protection Plan, and Land Use Regulations. The Teller County Wildfire Council CMAT report was completed in October 2020. This report includes a series of strategies for re-establishing the Teller County Wildfire Council and coordinating with partners to implement wildfire mitigation projects. A mitigation action to implement the recommendations of this report is included in Part 3 of the HMP. An assessment of all planning partners' regulatory, technical, and financial capabilities to implement hazard mitigation initiatives is included in Chapters 5 and 21 and the jurisdiction-specific annexes in Volume II. The Capability Assessment cites many of these relevant plans, studies, and regulations.

3.5.1 National Flood Insurance Program Participation

Teller County voluntarily has participated in the National Flood Insurance Program (NFIP) through its adoption and enforcement of floodplain regulations since 1988. The 2008 Teller County Land Use Regulations Section 6.3 regulates and promotes public health, safety, and general welfare and to

minimize public and private losses due to flood conditions in specific areas designed to help (Teller County, n.d.):

- Protect human life and health;
- Minimize expenditure of public money for costly flood control projects;
- Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- Minimize prolonged business interruptions;
- Minimize damage to critical facilities, infrastructure, and other public facilities (e.g., water, sewer, gas mains; electric and communication stations; and streets and bridges located in floodplains);
- Help maintain a stable tax base by providing for the sound use and development of flood-prone areas;
- Confirm potential buyers are notified the property is in a flood hazard area

These regulations apply to all Special Flood Hazards Areas (SFHAs) within Teller County's jurisdiction, identified in FEMA's 2009 Flood Insurance Study (FIS) and maps. The FIS contains a detailed flood profile and discharge data for Fountain Creek, East Fork Fountain Creek, Loy Gulch, and Trout Creek and partial discharge data for Paint Pony, East Fork Paint Pony, and Lovell Gulch. To accomplish its purpose, Teller County (2008) relies on the following methods for reducing flood losses (Chapter 6.3):

- Restrict or prohibit land uses that are dangerous to health, safety, or property in times of flood, or cause excessive increases in flood heights or velocities
- Require that uses vulnerable to floods, including facilities which serve such uses, are protected against flood damage at the time of construction
- Control the alteration of natural floodplains, stream channels, and natural protective barriers
- Control filling, grading, dredging, and other development which may increase flood damage
- Prevent or regulate the construction of flood barriers which will naturally divert floodwaters, or which may increase flood hazards to other lands

Teller County flood hazard regulations are in the following sections of the 2008 Teller County Land Use Regulations (Section 5.1.A.4):

- Floodplain Development, Section 5.1.A.4: In no case is the area within 100-year floodplains to be used for structural development without a Flood Plain Development Permit (*Section 6.3 Flood Hazard Areas*). Additionally, development will not be allowed to affect either the location of discharge, magnitude, depth, slope of stream bed, or velocity of drainage flows upstream or downstream from the development unless part of a Federal or State floodplain protection plan, or a regional or local floodplain protection plan approved and adopted by the Board of County Commissioners.

The County Planning Director or Planning Director's designee is authorized to function as the Floodplain Administrator. The Floodplain Administrator is responsible for implementing and administering *Section 6.3 Flood Hazard Area* in the Teller County Land Use Regulations and Chapter 6: Critical Areas (Teller County, 2008). Duties related to permitting review (before beginning any type of construction or development, owners must submit a Floodplain Development Permit to determine if the proposed

development could potentially be within a Flood Hazard Area and subject to these regulations), utilization of base flood data (e.g., floodplain study), obtain and maintain information (e.g., the elevation of all new or substantially improved structures, floodproofing certifications, and records of public inspections), alterations of watercourses (e.g., notifying adjacent communities and the Colorado Water Conservation Board before alteration or relocation of a watercourse and submit evidence of notification to FEMA), and interpretation of flood insurance rate map boundaries (Teller County, 2008).

Provisions for flood hazard reduction include the following:

- General standards (anchoring, construction materials and methods, utilities, and subdivision proposals)
- Specific standards for residential and non-residential construction (elevation to or above Base Flood Elevation, floodproofing, and structural components)
- Specific standards for manufactured homes and recreational vehicles (anchoring, elevation)
- Special Standards for floodways (areas within Areas of Special Flood Hazard), areas of shallow flooding, and extensive alteration of the floodway fringe

Teller County statutes/regulations establish policies, standards, and permitting requirements to guide, limit, and regulate new development within floodplains and floodways as required by the State of Colorado and the NFIP.

More specifically, the 2008 Teller County Land Use Regulations Chapter 6: Critical Areas *identifies and protects critical areas, including wildlife habitat impact areas, wildlife hazard areas, geologically hazardous areas, environmental health (EH) overlay zone district, and special flood hazard areas.*

3.6 Plan Development Chronology and Milestones

Table 3-2 summarizes essential milestones in the development of the plan update:

Table 3-2

2021 HMP Update Milestones			
Date	Event	Milestones	Attendance
June 11, 2020	HMC Meeting #1	• Introduce members to the planning process • Review and revise 2015 goals and objectives • Identify critical hazards of concern.	22 HMC Members
July 7, 2020	HMC Meeting #2	• Provide an update on the planning process and updated goals and objectives • Discuss hazards, objectives, and mitigation actions for the 2021 plan	11 HMC Members
September 22, 2020	HMC Meeting #3	• Review draft HMP and jurisdictional annexes and discuss data gaps	13 HMC Members
November 10, 2020	Public Meeting #1	• Provide an overview of the planning process	21 Participants

		• Discuss hazards, objectives, and mitigation actions for the 2021 plan	
February 23, 2021	HMC Meeting #4	• Present the final plan to elected officials and members of the HMC	-

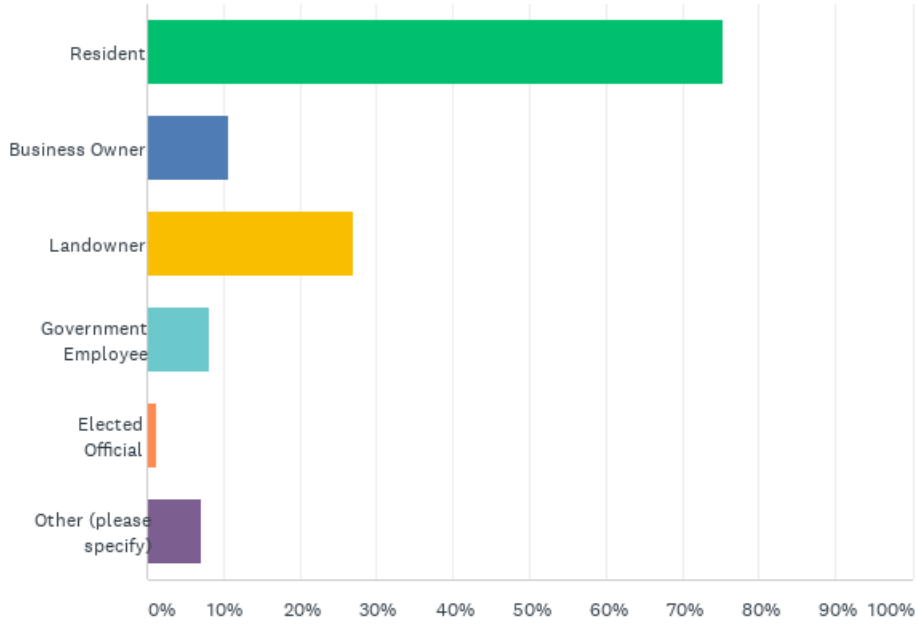
3.7 Inclusive Outreach and Public Engagement

A critical component of the HMP update effort is a robust stakeholder engagement process that provides "an opportunity for the public to comment on the plan during the drafting stage and before plan approval" (44 CFR §201.6). While providing an opportunity for public comment on the draft plan is one way to engage with the public regarding hazard concerns, the HMC also wanted to ensure that the community had a meaningful way to participate in the process, as outlined in the following sections. Public engagement was initiated soon after the HMP Project Kickoff Workshop (HMC Meeting #1).

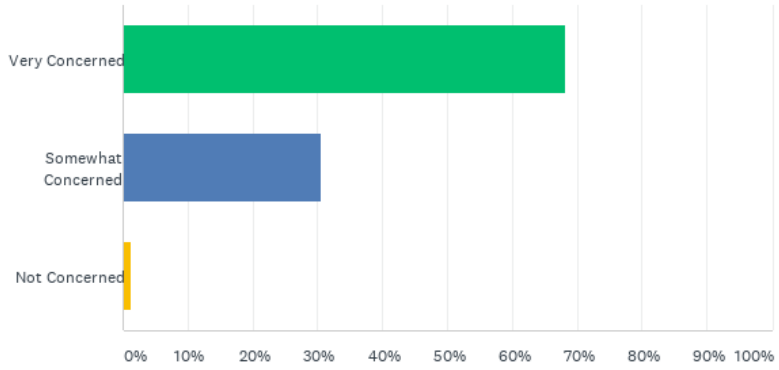
Online Outreach

The public received an online survey before the plan development phase. This survey allowed the planning team to identify and address public concerns as part of the plan development process. The initial online survey was distributed through the County's website beginning on March 6. Over eight weeks, more than 85 individuals responded to the survey and provided feedback. The following figures indicate some of the key findings of this initial survey. Complete survey results are in Appendix D.

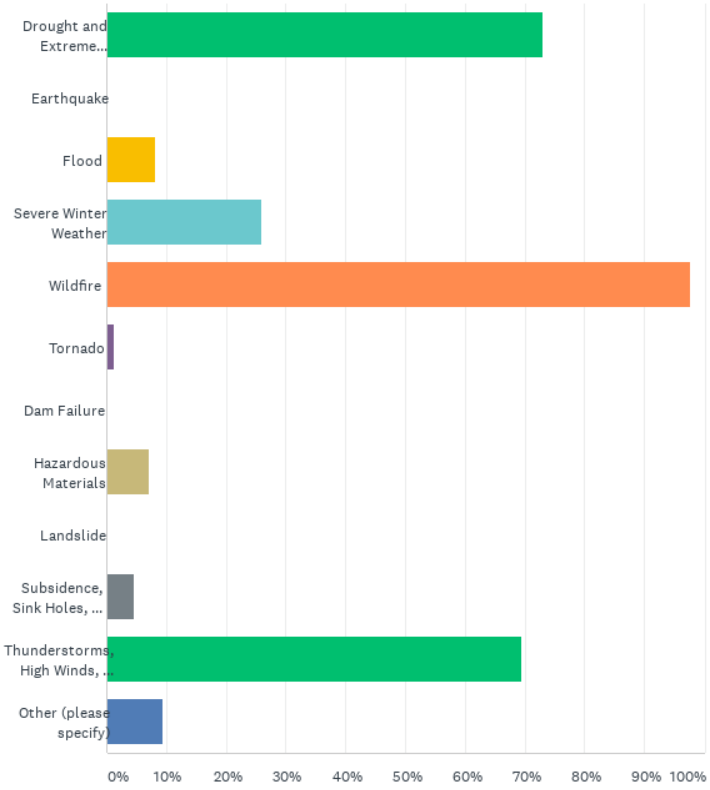
Q3 Which of the following best defines your role in the community?



Q4 How concerned are you about the impacts of natural disasters in your community?



Q7 Please select the top THREE (3) hazards you think are the GREATEST THREAT to your community, considering both frequency of occurrence and potential for severe damage.



Like the HMC, members of the community identified wildfire and thunderstorms, high winds, and hail as top hazards of concern. Community members also identified drought and extreme temperature as a top hazard of concern.

Public Meeting

The County and HMC hosted a public presentation to provide an opportunity for stakeholders and members of the public to learn more about the planning process and draft HMP. The public meeting was held via webinar from 6 to 7 p.m. on November 10 to comply with State and County requirements for social distancing. The presentation provided an overview of the planning process and the draft HMP, including hazard risks, plan goals and objectives, and proposed mitigation actions. Twenty-one (21) people attended the webinar, which was recorded and provided for public viewing on the County's website. Appendix D has additional public meeting documentation.

Plan Review

Community members were provided with the draft HMP from November 6 through November 20, 2020, on the County's website (https://www.co.teller.co.us/OEM/HMP2020.aspx) and informed of the availability of the plan through announcements on the County's social media accounts, including Twitter and Facebook.

During the public comment period, the County invited members of the community to share their thoughts. Two comments were received from members of the public during the public meeting and are summarized in Table 3-3.

Table 3-3

Public Comments Received on the Draft Teller County Hazard Mitigation Plan		
Public Comment	**Date Received**	**Comment Response**
What are the County's plans to address old growth and fuels at Catamount Park and Catamount Reservoir?	November 10	A Community Mitigation Assistance Team (CMAT) report has been prepared for Teller County and includes strategies for coordinating with partners to prioritize and complete fuels management and other wildfire mitigation projects. The County will be implementing these strategies as appropriate to manage fuels on public properties. An action (Action WF-6) has been added to Mitigation Implementation Plan to implement the recommendations of the report as appropriate.
Are there plans for improving evacuation routes in communities with only one ingress/egress route?	November 10	Evacuation routes will be considered as part of implementation of the CMAT report and existing and future Community Wildfire Protection Plans. Action WF-7 has been added to the Mitigation Implementation Plan to plan for and construct alternate evacuation routes as identified and appropriate.

4. Teller County Community Profile

4.1 Introduction

Established in 1899, Teller County is on the western slopes of the Front Range (Pikes Peak area) in central Colorado and is one of 64 counties in the State of Colorado (see Figure E-1 in Appendix E). Named after U.S. Senator Henry M. Teller, Teller County contains 557 square miles of land and 2 square miles of water. The County seat is Cripple Creek, and the most populous city is Woodland Park. Teller County begins 20 miles west of the city of Colorado Springs, accessed via State Highway 24 West and CO State Highway 67 North. It is located almost directly in the center of Colorado with elevations ranging from 8,000 feet in Woodland Park to over 14,000 on the western slopes of Pikes Peak (Teller County, n.d.).

According to the United States Census Bureau (2019), as of 2019, Teller County has an estimated population of 25,388. The official population in 2010 was 23,350 (United States Census Bureau, n.d.). The largest economic sectors in Teller County are health care and social assistance, retail trade, and

public administration. The planning area for the Teller County HMP includes Teller County and participating jurisdictions, including City of Cripple Creek, City of Woodland Park, City of Victor, and the Four Mile FPD.

4.2 Geography

The western slopes of Pikes Peak, a 14,115-foot fourteener located in Pike National Forest, dominate the geography of Teller County. Forested slopes and river gorges cover the county's lower elevations. The County lies in the transition zone between short grass prairies of the High Plains and the eastern edge of the Rocky Mountain Front Range. Teller County is at the intersection of four watersheds: Upper South Platte River, South Platte River Headwaters, Fountain Creek, and the Upper Arkansas River (Teller County, 2019). Major river drainages are the Arkansas and Upper South Platte. Dams and reservoirs provide water for Teller County and recreation sites for residents and visitors. Many small streams cross the county, including Beaver, Cripple, Fourmile, Rule, and Wilson Creeks, some of which were dammed to create reservoirs such as Catamount and Skaguay (Encyclopedia Staff, 2016).

Over 170,000 acres of Teller County is public land managed by federal, state, and local agencies, including the U.S. Forest Service (Pike National Forest) and the National Park Service (Florissant Fossil Beds Wildlife Area) (Teller County Office of Emergency Management, 2015). The State and Federal government own approximately 55% of Teller County land. The county contains a portion of the Pike National Forest, the Florissant Fossil Beds National Monument, the Dome Rock State Wildlife Area, Mueller State Park, and also includes:

- Department of the Interior Bureau of Land Management (BLM) lands;
- The Manitou Experimental Forest;
- State of Colorado State Lands Board lands;
- And lands managed by the Department of Transportation, Colorado Parks and Wildlife, and the Department of Conservation (Teller County, 2019).

4.3 Climate

Due to Teller County's diverse topography, the climate is highly variable, and conditions can change quickly. Weather conditions can also vary dramatically across seasons. Average temperatures tend to decrease with an increase in elevation, about 4 degrees per 1,000 feet, and subzero temperatures are typical in the winter. The majority of snowfall occurs during March and April. Due to the generally high elevation of the county, summers are relatively cool, with precipitation highest in July and August. However, there are exceptions with very dry summers. Early fall tends to be temperate and drier. Total annual precipitation is 16 inches, falling primarily in spring and summer.

4.4 Economy

Teller County, CO, economic statistics are from the U.S. Census Bureau and Chapter 5 of the *Future Regional Development Plan* by the Pikes Peak Area Council of Governments (n.d.). According to United States Census Bureau (2018b.) American Community Survey data, 61.7 percent of the Teller County population were in the civilian labor force. Primary industries (by employment) in Teller County according to the 2018 ACS 5-Year Estimates are the following: Agriculture, forestry, fishing and hunting, and mining (520 people), Construction (981), Manufacturing (485), Wholesale Trade (305), Retail Trade (1,198), Transportation and warehousing, and utilities (541), Information (143), Finance and insurance, and real estate and rental and leasing (655), Professional, scientific, and management, and administrative and

waste management services (1,221), Educational services, and health care and social assistance (2,382), Arts, entertainment, and health care and social assistance (1,626), other services, except public administration (723), and Public Administration (899) (United States Census Bureau, 2018a.).

In Teller County, 8.3 percent of the population (1,980 people out of the population of 23,899 people) live below the poverty line, a number that is lower than the national average of 13.1 percent (United States Census Bureau, 2018b.).

4.5 Land Use and Development

Growth in Teller County since 1990 and any future development will place additional demands on the county's rural lands, public lands, and government services. As the population of Colorado increases, the pressure to develop more of Teller County will increase. Teller County has a finite amount of land. It lies directly adjacent to rapidly expanding Front Range growth areas, such as Colorado Springs. Pressure from population growth on the Front Range could result in conflict between agricultural, rural lifestyles, and residential development.

Over 50 percent of the land in Teller County is public land belonging to a host of entities from the USFS that manage the Pike National Forest, the BLM, Colorado Parks, and Wildlife Division, National Monument and State Lands among others. While some Teller County-owned land exists (fairgrounds and Catamount area open space), County government is not currently actively pursuing additional land. In 2019, Teller County continued to endorse the relevant policies of the 1997 Parks, Trails, and Open Space Master Plan. The plan clearly states the importance that Teller County residents place upon open space, agricultural land preservation, and the preservation of recreation in Teller County.

The 1990 Growth Management Plan envisioned a more significant development of public transportation than has been realized in 2021. For instance, the plan envisioned development of airports and the resurgence of a rail system connecting Teller County's outlying cities, towns, and communities. Teller County remains, for the most part, a rural county with most residents living in subdivisions in unincorporated Teller County or Teller County's incorporated communities and cities. This dispersion makes the use of a rail system impractical, and there are no plans to develop one soon (Teller County, 2019).

4.6 Critical Facilities and Infrastructure

The project team identified the following types of critical facilities and infrastructure in Teller County (see Figure E-2 in Appendix E):

- Bridges
- Communication Towers
- Electric Substations
- Emergency Operations Centers
- Fire Stations
- Hospitals
- Law Enforcement
- National Shelter Systems
- Schools
- Water Tanks

Due to the sensitivity of this information, there is no detailed list of facilities, although a reference map is included in Appendix E.

4.7 Population

According to the 2018 ACS 5-Year Estimates, Teller County had a population of 24,113 (United States Census Bureau, 2018a.). In 2010, Teller County had a population of 22,821 people (United States Census Bureau, 2018a.). Between 2010 and 2018, the population of Teller County grew from 22,821 to 24,113 a 5.7 percent increase. In 2018, 94.7 percent of the population was White, 0.8 percent Black or African American, 0.5 percent American Indian or Alaska Native, 1.0 percent Asian, and 0.8 percent some other race. 2.3 percent of the population is two or more races: White and Black or African American (0.3 percent), White and American Indian and Alaska Native (1.3 percent), and White and Asian (0.4 percent). 6.4 percent of the population is Hispanic or Latino (of any race) (United States Census Bureau, 2018a.).

The median age in Teller County is 49.9, over ten years higher than the median age in the U.S. of 37.9. Approximately 4 percent of the County's population speaks a language other than English at home, including Spanish (1.7 percent), Other Indo-European languages (2.3 percent), Asian and Pacific Islander languages (0.2 percent), and other languages (0.1 percent) (United States Census Bureau, n.d.b.).

4.7.1 Vulnerable Populations

The elderly, children, people who are disabled, those who are low-income or below the poverty line, and those that speak a language other than English are more vulnerable to hazard events. The elderly are more likely to suffer health-related consequences following a disaster, making a recovery slower. They are more likely to be vision, hearing, and/or mobility impaired, and more likely to experience mental impairment or dementia. Also, the elderly are more likely to live in assisted-living facilities where emergency preparedness occurs at the discretion of facility operators. Elderly residents who live in their own homes may have more difficulty evacuating their homes and may be stranded in dangerous situations. This population group is more likely to need special medical attention, which may not be readily available during natural disasters.

Children under 14 are particularly vulnerable to disaster events because of their dependence on others for essential resources. Very young children may additionally be susceptible due to injury or sickness; this vulnerability can increase during natural hazards. Children may not understand the necessary precautions needed to protect themselves.

People with disabilities are more likely to have difficulty responding to hazard events than the general population. Knowing the percentage of the people in the population with a disability will allow emergency management personnel and first responders to have personnel available who can provide services needed by those with access and functional needs.

In the U.S., there is an expectation that individual households will use private resources to prepare for and recover from disasters to some extent. This assumption means that individuals or families living in poverty are automatically disadvantaged when confronting hazards. Mobile or modular homes are more susceptible to earthquakes and floods than other types of housing. In urban areas, low-income residents often live in older homes and apartment complexes, which are more likely to be made of un-reinforced masonry. This building type is more susceptible to damage during earthquakes.

Additionally, low-income residents are less likely to have insurance to compensate for losses incurred by natural disasters. In Teller County, 8.3 percent (1,980 out of 23,899 people) of the population lives below the poverty line, a number that is lower than the national average of 13.1 percent. The largest

demographic living in poverty are those aged 18-34 (11.1 percent), followed by under 18 (8.1 percent), 35 to 64 (8.0 percent) (United States Census Bureau, 2018a.).

Research shows that minorities are less likely to be involved in pre-disaster planning and experience higher mortality rates during a disaster event. Post-disaster recovery can be ineffective and often characterized by cultural insensitivity. Since higher proportions of ethnic minorities live below the poverty line than the white majority, poverty can compound vulnerability (Teller County Office of Emergency Management, 2015).

Table 4-1

Population Group	2010 American Community Survey (ACS) 5-Year Estimates Data Profiles	2018 ACS 5-Year Estimates Data Profiles
Total Population	22,821	24,113
65+	2,704 persons 65 years and older, or 11.8 percent of the population of Teller County	4,875 persons 65 years and older or 20.2 percent of the population of Teller County
Children under the age of 14	3,854 children under the age of 14 or 16.9 percent of the population of Teller County	3,497 children under the age of 14 or 14.6 percent of the population of Teller County.
Persons with disabilities	Data unavailable	3,465 persons with a disability or 14.5 percent
People living below the poverty line	1,529 or 6.7 percent	1,980 persons or 8.3 percent
People who speak English less than "very well"	97 or 1.1 percent	162 or 1.8 percent

(U.S. Census Bureau, 2010a.; U.S. Census Bureau, 2013b.; U.S. Census Bureau, 2018)

5. Teller County Capability Assessment

This section identifies the County's existing mitigation capabilities. These are the administrative and technical, financial, and planning and regulatory resources that are currently available to assist in reducing the County's vulnerability to hazards. This section addresses the capabilities of the Teller County government. Capability assessments for each participating jurisdiction are provided in the jurisdictional annexes.

HMC Meeting Deliverable

5.1 Administrative and Technical Resources

Table 5 describes the County's administrative and technical capabilities to engage in and improve mitigation planning and program implementation.

Table 5-1

Human and Technical Resources Integrated with Hazard Mitigation	
Resource	**Yes/No**
Emergency Manager	Yes
Floodplain Administrator	Yes
Community Planning:	
- Planner/Engineer (Land Development)	Yes
- Planner/Engineer/Scientist (Natural Hazards)	No
- Engineer/Professional (Construction)	Yes
- Resiliency Planner	No
- Transportation Planner	Yes
Building Official	Yes
Geographic Information System (GIS) Specialist and Capability	Yes
Grant Manager, Writer, or Specialist	Yes (Part-time)
Warning Systems/Services:	
- General	Yes
- Flood	Yes
- Wildfire	Yes
- Tornado	Yes
- Geological Hazards	Yes
Other	N/A

5.2 Financial Resources

The County maintains fiscal and financial resources to support its mitigation program. Table 6 identifies specific resources that funded mitigation activities.

Table 5-2

Accessible Financial Resources	
Financial Resource	**Yes/No**
Levy for Specific Purposes with Voter Approval	Yes
Utility Fees	No
System Development / Impact Development Fee	No
General Obligation Bonds to Incur Debt	Yes
Special Tax Bonds to Incur Debt	No
Withheld Spending in Hazard-Prone Areas	No
Stormwater Service Fees	No
Capital Improvement Project Funding	Yes
Community Development Block Grants	Yes
Other	Yes – Partnerships with municipalities to match funding for shared mitigation projects

Table 5-3 identifies current and potential sources of funding to implement identified mitigation actions contained within the HMP. Also, funding is available from federal and state agencies and programs.

Table 5-3

Financial Resources Integrated with Hazard Mitigation		
Funding Source	**Fund Administrator**	**Description**
LOCAL		
General Fund	Teller County Board of County Commissioners	Funding available for mitigation efforts supporting government-wide projects and activities.
Capital Improvements Fund	Teller County Public Works Department	Funding available for the construction of new infrastructure, infrastructure improvements, and critical infrastructure protection.
FEDERAL		
Building Resilient Infrastructure and Communities (BRIC) Program	Federal Emergency Management Agency (FEMA)/Colorado Division of Homeland Security and Emergency Management (DHSEM)	Authorized by the Disaster Relief and Recovery Act of 2018, the BRIC program is replacing FEMA's Pre-Disaster Mitigation Program. BRIC will support states, local communities, tribes and territories as they undertake projects that mitigate hazard risks and increase community resiliency. Grant awards will prioritize infrastructure projects and projects that support community lifelines: safety and security; food, water, shelter; health and medical; energy; communications; transportation; and hazardous material.
Hazard Mitigation Grant Program	Colorado Division of Homeland Security and Emergency Management (DHSEM)	Post-disaster funds to hazard reduction projects impacted by recent disasters.
Flood Mitigation Assistance Program	Colorado Division of Homeland Security and Emergency Management (DHSEM)	Provides funds for flood mitigation on buildings that carry flood insurance and have been damaged by flooding. Provides funding to support development of the flooding hazard portion of state and local mitigation plans and up to 100% of the cost of eligible mitigation activities. This funding is only available to communities participating in the NFIP.
Community Development Block Grant Program	U.S. Department of Housing and Urban Development/ Colorado Department of Local Affairs	Funds projects that benefit low- and moderate-income communities, prevent or eliminate slums or blight, or meet urgent community development needs posing a serious and immediate threat to community health or welfare.
Emergency Management Performance	Federal Emergency Management Agency (FEMA)/Colorado Division of Homeland	Provides funding to states for local or tribal planning, operations, acquisition of equipment, training, exercises, and construction and renovation projects.

Grants Program	Security and Emergency Management (DHSEM)	
National Earthquake Hazards Reduction Program (NEHRP)	Colorado Geological Survey (CGS)	Supports enhanced earthquake risk assessments in local HMPs. Provides funding for earthquake modeling and loss estimation, partnership building, planning, and training activities. Provides funding for prevention materials and activities. Provides support for limited post-event inspection and reporting.
State Fire Assistance Program	U.S. Forest Service (USFS)/ Colorado Division of Homeland Security and Emergency Management (DHSEM)	Provides funding opportunities for local wildland-urban interface planning, prevention, and mitigation projects, including fuels reduction work, education and prevention projects, community planning, and alternative uses of fuels.
National Dam Safety Program State Assistance Grants	FEMA/DWR Dam Safety	Provides technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible high hazard potential dams.
Risk Mapping, Assessing, and Planning	FEMA	Provides funding and technical support for hazard studies, flood mapping products, risk assessment tools, mitigation and planning, and outreach and support.
Conservation Reserve Program	U.S. Department of Agriculture Farm Service Agency and Natural Resource Conservation Service	Retires eligible cropland from agricultural production and plants the land with permanent grass cover to reduce wind erosion and dust hazards.
STATE		
Flood Response Fund	Colorado Water Conservation Board (CWCB)	Created and appropriated funding to the Flood Response Fund, administered by CWCB.
Emergency Dam Repair Cash Fund	Colorado Water Conservation Board (CWCB)	As determined by CWCB, money is transferred from the CWCB Construction Fund to the Emergency Dam Repair Cash Fund as needed.
Forest Restoration and Wildfire Risk Mitigation Grant	Colorado State Forest Service (CSFS)	Assists with funding community-level actions across the state that are implemented to protect populations and property in the wildland-urban interface and to promote forest health and the utilization of woody material. Includes funding for capacity building.
Rockfall Mitigation Program	Colorado Department of Transportation (CDOT)	Provides internal mitigation design and review for projects funded by rockfall mitigation budget; provides personnel designated as first responders during rockfall related emergencies; installs control devices on rock walls for prevention; posts falling rock signs on highways.

Colorado Wildfire Preparedness Plan and Fund	Division of Fire Prevention & Control (DFPC)	Amended to read Wildfire Emergency Response Fund creation, Wildfire Preparedness Fund creation. DFPC may use the moneys in the Wildfire Preparedness Fund to implement the Wildfire Preparedness Plan.
OTHER		
Community Planning Assistance Teams	American Planners Association Foundation	Provides pro bono technical assistance for planning frameworks or community vision plans for communities needing extra assistance. Local governments are responsible for travel costs.

5.3 Planning and Regulatory Resources

Table 5-4 summarizes the Teller County planning and regulatory capabilities, including plans, policies, and programs that have integrated hazard mitigation principles.

Table 5-4

Planning and Regulatory Resources Integrated with Hazard Mitigation	
Planning/Regulatory Resource	**Yes/No**
Building Codes (Year)	Yes; 2015 (IBC), 2017 (Electrical)
Building Code Effectiveness Grading Schedule (BCEGS) Rating	No
Capital Improvements Program or Plan	Yes
Community Rating System (CRS) [1]	No
Community Wildfire Protection Plan (CWPP)	Yes, 2011
Comprehensive, Master, or General Plan	Yes
Economic Development Plan	No
Elevation Certificates	Yes
Erosion/Sediment Control Program	Yes
Floodplain Management Plan or Ordinance	Yes
Flood Insurance Study	Yes, 2017
Growth Management Ordinance	Yes
Non-Flood Hazard-Specific Ordinance or Plan (e.g., steep slope, wildfire, snow load)	Yes, Wildfire
National Flood Insurance Program	Yes
Site Plan Review Requirements	Yes
Stormwater Program, Plan, or Ordinance	Yes
Zoning Ordinance	Yes
Other	Yes – Teller County Land Use Regulations, 2008, mostly for new development, pertaining to geologic and wildfire hazard areas, grading, drainage, and erosion and

	sediment control, driveway and access control, control of external effects, landscaping, lighting, open space, parking and loading, signage, tree retention and thinning and visual impacts. Teller County has also adopted Roadway Design & Construction Standards.

[1] (Colorado Association of Stormwater and Floodplain Managers, n.d.)

5.4 Education and Outreach Resources

Table 5-5 summarizes Teller County's education and outreach capabilities, including programs that are used to educate and notify residents, business owners, and other stakeholders regarding hazard risks.

Table 5-5

Teller County Education and Outreach	
Education and Outreach Resource	**No or Yes & Year Adopted**
Local Citizen Groups that communicate hazard risks	Yes, Teller County "Be Aware and Prepare," Woodland Park Field Office-Wildfire Mitigation and Education, Pikes Peak Wildfire Prevention Partners
StormReady	No, recommended actions from the 2008 plan. [1]
Firewise	Yes, including the following communities: Arabian Acres (2017), Aspen Hills (2013), Aspen Valley Ranch (2012), Colorado Mountain Estates (2017), Elk Valley (2013), Highland Lakes (2015), Majestic Park (2012), Ridgewood (2010), Upper Summer Haven (2014), Ute Lakes Fishing and Recreation Club (2011), Woodrock (2011), WP Friends of Forest Edge (2012) (Colorado State Forest Service, n.d.)

[1] (Teller County Office of Emergency Management, 2015).

5.5 National Flood Insurance Program Participation

FEMA	**C2.** Does the Plan address [Teller County's] participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3))

Teller County participates in the NFIP. A summary of measures the County uses to comply with the requirements of the NFIP is provided in Section 3.5.1. In 2020, the CWCB provided the following information on flooding losses under the NFIP in unincorporated areas of the county:

Table 5-6

Teller County Flood Losses			
Total Policies	**Total Claims**	**Number of Repetitive Losses**	**Total Payments since 1978**
26	5	0	$680

There are no repetitive loss properties or severe repetitive loss properties in unincorporated Teller County.

5.6 FEMA Funded Hazard Mitigation Projects

Teller County previously has received funding for hazard mitigation projects following federally declared disasters. Table 5-7 outlines potential funding sources available to local jurisdictions with a FEMA-approved HMP.

Table 5-7

Mitigation Plan Requirement for Governments Applying for Certain FEMA Grants			
Enabling Legislation	**FEMA Assistance Program**	**Is a Mitigation Plan Required?**	
		State Applicant	**Local Sub- Applicant**
Stafford Act	Individual Assistance (IA)	No	No
	Public Assistance (PA) Categories A and B (e.g., debris removal, emergency protective measures)	No	No
	Public Assistance (PA) Categories C through G (e.g., repairs to damaged infrastructure, publicly-owned buildings)	Yes	No
	Fire Mitigation Assistance Grants (FMAG)	Yes	No
	Hazard Mitigation Grant Program (HMGP)planning grant	Yes	No
	Hazard Mitigation Grant Program (HMGP) project grant	Yes	Yes
	Building Resilient Infrastructure and Communities (BRIC)	Yes	Yes
National Flood Insurance Act	Flood Mitigation Assistance (FMA) planning grant	Yes	No
	Flood Mitigation Assistance (FMA) project grant	Yes	Yes

The Teller County Office of Emergency Management is aware of the Disaster Recovery Reform Act of 2018 and has been following the proposed program and policy changes such as the creation of the Building Resilient Infrastructure and Communities (BRIC) program and changes to the NFIP. Teller County will continue to follow updates in program guidelines and policies as they are released.

The Teller County Office of Emergency Management recognizes that disasters do not occur within jurisdictional boundaries and takes a regional approach to disaster planning, mitigation, response, and recovery. The County collaborates with the community partners listed below and members of the public on an ongoing basis (Teller County Communications Subcommittee, 2010).

Education

- Cripple Creek-Victor School District RE-1
- Woodland Park School District RE-2

Federal Partners

- Bureau of Land Management
- U.S. Forest Service

Regional Partners

- State Parks
- Colorado State Forest Service
- Department of Social Services
- Teller County Public Health
- Mountain Communities Volunteer Fire Department-Woodland Park
- Mountain Communities Volunteer Fire Department-Florissant
- Four Mile Emergency Services
- Florissant Fire Rescue
- Cripple Creek Emergency Services
- Divide Fire Protection District
- North East Teller County Fire District
- Sheriff's Office, Cripple Creek / Woodland Park Police
- All Fire Departments/Districts
- Department of Community Development Services
- Information Technology Department
- Office of Emergency Management
- Colorado Division of Homeland Security and Emergency Management
- Department of Public Health

Business and Industry

- Qwest, Cellular Phone Companies
- Newmont Mining

Healthcare

- Pikes Peak Regional Hospital
- Southwest Teller County Emergency Medical Service
- Ute Pass Regional Emergency Medical Services
- Langstaff-Brown Urgent Care Center
- Penrose Urgent Care Cripple Creek
- Prospect Home Care & Hospice
- Cripple Creek Wellness Center

Regional and Private Utilities

- Black Hills Energy
- Intermountain Rural Electric Association (IREA)
- Colorado Natural Gas
- Municipal and community water suppliers
- Century Link
- Internet service providers

Transportation

- Colorado DOT

Community Non-Profit Organizations

- American Red Cross
- Salvation Army
- Coalition for the Upper South Platte (CUSP)

5.7 Integration of Mitigation into Existing Planning Mechanisms

FEMA	**C1.** Does the plan document [Teller County's] existing authorities, policies, programs, and resources, and its ability to expand on an improve these existing policies and programs? (Requirement §201.6(c)(3))

FEMA	**C6.** Does the Plan describe a process by which [Teller County] will incorporate 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))

Integration of the principles of mitigation into Teller County's daily operations and ongoing planning activities is a priority of the County's mitigation program. These activities will support:

- Raising awareness of the importance of hazard mitigation for the whole community
- Facilitating an understanding that hazard mitigation is not just an "emergency services" function and building ownership of mitigation activities across the organization
- Reduction in duplication or contradiction across the regional plan
- Maximization of planning resources through linked or integrated planning efforts

The County will consider integrating mitigation principles into planning mechanisms, including:

- Budget decision-making (e.g., operating and capital improvement)
- Building and zoning ordinances and decision-making
- Comprehensive land-use plan
- Emergency response plans
- Local school district projects
- Economic development planning and decision-making

5.7.1 Existing Plans

The existing plans listed in Table 5-8 provide ongoing opportunities for integration of hazard mitigation, and the County will work with plan owners and stakeholders when these plans are updated to consider hazard mitigation data and principles and ensure that plans align with the HMP.

Table 5-8

Existing Plans	
Plan	**Description**
Teller County Strategic Plan (2019-2034)	This document outlines strategies to assure the vision and mission of the Teller County government are meeting the needs of the constituents in a prioritized, systematic process, and will be used to structure goals and subsequent work plans in the short, medium, and long term. This plan is intended to be goal specific and focused on prioritized recent and future needs. In section IV., the plan outlines "Responding to Disaster and Emergencies" including short term (1-5 years), Mid Term (6-10 years), and Long Term (11-15 years) planning, preparedness, response, and recovery strategies.
Teller County Growth Management Plan, 2020	The goal of the County's Growth Management Plan is to provide for planned and orderly development within the County and cooperating cities, towns, and areas while balancing the basic human needs of a changing population and maintaining a healthy environment for future generations. Section V and VI outline growth alternatives and growth management strategies that touch on required mitigation measures and flood damage regulations.
4-Mile Regional Action Plan, 1998	The 4-Mile Regional Action Plan preserves the character and environment of the planning region while recognizing that population growth in the areas will occur.
Teller County Community Wildfire Protection Plan, 2011	The mission of the plan is to identify potential wildfire hazards, prioritize those hazards as they relate to public safety and community values, and develop activities and objectives to reduce wildfire risk in the highest priority areas. The plan addresses wildfire mitigation techniques and is due for an update.
Teller County Parks, Trails and Open Space Master Plan, 1997	This document is part of the Teller County Master Plan. It summarizes the main goals, policies, standards, and facilities planning recommendations for parks, trails, and open spaces under the jurisdiction of the Teller County Division of Parks.
Florissant Regional Plan, 1998	The general purpose of the Florissant Regional Plan is to guide and accomplish a coordinated, adjusted, and harmonious development of Florissant and the surrounding region.
Teller County Heavy Services Action Plan (HSAP)	The purpose of this plan is to identify properties in Teller County that have the potential to be developed for heavy service or light-industrial use.
Southeast Teller Regional Plan, 2004	The Southeast Teller County Regional Plan's general purpose was to guide and accomplish a coordinated, adjusted, and harmonious development of Southeast Teller County.

Teller County Emergency Operations Plan	The Teller County EOP supports the County's efforts to mobilize resources and conduct response and recovery activities in an emergency or disaster incident, or support of a planned special security event.

The integration of mitigation actions into existing plans and day-to-day operations is also a priority at the local community level. All communities in Teller County are encouraged to consider integration into planning mechanisms, such as:

- Operating and capital improvement budgets
- Building and zoning ordinances
- Comprehensive land-use plan
- Municipal ordinances
- Emergency response plans
- Local school district projects
- Economic development plans

Teller County 2021 Hazard Mitigation Plan

Part 2: Risk Assessment

Part 2 – Risk Assessment

6. Risk Assessment Methodology and Hazards of Concern

Introduction

Risk assessment is the process of measuring the potential loss of life, personal injury, economic injury, and property damage resulting from hazards. It allows emergency management personnel to establish early response priorities by identifying potential hazards and vulnerable assets. The process focuses on the following elements:

- **Hazard Identification** – Use all available information to determine what types of risks may affect a jurisdiction, how often they can occur, and their potential severity.
- **Exposure identification** – Estimate the total number of people and properties in the jurisdiction that is likely to experience a hazard event.
- **Vulnerability identification and cost evaluation** – Assess the impact of hazards on the people, property, environment, economy, and lands of the region, with estimates of the cost of potential damage and losses, or cost that can be avoided by mitigation.

44 CFR Section 201.6(c)(2) requires a risk assessment that provides a factual basis for activities proposed in the strategy to reduce losses from identified hazards. Information on the properties assessed is in aggregate, without details, to protect the owner's privacy and security.

6.1 Methodology

Chapters 7 through 17 describe the risks associated with each identified hazard of concern for Teller County. Each chapter elaborates on the hazard, the planning area's exposure and vulnerability, and potential cascading impacts or secondary hazards. The following steps defined the level of risk from each hazard:

- Identify and profile each hazard and include the following details:
  - Geographic areas most affected by the hazard
  - Event frequency estimates
  - Severity estimates
  - Warning time likely to be available for response
- Determine exposure to each hazard – Exposure was determined by overlaying risks with an inventory of potentially vulnerable structures, facilities, and systems to assess exposure to each hazard within the planning area.
- Assess the vulnerability of exposed facilities – The probability of occurrence for future events compared to structures and infrastructure in the probability area defined the vulnerability of those structures and infrastructure. The analysis used the GIS layer overlap for comparison.

The hazard profiles consider risks across the entire planning area, including participating jurisdictions. Where critical facility and parcel data is provided in the exposure and vulnerability assessments, that data is specific to unincorporated areas of Teller County. Exposure and vulnerability assessments for each of the participating jurisdictions are provided in the jurisdictional annexes.

6.2 Identified Hazards of Concern

For the update of this plan, the HMC considered the full range of hazards that could affect the planning area and ranked the hazards presenting the most significant concern. The process incorporated a review of the *Colorado State Hazard Mitigation Plan* and other local hazard planning documents. Also reviewed was data and information on the frequency, the magnitude of, and costs associated with hazards that have struck the planning area or could in the future. Additionally, the analysis used relevant qualitative or anecdotal information regarding hazards and the perceived vulnerability of the planning areas. Based on the review, this plan addressed the following hazards of concern:

- Flood
- Subsidence, Sink Holes, and Soil Erosion
- Wildfire
- Tornado
- Thunderstorms
- Epidemic/Pandemic
- Landslide & Mass Earth Movement
- Hazardous Materials
- Dam Failure
- Severe Winter Weather
- Extreme Temperature & Drought
- Earthquake

An additional hazard, avalanches, was discussed but was not included in the HMP. No avalanche hazard areas have been identified in Teller County. If an avalanche were to occur, it would occur outside of areas that are populated or have infrastructure and would be buffered from these areas by watershed drainages. Because avalanches do not present a significant hazard to the County, they are not discussed in the HMP.

6.2.1 Definitions of Hazard Ranking Factors

HMC members ranked all identified hazards on a scale from 1-5 as shown in Table 3-1. Results from the worksheets are in Appendix E. Table 6-1 also shows the definitions used to determine hazard ranking.

Table 6-1

Risk Assessment Hazard Ranking and Definitions				
Rating	**Magnitude**	**Frequency**	**Onset**	**Duration**
1	Single or limited number of properties impacted.	Less than every 25 years	Greater than 30 days of warning	Only brief moments
2	Neighborhood or small community impacted.	10-25 years	5-30 days of warning	1-24 hours
3	City or town impacted.	5-10 years	1-5 days of warning	Days to weeks
4	Entire County impacted.	1-5 years	1-10 hours of warning	Weeks to months
5	State and/or region impacted.	Once per year	No warning	Months to years

6.3 Risk Assessment Tools

Mapping

Relevant spatial data came from national, state, and county databases. Data used for this plan represents the best science currently available. The results of the data analysis are shown in the maps in Appendix E.

6.4 Limitations

Loss estimates, exposure assessments, and hazard-specific vulnerability evaluations rely on the best available data and methodologies. Uncertainties are inherent in any loss estimation methodology and arise in part from incomplete scientific knowledge concerning natural hazards and their effects on the built environment. Unpredictability also resulted from the following:

- Approximations and simplifications necessary to conduct a study
- Incomplete or outdated inventory, demographic or economic parameter data
- The unique nature, geographic extent, and severity of each hazard
- Mitigation measures already employed
- The amount of advance notice community members have to prepare for a specific hazard event
- GIS and Assessor data not integrated

These factors can affect loss estimates by a factor of two or more. Therefore, potential exposure and loss estimates are approximate and should be used only to understand relative risk. Over the long term, the Teller County and its planning partners would benefit from collecting additional data in the areas identified in the list above to assist with estimating future potential losses.

6.5 Hazard Profiles

The remainder of Part 2 – Risk Assessment comprises comprehensive hazard profiles for each of the adopted hazards. Each hazard profile begins with a general overview of the hazard before looking at the hazard in the context of Teller County. Hazard profiles also include a discussion of previous hazard events that have occurred in the county, the locations in which these events have or may occur, the frequency with which they occur, severity, warning time, and cascading or secondary impacts. Finally, there is a discussion of how climate change may exacerbate each hazard, the exposure and vulnerability of communities, property, critical infrastructure and the environment, development trends, and potential issues.

7. Flood

7.1 General Background

A flood is a general and temporary condition of partial or complete inundation of naturally dry land areas from the overflow of stream banks, the unusual and rapid accumulation of runoff of surface waters, or mudflows of the sudden collapse of shoreline land. Flooding results when the flow of water is greater than the standard carrying capacity of the waterway. The Colorado Water Conservation Board (2015) defines a floodplain as the land adjoining a channel of a river, stream, lake, or other watercourse or waterbody that becomes inundated with water during a flood. The extent to which a floodplain becomes inundated during a flood depends partly on the magnitude of the flood and the surrounding landscape (Department of Natural Resources Colorado Water Conservation Board, 2015).

When floodwaters recede after a flood event, they leave behind layers of rock and mud. These gradually build up to create a new floor of the floodplain. Floodplains generally contain unconsolidated sediments (accumulations of sand, gravel, loam, silt, and/or clay), often extending below the bed of the stream. These sediments provide a natural filtering system, with water percolating back into the ground and replenishing the groundwater.

Connections between a water source and its floodplain are most apparent during and after major flood events. These areas form a complex physical and biological system that not only supports a variety of natural resources but also provides natural flood and erosion control. When a river is separated from its floodplain by levees and other flood control facilities, natural, built-in benefits can be lost, altered, or significantly reduced (Wright, 2007).

DEFINITIONS

Flood – Inundation of normally dry land resulting from rising and overflowing of a body of water.

Floodplain – Land area along the sides of a river that becomes inundated with water during a flood

100-Year Floodplain – The area flooded by the flood that has a 1-percent chance of being equaled or exceeded each year. This is a statistical average only; in fact, a 100-year flood can occur more than once in a short period of time. The 1-percent annual chance flood is the standard used by most federal and state agencies.

500-year Floodplain – Also known as the 0.2-percent annual chance flood. The area inundated by floodwaters that has a 0.2-percent chance of being equaled or exceeded each year.

Return Period—The average period of time in years between occurrences of a particular hazard (equal to the inverse of the annual frequency of occurrence).

7.1.1 Potential Damage from Floods

Floods are one of the most common hazards in the U.S. They can develop over days or occur rapidly without warning. The effects of floods can impact a neighborhood or community, or entire counties or states. Floods can result in social, health, economic, and environmental consequences. There may be casualties, damage to property, and destruction of agricultural products. General infrastructure such as utilities, roads, bridges, and communication technology may be damaged and disrupted.

7.2 Teller County Hazard Profile

Teller County is susceptible to the following types of flooding:

- Rain in a general storm system
- Rain in a localized intense thunderstorm
- Dam failure
- Urban stormwater drainage
- Rain on fire-damaged watersheds

The county is at the greatest risk from large rain events that produce flash flooding. These rain events are most often microbursts, which produce a large amount of rainfall in a short amount of time. Flash floods are dangerous because they occur suddenly with little warning but usually dissipate within hours. Despite their sudden nature, the National Weather Service is typically able to issue advisories, watches, and warnings in advance of a potential flood.

7.2.1 Hazard Ranking

The Hazard Mitigation Committee completed a hazard ranking survey during the Teller County 2021 HMP update process for a range of hazard-related factors based on most likely scenarios; definitions of the hazard ranking factors are in Table 7-1 and Appendix E. When compared against the other hazards included in the hazard ranking survey, floods ranked as the number ten local hazard.

Table 7-1

Hazard Ranking Output						
Magnitude (1=lowest, 5=highest)	**Frequency (1=lowest, 5=highest)**	**Onset (1=slowest, 5=fastest)**	**Duration (1=shortest, 5=longest)**	**Perceived Change in Risk**	**Average**	**Rank**
3.00	2.00	3.00	1.00	3.00	2.67	10

7.2.2 Past Events

Gage records document flooding in Teller County by high-water marks, damage surveys, and personal accounts. National Centers for Environment Information from the National Oceanic and Atmospheric Administration (2020) includes flash flood events that happened in Teller County between 1993 and 2019. There are 23 recorded events in the database. There has been one Federal Emergency Management Agency (2020 a.) declaration for flooding in Teller County: DR-385 in 1973.

7.2.3 Location

Teller County is in the South Platte and Arkansas river basins. The majority of the county is in the Arkansas river basin, but Woodland Park straddles the divide between the two basins. Floodplains are generally narrow and affect creeks and gulches across the basins. Flooding can occur along Fountain Creek, West Four Mile drainage, Trout Creek, Turkey Creek, West Creek, Paint Pony Creek, and numerous gulches that are typically dry. Fountain Creek in the Arkansas river basin receives more intense rainfall than Trout Creek in the South Platte river basin. A small part of the County, which

includes Woodland Park and Green Mountain Falls, is part of the Fountain Creek watershed, which is located along the central Front Range and drains south into the Arkansas River at Pueblo.

Woodland Park can be affected by floods on Fountain Creek, Lovell Gulch, and Loy Gulch. Flooding in Woodland Park is a result of local drainage problems. The drainage system within most of the developed areas of the city was built to handle the typical five-year event but not more intense precipitation. The city of Cripple Creek has two small drainages that can be prone to flooding: Cripple Creek and Pony Creek. No streams or major drainages have been mapped in the city of Victor. Figures E-3A through E-3E in Appendix E show mapped floodplains within the unincorporated County; the cities of Woodland Park, Cripple Creek, Victor; and the Four Mile FPD.

7.2.4 Frequency

Floods in the County are highly likely to recur, with a nearly 100 percent chance of occurrence in any given year. This probability is based on the 23 events over 26 years reported in the National Oceanic and Atmospheric Administration (2020) *Storm Events Database*.

7.2.5 Severity

The principal factors affecting flood damage are flood depth and velocity. The deeper and faster flood flows become, the more damage they can cause. Shallow flooding with high velocity can cause as much damage as deep flooding with slow velocity. Flood severity is evaluated by examining peak discharges. In Teller County, the magnitude and severity of flooding are considered limited due to the fact that the stream channels and floodplains are relatively narrow and shallow throughout the county.

7.2.6 Warning Time

Due to the sequential pattern of meteorological conditions needed to cause severe flooding, it is unusual for a flood to occur without some warning. Typical warning times for floods are between 24 and 48 hours. Flash flooding occurrences and paths are less predictable, but areas potentially at risk of a flash flood can be warned.

7.3 Cascading Impacts/Secondary Hazards

The most problematic secondary hazard for flooding is bank erosion and rapid channel migration. In many cases, the threat and effects of bank erosion are more harmful than actual flooding. The hazard is accentuated in the upper courses of rivers with steep gradients, where floodwaters may pass quickly and without much damage, but scour the banks, edging properties closer to the floodplain. Flooding is also responsible for hazards such as landslides when high flows oversaturate soils on steep slopes, causing them to fail. Hazardous material incidents can also occur if storage tanks rupture or sewage/manure lagoons overtop and spill into streams, rivers, or drainage sewers.

Flooding can cause increased mold growth within a home. People with asthma, allergies, or other breathing conditions may be more susceptible to mold. Sensitive persons may experience a stuffy nose, irritated eyes, wheezing, or skin irritation. There is also a possibility of power outages after a major flood event.

7.4 Potential Impacts from Future Climate Conditions

Climate change is already impacting water resources, and resource managers have observed the following:

- Historical hydrologic patterns can no longer be solely relied upon to forecast the water future
- Precipitation and runoff patterns are changing, increasing the uncertainty for water supply and quality, flood management, and ecosystem functions
- Extreme climatic events will become more frequent, necessitating improvement in flood protection, drought preparedness, and emergency response

The amount of snow is critical for water supply, environmental needs, and determining the risk of flooding. The timing of snowmelt runoff into rivers and streams is another vital factor. Rising snowlines caused by climate change will allow more mountain areas to contribute to peak storm runoff. High-frequency flood events (e.g., 10-year floods), as well as less frequent flood events (e.g., 100-year flood), will occur more often with a changing climate. Snowmelt may occur earlier in the year with an increased onset time as the hydrology of Colorado changes.

Along with reductions in the amount of snowpack and accelerated snowmelt, scientists project greater storm intensity in multiple regions of the country, including Colorado, resulting in more direct runoff and flooding. Changes in watershed vegetation and soil moisture conditions will likewise change runoff and recharge patterns. As stream flows and velocities change, erosion patterns will also change. As hydrology changes, what is currently considered a 100-year flood may occur more often, leaving many communities at greater risk.

7.5 Exposure & Vulnerability

Flood exposure was analyzed using local GIS data from County, State, and federal sources.

7.5.1 Population and Property

Using GIS, an estimated 839 parcels in the unincorporated county and 5,542 acres are exposed to the 100-year floodplain:

Table 7-2

Number of Parcels Exposed to the 100-year Floodplain		
Land Type	**Land Type Count**	**Sum of Land Value**
Ag Residential	64	$2,017,520
Agricultural	197	$152,420
Comm Vacant	15	$198,400
Commercial	5	$581,510
Exempt	63	$6,858,420
Industrial	-	-
Mineral	18	$83,670
Mixed Use Comm	6	$427,510
Mixed-Use Res	-	-
Mobile Home	4	$18,070
NONE	27	-
Producing Mine	-	-
Residential	213	$5,233,060
Severed Mineral	-	-
State	1	-
State Assessed	-	-

Vacant Land	226	$2,501,160
Grand Total	**839**	**$18,071,740**

Vulnerability

Teller County is at greatest risk from large rain events that produce severe flash flooding. These rain events are most often microbursts, which produce a large amount of rainfall in a short amount of time. According to the 2018 ACS 5-Year Estimate, Teller County has average household size of 2.35. Based on this estimate and the number of residential parcels in mapped 100-year floodplains, a residential population of 660 people in Teller County is vulnerable to a 100-year flood event.

7.5.2 Critical Facilities

Roads or railways that are blocked or damaged by floods can isolate residents and prevent access throughout the County by residents and emergency service providers. Bridges washed out or obstructed by floods or debris can cause isolation. Water and sewer systems can be flooded or backed up, leading to potential health issues.

Table 7-3 summarizes the critical facilities and infrastructure in 100-year floodplains in unincorporated Teller County.

Table 7-3

Teller County Critical Facilities Within 100-year Floodplain	
Bridge	16
Fire Station	1
Hospital	2
Law Enforcement	1
Total	20

Vulnerability

All critical facilities and infrastructure listed in Table 16 are vulnerable to flood hazards.

7.5.3 Environment

Flooding is a natural event, and floodplains provide many natural and beneficial functions. Nonetheless, with human development factored in, flooding can impact the environment in negative ways. Fish can wash into roads or over dikes into flooded fields, with no possibility of escape. Pollution from roadways, such as oil and hazardous materials, can flow into rivers and streams. During floods, these can settle onto naturally dry soils, polluting them for agricultural uses. Human development such as bridge abutments and levees can increase stream bank erosion, causing rivers and streams to migrate into non-natural courses.

Vulnerability

The environment vulnerable to flood hazard is the same as the environment exposed to the hazard. Loss estimation software platforms, such as HAZUS-MH, are unable to measure the environmental impacts of flood hazards. The best gauge of environmental vulnerability is a damage review from past flood events. Loss data that segregates damage to the environment were not available at the time of this plan.

Capturing this data from future events could prove to be beneficial in measuring the vulnerability of the environment for future updates.

Additionally, while the vulnerability assessment typically focuses on human vulnerability to flooding events, the opposite is also worth noting. Floodplains have many natural and beneficial functions; however, due to the negative impacts of floods, many structural and other measures have been devised to limit how far a floodplain can extend. Disruption of natural systems can have long-term consequences for entire regions; however, this potential impact was only recently noted. Some well-known, water-related functions of floodplains (noted by FEMA) include:

- Natural flood and erosion control
- Provide flood storage and conveyance
- Reduce flood velocities
- Reduce flood peaks
- Reduce sedimentation
- Surface water quality maintenance
- Filter nutrients and impurities from runoff
- Process organic wastes
- Moderate temperatures of water
- Groundwater recharge
- Promote infiltration and aquifer recharge
- Reduce the frequency and duration of low surface flows

Areas within the floodplain that typically provide these natural functions are wetlands, riparian areas, sensitive areas, and habitats for rare and endangered species.

7.6 Development Trends

The County has experienced little growth over the past ten years. Economic problems have impacted growth when compared to the rest of Colorado. The County and its planning partners are equipped to handle future growth within flood hazard areas. All municipal planning partners have plans (e.g., Teller County Growth Management Plan) that address frequently flooded areas. All partners have committed to linking their plans to this HMP update. This collaboration will create an opportunity for wise land-use decisions, as future growth can impact flood hazard areas.

7.7 Issues

Fundamental issues associated with flood hazards include but are not limited to the following:

- Older levees are subject to failure or do not meet current building practices for flood protection.
- More information is needed on flood risk to support the concept of risk-based analysis of capital projects.
- There needs to be a sustained effort to gather historical damage data, such as high-water marks on structures and damage reports, to measure the cost-effectiveness of future mitigation projects.
- Ongoing flood hazard mitigation will require funding from multiple sources to continue.
- There needs to be a coordinated hazard mitigation effort between jurisdictions affected by flood hazards in the County.
- Continue to educate floodplain residents about flood preparedness and resources available during and after floods.

- The risk associated with the flood hazard overlaps the risk associated with other hazards, such as landslides. Looking at combined hazards provides an opportunity to seek mitigation alternatives with multiple objectives that can reduce the risk of numerous hazards.
- Streambank erosion is still a significant problem in most of the County's rivers and streams.
- The concept of residual risk should be considered in the design of future capital flood control projects and shared with residents living in the floodplain.
- The promotion of flood insurance as a means of protecting private property owners from the economic impacts of frequent flood events should continue.
- Existing floodplain-compatible uses such as agricultural and open space need to be maintained.
- The economy has an impact on a jurisdiction's ability to manage its floodplains. Budget cuts and personnel losses can tax many resources needed to support floodplain management.
- Flood Rate Insurance Maps (FIRMs) and Digital FIRMs (DFIRMs) do not provide accurate estimates of future risk due to climate change.

8. Subsidence, Sinkholes, & Soil Erosion

8.1 General Background

Subsidence is sinking or settling of the ground surface due to the movement of soil or water under the surface (U.S. Geological Survey, n.d.b.). Erosion can cause subsidence, and sinkholes are one type of result from subsidence. Subsidence can impact small areas like sinkholes or large land areas. The National Oceanic and Atmospheric Administration (NOAA) (n.d.) explain humans and natural events can cause subsidence. However, most often, it is caused by humans removing water, oil, natural gas, or mineral resources out of the ground through pumping, fracking, or mining. Natural factors include earthquakes, glacial movement, soil compaction, erosion, natural sinkholes, and loess deposits (NOAA, n.d.).

Erosion is the removal of soil from the ground. There are two main ways to erode soil: by water flow or wind movement over the soil (Natural Resources Conservation Service Soils, n.d.). Soil erosion can cause sinkholes by removing material underneath the ground surface. When underground water flow erodes soil or water drains out of a pocket, it leaves an empty gap and forms a void. This void can lead to a sinkhole. Sinkholes occur when a void develops directly under the surface of the ground, and the top layer cannot support its weight (Colorado Department of Transportation, n.d.). The top layer collapses, resulting in a localized ground depression.

DEFINITIONS

Erosion –The removal and simultaneous transportation of earth materials from one location to another by water, wind, waves, or moving ice.

Land subsidence - Gradual settling or sudden sinking of the Earth's surface owing to subsurface movement of earth materials. The principal causes of land subsidence are aquifer-system compaction, drainage of organic soils, underground mining, hydrocompaction, natural compaction, sinkholes, and thawing permafrost.

Loess Deposits – Soil subsidence by adding water to fine soils deposited by wind.

Sinkhole – A type of subsidence; a depression in the ground that has no natural external surface drainage.

8.1.1 Potential Damage from Subsidence, Sinkholes, and Soil Erosion

There is a wide range of potential damage generated by subsidence, sinkholes, and erosion. A small sinkhole in an open field has little impact; on the other hand, a small sinkhole under a building causes significant structural damage. A hillside can erode slowly with no damage, or heavy rain can cause rivers to overflow and deteriorate pieces of road along the riverbank. Road closures and damage can disrupt travel, supplies, and cost time and money. In rural areas, road closures can isolate populations. Subsidence over vast areas can unlevel whole city blocks impacting the stability of buildings, infrastructure, and utilities (U.S. Geological Survey, n.d.). Most often, subsidence and erosion happen slowly over time and are a result of human intervention. Regular land inspections and other mitigation actions can prevent the harmful effects of slow-onset subsidence. Unfortunately, rapid events happen on occasion, with devastating ramifications, such as sinkholes opening up under buildings or roads with no warning.

8.2 Teller County Hazard Profile

The Colorado Geological Survey (n.d.) reports the most substantial areas for concern in Colorado are collapsing soils, sinkholes in karst areas, and ground subsidence over abandoned mines.

8.2.1 Hazard Ranking

The HMC completed a hazard ranking survey during the Teller County 2021 HMP update process for a range of hazard-related factors based on most likely scenarios; definitions of the hazard ranking factors may be found in Table 8-1 in Appendix D. When compared against the other hazards included in the hazard ranking survey, subsidence, sinkholes, and soil erosion ranked as the number 8 local hazard.

Table 8-1

Hazard Ranking Output						
Magnitude (1=lowest, 5=highest)	**Frequency (1=lowest, 5=highest)**	**Onset (1=slowest, 5=fastest)**	**Duration (1=shortest, 5=longest)**	**Perceived Change in Risk**	**Average**	**Rank**
3.00	1.00	5.00	2.00	3.00	3.00	8

8.2.2 Past Events

Soil erosion is an ongoing geological process. It is not easy to discern or document specific erosion events. Many of the descriptions associated with the flood and debris flow hazards included episodes of excessive erosion or deposition. Since the Hayman fire in 2002, the Waldo Canyon fire in 2012, and the High Chateau fire in 2018, erosion and sedimentation have been an ongoing problem in portions of the county. There have been historic underground mine collapses/cave-ins in the county. One collapse in August 2012 shut down Highway 67 north of Cripple Creek for several days.

8.2.3 Location

Due to the topography and mining history in Teller County, generally, the entire county is susceptible to subsidence, sinkholes, and soil erosion.

8.2.4 Frequency

Significant soil erosion happens nearly every year in Teller County and is considered highly likely with nearly a 100-percent chance of occurrence in any given year. Sinkholes have a very infrequent appearance and are not likely with a less than 10 percent chance in any given year.

8.2.5 Severity

Based on the information in this hazard profile, the severity of soil erosion, subsidence, and sinkholes is negligible, with less than ten percent of property severely damaged. Overall significance to the county is considered low with minimal potential impact.

8.2.6 Warning Time

Soil erosion happens every day and is exacerbated by certain human-caused and natural events. Subsidence and sinkholes take years for development but can appear and affect residents and property owners within a matter of seconds. Sinkholes have a reputation for being sudden occurrences. There are some early signs to check for sinkholes:

- Fresh exposure of trees or structures that results from the ground sinking around them;
- Slumping, sagging, or slating trees or objects
- Depressions in the ground (e.g., yard, street)

8.3 Cascading Impacts/Secondary Hazards

Cascading impacts of soil erosion include exacerbated stream bank deterioration, leading to potential flooding and channel instability. Due to erosion and flooding, residents in the county could experience loss of crops and other agricultural goods; residential, industrial, or private property; and loss of infrastructure. The transportation and deposition of sediment downstream can alter downstream reaches. Sedimentation in an uncontrolled system can lead to loss of channel and reservoir capacity, habitat, and fisheries. Lack of capacity can alter service providers' capability to provide water for residents and water for wildfire fighting. Loss of habitat and fisheries can affect local sustenance and the economy. Undercutting caused by erosion can lead to landslides, mudslides, rock falls, and loss of infrastructure such as bridges and roads.

8.4 Potential Impacts from Future Climate Conditions

The United States Geological Survey (n.d.) identifies subsidence as a national problem, affecting 45 states in the U.S. Irregular weather patterns and precipitation levels can lead to an increase in sinkholes and soil subsidence. Since 1900, Colorado recorded several significant droughts, the most recent events occurred from 1998 to 2004, 2011 to 2013, and in 2018. Details for drought and extreme temperatures are in detail in Chapter 16. Climate change data reveals longer dry periods, which affects groundwater levels. The impacts on soil moisture can cause the soil to expand and shrink, weakening the soil and increasing chances of a sinkhole.

8.5 Exposure and Vulnerability

8.5.1 Population

It is reasonable to assume the entire planning area is exposed and vulnerable to soil erosion, subsidence, and sinkholes. Certain areas of the county have more exposure due to geographic location. Populations living near rivers, streams, and current and former mining sites are more susceptible to the risks discussed in this profile.

8.5.2 Property

Nearly all the approximately 15,000 buildings within the census tracts that define the planning area are exposed and vulnerable to soil erosion, subsidence, and sinkholes. Those properties sitting on top of karst areas and near abandoned mine workings are the most exposed and vulnerable. Older buildings are at the most risk from damage. The frequency and degree of damage will depend on specific locations.

8.5.3 Critical Facilities

All critical facilities exposed to flooding and landslides or mass earth movements are also likely exposed and vulnerable to risks associated with soil erosion, subsidence, and sinkholes. Incapacity and loss of roads and other infrastructure is a significant concern. Prolonged outages on arterial roads can have negative impacts on the entire region.

8.5.4 Environment

The environment is highly exposed and vulnerable to soil erosion. Natural habitats such as streams and riparian areas risk major damage and destruction.

8.6 Development Trends

"More than 80 percent of the identified subsidence in the Nation has occurred because of exploitation of underground water, and the increasing development of land and water resources threatens to exacerbate existing land-subsidence problems and initiate new ones" (U.S. Geological Survey, n.d., para. 5). Development in the county is slowly increasing. There is the potential for additional water resources to be developed as the state's population grows, increasing the chances for soil erosion, subsidence, and sinkholes if development is not handled correctly.

8.7 Issues

The major issues surrounding soil erosion, subsidence, and sinkholes in the county include:

- Unknown locations of cavities underground that cause sinkholes
- Unknown makeup of soil layers that make up karst areas
- No current mapping of existing sinkholes or major soil erosion concern areas exists within the county

9. Wildfire

9.1 General Background

A reportable wildland fire is any fire involving vegetative fuels, including prescribed fire, that occurs in the wildland or wildland-urban interface (WUI) areas, including those fires that threaten or consume structures. Lightning causes most natural fires. On the other hand, most wildland fires are caused by human activity such as smoking, campfires, equipment use, and arson. Wildfires can happen every month of the year; drought, snowpack, and local weather conditions such as high winds can expand the length of the fire season. How a fire behaves depends on the following:

- **Fuel** – Fuel Load plays a factor along with mixed fuel types (e.g., vegetative underbrush under the canopy). Lighter fuels such as grasses, leaves, and needles quickly expel moisture and burn rapidly, while heavier fuels such as tree branches, logs, and trunks take longer to warm and ignite. Dead, dying, and diseased trees present a higher hazard (University of Washington, 2015b).
- **Weather** – Strong, dry winds and relative humidity plays a large part in determining extreme fire conditions.
- **Terrain** – The topography of a region influences the amount and moisture of fuel, the impact of weather conditions (such as temperature and wind), potential barriers to fire spread (such as highways and lakes), and elevation and slope of landforms (uphill vs. downhill). South-facing slopes, box canyons, and saddles can intensify fire spread.

9.1.1 Potential Damage from Wildfires

Fire hazards present a considerable risk to vegetation and wildlife habitats. Short-term loss caused by a wildfire can include the destruction of timber, wildlife habitat, scenic vistas, and watersheds. Long-term effects include smaller timber harvests, reduced access to affected recreational areas, and destruction of cultural and economic

DEFINITIONS

Conflagration – A fire that grows beyond its original source area to engulf adjoining regions. Wind, extremely dry or hazardous weather conditions, excessive fuel buildup, and explosions are usually the elements behind a wildfire conflagration.

Firestorm – A fire that expands to cover a large area, often more than a square mile. A firestorm usually occurs when many individual fires grow together into one. The area involved becomes so hot that all combustible materials ignite, even if they are not exposed to direct flame. Temperatures may exceed 1,000 degrees Celsius. Superheated air and hot gases of combustion rise over the fire zone, drawing surface winds in from all sides, often at velocities approaching 50 miles per hour. Although firestorms seldom spread because of the inward direction of the winds, once started, there is no known way of stopping them.

Wildland-Urban Interface Area – An area susceptible to wildfires and where wildland vegetation and urban or suburban development occur together. An example would be smaller urban areas and dispersed rural housing in forested areas.

Wildfire – Fires that result in uncontrolled destruction of forests, brush, field crops, grasslands, and real and personal property in non-urban areas. Because of their distance from firefighting resources, they can be difficult to contain and cause a great deal of destruction.

resources and community infrastructure. Vulnerability to flooding increases through the destruction of watersheds. The potential for significant damage to life and property exists in areas designated as WUI areas, where development is adjacent or among lands prone to wildland fire.

9.2 Teller County Hazard Profile

Wildfires are of significant concern throughout Colorado, including Teller County. Vegetation fires occur on an annual basis in Colorado, with most being controlled burns and contained early with little damage. In Teller County and throughout Colorado, aggressive fire suppression combined with cycles of drought and changing land management over the past century has left many forests unnaturally dense and ready to burn. The threat of wildfire and potential losses are continually increasing as human development and population increase, and the WUI expands. Another major contributor to fuel loads in Colorado and Teller County are standing trees killed by spruce beetles, which have affected 40 percent of the state's spruce fir forests since the year 2000 (Colorado State Forest Service Colorado State University, 2020).

9.2.1 Hazard Ranking

The Hazard Mitigation Committee completed a hazard ranking survey during the Teller County 2021 HMP update process for a range of hazard-related factors based on most likely scenarios; definitions of the hazard ranking factors are in Table 9-1 and Appendix D. When compared against the other hazards included in the hazard ranking survey, wildfires ranked as the number 1 local hazard.

Table 9-1

Hazard Ranking Output						
Magnitude (1=lowest, 5=highest)	**Frequency (1=lowest, 5=highest)**	**Onset (1=slowest, 5=fastest)**	**Duration (1=shortest, 5=longest)**	**Perceived Change in Risk**	**Average**	**Rank**
5.00	4.00	4.00	3.00	1.00	4.33	1

9.2.2 Past Events

Wildfires are becoming increasingly prevalent nationally and in Colorado. The number, intensity, and complexity of wildfires have grown exponentially since the 1990s. In an average Colorado fire season, there are over 4,500 fires on non-federal lands burning 101,000 acres, with large State Responsibility Fires also occurring (Colorado Division of Fire Prevention and Control, 2019).

In 2019, Colorado experienced only 857 wildfires that accounted for 40,392 acres burned (Insurance Information Institute, n.d.). 2018 was a significant wildfire year in Colorado, with 18 incidents that became State Responsibility Fires, resulting in over $40 million in State dollars expended. More than 6,000 wildland fires occurred on State and private lands, for a total of over 250,000 burned acres. Of Colorado's largest 20 wildfires in history, the three largest occurred in 2020 (Colorado Division of Fire Prevention and Control, 2020). According to the Division of Fire Prevention and Control Annual Wildfire Outlook (2019), these include:

- Cameron Peak: 208,663 acres (2020)
- East Troublesome: 193,812 acres (2020)
- Pine Gulch: 139,007 acres (2020)
- Bridger: 45,800 acres (2008)
- Last Chance: 45,000 acres (2012)
- Bear Springs: 44,662 acres (2001)

- Hayman: 137,760 acres (2002)
- Spring Creek: 108,045 acres (2018)
- High Park: 87,284 acres (2012)
- Missionary Ridge: 70,485 acres (2002)
- West Fork: 58,570 acres (2013)
- 416 Fire: 54,129 acres (2018)
- Papoose: 49,628 acres (2013)
- MM 117: 42,795 acres (2018)
- Beaver Creek: 38,380 acres (2016)
- Bull Draw: 36,549 acres (2018)
- Badger Hole: 33,421 acres (2018)
- Logan: 32,546 acres (2017)
- Grizzly Creek: 32,431 acres (2020)
- Burn Canyon: 31,300 acres (2002)

One of the worst wildfires in Colorado history, the Hayman Fire, ignited in eastern Park County and burned nearly 138,000 acres from June 8 – 28, 2002, including 60,000 acres on June 9th alone, in Park, Teller, Jefferson, and Douglas Counties. It thrived in dry forests that had become overpopulated with trees and undergrowth. Some of the most significant challenges in fighting this particular fire were the acute drought conditions existing in 2002, extreme weather events at the beginning of the fire, winds of 20-50 mph coupled with 5 percent relative humidity, and the prevalence of crown fire and long-range spotting. These factors led to numerous breaches of firebreaks and treatments during the Hayman Fire. Table 9-2 below lists other notable fires that may have impacted the County from 1980-2018.

Table 9-2

Fire Name	Date	Total Acres Burned
High Chateau Fire[1]	June 2018	1,500
Grouse	May 2006	106
Oil Creek	March 2004	20
Florissant	January 2004	65
FLFO2	February 2003	33.2
Hayman	June 2002	137,000
Tranquil	June 2002	6
Cedar Mountain	April 2002	140
Pony Gulch	June 2001	9
Waldo Canyon	August 2000	8
Manitou	March 1999	25
Teller 1	May 1998	12
Paradise	July 1997	7
4-Forty	May 1988	7.2
-	March 1986	50
Cripple Creek	October 1983	20
Saw Mill	April 1981	22

[1] (Web Staff, 2018) [2] (Teller County, 2011)

9.2.3 Location

Colorado overall is one of the fastest-growing states in the nation. Growth is occurring outside of urban boundaries in the WUI. The WUI is the area where structures and other human improvements meet and mix with undeveloped wildland or vegetative fuels. Population growth within the WUI substantially

increases the risk of wildfires. The Colorado State Wildfire Risk Assessment (CO-WRA) estimates that 100 percent of the Teller County population is living within the WUI and is at risk from wildfire. Figure E-4 in Appendix E shows wildfire risk areas in Teller County.

9.2.4 Frequency

Given past events and probability of future occurrence, there is a 100-percent chance that at least one wildfire will occur each year in Teller County. Many of these fires will be small, maybe five acres or less. However, previous wildfires, beetle kill standing trees, and other factors can contribute to small wildfires quickly getting out of hand. Changes in snowpack levels, precipitation patterns, and winds may contribute to more frequent and/or more severe fires. Wildland fires will continue to happen naturally and as a result of human activities.

9.2.5 Severity

Potential losses from wildland fire include human life, structures, and other improvements, and natural resources. Given the potential for immediate response to reported fires, the likelihood of injuries and casualties can be minimal in these situations. However, there are isolated areas with limited ingress and egress options, increasing the potential for loss of life. Smoke and air pollution from fires can be a health hazard, especially for sensitive populations, including children, the elderly, and those with respiratory and cardiovascular diseases. Wildland fire may also threaten the health and safety of those fighting the fires. First responders are exposed to dangers from the initial incident and after-effects from smoke inhalation and heat stroke. Wildland fire can also lead to ancillary impacts, such as habitat loss, landslides in steep ravine areas, increased soil erosion, and flooding due to the effects of silt in the local watersheds. The overall significance of this hazard is considered high with widespread potential impact.

9.2.6 Warning Time

Humans typically cause wildland fires; therefore, it is difficult to predict when one might break out. Dry lightning may also trigger wildland fires. Severe weather can be predicted, so special attention can be paid during weather events that may start wildland fires. If a fire does break out and spreads rapidly, residents may need to evacuate within hours or days. Reliable National Weather Service (NWS) lightning warnings are available on average 24 to 48 hours before a significant electrical storm. Dry seasons and droughts are factors that significantly increase fire likelihood. Once a fire has started, fire alerting is rapid in most cases. The spread of cellular and two-way radio communications in recent years has further contributed to a significant improvement in warning time.

The NWS can issue a fire weather watch when the potential for severe fire weather exists soon or is expected to develop. Additionally, the NWS can issue a forecast warning called a red flag warning. This warning indicates that conditions are currently ideal for wildland fire combustion and rapid spread – warm temperatures, low humidity, and stronger winds. Firefighters and other emergency officials track these forecasts and watches to prepare for potential wildfires.

9.3 Cascading Impacts/Secondary Hazards

Wildland fires can cause cascading impacts that may be more widespread and have prolonged damage than the fire itself. Fires can cause direct economic losses in the reduction of harvestable timber and indirect financial losses, such as reduced tourism. Wildland fires cause the contamination of reservoirs (and sometimes drinking water), destroy transmission lines, and contribute to flooding. Fires strip slopes of vegetation, exposing them to greater amounts of runoff; this, in turn, can weaken soils and cause

failures on slopes. Major landslides can occur several years after a fire. Most wildland fires burn hot and for long durations that can bake soils, especially those high in clay content, thus increasing the imperviousness to the ground. This hardened ground increases the runoff generated by storm events, correspondingly increasing the chance of flooding.

9.4 Potential Impacts from Future Climate Conditions

Multiple factors affect fire hazards in western ecosystems, such as climate variability, local topography, and human intervention. Future climate conditions have the potential to affect various elements of the wildland fire system: fire behavior, ignitions, fire management, and vegetation fuels. Changes in winds (increased) may spread fires, threatening WUI areas. Additionally, future droughts may promote more or faster spreading wildland fires.

9.5 Exposure & Vulnerability

9.5.1 Population

Teller County residents, especially those who live in the WUI, are exposed to wildfire hazards. According to the 2018 ACS 5-Year Estimate, Teller County has an average household size of 2.35 people. Based on this estimate, a residential population of 19,646 people in the unincorporated County is vulnerable to wildfires. This estimate assumes that a household is present on each residential parcel within wildfire risk areas in the unincorporated County.

Vulnerability

Vulnerable populations can include every person within the County. Smoke and air pollution from surrounding wildfires can be a health hazard to residents, especially for sensitive populations such as children, the elderly, and persons with respiratory and cardiovascular disease. Public health impacts associated with wildfires include difficulty breathing and reduction in visibility.

9.5.2 Property

Property damage from wildland fires can be severe and can significantly alter entire communities. Table 9-3 shows the acreage exposed in the various wildfire hazard zones in the unincorporated County based on GIS data. Categories are very high risk, high risk, medium risk, low risk, and very low risk. Table 9-4 indicates the sum of the total assessed parcel counts by land use category for the wildfire risk categories in unincorporated Teller County, and Table 9-5 provides total parcel values by land use category.

Table 9-3

Wildfire Risk						
Sum of Acres	**Wildfire Risk Very Low**	**Wildfire Risk Low**	**Wildfire Risk Medium**	**Wildfire Risk High**	**Wildfire Risk Very High**	**Grand Total**
Cripple Creek	914	63	-	-	-	976
Green Mtn Falls	-	21	18	62	88	190
Unincorporated	199,363	75,951	34,110	32,265	10,053	351,743
Victor	182	-	-	-	-	182
Woodland Park	2,664	718	511	323	18	4,234
Grand Total	**203,123**	**76,753**	**34,639**	**32,650**	**10,159**	**357,325**

Table 9-4

Number of Parcels Exposed to Wildfire						
Land Type	**Very Low Risk**	**Low Risk**	**Medium Risk**	**High Risk**	**Very High Risk**	**Grand Total**
Ag Residential	78	80	58	90	53	359
Agricultural	919	395	215	294	187	2,010
Comm Vacant	62	11	3	2	-	78
Commercial	74	13	2	5	1	95
Exempt	193	97	43	77	59	469
Industrial	6	-	-	-	-	6
Mineral	700	61	34	11	2	808
Mixed Use Comm	16	5	7	3	3	34
Mixed-Use Res	2		2	-	1	5
Mobile Home	110	122	56	43	3	334
NONE	4	2	9	14	27	56
Producing Mine	267	10	4	3	-	284
Residential	2,828	2,144	1,098	1,228	364	7,662
Severed Mineral	1	-	-	-	-	1
State	12	9	1	-	-	22
State Assessed	1	-	1	-	-	2
Vacant Land	3,380	2,281	685	965	457	7,768
Grand Total	**8,653**	**5,230**	**2,218**	**2,735**	**1,157**	**19,993**

Table 9-5

Value of Parcels Exposed to Wildfire						
Land Type	**Very Low Risk**	**Low Risk**	**Medium Risk**	**High Risk**	**Very High Risk**	**Grand Total**
Ag Residential	$1,820,230	$2,299,780	$1,584,430	$3,025,880	$1,457,310	$10,187,630
Agricultural	$128,080	$144,420	$97,930	$215,190	$244,910	$830,530
Comm Vacant	$798,160	$290,230	$176,060	$39,170	$-	$1,303,620
Commercial	$4,929,620	$2,237,160	$87,070	$954,760	$960	$8,209,570
Exempt	$6,065,980	$6,715,690	$3,654,570	$7,903,720	$8,881,710	$33,221,670
Industrial	$268,040					$268,040
Mineral	$974,550	$186,340	$163,680	$9,190	$-	$1,333,760
Mixed Use Comm	$1,136,890	$356,490	$689,000	$1,168,540	$430,490	$3,781,410

Mixed Use Res	$67,360	$-	$133,210	$-	$8,290	$208,860
Mobile Home	$287,050	$330,280	$144,880	$172,340	$17,260	$951,810
NONE	$-	$-	$-	$-	$-	$-
Producing Mine	$33,680	$-	$-	$-	$-	$33,680
Residential	$53,485,950	$43,294,190	$23,222,410	$28,628,040	$9,119,600	$157,750,190
Severed Mineral	$10	$-	$-	$-	$-	$10
State	$-	$-	$-	$-	$-	$-
State Assessed	$-	$-	$9,030	$-	$-	$9,030
Vacant Land	$18,231,610	$14,755,250	$6,619,680	$8,962,140	$4,135,790	$52,704,470
Grand Total	$88,227,210	$70,609,830	$36,581,950	$51,078,970	$24,296,320	$270,794,280

9.5.3 Critical Facilities

There are 16 critical facilities and infrastructure exposed to a medium, high, or very high wildfire hazard in unincorporated Teller County. Table 9-6 identifies the facilities by category.

Table 9-6

Critical Facilities Exposed to Wildland Fire Hazards (Medium to Very High)	
Bridge	5
Communication	5
Fire Station	1
Water Tank	5
Total	16

Vulnerability

There would likely be little damage to the majority of infrastructure. Most roads and railroads would be without damage in standard scenarios. Wood power poles are more vulnerable than poles made from other materials. Bridges are usually not directly impacted; however, wildland fires can create conditions that obstruct bridges. Wildfires can damage communication equipment and facilities and disrupt emergency and other communications channels.

9.5.4 Environment

Wildland fires can cause severe environmental impacts:

- **Damaged Fisheries** – Critical cutthroat, rainbow, and greenback cutthroat trout fisheries can suffer from increased water temperatures, sedimentation, and changes in water quality.

- **Soil Erosion** – Wildfires remove the protective covering provided by foliage and dead organic matter, leaving soil completely exposed to wind and water erosion. Accelerated soil erosion occurs, causing landslides and threatening aquatic habitats.
- **Spread of Invasive Plant Species** – Non-native woody plant species frequently invade burned areas.
- **Established Weeds** – Weeds can dominate the plant cover over broad landscapes and become difficult and costly to control.
- **Disease and Insect Infestations** – Swiftly remove infected trees; otherwise, infestation and disease can spread to healthy forests and private lands. Timely active management actions are needed to remove diseased or infested trees.
- **Destroyed Endangered Species Habitat** – Catastrophic fires can have devastating consequences for endangered species.
- **Soil Sterilization** – Topsoil exposed to extreme heat can become water repellant, and soil nutrients may be lost. It can take decades or even centuries for ecosystems to recover from a fire. Some fires burn so hotly they can sterilize the soil.

9.6 Development Trends

The process of urbanization into wildland areas alters the natural fire regime. The County has not experienced massive growth in the past ten years, and the highly populated portions of the planning area have lower wildfire risk exposure. WUI development and wildland fire risk are manageable with strong land-use practices and enforcement of building codes. Teller County has tools to address future growth into the WUI.

9.7 Issues

The following are serious issues related to wildfire mitigation:

- Public education and outreach to people living in or near the fire hazard zones should include information about and assistance with mitigation activities such as defensible space and advance identification of evacuation routes and safe zones.
- Continue to manage future growth into the WUI.
- Critical facilities and other structures that are wood-frame structures with combustible roofing materials should be discouraged in WUI areas.
- Climate change could impact the risk exposure to this hazard in the future.
- There is a lack of fire hydrants and other water sources in County WUI areas, as well as a lack of air resources.
- Communities have a general lack of knowledge of safe fire practices.
- Insufficient vegetation management activities are a risk, including the enhancement through the expansion of the target areas as well as additional resources.
- Expand certifications and qualifications for fire department personnel. Ensure that all firefighters are trained in basic wildfire behavior, basic fire weather. Train all company officers and chief level officers in the wildland command and strike team leader level.

10. Tornado

10.1 General Background

A tornado is a violently rotating column of air, usually associated with a cumulonimbus, with circulation reaching the ground (National Weather Service, n.d.a.). It nearly always starts as a funnel cloud and may be accompanied by a loud roaring noise. On a local scale, it is the most destructive of all atmospheric phenomena. Tornadoes can have the same pressure differential that fuels 300-mile-wide hurricanes across a path only 300 yards wide or less. They form when cool, dry air sits on top of warm, moist air.

DEFINITIONS

Tornado – Funnel clouds that generate winds up to 500 miles per hour. They can affect areas up to three-quarters of a mile wide, with a path of varying length. They are measured using the Enhanced Fujita Scale, ranging from EF0 to EF5.

Before February 1, 2007, tornado intensity was measured by the Fujita (F) scale. This scale was revised and is now the Enhanced Fujita (EF) scale. Both scales are sets of wind estimates based on damage. The EF scale provides 28 total damage indicators and associated degrees of damage, allowing for a more detailed analysis and better correlation between damage and wind speed.

10.1.1 Potential Damage from Tornadoes

Tornadoes can cause damage to property, injuries, and fatalities. Most damage is caused by violent winds, with most injuries and deaths occurring from flying debris. Wind and debris can damage buildings, cause trees to fall over, resulting in broken power or gas lines and broken sewer and water mains. Crops and industries can also experience damage or destruction. Access roads and streets may be blocked off by fallen trees and other debris, delaying emergency response personnel.

10.2 Teller County Hazard Profile

Tornadoes in Teller County are typically associated with supercell thunderstorms with deep rotating updrafts.

10.2.1 Hazard Ranking

The HMC completed a hazard ranking survey during the Teller County 2021 HMP update process for a range of hazard-related factors based on most likely scenarios; definitions of the hazard ranking factors are in Table 10-1 and Appendix D. When compared against the other hazards included in the hazard ranking survey, tornadoes ranked as the number 3 local hazard.

Table 10-1

Hazard Ranking Output						
Magnitude (1=lowest, 5=highest)	**Frequency (1=lowest, 5=highest)**	**Onset (1=slowest, 5=fastest)**	**Duration (1=shortest, 5=longest)**	**Perceived Change in Risk**	**Average**	**Rank**
3.00	3.00	5.00	1.00	1.00	3.67	3

10.2.2 Past Events

In the NOAA (n.d.) *Storm Events Database*, there are eight instances of tornadoes in Teller County from 1950 to April 30, 2020:

Table 10-2

Date	Magnitude	Damage
07/03/1968	F0	$17,874
07/25/1979	F1	-
06/28/1983	F1	$300
07/12/1996	F1	-
06/27/2007	EF1	-
08/23/2008	EF1	$20,000
05/25/2014	EF0	-
06/08/2014	EF1	-

10.2.3 Location

While it is unusual to have tornadoes in the foothills and higher elevations that comprise Teller County, they have occurred. The entire County is vulnerable to tornadoes.

10.2.4 Frequency

Based on past occurrences, the probability of future tornadoes in Teller County is likely, with a 10- to 20-percent chance of occurrence in any given year based on previous occurrences.

10.2.5 Severity

Tornadoes are the most dangerous of local storms, but they are not common in the topography and elevation of Teller County. The magnitude and severity of a tornado are considered low for the County, with little impact on property and facilities. However, this can all depend on where a tornado hits. The randomness and sporadic nature of tornadoes lead to their heightened awareness and severity for Teller County.

10.2.6 Warning Time

According to NOAA research, the current average lead time for tornado warnings is thirteen (13) minutes. This time had improved drastically from decades ago when tornado warnings were only issued once a tornado was on the ground.

10.3 Cascading Impacts/Secondary Hazards

The most significant secondary hazards associated with tornadoes are falling and downed trees, flying debris, and downed power lines. Flying debris, damaged property, and commonly associated heavy rainstorms frequently compound the effects of tornadoes.

10.4 Potential Impacts from Future Climate Conditions

Future climate conditions present a significant challenge for risk management associated with severe weather, including tornadoes. The frequency and severity of extreme weather events and tornadoes have increased steadily over the last century. Teller County has experienced this change first-hand.

There is a reasonable expectation that tornadoes may become more frequent and severe in the County as climate conditions continue to change.

10.5 Exposure & Vulnerability

10.5.1 Population

It is reasonable to assume the entire planning area, to some extent, is at risk from tornadoes. Certain regions have more exposure due to their geographic location and local weather patterns. Vulnerable populations are the elderly, low income or linguistically isolated communities, persons with life-threatening illnesses, and residents living in areas that are isolated from major roads or whose homes lack shelter or basements.

10.5.2 Property

There are approximately 15,000 buildings in the County, and most of these buildings are residential. All of these buildings are susceptible to tornados. Still, structures in poor condition or located in particularly vulnerable places (such as proximity to trees and in exposed, open areas) are at risk for the most damage. Due to the sporadic locations and degrees of tornadoes, all property is considered vulnerable.

10.5.3 Critical Facilities

All critical facilities within Teller County are likely exposed and vulnerable to tornadoes. Incapacity and loss of roads are the primary transportation failures resulting from tornadoes. Prolonged obstruction of major routes can disrupt emergency services and the shipments of goods and supplies.

10.5.4 Environment

The environment is highly exposed and vulnerable to tornadoes. Natural habitats such as streams and forested areas risk major damage.

10.6 Development Trends

All future development will be vulnerable to some degree to tornado damage. The ability to withstand impacts lies in sound land-use practices and consistent enforcement of code and regulations for new construction. Ensuring that all buildings in the planning area meet the provisions for wind codes will ensure less vulnerability to the tornado hazard. Teller County has the tools to deal with the future growth and associated impacts of tornadoes. In the Teller County Building Code (2017), Chapter 3 *Building Planning* addresses wind speeds and design, where the basic wind speed for Teller County has been set at 85 miles per hour.

10.7 Issues

Crucial issues associated with tornado hazards in Teller County include the following:

- The older structures in the County have low or no building code standards, compared to more modern buildings designed after more stringent codes were written. Therefore, these structures are more vulnerable to tornadoes.
- Recreational vehicles and mobile homes are also highly vulnerable to damage. These have the potential to be tipped over, increasing the possibility of injuries.
- Isolated population centers are generally at higher risk since it takes longer for first responders to arrive.

- Areas are at higher risk if they do not have power supply redundancies or a backup power generator.

11. Thunderstorms, High Winds, and Hail

11.1 General Background

Severe weather refers to any dangerous meteorological phenomena with the potential to cause damage, serious social disruption, or casualties. This definition includes thunderstorms, downbursts, waterspouts, and dust storms.

There are two types of severe weather: systems that form over vast geographic areas, called general severe weather, and those with a more limited geographic area, called localized severe weather. Extreme weather refers to unusual weather events at the extremes of the historical distribution for a given location.

A thunderstorm is a rain-bearing cloud that also produces lightning (National Weather Service, n.d.a.). Every thunderstorm produces lightning. In the U.S., an average of 300 people are injured, and 80 are killed each year by lightning. Other associated dangers of thunderstorms include tornadoes, strong winds, hail, and flash flooding. Dry thunderstorms can produce rain that evaporates before it reaches the ground but can still produce lightning that can reach the ground and start wildfires. Lightning often strikes outside of the heavy rain in the thunderstorm and may occur as far as 10 miles away from rainfall.

Three factors cause thunderstorms to form: moisture, rising unstable air (air that keeps rising when disturbed), and a lifting mechanism to provide the disturbance. The sun heats the surface of the earth, which warms the air above it. If this warm surface air rises (hills or mountains can cause rising motion, as can the interaction of warm air and cold air or wet air and dry air), it will continue to rise as long as it weighs less and stays warmer than the air around it. As the air rises, it transfers heat from the surface of the earth to the upper levels of the atmosphere (the process of convection). The water vapor it contains begins to cool, and it condenses into a cloud. The cloud eventually grows upward into areas where the temperature is below freezing. Some of the water vapor turns to ice, and some of it turns into water droplets. Both have electrical charges. Ice particles usually have positive charges, and rain droplets usually have negative charges. When the charges build up enough, they discharge in a bolt of lightning, which causes the sound waves we hear as thunder.

DEFINITIONS

Hail – Showery precipitation in the form of irregular pellets or balls of ice more than 5 mm in diameter, falling from a cumulonimbus cloud.

Severe Local Storm – Small-scale atmospheric systems, including tornadoes, thunderstorms, windstorms, ice storms and snowstorms. These storms may cause a great deal of destruction and even death, but their impact is generally confined to a small area. Typical impacts are on transportation infrastructure and utilities.

Thunderstorm – A storm featuring heavy rains, strong winds, thunder and lightning, typically about 15 miles in diameter and lasting about 30 minutes. Hail and tornadoes are also dangers associated with thunderstorms. Lightning is a serious threat to human life. Heavy rains over a small area in a short time can lead to flash flooding.

11.1.1 Four types of thunderstorms

Single-Cell Thunderstorms – Single-cell thunderstorms usually last 20 to 30 minutes. An actual single-cell storm is rare because the gust front of one cell often triggers the growth of another. Most single-cell storms are not usually severe, but a single-cell storm can produce a brief severe weather event. When this happens, it is called a pulse severe storm.

Multi-Cell Cluster Storm – A multi-cell cluster is the most common type of thunderstorm. The multi-cell cluster consists of a group of cells, moving as one unit, with each cell in a different phase of the thunderstorm life cycle. Mature cells are usually found at the center of the cluster and dissipating cells at the downwind edge. Multi-cell cluster storms can produce moderate-size hail, flash floods and weak tornadoes. Each cell in a multi-cell cluster lasts only about 20 minutes; the multi-cell cluster itself may persist for several hours. This type of storm is usually more intense than a single cell storm.

Multi-Cell Squall Line – A multi-cell line storm, or squall line, consists of a long line of storms with a continuous well-developed gust front at the leading edge. The sequence of storms can be solid, or there can be gaps and breaks in the line. Squall lines can produce hail up to golf-ball size, heavy rainfall, and weak tornadoes, but they are best known as the producers of strong downdrafts. Occasionally, a strong downburst will accelerate a portion of the squall line ahead of the rest of the line, producing a bow echo. Bow echoes can develop with isolated cells as well as squall lines. Bow echoes are easily detected on radar but are difficult to observe visually.

Super-Cell Storm – A super-cell is a highly organized thunderstorm that poses a high threat to life and property. It is similar to a single-cell storm in that it has one main updraft, but the updraft is powerful, reaching speeds of 150 to 175 miles per hour. Super-cells are rare. The main characteristic that sets them apart from other thunderstorms is the rotation. The rotating updraft of a super-cell (called a mesocyclone when visible on radar) helps the super-cell to produce extreme weather events, such as giant hail (more than 2 inches in diameter), strong downbursts of 80 miles an hour or more, and strong to violent tornadoes.

11.1.2 Lightning

An electrical discharge occurs between positive and negative regions of a thunderstorm. A lightning flash is composed of a series of strokes (short flashes of lightning) with an average of about four. The length and duration of each lightning stroke vary but typically average about 30 microseconds.

11.1.3 Damaging Winds

Classified as those exceeding 60 mph. Damage from such winds accounts for half of all severe weather reports in the lower 48 states and is more common than damage from tornadoes. Wind speeds can reach up to 100 mph and can produce a damage path extending for hundreds of miles. There are seven types of damaging winds:

Straight-line Winds – Any thunderstorm wind that is not associated with rotation; this term is mainly to differentiate from tornado winds. Most thunderstorms produce some straight-line winds as a result of outflow generated by the thunderstorm downdraft.

Downdrafts – A small-scale column of air that rapidly sinks toward the ground.

Downbursts – A strong downdraft with horizontal dimensions larger than 2.5 miles resulting in an outward burst or damaging winds on or near the ground. Downburst winds may begin as a microburst

and spread out over a wider area, sometimes producing damage similar to a strong tornado. Although usually associated with thunderstorms, downbursts can occur with showers too weak to produce thunder.

Microbursts – Are a small concentrated downburst that produces an outward burst of damaging winds at the surface. Microbursts are generally less than 2.5 miles across and short-lived, lasting only 5 to 10 minutes, with maximum wind speeds up to 168 mph. There are two kinds of microbursts: wet and dry. A wet microburst is accompanied by heavy precipitation at the surface. Dry microbursts, common in places like the high plains and the intermountain west, occur with little or no precipitation reaching the ground.

Gust Front – A gust front is the leading edge of rain-cooled air that clashes with warmer thunderstorm inflow. Gust fronts are characterized by a wind shift, temperature drop, and gusty winds out ahead of a thunderstorm. Sometimes the winds push up the air above them, forming a shelf cloud or detached roll cloud.

Derecho – A derecho is a widespread thunderstorm wind caused when new thunderstorms form along the leading edge of an outflow boundary (the boundary formed by horizontal spreading of thunderstorm-cooled air). The word “derecho” is of Spanish origin and means “straight ahead.” Thunderstorms feed on the boundary and continue to reproduce. Derechos typically occur in summer when complexes of thunderstorms form over plains, producing heavy rain and severe wind. The damaging winds can last a long time and cover a large area.

Bow Echo – A bow echo is a linear wind front bent outward in a bow shape. Damaging straight-line winds often occur near the center of a bow echo. Bow echoes can be 200 miles long, last for several hours, and produce extensive wind damage at the ground.

11.1.4 Windstorms

Straight-line winds often occur in Teller County. These winds, which can exceed 100 mph, represent the most common type of severe weather and are responsible for most wind damage related to thunderstorms. The NWS will issue a severe wind warning when they expect winds to exceed 75 miles per hour.

11.1.5 Hail

Hail occurs when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere where they freeze into ice. Recent studies suggest that super-cooled water may accumulate on frozen particles near the backside of a storm as they are pushed forward across and above the updraft by the prevailing winds near the top of the storm. Eventually, the hailstones encounter downdraft air and fall to the ground.

11.1.6 Hailstones

Hailstones grow two ways: by wet growth or dry growth. In wet growth, a tiny piece of ice is in an area where the air temperature is below freezing, but not super cold. When the tiny bit of ice collides with a super-cooled drop, the water does not freeze on the ice immediately. Instead, liquid water spreads across tumbling hailstones and slowly freezes. Since the process is slow, air bubbles can escape, resulting in a layer of clear ice. Dry growth hailstones grow when the air temperature is well below

freezing, and the water droplet freezes immediately when it collides with the ice particle. The air bubbles are "frozen" in place, leaving cloudy ice.

Hailstones can have layers like an onion if they travel up and down in an updraft, or they can have few or no layers if they are "balanced" in an updraft. One can tell how many times a hailstone traveled to the top of the storm by counting its layers. Hailstones can begin to melt and then re-freeze together, forming large and very irregularly shaped hail.

11.1.7 Potential Damage from Thunderstorms – High Winds and Hail

Thunderstorms can cause damage by strong winds, hail, lightning, and flash flooding, in addition to tornadoes, which are discussed in Chapter 9. Strong winds in themselves can cause damage. However, damage from falling trees, loose objects, or broken utility poles tends to cause more harm than winds themselves. Hail can damage and destroy property as well as injure people. Lightning can directly injure or kill people or can start wildfires resulting in a disaster. Flash flooding can catch people and communities off-guard, causing damage, injuries, and fatalities.

11.2 Teller County Hazard Profile

Teller County regularly experiences thunderstorms, high winds, and hail; all are relatively common in the western U.S. When searching the NOAA Storm Events Database from 1971 to April 30, 2020, for event types hail, lightning, strong wind, and thunderstorm winds, there are 80 days with an event.

11.2.1 Hazard Ranking

The HMC completed a hazard ranking survey during the Teller County 2021 HMP update process for a range of hazard-related factors based on most likely scenarios; definitions of the hazard ranking factors are in Table 11-1 and Appendix D. When compared against the other hazards included in the hazard ranking survey, Thunderstorms, high winds, and hail ranked as the number 2 local hazard.

Table 11-1

Hazard Ranking Output						
Magnitude (1=lowest, 5=highest)	**Frequency (1=lowest, 5=highest)**	**Onset (1=slowest, 5=fastest)**	**Duration (1=shortest, 5=longest)**	**Perceived Change in Risk**	**Average**	**Rank**
5.00	4.00	3.00	2.00	1.00	4.00	2

11.2.2 Past Events

In the NOAA Storm Events Database from 1971 to April 30, 2020, for event types hail, lightning, strong wind, and thunderstorm winds, there are 80 days with an event. During this time, there were a reported two deaths and four injuries from lightning. There are occasional gaps in reported events, especially when the events come in over multiple forecast zones. In the database, there are five notable lightning events, four thunderstorm wind events, and 99 hail events.

11.2.3 Location

Severe weather events, including thunderstorms, high winds, and hail, have the potential to happen anywhere in Teller County. The entire County is exposed to some degree of lightning hazard, though exposed points of high elevation have a significantly higher frequency of occurrence. Windstorms can occur anywhere in the County; higher elevations such as the Pikes Peak area in the eastern portion of the County could experience the most significant wind speeds. Wind events are the most damaging to heavily wooded areas.

Figure 1 shows the flash density of lightning strikes throughout the country in flashes per square mile per year from 2008 to 2017.

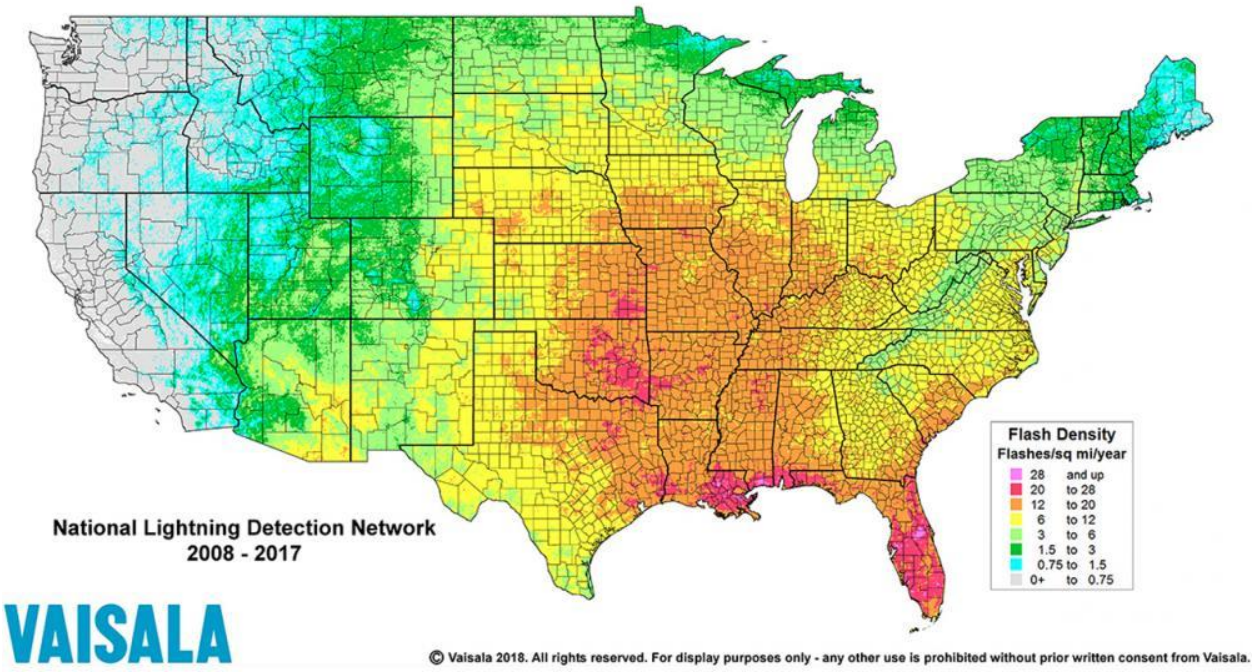


Figure 1 (Vaisala, 2020)

11.2.4 Frequency

Based on five events in 22 years, a damaging lightning strike occurs every four years on average in the county. This event is considered likely, with a 20 to 30-percent chance of occurrence in any given year. Windstorms occur nearly every year and are considered highly likely, with a close to the 100-percent possibility of an event in any given year.

On record, there are 99 hailstorm events over 39 years. This occurrence is every year on average, with a near 100-percent chance of happening in any given year.

11.2.5 Severity

The magnitude and severity of most thunderstorms and associated hazards are limited, with a small percentage of property severely damaged and a low likelihood of facilities shutting down for more than

a week. High winds can cause property and crop damage, threaten public safety, and have adverse economic conditions from business closures and power loss. Although the loss of life is typically low, winds do disrupt daily activities and cause damage to property. High winds tend to be more severe than thunderstorms (aside from lightning strikes causing wildfires). Small to severe hailstorms can be destructive. Billions of dollars in property and crop damage occur each year in the U.S..

11.2.6 Warning Time

As is the same with severe winter weather, meteorologists can often predict the likelihood of a severe storm, providing up to several days of warning time. However, meteorologists cannot predict the exact time of onset or severity of the storm. Some storms may come on more quickly and severely, with only a few hours of warning time.

11.3 Cascading Impacts/Secondary Hazards

Secondary hazards associated with thunderstorms, high winds, and hail are floods, falling and downed trees, landslides, and downed powerlines. Thunderstorms can result in flash flooding with little to no warning for low-lying communities or homes. Falling trees can be a hazard to pedestrians, cleanup workers, emergency response workers, vehicles, and roads. Fallen trees can block primary and secondary access roads, isolating people from emergency service workers or other means of assistance. Accumulating hail combined with heavy rain can overwhelm natural and human-made drainage systems. Landslides can occur when the soil on slopes becomes oversaturated and fails. Downed powerlines and utility lines can cut off utilities such as water, sewage, communications, and power.

11.4 Potential Impacts from Future Climate Conditions

Future climate conditions present a significant challenge for risk management associated with severe weather (the hazard profile for severe winter weather in this HMP is in Chapter 15). The frequency of severe weather events has increased steadily over the last century and has become significantly more costly. Historical data shows that the probability of severe weather events increases in a warmer climate. The changing hydrograph caused by changing climate conditions have a significant impact on the intensity, duration, and frequency of storm events.

11.5 Exposure & Vulnerability

11.5.1 Population

There is a reasonable assumption that the entire planning area of Teller County has some exposure to thunderstorms, high wind events, and hail. Certain areas are at a higher risk due to geographic location and local weather patterns. Populations living at higher elevations with large stands of trees or powerlines may be more susceptible to wind damage and power outages. At the same time, low-lying areas are more at risk for flooding.

Vulnerability

Vulnerable populations include the elderly, lower-income or linguistically isolated communities, people with life-threatening illnesses, and residents living in areas isolated from major transportation routes. Power outages can be life-threatening to those dependent on electricity for life support or warmth. Vulnerable populations may face more exposure to thunderstorms, wind, and hail events and could suffer more secondary effects of the hazard.

11.5.2 Property

According to the Teller County Assessor, there are approximately 15,000 buildings within planning area. Most of these buildings are residential. A small percentage of these residential structures, built years ago, were not constructed under a building code with provisions for wind loads and weather protection. All of these buildings are at risk of damage from a thunderstorm, high wind, or hail event. Structures in poor condition or in a particularly vulnerable location may be at risk for the most damage. Property stored outside without proper cover (such as a car on the street) is exposed to hail damage.

Vulnerability

All property is vulnerable during a thunderstorm, high wind, or hail event. Property in poor condition or in particularly vulnerable locations risks the most damage. Downed power lines, large trees, and overhanging branches can damage property in their vicinity.

11.5.3 Critical Facilities

All critical facilities exposed to flooding listed in Chapter 6 are also likely exposed to risks associated with thunderstorms, high winds, and hail. Falling trees and wind damage can also damage exposed facilities on higher ground. The most common problems associated with thunderstorms, high winds, and hail events are loss of utilities. Transportation routes may be interrupted due to fallen trees or landslides.

Vulnerability

Incapacity and loss of roads are the primary transportation failures resulting from thunderstorms, high wind, and hail events, mostly associated with secondary hazards.

11.5.4 Environment

The environment is vulnerable to thunderstorms, high winds, and hail events. Lightning storms are the primary natural cause of wildfire, which can be highly destructive and cause long-term changes in natural systems. Natural habitats such as streams and forests can suffer considerable damage and destruction as a result of severe precipitation. Prolonged rains can saturate soils and lead to slope failure. Flooding events can produce river channel migrations or damage riparian habitat.

11.6 Development Trends

All future development will be affected by thunderstorms, high winds, and hail. Any planned expansion should also take into consideration climate change, which can increase the duration, frequency, and intensity of these events. The ability to withstand impacts lies in sound land-use practices and consistent enforcement of codes and regulations for new construction. There are no developments planned in areas especially susceptible to thunderstorms, high wind, and hail events. Teller County has adopted the 2015 IBC and is well equipped to deal with future growth and the associated impacts of thunderstorms, high wind, and hail events.

11.7 Issues

Important issues associated with thunderstorms, high winds, and hail events in Teller County include:

- The older structures in the County have low or no building code standards, compared to more modern buildings designed after more stringent codes were written. Therefore, these structures are more vulnerable to severe weather events.
- The County and its partners must evaluate their power supply redundancies.
- The capacity for backup power generation is limited.

- Identify and recognize isolated population centers.

12. Epidemic/Pandemic

12.1 General Background

Epidemics of infectious diseases are occurring more often, spreading faster and further all over the world. Diseases that are happening are both newly discovered and re-emerging (World Health Organization, 2018). For example, Severe Acute Respiratory Syndrome (SARS) was unheard of before 2003, and an outbreak of the plague occurred in Madagascar in 2017 (World Health Organization, 2018). Diseases very rarely disappear, and new ones are continually being discovered (World Health Organization, 2018). Magnifying vulnerability to both newly discovered and re-emerging diseases are new strains of pathogens and anti-vaccination movements (World Health Organization, 2020).

Outbreaks may occur periodically (e.g., influenza) and can be rare, but result in severe disease (e.g., meningococcal meningitis), occur after a disaster (e.g., cholera), or occur due to an intentional release of an agent (e.g., bioterrorism). Agents causing outbreaks can be viruses, bacteria, parasites, fungi, or toxins, and in many cases, spread by people. Other forms of spreading are contaminated food or water, healthcare procedures, animals, insects, and other arthropods, or directly from the environment. An individual may be exposed by breathing, eating, drinking, or having direct contact. Some agents have multiple means of spreading, while others are only spread person to person (World Health Organization, 2020).

In 2019, the novel coronavirus (COVID-19) began spreading from the city of Wuhan in Hubei province, China. The World Health Organization received information on a case of pneumonia with an unknown cause, suspected of originating from the Huanan Seafood market. By January 12, 2020, China shared the genetic sequence of COVID-19. As on June 17, 2020, COVID 19 was a global pandemic affecting at least 188 countries, 12 countries reported having no cases. Over 8.3 million people have been infected worldwide, with a death toll of more than 448,000 (Center for Disease Control, 2020 b.).

DEFINITIONS

Cluster – An aggregation of cases grouped in place and time that are suspected to be greater than the number expected.

Endemic – Refers to the constant presence and/or usual prevalence of a disease or infectious agent in a population within a geographic area.

Epidemic – An increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area.

Hyperendemic – Persistent, high levels of disease occurrence.

Outbreak – The same definition of epidemic, but is often used for a more limited geographic area, jurisdiction, or group of people.

Pandemic – An epidemic that has spread over several countries or continents, usually affecting many people.

Sporadic – Refers to a disease that occurs infrequently or irregularly.

Medical Countermeasures – life-saving medicines and medical supplies that can be used to diagnose, prevent, protect from, or treat conditions associated with chemical, biological, radiological, or nuclear threats, emerging infectious disease, or natural disaster.

12.1.1 Potential Damage from Epidemics

Epidemics can spread more widely and quickly than before, potentially affecting ever-greater numbers of people, having a significant impact on the economy of the affected community, and spilling over into the global economy, disrupting travel, trade, and livelihoods. Local outbreaks can overwhelm medical facilities, and a pandemic could jeopardize essential community services by causing critical positions to go unfilled.

Essential public services such as health care, law enforcement, fire and emergency response, communications, transportation, and utilities could be disrupted or severely reduced. The length of the epidemic or pandemic would stress societal systems and local and outside resources.

Disease outbreaks could also be associated with bioterrorism. Bioterrorism is the intentional release of viruses, bacteria, or other germs that can sicken or kill people, livestock, or crops. These types of attacks are highly consequential and can result in high mortality rates. Six potential agents could pose the greatest threat to the area, including anthrax, botulism, plague, smallpox, tularemia, and viral hemorrhagic fevers.

12.1.2 Teller County Hazard Profile

In the State of Colorado, the vaccine compliance rate for all schools and childcare centers is 92.52 percent. Teller County has a higher percentage of student vaccine exemptions. Data for the 2018/2019 school year from the Department of Public Health and Environment (2019) shows an average fully immunized rate of 90.6 percent for all 344 students in the Cripple Creek-Victor RE-1 School District and 90.9 percent for all 2,241 students in the Woodland Park RE-2 School District.

In RE-1, the highest exemption rate is for the Tdap vaccine at 10.7 percent. Trailing close behind is polio and the measles, mumps, and rubella vaccines at over 9 percent for both. In RE-2, the highest exemption rate is for the Varicella vaccine at 6.1 percent. These high exemption rates contributing to low immunization coverage rates are below the recommended immunization percentages necessary to allow for herd immunity in the community.

12.1.3 Hazard Ranking

The HMC completed a hazard ranking survey during the Teller County 2021 HMP update process for a range of hazard-related factors based on most likely scenarios; definitions of the hazard ranking factors are in Table 12-1 and Appendix D. When compared against the other hazards included in the hazard ranking survey, epidemics ranked as the number 5 local hazard.

Table 12-1

Hazard Ranking Output						
Magnitude (1=lowest, 5=highest)	**Frequency (1=lowest, 5=highest)**	**Onset (1=slowest, 5=fastest)**	**Duration (1=shortest, 5=longest)**	**Perceived Change in Risk**	**Average**	**Rank**
3.00	5.00	2.00	5.00	1.00	3.33	5

12.1.4 Past Events

The Center for Disease Control (2020 a.) reported the highly contagious measles virus, which was declared eliminated in 2000, has started to re-emerge throughout the U.S. with cases confirmed in 31 states, including Colorado. There were over 1,200 new cases of the measles virus in 2019 compared to 375 new cases in 2018. Colorado only experienced one case of measles in 2019 (Colorado Department of Public Health and Environment, 2020).

During the time of this plan update, the world was still experiencing the COVID-19 pandemic. This respiratory illness spreads from person to person. On March 26, 2020, the Governor ordered all Coloradans to stay home until April 26. As of June 20, 2020, the Colorado Department of Public Health and Environment (2020) stated, Colorado is now under a safer at home order; meaning much of Colorado is open with restrictions to prevent the spread of COVID-19. Teller County experienced 225 confirmed cases and four deaths as of October 27, 2020 (Colorado Department of Public Health and Environment, 2020). There are two FEMA declarations related to COVID-19 for the County: DR 3436 and 4498.

12.1.5 Location

All of Teller County is susceptible to human health hazards and epidemics. Infectious diseases can cause exposure to the County from outside the local region. Residents who travel or commute can become exposed and bring diseases back into the County. It is challenging to map the extent of an outbreak or epidemic.

12.1.6 Frequency

Due to increased air travel, commuters, and population growth, the probability of an epidemic or outbreak occurring is growing. The frequency of outbreaks is difficult to establish, depending mainly on unique circumstances surrounding the outbreak and expansion into epidemics and eventually pandemics. It is reasonable to expect an epidemic or pandemic to occur once every ten years.

12.1.7 Severity

The severity of a disease or epidemic varies from individual to individual. Typically, vulnerable populations (specifically young children and elderly adults) are more susceptible to acquiring communicable diseases due to immune system challenges and capabilities. In general, severity depends on the pathology of the disease, the health of the individual, vaccinations, and availability of treatments for symptoms or curing the disease.

12.1.8 Warning Time

Warning time for public health risks varies from a few hours or days to a few months, depending on the illness and outbreak.

12.2 Cascading Impacts/Secondary Hazards

The most considerable secondary impact caused by an epidemic or pandemic is the economy. A reduction in workforce and labor hours can have a severe effect on businesses, government agencies, and non-profit organizations. With a reduced workforce, there may be transportation route closures or supply chain disruptions, resulting in a lack of food, water, or medical resources. Another immense and costly secondary impact would be fear or stigma, which may result in isolation or social unrest.

Hospitals and public health facilities may receive an unmanageable number of patients, including those with the disease and those concerned about having contracted it. Medical workers will become sick, and staffing shortages of professional medical personnel can occur. There is a potential for shortages and increased competition for medical supplies; this may lead to a controlled system where all supplies are monitored closely and prioritized. Finally, the disease may mutate, rendering cures and research unusable and contributing to the previously identified secondary impacts.

12.3 Potential Impacts from Future Climate Conditions

Future climate conditions and continued improvement of the ability to travel will contribute to the development and spread of diseases. Overall warmer temperatures and changing conditions in precipitation can contribute to the spread of certain diseases. Disease-carrying mosquitos can survive longer, transmitting viruses more effectively. The Zika Virus outbreak occurred during the warmest year on record at the time. Waterborne diseases, such as cholera, are becoming more common as waters are increasing in temperature.

12.4 Exposure & Vulnerability

12.4.1 Population

All residents and visitors in the County could be susceptible to the effects and exposed to infectious disease. A massive outbreak or epidemic could have a devastating impact on the population. Those with compromised immune systems, children, individuals that are socioeconomic or health disadvantaged, and individuals with access and functional needs are considered some of the most vulnerable to diseases.

12.4.2 Property

Epidemics, pandemics, and diseases would not have a significant measurable impact on property in the County.

12.4.3 Critical Facilities

Health care facilities may reach capacity and become inundated with people. Early identification of shelters, alternate treatment facilities, isolation capacity, and methods to expand resources can help health care facilities and governments cope with an epidemic. Epidemics and pandemics would not have a significant measurable impact on the physical condition of critical facilities or infrastructure of the County. However, absenteeism could impact the operation of critical facilities. During a severe pandemic, critical workers may be absent due to illness or the need to self-quarantine or care for ill family members. The 2018 – 2023 Colorado HMP estimates that absenteeism may reach 40 percent of the workforce during a severe pandemic (Colorado Department of Public Safety Division of Homeland Security and Emergency Management, 2018)

12.4.4 Environment

Epidemics and pandemics would not have a significant measurable impact on the environment in the County. If travel restrictions or stay at home orders are in place, there may be an opportunity for the environment to experience a temporary break from negative human impacts such as littering and greenhouse gas emissions.

12.5 Development Trends

The potential for an epidemic or outbreak is not likely to slow expected growth in the County. The possibility of restricting travel to, from, and within the County can strain and temporarily negatively affect the tourism industry, which can lead to small businesses closing if aid is not available. Travel restrictions related to epidemics or pandemics could have economic consequences that last far beyond the restrictions put in place, slowing growth and opportunity until tourism and the local and global economy recovers.

12.6 Issues

Important issues associated with epidemics and outbreaks include:

- Providing culturally appropriate preventative health care to changing demographic and aging population, including vaccination and education, to help reduce the impacts.
- Overuse and misuse of antibiotics contributing to antibiotic resistance.
- Medical and response personnel need to be integrated into a response to provide care when needed.
- Adequate training and supplies for medical and response personnel
- A system needs to be in place to inform the public with a clear message and facts about the disease and care options.
- Health agencies and facilities require surge capacity management and adaptation to the rising number and needs of the area.

13. Landslide & Mass Earth Movements

13.1 General Background

A landslide is the movement of a mass of rock, debris, or earth down a slope. Mass earth movements denote any down-slope flow of soil, rock, or debris under the direct influence of gravity. There are five modes of slope movement: falls, topples, slides, spreads, and flows. Slope movement occurs when forces acting down-slope exceed the strength of the earth materials that compose the slope. Landslides can be initiated in slopes already on the verge of sliding by rainfall, snowmelt, changes in water level, stream erosion, changes in groundwater, earthquakes, volcanic activity, disturbance by human activities, or any combination of these factors (U.S. Geologic Survey, n.d.c.). Human activities contribute to soil instability through grading of steep slopes, overloading slopes with artificial fill, extensive irrigation, construction of impervious surfaces, excessive groundwater withdrawal, and removal of vegetation.

DEFINITIONS

Debris Flow – A moving mass of loose mud, sand, soil, rock, water, and air moving down a slope under the influence of gravity.

Landslide – The sliding movement of masses of loosened rock and soil down a hillside or slope.
Slope failures occur when the strength of the soils forming the slope is exceeded by the pressure, such as weight or saturation, acting upon them.

Mass Movement – A collective term for landslides, debris flows, falls and sinkholes.

Mudslide (or Mudflow) – A river of rock, earth, organic matter and other materials saturated with water.

Five primary factors influence the risk of an earth movement: slopes of more than 30%, a history of slides, water movement (e.g., from rivers, streams, currents, or waves) that causes undercutting and/or erosion, the potential for avalanches, areas with an alluvial fan, impermeable soils (e.g., clay and silt). The most common cause of slides is short, intense bursts of water, such as a heavy rainstorm where the ground cannot absorb the runoff fast enough. The most potentially destructive slides are deep-seated, where large areas of earth move down a slope, often due to increased water in the ground, too much weight on the slope, or significant reduction in slope stability protection like trees and vegetation. Earthquakes can also cause large earth movements.

13.1.1 Potential Damage from Landslides and Mass Earth Movements

Landslides and mass earth movements typically have a slower onset and can be predicted to some extent. Monitoring soil moisture levels, ground cracking, or slumping in areas of previous landslide activity areas are ways to prevent damage. Landslides and mass earth movements can result in property damage, destruction, and human injury or, in the worst-case, loss of life. The displaced earth can dam rivers, destroy highways, and sever railroad lines, resulting in flooding, delayed response time for assistance, and train derailments. Although it is less common, there are earth movements that can occur with little to no warning. These events can have a more significant impact, especially in populated areas where there is no time to provide an evacuation alert.

13.2 Teller County Hazard Profile

13.2.1 Hazard Ranking

The HMC completed a hazard ranking survey during the Teller County 2021 HMP update process for a range of hazard-related factors based on most likely scenarios; definitions of the hazard ranking factors are in Table 13-1 and Appendix D. When compared against the other hazards included in the hazard ranking survey, landslides ranked as the number 3 local hazard.

Table 13-1

Hazard Ranking Output						
Magnitude (1=lowest, 5=highest)	**Frequency (1=lowest, 5=highest)**	**Onset (1=slowest, 5=fastest)**	**Duration (1=shortest, 5=longest)**	**Perceived Change in Risk**	**Average**	**Rank**
4.00	2.00	5.00	2.00	1.00	3.67	3

13.2.2 Past Events

Heavy rain caused a landslide that shut down a highway in Ute Pass in 1995. In 1997 Teller County saw several rock and mudslides across roads. July of 2004, a County disaster was declared due to heavy rainfall and thunderstorms that caused multiple flash floods and damaged several roads. Shelf Road was unable to reopen for approximately one month. Teller County has several privately-owned dams. During this event, at least six broke (NOAA National Centers for Environmental Information, n.d.). One of Colorado's most substantial flood events occurred in September 2013. Teller and many other counties suffered significant damage to roads and property. The National Weather Service (2013) reported the 2013 flooding caused a total of $2-3 billion in damages, 2,006 homes destroyed, 200 businesses destroyed, and 200 miles of road damaged with 50 major bridges damaged. Images from the event show roads and slopes undercut by flowing water and large pieces of roads washed away (National Weather Service, 2013).

On Monday, July 23, 2018, the Colorado Department of Transportation closed U.S. 24 due to mudslides and debris washout on the 4-lane highway. Motorists were stuck on Ute Pass as it was closed both directions.

13.2.3 Location

Figure E-5 in Appendix E shows areas of debris from historic landslides in Teller County. The recognition of ancient dormant mass movement sites is vital for identifying areas susceptible to flows and slides. These areas are prone to reactivation from earthquakes, exceptionally wet weather, natural weathering and strength reduction processes, and construction activities.

13.2.4 Frequency

Other natural hazards frequently trigger mass earth movements, such as earthquakes, heavy rain, floods, or wildland fires; movement frequency is related to the frequency of these other hazards. In Teller County, mass earth movements typically occur during and after large-scale storms. Mass earth movements can occur any month of the year and can occur annually, though the exact frequency is unpredictable.

13.2.5 Severity

Mass earth movements destroy property and infrastructure and can injure and kill people. Slope failures cause an estimated 25 to 50 deaths and $3.5 billion in damage each year in the U.S. (National Geographic, n.d.).

13.2.6 Warning Time

Mass movements can occur suddenly or slowly. The velocity of movement may range from a slow creep of inches per year to many feet per second, depending on height, slope angle, material, and water content. Some methods used to monitor mass movements can provide an idea of the type of movement and the amount of time before failure. Currently, there is no practical warning system for individual landslides. The standard operating procedure is to monitor situations on a case-by-case basis.

Generally accepted warning signs for landslide activity include:

- Springs, seeps, or saturated ground in areas that have not typically been wet before
- New cracks or unusual bulges in the ground, street pavements, or sidewalks
- Soil moving away from foundations
- Ancillary structures, such as decks and patios tilting and/or moving relative to the main structure
- Tilting or cracking of concrete floors and foundations
- Broken water lines and other underground utilities
- Leaning telephone poles, trees, retaining walls, or fences
- Offset fence lines
- Sunken or down-dropped roadbeds
- A rapid increase in creek water levels, possibly accompanied by increased turbidity (soil content)
- A sudden decrease in creek water levels though rain is still falling or just recently stopped
- Sticking doors and windows, and visible open spaces indicating jambs and frames out of plumb
- A faint rumbling sound that increases in volume as the landslide nears
- Unusual sounds, such as trees cracking or boulders knocking together

13.3 Cascading Impacts/Secondary Hazards

Mass earth movements can cause several types of cascading impacts and secondary hazards. Roads can become blocked or destroyed, isolating residents, communities, and businesses and delaying commercial, public, and private transportation. These movements can knock over electrical poles and cell towers resulting in loss of power and communication access. There is also a risk of destabilizing the foundations of structures, resulting in property and monetary losses for businesses and homeowners. Earth movements can also block waterways, resulting in flooding, reduced water quality, and potential harm to fisheries and spawning habitat.

13.4 Potential Impacts from Future Climate Conditions

Future climate conditions may increase the probability of more frequent, intense storms with varying duration. Snowpack can also be affected, changing the ability to hold and store water. Droughts may increase in occurrence and time, increasing the chances for wildland fires, affecting vegetation that helps support steep slopes. These factors, by themselves or together, would increase the probability of a mass earth movement within the County.

13.5 Exposure & Vulnerability

13.5.1 Population

Only one residential parcel in the unincorporated county is within a landslide debris area. Residents living on or below steep slopes are exposed and vulnerable to mass earth movements. Teller County is at greatest risk from landslides and other slope movements after a large rain event. According to the 2018 ACS 5-Year Estimate, Teller County has average household size of 2.35. Based on this estimate, an estimated 2 people in unincorporated Teller County are vulnerable to a mass earth movement.

It is challenging to determine the demographics of populations vulnerable to mass earth movements due to the nature of census block group data. In general, everyone exposed to the hazard is also vulnerable. People building homes on view property atop of steep slopes subject to mass movement increases the number of lives endangered by this hazard.

13.5.2 Property

Based on GIS analysis, there are 396 acres in the unincorporated county that are within landslide debris areas. Table 13-2 shows the types of parcels within the landslide debris area in the unincorporated county.

Table 13-2

Number and Value of Parcels Exposed to Landslide Debris		
Land Type	**Parcel Number**	**Parcel Value**
Ag Residential	1	$22,230
Exempt	4	$1,025,130
NONE	5	-
Grand Total	**10**	**$1,047,360**

13.5.3 Critical Facilities

According to the GIS analysis, there are no critical facilities exposed to the mass earth movement hazard in unincorporated Teller County. Potentially susceptible areas of the County include the mountain roads and transportation infrastructure.

13.5.4 Environment

Environmental problems as a result of mass movements can be numerous. Simply, earth movements alter the landscape. Landslides can impact the topography, rivers, streams, forests, and grasslands, and the habitats of native fauna, both on land and in water (Schuster and Highland 2001). Mass earth movements that affect rivers can lead to blockage, the formation of lakes, or widespread flooding. Soil and sediment runoff can accumulate downslope, potentially blocking waterways, harming the quality of streams and other water bodies.

13.6 Development Trends

The County and its planning partners are equipped to handle future growth within landslide hazard areas. All municipal planning partners address construction on steep slopes in their laws, ordinances, or plans.

13.7 Issues

Important issues associated with landslides in the planning area include the following:

- As incidents of wildfires increase and hillsides are void of vegetation, these rain-soaked hillsides are more likely to slide, resulting in increased damage Countywide.
- Future development could lead to more homes in landslide risk areas.
- Mapping and assessment of landslide hazards evolve constantly. New data and science prompt the need to reevaluate landslide risks.
- The impact of climate change on landslides is uncertain. If climate change impacts atmospheric conditions, then exposure to landslide risks is likely to increase.
- Landslides may cause adverse environmental consequences, including water quality degradation.
- The risk associated with the landslide hazard overlaps the risk associated with other hazards such as earthquake, flood, and wildfire. This overlap provides an opportunity to seek mitigation alternatives with multiple objectives that can reduce the risk of multiple hazards at once.

14. Hazardous Materials

14.1 General Background

Hazardous materials are substances or materials that pose an unreasonable risk to health, safety, and property. They include but are not limited to hazardous substances, hazardous wastes, marine pollutants, and high-temperature materials. Hazardous materials are widely used and stored in homes and businesses. Products are shipped daily on highways, railroads, waterways, and pipelines.

Starting in 1986, the Emergency Planning and Community Right-to-know Act (EPCRA) required specific industries to report the locations and quantities of chemicals stored on-site to government officials. The Toxic Release Inventory database issues public information about releases and transfers of toxic chemicals from facilities to certain industrial sectors. Knowing what materials are in the community helps officials train and prepare for potential incidents (Environmental Protection Agency, 2019).

DEFINITIONS

Hazardous Substance – Those substances listed in Appendix A of 49 CFR §172.101; does not include petroleum, natural gas, liquefied natural gas, or fuel.

Hazardous waste – Materials subject to 40 CFR §262.

Marine pollutant – Materials listed in Appendix B of 49 CFR §172.101.

Elevated temperature material – Materials which are in a liquid phase at a temperature at or above 212°F; or which are in a liquid phase with a flash point at or above 100°F; or is in a solid phase at a temperature at or above 464°F.

Navigable waters – Waters of the United States, including territorial seas.

14.1.1 Potential Damage from Hazardous Materials

Hazardous materials can cause damage to people, property, or the environment when released to soil, water, or air. Small releases can have the potential to endanger public health and contaminate groundwater, surface water, and soils. Environmental damage from such releases depends on the material released and the extent of the contamination. Many are releases of small quantities that are contained and cleaned up quickly with little damage to the environment. Even small releases can incur thousands of dollars of cleanup costs and damages. Massive releases can cost communities and companies millions of dollars.

Damage from hazardous materials can occur from the material's flammability, toxicity, corrosiveness, chemical instability, and/or combustibility. Material releases seep through the soil and eventually into the groundwater, making water supplies unsafe to drink. Vapors from released materials can collect in houses and businesses, sometimes in low-lying areas, creating fire, explosion, and toxic inhalation hazards. Public health impacts of a release can vary from temporary skin irritation to death. Exposure can pose short- and long-term toxicological threats to humans, terrestrial and aquatic plants, and land and marine wildlife.

14.2 Teller County Hazard Profile

Accidental releases of petroleum, toxic chemicals, gases, and other hazardous materials frequently occur throughout Teller County. They can occur on highways, railroads, air/flight paths, pipelines, and

waterways. Major transportation routes through Teller County include U.S. Route 24 and State Highway 67. Potential for a release also exists on transportation routes used for business and industrial purposes.

14.2.1 Hazard Ranking

The HMC completed a hazard ranking survey during the Teller County 2021 HMP update process for a range of hazard-related factors based on most likely scenarios; definitions of the hazard ranking factors are in Table 14-1 and Appendix D. When compared against the other hazards included in the hazard ranking survey, hazardous material incidents ranked as the number 5 local hazard.

Table 14-1

Hazard Ranking Output						
Magnitude (1=lowest, 5=highest)	**Frequency (1=lowest, 5=highest)**	**Onset (1=slowest, 5=fastest)**	**Duration (1=shortest, 5=longest)**	**Perceived Change in Risk**	**Average**	**Rank**
3.00	2.00	5.00	1.00	1.00	3.33	5

14.2.2 Past Events

The National Response Center (NRC) contains hazardous material reports dating back to 1990. Between 2013 and 2020, the NRC reported the following incidents (not included in Table 14-2):

- 2/14/2020 – Abandoned drums were found in Florissant, CO. No additional information related to this incident was available.
- 7/28/2017 – Approximately 5,000 gallons of slurry (non-oil, sodium bentonite mixture) were released onto a construction site.

A review of the Pipeline and Hazardous Materials Safety Administration (2020) incident reporting database showed the hazardous materials incidents along transportation corridors since 1975. Teller County experienced ten incidents, shown in Table 14-2. Most of these incidents were spills of gasoline, fuel oil, or petroleum.

Table 14-2

Hazardous Materials Incidents in Teller County				
Incident Route	**Incident City**	**Date of Incident**	**Quantity Released**	**Commodity Name**
520 US 24	Woodland Park	5/23/2018	6 Gallons	Gasohol Gasoline Mixed with Ethyl Alcohol, with Not More Than 10% Alcohol
1280 HWY 67	Victor	8/4/2003	0.5 Gallons	Sodium Cyanide
CO RD 67	Victor	2/11/2002	7200 Gallons	Diesel Fuel
State Highway 67 Mile Marker 4	Victor	2/21/2001	4000 Gallons	Fuel Oil, No. 1, 2, 4, 5, Or 6

CO 67; 6 Miles S Divide	Divide	1/19/1999	10005 Gallons	Petroleum Gases, Liquefied or Liquefied Petroleum Gas
256 East Bennet Ave	Cripple Creek	10/9/1996	40 Gallons	Propane
Colorado 24	Lake George	2/14/1994	10 Gallons	Petroleum Gases, Liquefied or Liquefied Petroleum Gas
-	Woodland Park	10/7/1980	60 Gallons	Gasoline Includes Gasoline Mixed with Ethyl Alcohol, with Not More Than 10% Alcohol
-	Lake George	3/3/1978	9500 Gallons	Fuel Oil, No. 1, 2, 4, 5, or 6
-	West Victor	8/12/1975	1088 Gallons	Gasoline Includes Gasoline Mixed with Ethyl Alcohol, with Not More Than 10% Alcohol

In January of 1999, a propane trucked rolled over on Highway 67. The estimated impact/expense of this incident was over $150,000. The response lasted 18 hours and required closing Highway 67, evacuating the Rainbow Valley subdivision, and closing access to other surrounding subdivisions.

14.2.3 Location

Hazardous material releases are more likely to occur in areas surrounding fixed-site facilities and along major transportation routes in the County. State Highway 24 is a major artery that runs east-west through Teller County; it is a heavily trafficked route which is used for hazardous materials transportation. Highway 67 runs north-south through the county. The transport of hazardous materials and substances is more dangerous on high mountain passes with severe weather conditions, ice, wildlife, and debris on roadways.

Multiple fixed facilities are potentially sources of hazardous materials releases in the County (see Figure E-6 in Appendix E). The primary facility of concern is the Cripple Creek and Victor Gold Mining Company on Highway 67 in Victor. Residences can also be the source of fixed facility incidents, including meth lab fires, propane, and methane leaks.

14.2.4 Frequency

Federal, state, and local rules and regulations continue to become more stringent and lower the chances for an incident. However, with increased utilization of hazardous materials and increasing transportation along major transportation routes, the chance for a large hazardous material incident in the County remains a risk. Hazardous materials incidents are moderately likely to occur in Teller County, with an approximately 27 percent probability of occurrence in any given year.

14.2.5 Severity

The severity of a hazardous material release varies greatly depending on the material and the amount released. The extent of a hazardous substance release depends on the following factors: whether the released substance is from a fixed or mobile source, the size of the impacted area, the toxicity and properties of the substance, the duration of the release, and environmental conditions. Air, water, and soils can become contaminated. Exacerbating conditions that can magnify the effects of a release include weather conditions, micro-meteorological impacts on buildings and terrain, and maintenance failures.

Other factors that determine the severity of a potential incident include quick and decisive responses by emergency officials, evacuation and shelter-in-place needs and communication, public health concerns, and relevant economic considerations. While most incidents are generally brief, the resulting recovery and cleanup may take time and money.

14.2.6 Warning Time

Hazardous material incidents usually offer little to no warning time before the incident occurs. People in the immediate vicinity have the least amount of warning and response time. Surrounding community members will usually have more time to shelter-in-place or evacuate the area. The initial identification of specific hazardous materials types can increase response capabilities, establish the proper warnings and response procedures, and reduce overall impacts on humans and the environment.

14.3 Cascading Impacts/Secondary Hazards

Hazardous material incidents can result in the contamination of air, water, and soils, leaving lasting long-term exposure and negative impacts on plants, animals, and humans. Large-scale incidents can require long-term health and environmental monitoring costs to monitor the effects on humans and the environment. With certain materials, there is a chance for fire, which can result in an urban fire or wildfire. Long-term environmental impacts can, in turn, cause negative economic impacts on tourism or fishing.

14.4 Potential Impacts from Future Climate Conditions

Human-caused incidents such as hazardous material incidents are not typically considered vulnerable to climate change. Climate change and its impact on hazardous material sites, particularly waste sites, is a growing concern. Hazardous waste sites near rivers are tentatively at the highest risk because extreme storms and higher water levels could release pollution into the environment. Many of these sites were in locations believed to be removed from potential contamination or exposure increasing factors. However, development, floodplain boundary change, and an increase in extreme events from climate change are increasing the possibility that water may reach hazardous material and waste sites.

Increased severe weather events can increase the chances of a hazardous materials incident as a secondary hazard.

14.5 Exposure & Vulnerability

Exposure and vulnerability due to hazardous material incidents are difficult to quantify due to many variables and human elements.

14.5.1 Population

The entire population of Teller County is vulnerable to a hazardous material incident due to widespread use and storage of hazardous materials throughout communities. Although the vulnerability is low, people are more at risk due to higher utilization and transportation of hazardous materials. Communities along major transportation highway and rail transportation routes are at a higher risk for an incident. There is a potential for the general population to be at risk of a hazardous material release through inhalation, ingestion, or dermal exposure.

Vulnerability

Vulnerable populations are all populations exposed to an incident and incapable of escaping the area within the allowable time frame. This population includes the elderly and young, who may be unable to

get themselves out of the affected area. Other vulnerable populations consist of individuals that may not have adequate warning to protect themselves or evacuate, such as linguistically isolated persons.

14.5.2 Property

Some hazardous materials pose a reactivity, fire, or explosion risk. Materials improperly stored have the potential to mix with incompatible substances, which can result in polymerization, the production of heat, combustion or fire, or an explosion.

Vulnerability

It is difficult to determine potential losses and vulnerabilities to properties due to the variable nature and amount of stored hazardous materials. Hazardous material incidents can pose a serious long-term threat to property.

14.5.3 Critical Facilities

Multiple critical facilities in Teller County are vulnerable to a hazardous material incident. It is difficult to quantify losses of critical facilities due to the variability of hazardous material incidents. Potential losses may include inaccessibility, loss of service, contamination, and/or probable structural and content loss if an explosion occurs. The cost of clean-up and potential future monitoring can put extra strain on the facility and, in the worst case, lead to bankruptcy.

Vulnerability

Almost all critical facilities store hazardous materials, increasing vulnerability and the likelihood of an incident. Hazardous materials travel over transportation infrastructure, and thus the infrastructure is vulnerable to potential disruption in the event of the release of hazardous materials.

14.5.4 Environment

Environmental damage resulting from a hazardous material incident can be on a scale from limited to disastrous. Released materials can end up in the air, soil, and water. Some materials contribute to the destruction of the ozone. As materials soak into the ground, they can kill microorganisms and nutrients that contribute to the livelihood of plants and animals. Hazardous materials can eventually reach the groundwater, potentially toxifying community drinking water systems. Materials that end up in bodies of water can kill off aquatic plants and animals and strain an ecosystem.

Vulnerability

The vulnerability of the environment is the same as exposure.

14.6 Development Trends

The number and types of hazardous chemicals stored in and transported through the county will likely continue to increase. As the population grows, the number of people vulnerable to the impacts of hazardous materials incidents will increase. Community and business growth along arterial corridors increases the vulnerability to transportation incidents.

14.7 Issues

The major issues for hazardous materials incidents include the following:

- Continue all facets of emergency preparedness training for police, fire, public works, and public information staff to respond quickly.
- Work proactively with hazardous materials facilities to follow best management practices:

  - Placards and labeling of containers
  - Emergency plans and coordination
  - Standardized response procedures
  - Notification of the types of materials transported through the planning area
  - Random inspections of transporters
  - Installation of mitigating techniques along with critical locations
  - Routine hazard communication initiatives
  - Consideration of using safer alternative products
- Work with the private sector to enhance and create Business Continuity Plans in the event of an emergency.
- Maintain a regional emergency services information line that the public can contact 24 hours a day during an emergency incident.
- Coordinate with planning area school districts to ensure that their emergency preparedness plan includes preparation for hazardous material incidents.

15. Dam Failure

15.1 General Background

A dam failure is an uncontrolled release of water from a reservoir as a result of structural failures in a dam. Dam failures are likely to occur for one of five reasons (Association of State Dam Safety Officials (n.d.)):

- **Overtopping**: caused by water spilling over the top of the dam. Overtopping due to inadequate spillway design, debris blockage of spillways or settlement of the dam crest account for approximately 34 percent of all U.S. dam failures.
- **Foundation Defects:** cause approximately 20 percent of all dam failures such as settlement, slope instability, uplift pressures, and foundation seepage.
- **Piping:** is internal erosion caused by seepage. When seepage through a dam is not adequately filtered, soil particles progress and form sinkholes in the dam, which accounts for 20 percent of U.S. dam failures.
- **Cracking:** caused by movements of a dam, such as natural settling and accounting for approximately 10 percent of dam failures.
- **Inadequate Maintenance and Upkeep**: The remaining 16 percent of dam failures are due to cracking, insufficient maintenance and upkeep, and other miscellaneous causes such as natural hazard events and human activities.

Dam failures in the U.S. often occur as the result of other hazards such as earthquakes, landslides, storms, snowmelt, or sabotage. Human errors include poor construction, lack of maintenance and repair, and deficient operational procedures, and are preventable or correctable by a program of regular inspections. Terrorism and vandalism are concerns that operators of these facilities must plan for. These threats are under continuous review by public safety agencies.

The potential for catastrophic flooding due to dam failures led to the passage of the National Dam Safety Act (Public Law 92-367). Two federal agencies play

DEFINITIONS

Dam – Any artificial barrier and/or any controlling works, together with appurtenant works that can or do impound or divert water.

Dam Failure – An uncontrolled release of impounded water due to structural deficiencies in the water barrier.

Emergency Action Plan (EAP) – A formal document that identifies potential emergency conditions at a dam and specifies preplanned actions to be followed to minimize property damage and loss of life. The EAP contains specifies actions the dam owner should take to moderate or alleviate the problems at the dam, procedures on issuing early warning and notification messages to responsible downstream emergency management authorities, and inundation maps to show the emergency management authorities the critical areas for action in case of an emergency.

High Hazard Dam – Dams assigned the high hazard potential classification are those where failure or operational issues will probably cause loss of human life.

Inundation Area – The area of land that would be flooded following a dam failure

Significant Hazard Dam – Those dams where failure or operational issues result in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns.

significant roles in ensuring the safe operations and maintenance of dams identified under the National Dam Safety Program: The U.S. Army Corps of Engineers and the Federal Energy Regulatory Commission (FERC). In Colorado, the *Colorado Rules and Regulations for Dam Safety and Dam Construction* apply to any dam constructed or used to store water in Colorado.

15.1.1 Potential Damage from Dam Failure

A dam failure has the potential to cause damage similar to that caused by a flash flood. Downstream communities can be devasted in the event of a massive dam failure, resulting in damage or destruction of buildings and infrastructure, particularly bridges, culverts, and other infrastructure within the floodplain. Large dam failures can also result in casualties and damage to agriculture and natural ecosystems.

15.2 Teller County Hazard Profile

The Association of State Dam Safety Officials (n.d.) states that, in the U.S., dam ownership is primarily private, including 61 percent of the dams listed in the National Inventory of Dams. Ownership of the 39 percent of dams that are publicly owned is as follows: 22 percent are locally owned, 8 percent are federal, 5 percent are utility, and 4 percent are State-owned. In Teller County, there are 65 listed Division of Water Resources jurisdictional dams and ten non-jurisdictional dams (Colorado Information Marketplace, n.d.). Only one dam, Manitou Park, is federally regulated. Five dams are a high hazard, and nine dams are a significant hazard.

15.2.1 Hazard Ranking

The HMC completed a hazard ranking survey during the Teller County 2021 HMP update process for a range of hazard-related factors based on most likely scenarios; definitions of the hazard ranking factors are in Table 15-1 and Appendix D. When compared against the other hazards included in the hazard ranking survey, dam failures ranked as the number 10 local hazard.

Table 15-1

Hazard Ranking Output						
Magnitude (1=lowest, 5=highest)	**Frequency (1=lowest, 5=highest)**	**Onset (1=slowest, 5=fastest)**	**Duration (1=shortest, 5=longest)**	**Perceived Change in Risk**	**Average**	**Rank**
1.00	2.00	5.00	1.00	0.00	2.67	10

15.2.2 Past Events

Colorado has a history of dam failure. There have been at least 160 known dam failures and incidents in Colorado since 1890. During severe weather events in 2013, 2015, and 2017, no dam failures occurred in Teller County. In total, there have been two occurrences of dam failure in the past 45 years in Teller County. There are no federal disasters declared for dam failure in Teller County.

15.2.3 Location

There are 65 jurisdictional dams and ten non-jurisdictional dams in Teller County (see Figure E-7 in Appendix E). Of these, five dams are a high hazard, and nine dams are a significant hazard. Classification

based on the potential risk to the downstream area resulting from failure or mis-operation of the dam or facilities is as follows:

- **High Hazard Potential** – Probable loss of life (one or more)
- **Significant Hazard Potential** – No probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns; often located in predominately rural or agricultural areas but could be found in areas with populations and significant infrastructure
- **Low Hazard Potential** – No probable loss of human life and low economic and/or environmental losses; losses are principally limited to the owner's property.

High and significant hazard dams in Teller County are in Table 15-2:

Table 15-2

High and Significant Downstream Hazard Dams in Teller County							
Name	**Water Course**	**Year Built**	**Dam Type**	**Hazard Class**	**Height (ft)**	**Storage Capacity (acre-ft)**	**Drainage Area (sq. mi.)**
North Catamount	North Catamount Creek	1959	Earth Fill	High	200	12300	4160
Mc Reynolds	Middle Beaver Creek	1903	Earth Fill	High	33	2050	698
Mount Pisgah	Four Mile Creek	1911	Earth Fill	High	69	2250	46460
Mason	Boehmer Creek	1903	Earth Fill	High	50	1965	3974
South Catamount	South Catamount Creek	1935	Earth Fill	High	100	2604	3802
Wilson	E Fork W Beaver Creek	1897	Earth Fill	Significant	20	669	1100
Pringtime	West Beaver Creek	1974	Earth Fill	Significant	44	212	17536
Rosemont	East Beaver Creek	1961	Rock Fill	Significant	90	2538	2099
Victor #2	E Fork W Beaver Creek	1897	Earth Fill	Significant	43	225	3565
Burgess #1	Rule Creek	1965	Earth Fill	Significant	32	210	8160
Cripple Creek #3	W Fork of W Beaver Creek	1891	Earth Fill	Significant	40	130	2688
Bison Park	Bison Creek	1902	Earth Fill	Significant	27	1148	6400

Skaguay	West Beaver Creek	1901	Rock Fill	Significant	76	2066	39680
Cripple Creek #2	W Fork of W Beaver Creek	1971	Earth Fill	Significant	50.5	136	850

These dams can affect the downstream towns of Pueblo, Deckers, Green Mountain Falls, and Canon City.

15.2.4 Frequency

Dam failure events are infrequent; their frequency coincides with that of the events that may cause them, including earthquakes, landslides, and excessive rainfall and snowmelt. Dams may pose "residual risk" – risk remaining after implementation of safeguards. Residual risk is associated with events that go beyond a dam's design to withstand. Based on two occurrences of dam failure in the past 45 years in Teller County, there is an estimated 1 and 10 percent chance of occurrence in any given year.

15.2.5 Severity

Dam failure can be catastrophic to all life and property downstream. Past dam failure events in Colorado have led to significant economic and environmental impacts. The measure of extent or severity of a dam failure is through the classification of the dam. The U.S. Army Corps of Engineers hazard classification is in Table 15-3 (U.S. Army Corps of Engineers, 1995).

Table 15-3

U.S. Army Corps of Engineers Dam Hazard Classification				
Hazard Category [a]	**Direct Loss of Life [b]**	**Lifeline Losses [c]**	**Property Losses [d]**	**Environmental Losses [e]**
Low	None (rural location, no permanent structures for human habitation)	No disruption of services (cosmetic or rapidly repairable damage)	Private agricultural lands, equipment, and isolated buildings	Minimal incremental damage
Significant	Rural location, only transient or day-use facilities	Disruption of essential facilities and access	Major public and private facilities	Major mitigation required
High	Certain (one or more) extensive residential, commercial, or industrial development	Disruption of essential facilities and access	Extensive public and private facilities	Extensive mitigation cost or impossible to mitigate
a. Overall projects are categorized, not individual structures at a project. b. Loss of life potential based on inundation mapping of the area downstream of the project. Analyses of loss of life potential should take into account the population at risk, time of the flood, wave travel, and warning time. c. The interruption of lifeline services causes indirect threats due to project failure or operational disruption, for example, loss of critical medical facilities or access to them. d. Damage to project facilities and downstream property and indirect impact due to loss of project services, such as impact due to loss of a dam and navigation pool, or impact due to loss of water or power supply.				

e. The incremental flood wave produced by the project failure causes environmental impact downstream, beyond the typical expectation for the magnitude flood event.

15.2.6 Warning Time

The warning time for dam failure varies depending on the cause of the breakdown. Planned evacuations can happen given enough time before extreme precipitation or massive snowmelt strikes. There may not be a warning time for structural failure due to an earthquake. A dam's structural type also affects warning time. Earthen dams do not tend to fail entirely or instantaneously. Once a breach starts, discharging water erodes the breach until either the reservoir water is depleted, or the breach resists further erosion. Concrete gravity dams also tend to have a partial breach as one or more monolith sections formed during dam construction are forced apart by the escaping water. The time for breach formation ranges from a few minutes to a few hours (United States Army Corps of Engineers, 1997).

Teller County and its planning partners have established protocols for flood warning and response to the imminent dam failure in the flood warning portion of its adopted emergency operations plan. Emergency action plans (EAPs) created by the dam owners initiate these protocols.

15.3 Cascading Impacts/Secondary Hazards

Dam failure can cause severe downstream flooding depending on the magnitude of the loss. Other potential secondary hazards of dam failure include landslides around the reservoir perimeter, bank erosion on the rivers, and destruction of downstream habitat.

15.4 Potential Impacts from Future Climate Conditions

Assumptions about a river's flow behavior expressed as hydrographs, inform a dam's design. Changes in weather patterns can have significant effects on the hydrograph used to design a dam. If the hydrograph changes, it is conceivable that the dam could lose some, or all, of its designated margin of safety, also known as freeboard. If the A reduced freeboard can force dam operators to release increased volumes earlier in a storm cycle to maintain the required margins of safety. These earlier releases of high volumes of water, which in turn, can increase flood potential downstream.

Dam construction includes safety features known as "spillways." Spillways are put in place on dams as a safety measure in the event of the reservoir filling too quickly. Future climate conditions are unlikely to increase the occurrences of structural dam failure. However, spillway overflow events, often referred to as "design failures" may increase. This failure would result in increased discharges downstream and flooding potential. Climate change would also increase the occurrence of floodwaters exceeding levee capacity and the risk for structural levee failure.

15.5 Exposure & Vulnerability

15.5.1 Property and Population

GIS data showing dam inundation areas in Teller County were not publicly available at the time of this plan update. Information on the exposure of property to dam failure hazards was collected through data requests or interviews with Teller County and dam owners, including Colorado Springs Utilities (see Appendix D). Property exposure downstream of high hazard dams in the county is summarized below.

The McReynolds Dam is at the mouth of the McReynolds Reservoir, which stores 2,049 acre-feet of water. The inundation area for the dam lies along Middle Beaver Creek. Several recreational cabins in

this area would be within the inundation area. Gold Camp Road also would be overtopped by the inundation area; this road is used for recreational use and as an alternate route if Highway 24 is closed. The inundation area goes through Skaguay Reservoir and into West Beaver Creek. Skaguay Reservoir is owned by Colorado Parks and Wildlife and is used for recreational fishing and boating. The inundation area passes into Fremont County and would affect the old Skaguay Power Plant, a cultural site and popular destination for hikers. While the power plant is in Fremont County, the hiking trails that lead to it are in Teller County and may be affected by a dam breach.

Mason Reservoir is located just west of the McReynolds Reservoir, and the inundation area for the Mason Dam would affect the same areas as the inundation area for the McReynolds Dam.

North Catamount and South Catamount dams are located in eastern Teller County near the County line with El Paso County and west of the community of Green Mountain Falls. The inundation area for both dams in Teller County follows Catamount Creek and would affect homes and other structures along the creek outside of Green Mountain Falls. Over 50 homes and other structures in Teller County are within the inundation area for South Catamount dam. Approximately an additional 10 homes and structures in this area would be within the inundation area for North Catamount dam (GEI Consultants 2016a, 2016b). Based on the average household size for Teller County (2.35 people), an estimated 118 people reside in the dam inundation area for South Catamount dam and 141 people reside in the dam inundation area for North Catamount dam, assuming all of the structures within the inundation areas in the County are occupied. Inundation depths along Catamount Creek could exceed 20 feet.

The Mount Pisgah dam is located in southwestern Teller County on Wrights Reservoir. The inundation area for this dam follows Fourmile Creek south past the County line with Fremont County and would affect approximately 11 homes and other structures along the creek. Based on the average household size for Teller County, an estimated 26 people reside in the dam inundation area for the Mount Pisgah dam, assuming that all structures within the dam inundation area in Teller County are occupied. County and local roads that would be affected by failure of the Mount Pisgah dam include Teller County Road 111, Lakemoor Drive, Ranchview Drive, and Ranchview Road (RJH Consultants, Inc., 2020).

Vulnerability

Vulnerable properties are those closest to the dam inundation area. These properties would undergo the most massive and destructive surge of water. Low-lying areas are also vulnerable because dam waters would collect there.

All populations exposed to the flood hazard are at risk from a dam failure. Vulnerable populations are all populations downstream from dam failures that are incapable of escaping the area within the allowable timeframe. This population can include elderly and young persons who may be unable to get themselves out of the inundation area. Other vulnerable populations include those who do not have adequate warning from a television, radio emergency warning system, or a notification in their language, including people who are visiting Pike National Forest who may not have access to cell service or other notification systems.

15.5.2 Critical Facilities

Colorado Springs Utilities indicated that few critical facilities are located in the dam inundation areas for the agency's dams in Teller County. One local road, Gold Camp Road, would be overtopped in the event of a failure at McReynolds Dam and may be affected by a failure of Mason Dam. This roadway is in Pike

National Forest and is used for recreational use and as an alternate route if Highway 24 is closed. A couple of additional County roads in Pike National Forest may be affected by a failure of Wilson Dam, a low hazard dam. These roads are not heavily used.

Unpaved roads in Pike National Forest east of North Catamount and South Catamount dams would be affected by a failure of either dam. County and local roads, including Teller County Road 111, Lakemoor Drive, Ranchview Drive, and Ranchview Road, are in the dam inundation area for the Mount Pisgah dam. No other critical facilities are located within the dam failure inundation areas for these high hazard dams in Teller County.

Vulnerability

All critical facilities within dam inundation areas are vulnerable to the dam failure hazard. Transportation routes—including all roads, railroads, and bridges in the path of a dam inundation—are vulnerable and could be wiped out, creating isolation issues. Critical facilities most susceptible are those already in poor condition and thus not able to withstand a large water surge. Utilities such as overhead power lines, cable, and phone lines could also be vulnerable. Loss of these utilities could create additional isolation issues within the inundation areas.

15.5.3 Environment

Reservoirs held behind dams affect many ecological aspects of a river. River topography and dynamics depend on a wide range of flow. Rivers below dams often undergo long periods of very stable flow conditions or saw-tooth flow patterns caused by releases followed by no releases. Water releases from a reservoir, including those exiting a turbine, usually contain very little suspended sediment; this can lead to scouring of riverbeds and loss of riverbanks.

Vulnerability

In the event of a dam failure, there are several risks to the environment. The inundation could introduce many foreign elements into local waterways, possibly destroying downstream habitat and exerting detrimental effects on many species of animals. Any facilities that house or process hazardous materials within the inundation are may also threaten the environment. The extent of vulnerability of the environment is the same as the extent of exposure.

15.6 Development Trends

Since the dam failure inundation areas overlie the mapped floodplain areas, the future trends for development in these areas are the same as described for the flood risk assessment in Chapter 7.

The 2020 Growth Management Plan directs land-use in the planning area. This plan establishes objectives for the protection of the community from hazards. Dam failure is currently not explicitly addressed as a standalone hazard, but flooding is. The planning partners have established comprehensive policies regarding proper land use in identified flood hazard areas. Most of the areas vulnerable to the more severe impacts of dam failure intersect the mapped flood hazard areas.

15.7 Issues

The most significant issue associated with dam failure involves the properties and populations in the inundation zones. Flooding as a result of a dam failure would significantly impact these areas. There is often limited warning time for dam failure. These events are frequently associated with other natural

hazard events such as earthquakes, landslides, or severe weather, which limit their predictability and compound the hazard. Critical issues related to dam failure hazards include the following:

- Federally regulated dams have an adequate level of oversight and sophistication in the development of Emergency Action Plans for public notification in the unlikely event of failure. Clearly identify non-federal-regulated dams whose failure would pose a genuine threat to the people, property, and economy of Teller County.
- Mapping for federally regulated dams is already required and available; however, to accurately assess the risk associated with non-federal-regulated dams, better mapping that estimates inundation depths is necessary.
- Most dam failure mapping required at state and federal levels requires determination of the probable maximum flood. While the probable maximum flood represents a worst-case scenario, it is generally the event with the lowest probability of occurrence. Mapping of dam failure scenarios for non-federal-regulated dams that are less extreme than the probable maximum flood, but have a higher likelihood of an event, can be valuable to emergency managers and community officials downstream of these high hazard facilities. This type of mapping can illustrate areas potentially impacted by more frequent events to support emergency response and preparedness actions.
- The concept of residual risk associated with structural flood control projects should be considered in the design of capital projects and the application of land use regulations.
- Addressing security concerns and the need to inform the public of the risk associated with dam failure is a challenge for public officials.

16. Severe Winter Weather

16.1 General Background

Severe winter weather can take the form of heavy snow, high winds, blizzard conditions, ice, and/or freezing to sub-freezing temperatures. Severe winter storms and blizzards are extra-tropical cyclones that originate as mid-latitude depressions. The NWS defines a winter storm as having significant snowfall, ice, and/or freezing rain; the quantity of precipitation varies by elevation. Heavy snowfall in mountainous areas is 12 inches or more in 12 hours or 18 inches or more in 24 hours. There are three main criteria in a severe winter storm:

- Cold Air – Below-freezing temperatures in the clouds and near the ground are necessary to make snow and/or ice.
- Moisture – Cloud formation and precipitation requires moisture. Air blowing across a body of water, such as the ocean or large lakes, can be a primary contributor to moisture.
- Lift – Moist air must rise to form clouds and result in precipitation. An example of lift is air flowing up a mountainside.

Freezing rain and sleet are also hazards associated with severe winter weather. Sleet is frozen water particles that fall in the form of ice while freezing rain falls as supercooled water, which can freeze on impact with the ground, trees, powerlines, and roadways. Freezing rain can be severe and fall as part of an ice storm; ice storms can cause significant damage by building up heavy ice on utility lines, tree limbs, whole trees, and roofs.

DEFINITIONS

Freezing Rain – The result of rain occurring when the temperature is below the freezing point. The rain freezes on impact, resulting in a layer of glaze ice up to an inch thick. In a severe ice storm, an evergreen tree 60 feet high and 30 feet wide can be burdened with up to six tons of ice, creating a threat to power and telephone lines and transportation routes.

Severe Local Storm – Small-scale atmospheric systems, including ice storms and snowstorms. These storms may cause a great deal of destruction and even death, but their impact is generally confined to a small area. Typical impacts are on transportation infrastructure and utilities.

Winter Storm – A storm having significant snowfall, ice, and/or freezing rain; the quantity of precipitation varies by elevation.

16.1.1 Potential Damage from Severe Winter Weather

Heavy snow can immobilize regions, stranding commuters and travelers, disrupting the flow of supplies, and impact emergency and medical services. Accumulations of snow can collapse buildings and knock down trees and powerlines. In rural areas with single road access, fallen debris can isolate homes and farms. Livestock and crops may be lost. In mountainous areas, heavy snow can lead to uncontrolled avalanches. The cost of snow removal, repairing damages, loss of business, or the burden of severe weather response can have a considerable economic impact on smaller cities and towns. Ice storms can cause tree limbs to fall on houses, cars, people, and roadways. The weight of the ice can bring down telephone poles and utility lines, causing power outages or stranding people and blocking emergency response vehicles.

16.2 Teller County Hazard Profile

In Colorado, severe winter storms often begin with cyclonic weather systems in the North Pacific Ocean that can cause massive low-pressure storm systems to sweep across the western states. Winter storms plunge southward from arctic regions and can bring heavy snow and ice. Colorado is in a vulnerable area to winter storms, being affected by the convergence of dry, cold air from the Midwest and warm, moist air from the Pacific Ocean. Significant winter storms often occur during the transition between cold and warm weather periods. Severe winter weather is the most common cause for a state emergency declaration in Colorado.

16.2.1 Hazard Ranking

The HMC completed a hazard ranking survey during the Teller County 2021 HMP update process for a range of hazard-related factors based on worst case and most likely scenarios; definitions of the hazard ranking factors are in Table 16-1 and Appendix D. The results of the survey were averaged together for each factor to generate a total average score and rank, enabling the prioritization of hazards by type. When compared against the other risks included in the hazard ranking survey, severe winter weather ranked as the number 5 hazard.

Table 16-1

Hazard Ranking Output						
Magnitude (1=lowest, 5=highest)	**Frequency (1=lowest, 5=highest)**	**Onset (1=slowest, 5=fastest)**	**Duration (1=shortest, 5=longest)**	**Perceived Change in Risk**	**Average**	**Rank**
5.00	2.00	3.00	2.00	5.00	3.33	5

16.2.2 Past Events

Table 16-2 summarizes blizzards, heavy snow, ice storms, and winter storm events in Teller County since 2013, as recorded by NOAA. Severe winter storms are common in Colorado and Teller County. In total, 108 days feature the four-event types from January 1996 (the earliest year data available from NOAA) to May 1, 2020.

Table 16-2

Year	Type	Dates
2013	Winter Storm	2/23, 3/09, 5/09,
2014	Winter Storm	3/07, 4/03, 5/11
2015	Winter Storm	2/21, 4/16, 5/09, 11/16
2016	Winter Storm	2/01, 3/23, 4/15, 4/28
2017	Winter Storm	3/24
2018	Winter Storm/Heavy Snow	10/14
2019	Winter Storm	3/13, 10/23, 11/25, 12/15

Winter storm events in the spring of 2007 were intense throughout Colorado and Teller County. On April 24, 2007, heavy wet snow combined with high winds caused numerous power outages, downed power

lines, and road closures throughout the County. Woodland Park reported 12 to 14 inches of snow. There was an estimated $171,428 in estimated storm-wide damages. On March 18, 2020, nearly 12 inches of snow fell on Teller County causing cars to slide off the roads, but no serious accidents or severe damage was reported.

16.2.3 Location

The entirety of Teller County is susceptible to severe winter weather. Higher elevations in the County will typically experience more frequent and/or more severe winter weather. The eastern portion of the County in the Pikes Peak area is more likely to experience heavy snow. Highway 24 through Woodland Park, Divide, and Florissant can experience blizzard and "white-out" conditions for drivers.

There are currently no maps showing specific portions of the County affected by historical severe winter weather events. Presently, no detailed maps show which parts of Teller County could be impacted by severe winter weather in the future. Continuing to document historical events will further the process of determining whether specific locations in the County are inherently more prone to the impacts of severe winter weather when compared to other areas.

16.2.4 Frequency

The State of Colorado and Teller County experience severe winter storms every year; the mountainous areas may experience more than one event every year. Their future probability is highly likely, with a nearly 100 percent chance of occurrence in any given year.

16.2.5 Severity

Based on the frequency, impacts, and other information in this hazard profile, the severity of severe winter storms can be considered mild to catastrophic. There is a widespread potential impact. The most common problems associated with severe winter weather are immobility and loss of utilities. Fatalities are uncommon but can occur. The severity of the weather can depend on a multitude of factors, including snowfall amount, wind speed, duration, icing, and warning time.

Roads can become hazardous or impassable due to downed tree limbs or trees, ice accumulation or snow, or a landslide. Powerlines may fall due to high winds, ice accumulation, or both, and utility services such as water may not be able to operate. Severe winter weather can disrupt lives and jobs for hours to days to weeks, depending on the severity. Snow and ice can block primary and secondary routes and cause treacherous driving conditions.

Utility infrastructure that is adversely affected can leave people and households without power, including heat. Power outages are especially dangerous for vulnerable populations. Phone communications can be interrupted, posing a risk to those who can't get in touch for outside help. Frozen water pipes can rupture in homes, and water and sewer mains can freeze, leak, or rupture, leading to property damage and inconvenience.

Severe winter weather can adversely affect the health of people in the county. For those who have lost heat in their homes or workers conducting snow removal operations or emergency response, hypothermia and frostbite are possible. Drivers and passengers that are stranded can suffer from hypothermia if they do not have a way to maintain their core body temperature.

16.2.6 Warning Time

Meteorologists can often predict the likelihood of severe winter storms. These predictions can give several days of warning time to prepare; however, they cannot predict the exact onset time or severity. Weather can shift and come on more quickly or severely than predicted, cutting down warning and preparation time. The NWS tracks winter storms by radar. Radar tracking can provide up-to-date weather information and winter storm watches and warnings to indicate when conditions are favorable for a winter storm or one is occurring.

16.3 Cascading Impacts/Secondary Hazards

The most significant secondary hazard associated with severe winter weather is falling and downed trees, downed powerlines, other impacts to utilities, floods, landslides, and hazardous materials incidents. Falling tree hazards due to winds, ice, or both are hazardous for vehicles, pedestrians, rescue workers, and residents of buildings close to trees. Rapidly melting snow combined with heavy rain can overwhelm natural and human-made drainage systems, causing overflow and property destruction. Landslides can occur when the soil on slopes becomes oversaturated and fails.

Treacherous driving conditions can result in automobile accidents and hazardous materials incidents. Multiple hazardous materials travel through the County by rail and highway, and a winter storm with "white-out" conditions can cause an accident and a potential release. Regular automobile accidents can occur, injuring, and possibly stranding drivers and passengers. Impassible roads can delay supplies and deliveries. Schools and bus routes will shut down if road conditions do not allow for safe driving.

The local economy can suffer if businesses close for extended periods. Other costs include salting and sanding roads and road repairs after the winter months.

16.4 Potential Impacts from Future Climate Conditions

Future climate conditions present a significant challenge for risk management associated with severe winter weather. The frequency of severe winter weather and storms has increased steadily over the last century. Nationally, the number of weather-related disasters during the 2000s was four times that of the 1950s. Historical data shows that the probability of severe winter weather events increases in a warmer climate. The changing hydrograph caused by a changing climate could have a significant impact on the intensity, duration, and frequency of winter storm events.

16.5 Exposure & Vulnerability

16.5.1 Population

It is reasonable to assume the entire planning area of Teller County is at risk of a severe winter weather hazard to varying degrees. Every person can be affected and exposed to severe winter weather. Populations living at higher elevations may be more susceptible to heavy snow and ice accumulation. Those with trees close to homes or powerlines may be more susceptible to wind damage and power loss. Populations in low-lying areas are at risk for flooding.

Vulnerability

All people within the planning area are vulnerable to severe winter weather, but specific populations are more susceptible. The most vulnerable are the elderly, low-income, and linguistically isolated communities, those under the assistance of life support devices, those with life-threatening illnesses, and residents living in areas that are isolated from major roads. Power outages can be life-threatening if

there is no means of backup power. Residents isolated from major roads may be unreachable for hours or days due to road closures and are vulnerable if they become in need of emergency assistance.

16.5.2 Property

According to the Teller County Assessor, there are nearly 15,000 buildings within the planning area. Most of these buildings are residential. An estimated 8 percent of the residential structures are older buildings built before a structure building code with provisions for wind and snow loads. All these buildings are at risk of a severe winter weather hazard. Structures in poor condition may risk the most damage.

Vulnerability

All exposed property is also vulnerable to the severe winter weather hazard, but properties and structures in poor condition are at the most risk. Structures on hilltops, in heavily forested areas with trees close to buildings and structures located under or near overhead lines, are the most vulnerable, especially with the danger of ice accumulation.

16.5.3 Critical Facilities

All critical facilities are at risk of damage from severe winter weather. More specifically, all critical facilities exposed to flooding, addressed in Chapter 6 of this HMP, are also likely exposed to severe winter weather. Wind damage or falling trees can damage facilities on higher ground. The most common critical facility exposure issues are those associated with utilities. Downed power lines can cause blackouts; phone, water, and sewer systems may not be able to function. Heavy snow events and ice storms can significantly impact the transportation system and the availability of public safety services.

Vulnerability

Significant vulnerabilities include roads that provide access to isolated areas, the elderly, and other vulnerable populations.

16.5.4 Environment

The environment is highly susceptible to severe winter weather events. Natural habitats such as streams and trees are exposed to the elements during events and risk extensive damage and destruction. Flooding events caused by snowmelt can produce river channel migration or damage riparian habitat.

Vulnerability

The vulnerability of the environment to severe winter weather is the same as exposure.

16.6 Development Trends

All future development will be affected by the severe winter weather hazard. The ability to withstand impacts lies in sound land-use practices and consistent enforcement of codes and regulations for new construction and retrofitting. Teller County and its planning partners have adopted the International Building Code in response to Colorado mandates. This code sufficiently manages severe winter weather events such as wind and snow loads. Land-use policies within Teller County also address flooding and landslides associated with this hazard. With these tools, the planning partnership is well equipped to deal with future growth and the associated impacts of severe winter weather.

16.7 Issues

Critical issues associated with severe winter weather in the planning area include the following:

- The older structures in the County have low or no building code standards, compared to more modern buildings designed after more stringent codes were written. These structures could be highly vulnerable to severe winter weather events such as windstorms, heavy snow loads, and ice storms.
- Redundancy of power supply must be evaluated, especially for those providing emergency services.
- The capacity for backup power generation is limited.
- Identify isolated population centers ahead of time and plan for their specific needs.

17. Extreme Temperature & Drought

17.1 General Background

Extreme temperature events can have severe impacts on human health and mortality, natural ecosystems, agriculture, and the economy. Extreme temperatures can affect utility capabilities and cause failure, leading to significant individual and community impacts. Extreme high temperatures can be associated with drought conditions.

Extreme cold often accompanies or follows winter storms, typically in December, January, and February. Prolonged exposure to the cold can cause frostbite or hypothermia and can become life-threatening due to the lowering of body temperature.

Ready.gov (2020) defines **extreme heat** as a period of high heat and humidity with temperatures above 90 degrees for at least two to three days. Extreme heat is most likely to occur in June, July, and August. On average, July is the hottest month. Locally in Teller County, extreme heat events occur when high temperatures exceed 85 degrees for several days.

Drought is a normal phase in the climatic cycle of most geographical areas of the U.S.. The National Drought Mitigation Center states that drought originates from a deficiency of precipitation over an extended period, usually a season or more. In short, there is a water shortage for some activity, group, or environmental sector. Drought is the result of a significant decrease in water supply relative to what is considered normal in a given location. When compared to most disasters, droughts usually come on slowly but last a long time.

It is vital to define the event as a drought early on to minimize the impact on the community. Drought management requires identifying available supplies to local water users as well as stored water in surface reservoirs or groundwater basins. A long-term drought is when the precipitation deficit lasts for months or years. Droughts are short-term if they last a few weeks or a couple of months.

DEFINITIONS

Agricultural Drought – When there is not enough soil moisture to meet the needs of a particular crop at a particular time. Agricultural drought happens after meteorological drought but before hydrological drought.

Drought – A drought is a prolonged period of abnormally low precipitation, leading to a shortage of water.

Extreme Temperature – **T**emperatures that are much hotter and/or more humid or much colder than the average. Extreme temperature conditions are determined by comparing temperature and humidity to average conditions for the affected location at that time of year.

Hydrological Drought – Deficiencies in surface and subsurface water supplies.

Meteorological Drought – A precipitation's departure from normal over a period of time. Meteorological measurements are the first indicators of droughts.

Socioeconomic Drought – Drought impacts on health, well-being, and quality of life.

17.1.1 Potential Damage from Extreme Temperature and Drought

During extreme cold events, young children and elderly persons are most susceptible to hypothermia and frostbite. Pipes may freeze and burst in areas that are poorly insulated or without heat. In some cases, communications facilities can be disrupted or impaired.

Extreme heat events, particularly when heat and humidity remain high at night, increase the risk of health effects for humans and animals because high heat and humidity hamper the body's ability to cool down. Excessive heat can also result in power outages due to increased demand for air conditioning, damage to transportation and other infrastructure, increased water demand, agricultural crop and livestock losses, and increased risk of wildfire.

The risk of drought increases when winter precipitation is less than average or more precipitation falls as rain rather than snow, decreasing the amount of water held in the snowpack. Extended droughts can cause water shortages for agriculture, ranching, domestic and industrial uses, recreational uses, and for native animals and plants.

17.2 Teller County Hazard Profile

The National Weather Service issues wind chill warnings in Teller County when expected wind chill values drop to or below -35 degrees in the mountains. The wind must be at least ten mph. The lowest temperature recorded in Teller County was -9.9 degrees; the lowest wind chill temperature was -25.6 degrees. The highest recorded temperature in the County was 100.8 degrees in June of 2018 (Colorado Springs Weather, 2020).

17.2.1 Hazard Ranking

The HMC completed a hazard ranking survey during the Teller County 2021 HMP update process for a range of hazard-related factors based on most likely scenarios; definitions of the hazard ranking factors are in Table 17-1 and Appendix D. When compared against the other hazards included in the hazard ranking survey, drought and extreme temperatures ranked as the number 8 local hazard.

Table 17-1

Hazard Ranking Output						
Magnitude (1=lowest, 5=highest)	**Frequency (1=lowest, 5=highest)**	**Onset (1=slowest, 5=fastest)**	**Duration (1=shortest, 5=longest)**	**Perceived Change in Risk**	**Average**	**Rank**
4.00	2.00	3.00	4.00	4.00	3.00	8

17.2.2 Past Events

Since 1900, Colorado recorded several significant droughts, the most recent events occurred from 1998 to 2004, 2011 to 2013, and in 2018. These periods saw rainfall levels well below normal and caused many communities throughout the region to institute water restrictions. Drought conditions are currently extreme or severe throughout the entire state of Colorado (as of September 10, 2020). Teller County is in a moderate to severe drought. Although meteorologists have attempted to anticipate

long-term changes and trends in weather patterns, it is not possible to predict the onset of a significant drought at this time.

Water tables in Teller County have dropped in recent years. This trend affects communities that rely on wells for potable water supplies. About 40 to 50 residents in the Colorado Mountain Estates neighborhood and Florissant have lost all water service because local water tables have dropped below the well intakes. These residents currently rely on deliveries of potable water.

There is one FEMA disaster declaration in Teller County related to drought: DR-3025 in 1997.

The National Oceanic and Atmospheric Administration's (NOAA's) National Centers for Environmental Information (NCEI) records no instances of extreme heat or extreme cold events in Teller County between 2013 and December 2020. However, the NCEI has recorded that winter weather impacted the County on 42 days during this timeframe (National Oceanic and Atmospheric Administration, 2020). These winter storms may have brought with them dangerously cold temperatures. Extreme cold has caused water and sewer line breaks within Teller County communities in the past.

17.2.3 Location

Extreme cold temperatures can impact the entire County. Extreme heat could affect the lower elevations of the County and the municipalities. With most of the County at elevations of 7,500 feet or higher, extreme heat is less of a concern.

Due to Colorado's semiarid conditions, drought is a natural but unpredictable occurrence in the State. However, because of natural variations in climate and precipitation sources, it is rare for all of Colorado to be deficient in moisture at the same time. However, the State can expect single-season droughts over some regions. The entire County is at risk of drought conditions. Drought is one of the few hazards with the potential to impact every person in the County as well as adversely affect the local economy.

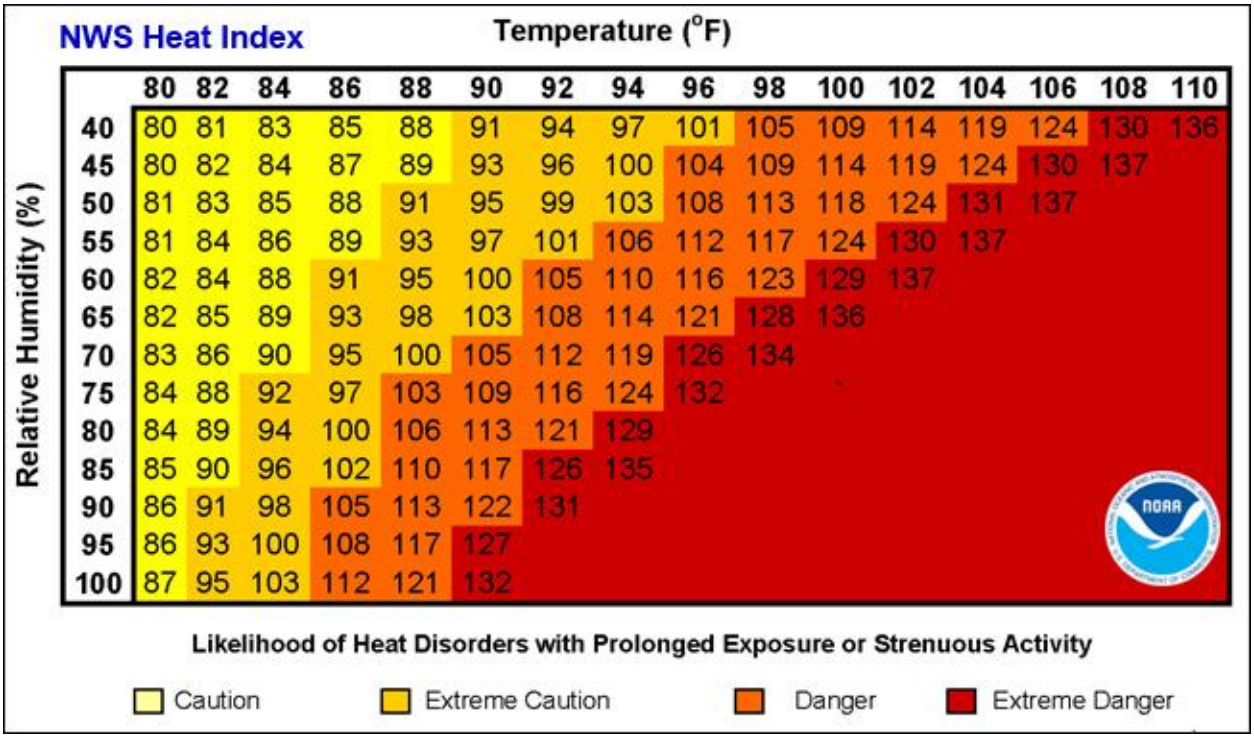
17.2.4 Frequency

The probability of future drought in Teller County is likely, with between 10 and 100 percent chance of occurrence in any given year, or a recurrence interval of 10 years or less. According to information from the Colorado Drought Mitigation and Response Plan, Colorado was in drought for 53 of the past 127 years (1893-2019). Thus, there is a 42 percent chance that drought will happen in Colorado in any given year, and a drought can be expected somewhere in the State every 2.4 years.

17.2.5 Severity

Based on the information in this hazard profile, the magnitude/severity of extreme temperatures is limited. The overall significance is considered low, with minimal potential impact. Figure 2 shows the National Weather Service Heat Index Chart, which illustrates how heat affects the body. In an average year, approximately 200 people in the U.S. succumb to the summer heat hazard. Extreme heat can reduce the body's ability to shed heat or lead to a chemical imbalance by too much sweating. When heat gain exceeds the level the body can remove, or when the body cannot compensate for fluids and salt lost through sweat, the body's inner core temperature rises, and heat-related illness may result.

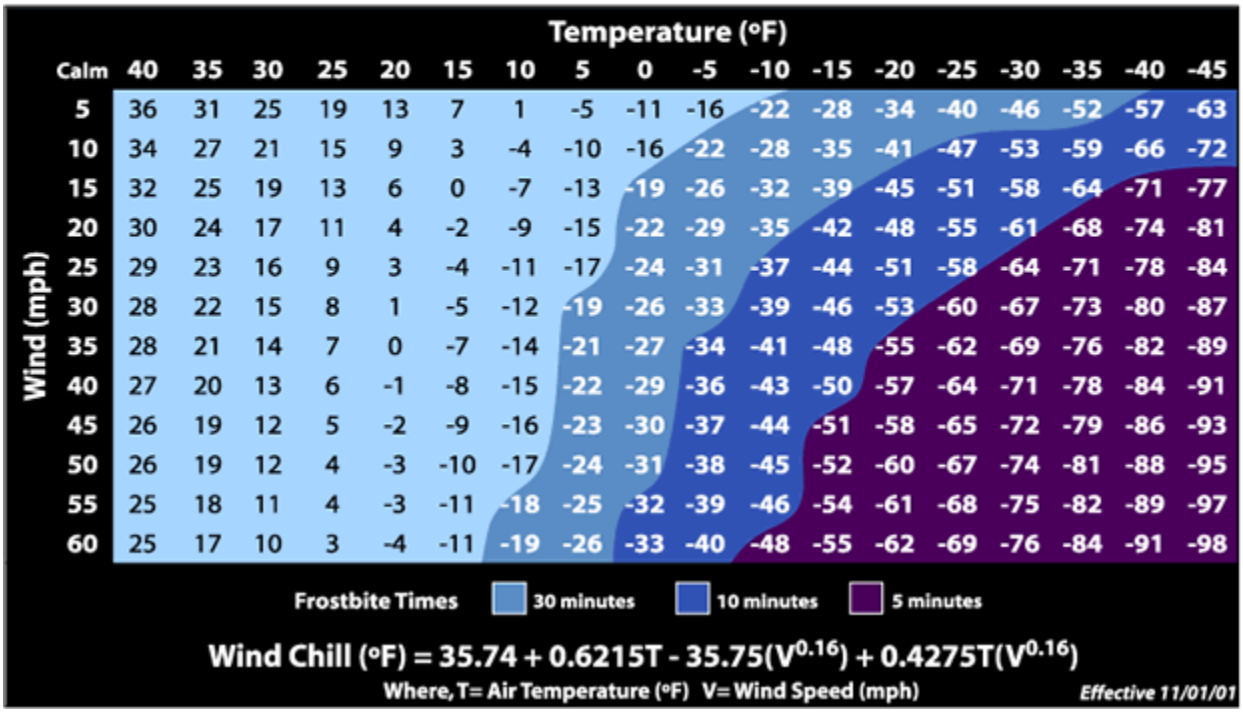
Figure 2 (National Weather Service, n.d.b.)



Drought impacts are wide-reaching and may be economic, environmental, and/or societal. The most significant effects associated with drought in Colorado are those related to water-intensive activities such as agriculture, wildfire prevention and protection, municipal usage, commerce, tourism, recreation, and wildlife preservation. An ongoing drought may leave an area more prone to beetle kill and associated wildfires. Drought conditions can also cause the soil to compact, increasing an area's susceptibility to flooding, and reduce vegetation cover, which exposes soil to wind and erosion. A reduction of electric power generation and water quality deterioration can occur.

In 2001, the National Weather Service (n.d.b.) implemented an updated Wind Chill Temperature index (Figure 3). This index describes the relative discomfort or danger resulting from the combination of wind and temperature. Windchill is the rate of heat loss from exposed skin caused by wind and cold. As the wind increases, it draws heat from the body, driving down skin temperature and eventually the internal body temperature.

Figure 3 (National Weather Service, n.d.b.)



17.2.6 Warning Time

To help communities prepare for upcoming extreme heat events, the NWS has developed the experimental HeatRisk forecast, which projects potential heat risks over the next seven days: https://www.wrh.noaa.gov/wrh/heatrisk/. Similarly, weather forecasts can predict extreme cold events from several days to a week before they occur.

Droughts are climatic patterns that occur over long periods. Only a generalized warning can occur due to the numerous variables.

The NWS Climate Prediction Center uses data on patterns in oceanic and atmospheric currents together with climate and weather models and historical records to predict the likelihood that drought will occur over the next month or several months. Because the occurrence and severity of droughts depend on many variables, these outlooks are general and describe large-scale trends across regions of the country (National Integrated Drought Information System, n.d.). Monthly and seasonal drought outlooks are available online at https://www.cpc.ncep.noaa.gov/products/Drought/.

17.3 Cascading Impacts/Secondary Hazards

Cascading impacts due to drought include water quality impacts, agricultural losses, forestry losses, utility failure, heat-related illnesses, and habitat degradation. Extreme heat can damage infrastructure and lead to increased water demand. The secondary hazard most commonly associated with drought is

wildfire. A prolonged lack of precipitation dries out vegetation, which becomes increasingly susceptible to ignition as the duration of the drought extends.

17.4 Potential Impacts from Future Climate Conditions

Global water resources are already experiencing the following stresses without climate change:

- Growing populations
- Increased competition for available water
- Poor water quality
- Environmental claims
- Uncertain reserved water rights
- Groundwater overdraft
- Aging urban water infrastructure

Climate change will likely increase the frequency, duration, and severity of droughts due to increases in average temperatures and changes in precipitation patterns. Hotter temperatures will amplify droughts that are caused by natural variations in Colorado's climate and increase the probability that droughts lasting longer than a decade (megadroughts) will occur. Increased temperatures during the winter months may cause "snow droughts" due to a lack of precipitation in general, more precipitation falling as rain, or earlier snowmelt. Mountain areas at lower elevations are likely to receive more winter precipitation as rain rather than snow. Increased aridification across the region through increased evapotranspiration, lower soil moisture, reduced snowpack, and earlier snowmelt all may increase the duration and severity of drought and generate a drier climate overall.

17.5 Exposure & Vulnerability

To some extent, all people, property, and environments in the county are at risk of moderate to extreme drought conditions and extreme temperatures.

17.5.1 Population

There is no data to provide a population exposure for drought conditions and extreme temperatures. It is reasonable to assume the entire county population is at risk of extreme temperatures and drought, at least to some extent. Certain areas have a higher risk of drought due to geographic location, elevation, and localized weather patterns.

Vulnerability

Vulnerable populations include the elderly, low-income, or linguistically isolated communities, people with life-threatening illnesses, and residents living in areas that are isolated from major roads and utilities. Power outages can be life-threatening to those dependent on electricity for life support.

17.5.2 Property

No structures will be directly affected by drought conditions, though some structures may become vulnerable to wildfires, which become more likely in years of drought.

Vulnerability

Most property is not considered vulnerable to the drought or extreme temperature hazard.

17.5.3 Critical Facilities

Critical facilities, as defined in this plan, will continue to be operational during a drought and extreme temperature events. During a drought, landscaping and unnecessary water usage will cease at critical facilities, preserving water for priority needs.

Vulnerability

No critical facilities are considered vulnerable to extreme temperatures or drought.

17.5.4 Environment

The entire County is at risk of extreme temperatures and drought hazards. Extreme heat and drought can kill plants and wildlife and degrade pasture for livestock. Examples of environmental loss from excessive heat and drought:

- Damage to plants, animals, wildlife habitats
- Reduced air and water quality
- Forest and range fires
- Degraded landscaping
- Loss of biodiversity
- Soil erosion

Some of the effects are short-term, and conditions quickly return to normal following the end of the drought. Other environmental effects linger or may become permanent. Water resources and vegetation loss can degrade an entire wildlife ecosystem.

Vulnerability

Ecosystems and natural resources across the County are vulnerable to extreme temperatures and drought. The impacts of this hazard can result in economic losses to agriculture and degradation or loss of ecosystem services.

17.6 Development Trends

Colorado and Teller County's population will continue to grow, increasing the demand for limited water resources. The ability to withstand extreme temperatures and drought lies in sound land-use practices. Each municipal planning partner in this effort has an established comprehensive plan that includes policies directing land use and dealing with issues of water supply, water rights, and the protection of water resources. These plans provide the capability at the local municipal level to protect future development from the impacts of drought. Regular HMP reviews can identify deficiencies resulting in new or updated mitigation actions to deal with future trends in development.

17.7 Issues

Generally, every person in the county is likely exposed to the risks of extreme temperatures and drought. Vulnerable populations are also at risk. Important issues in the area include but are not limited to:

- Identification and development of alternative water supplies.
- Utilize groundwater recharge techniques to stabilize the groundwater supply.
- Climate change increases the probability of higher drought frequencies and durations.
- Promote active water conservation even during non-drought periods.

- Areas are at higher risk if they do not have power supply redundancies or a backup power generator.
- The capacity for backup power generation is limited.
- There are isolated community members in parts of the county.

18. Earthquake

18.1 General Background

An earthquake results from sudden stress changes in the earth due to the slip of a fault, or volcanic activity, and the resulting ground shaking and radiated seismic energy. Earthquakes can last from a few seconds to over five minutes; they may also occur as a series of tremors over several days.

Most seismic activity occurs on well-known active faults. However, determining if a fault is active or potentially active depends on geologic evidence, which may or may not be available. Active faults represent the highest hazard.

Earthquakes are more likely to occur on faults that have rapid rates of movement, had recent earthquakes, experienced more significant displacements, or are aligned to relieve accumulated tectonic stresses. There is a direct relationship between the length and location of a fault and its ability to generate damaging ground motion at a given site.

In some areas, smaller, local faults produce lower magnitude quakes, but ground shaking can be strong, and damage can be significant as a result of the fault's proximity to the area. In contrast, large regional faults can generate earthquakes of immense magnitude but, because of their distance and depth, may result in only moderate shaking on the ground's surface.

18.1.1 Potential Damage from Earthquakes

Earthquakes can cause structural damage, causalities, and damage to infrastructure networks. After a moderate to a massive earthquake, expect disruption to communications, electrical power supplies, gas, sewer, and water lines. Older buildings and infrastructure built before more stringent earthquake codes are particularly vulnerable. Other damage-causing effects of earthquakes include surface rupture, fissuring, settlement, and permanent horizontal and vertical shifting of the round. Secondary impacts can consist of landslides, rockfalls, liquefaction, fires, dam failure, and hazardous materials incidents.

18.2 Teller County Hazard Profile

Colorado is in an active tectonic province. Although the risk of a damaging earthquake is low, it is possible. The state's

DEFINITIONS

Earthquake – The shaking of the ground caused by an abrupt shift of rock along a fracture in the earth or a contact zone between tectonic plates. Earthquakes are typically measured in both magnitude and intensity.

Epicenter – The point on the earth's surface directly above the hypocenter of an earthquake. The location of an earthquake is commonly described by the geographic position of its epicenter and by its focal depth.

Fault – A fracture in the earth's crust along which two blocks of the crust have slipped with respect to each other. Most common is a strike-slip, normal, or thrust fault.

Focal Depth – The depth from the earth's surface to the hypocenter.

Hypocenter – The region underground where an earthquake's energy originates.

Liquefaction – Loosely packed, water-logged sediments losing their strength in response to strong shaking, causing major damage during earthquakes.

Seiche – A standing wave in an enclosed or partly enclosed body of water, normally caused by earthquake activity; can affect harbors, bays, lakes, rivers, and canals.

high mountains are a result of uplift on faults that are a part of the Rio Grande rift system. There are over 90 potentially active faults and more than 700 recorded earthquakes of magnitude 2.5 or higher since 1867. There have been seven recorded earthquakes within the county with a magnitude of 3.6 or less. The Ute Pass Fault Zone runs through the northeastern part of the County.

18.2.1 Hazard Ranking

The HMC completed a hazard ranking survey during the Teller County 2021 HMP update process for a range of hazard-related factors based on most likely scenarios; definitions of the hazard ranking factors are in Table 18-1 and Appendix D. When compared against the other hazards included in the hazard ranking survey, earthquakes ranked as the number 10 local hazard.

Table 18-1

Hazard Ranking Output						
Magnitude (1=lowest, 5=highest)	**Frequency (1=lowest, 5=highest)**	**Onset (1=slowest, 5=fastest)**	**Duration (1=shortest, 5=longest)**	**Perceived Change in Risk**	**Average**	**Rank**
1.00	2.00	5.00	3.00	1.00	2.67	10

18.2.2 Past Events

Colorado Geological Survey (n.d.b.) reports a relatively short period of historical records for earthquakes. Earthquakes in Teller County have been infrequent and low in magnitude and intensity. Six small earthquakes have occurred along Ute Pass and in the mining district, although the damage from these earthquakes was minimal. The following are earthquake events that have happened inside the County border:

- February 19, 2003 – Woodland Park, Magnitude 2.2
- July 22, 2001 – Woodland Park, Magnitude 3.1
- April 18, 1998 – Woodland Park, Magnitude 2.7
- January 18-19, 1997 – Woodland Park, Magnitude 2.7-3.3 (three earthquakes)
- January 6, 1979 – Divide, Magnitude 2.9

18.2.3 Location

Colorado Geological Survey (n.d.a.) research indicates that faults capable of producing earthquakes are prevalent in Colorado. There are approximately 90 potentially active faults in the State with documented movement within the last 1.6 million years.

Ute Pass Fault Zone

West of Colorado Springs, the Ute Pass fault zone, has a series of five northwest-trending faults (U.S. Geological Survey, 1997). The main fault is parallel to the southwest flank of the Rampart Range and Fountain Creek. The faults begin east of Deckers near Devil's Head and terminate in a series of splay faults at the southern end of the east flank of the Front Range. At the north end, the fault plane is almost vertical. Near Woodland Park, the fault is defined by steeply dipping fault planes that form

grabens, or areas of the earth's crust that are displaced downward between two faults (rift valleys). West-dipping reverse faults characterize the south end.

18.2.4 Frequency

The seismic hazard in Teller County is low, but it is still likely that future damaging earthquakes will occur. Research on Colorado's earthquake history suggests that an earthquake of magnitude six or greater has a one percent probability of occurring every year somewhere in the State. The probability that a magnitude five or greater earthquake will happen in the next 50 years in Teller County is 0.5 percent or less. Small earthquakes that cause little to no damage are likely and may occur once every five years or more.

18.2.5 Severity

Intensity and magnitude define the severity of an earthquake. Intensity represents the observed effects of ground shaking at any specified location. The intensity of earthquake shaking lessens with distance from the earthquake epicenter. Tabulated peak ground accelerations for a listed "maximum credible earthquakes" (MCE) are a measure of how a site will be affected by seismic events on distant faults. Earthquake severity is measured by:

- How hard did the ground shake?
- How did the ground move? Horizontally or vertically?
- How stable was the soil?
- What is the fragility of the built environment in the area of impact?

Magnitude represents the amount of seismic energy released at the hypocenter of the earthquake, based on the amplitude of the earthquake waves recorded on instruments. Magnitude is a single, instrumentally determined value. Table 18-2 defines earthquake magnitude classes.

The impact and severity of an earthquake on structure and infrastructure is a function of ground shaking, distance from the source of the quake, and liquefaction. A secondary effect of an earthquake is when soils lose their shear strength and flow or behave as a liquid, called liquefaction. Liquefaction generally occurs in soft, unconsolidated sedimentary soils. The National Earthquake Hazard Reduction Program (NEHRP) has a library of maps based on soil characteristics to help identify locations subject to liquefaction. NEHRP Soils B and C typically can sustain low-magnitude ground shaking without much effect. The areas that are most affected by ground shaking have NEHRP Soils D, E, and F. Table 18-3 summarizes NEHRP soil classifications.

Shear is the change of shape, without change of volume, of a layer of the soil, produced by a pair of equal forces acting in opposite directions along the two faces of the layer. Shear waves are transverse waves – an example includes surface ripples on water. The average shear-wave velocity in the top 30 meters based on travel time from the surface to a depth of 30 meters is known as Vs30.

Table 18-2

Earthquake Magnitude Classes	
Magnitude Class	**Magnitude Range**
Great	M > 8
Major	7 ≤ M < 7.9
Strong	6 ≤ M < 6.9
Moderate	5 ≤ M < 5.9
Light	4 ≤ M < 4.9
Minor	3 ≤ M < 3.9
Micro	M < 3

Table 18-3

NEHRP Soil Classification System		
NEHRP Soil Type	**Description**	**Mean Shear Velocity to 30 m (m/s)**
A	Hard Rock	1,500
B	Firm to Hard Rock	760-1,500
C	Dense Soil/Soft Rock	360-760
D	Stiff Soil	180-360
E	Soft Clays	< 180
F	Special Study Soils (liquefiable soils, sensitive clays, organic soils, soft clays >36 m thick)	

18.2.6 Warning Time

Part of what makes an earthquake so destructive is their quick onset and lack of warning. The main shock of an earthquake is measured in seconds and rarely lasts more than a minute. Aftershocks can occur within the coming days, weeks, and months following a significant earthquake.

By studying the geologic characteristics of faults, scientists can often determine when the fault last moved and estimate the magnitude of the earthquake. Earthquakes in Colorado are infrequent; the historical record is limited and challenging to integrate into current estimates. There is currently no reliable way to predict when an earthquake will occur in any given location.

18.3 Cascading Impacts/Secondary Hazards

Earthquakes can cause landslides and mudslides of all sizes and severity. River valleys are vulnerable to slope failure due to the loss of cohesion in clay-rich soils. Liquefaction is when violent shaking of water-saturated sands, silts, or gravelly soils causes individual grains to lose contact with one another and float freely in the water, turning the soil into a semi-solid. Building and road foundations lose load-bearing strength and may sink into the ground. Hazardous materials that are improperly stored can be released, causing potential harm to human health, facilities, property, and the environment. Dams and levees are susceptible to seismic events, and the impacts of their failures can be considered a secondary hazard.

18.4 Potential Impacts from Future Climate Conditions

The impacts of global climate change and future climate conditions on earthquake probability are still unknown at this point. Climate change magnifies the secondary impacts of earthquakes. Soils saturated by repetitive storms are more likely to trigger liquefaction during seismic activity. Dams storing increased volumes of water due to changes in the hydrograph could fail during seismic events. There are currently no models available to estimate these impacts.

18.5 Exposure & Vulnerability

18.5.1 Population

The entire population of Teller County is at risk of direct and indirect impacts from earthquakes. The degree of exposure depends on a multitude of factors, including but not limited to age and construction of structures, soil types underneath those structures, and proximity to fault lines. The entire county will have to deal with the consequences of earthquakes to some degree. Business interruptions could prevent people from working, road closures can isolate persons or communities, and loss of utilities could impact populations that suffered no direct damage from the event itself.

Vulnerability

Three population groups are particularly vulnerable to earthquake hazards:

- **Linguistically Isolated Households** – Multiple households in the county do not speak English as their native language. Problems arise when there is an urgent need to inform non-English speaking residents of an earthquake event. Individuals that do not speak English, and English as a second language speakers, may struggle to understand hazard-related information and alert notifications from predominantly English-speaking media and government agencies.
- **Population Below Poverty Level** – The county is home to people and households with incomes below the poverty level. These people may lack the financial resources to improve their homes to prevent or mitigate earthquake damage. Low-income households are also less likely to have insurance to compensate for losses from earthquake events.
- **Population Over 65 Years Old** – This population group may require additional medical attention and could have difficulty evacuating after an earthquake, potentially leaving them isolated or stranded.

18.5.2 Property

According to County Assessor records, there are approximately 15,000 buildings in Teller County. Since all structures in the County are susceptible to earthquake impacts to varying degrees, this represents the Countywide property exposure to seismic events. Many of the buildings are residential.

The total number of parcels exposed to earthquake hazards in the unincorporated county is 19,993. Land types include agricultural, commercial, exempt, industrial, mixed use-commercial, mixed-use – agricultural residential, mobile home, residential, mining, and vacant land. Table 18-4 shows a summary of the acres in the county that are impacted by an earthquake with a peak ground acceleration of 0.100 to 0.121. Table 18-5 shows the number of parcels by land use type in unincorporated parts of the county that would be impacted by an earthquake with a peak ground acceleration of 0.100 to 0.121, and Table 18-6 shows the value of these parcels by land use type. Figure E-8 in Appendix E shows areas of the County within the peak ground acceleration ranges noted above.

Table 18-4

Sum of Acres	0.100-0.109	0.110 – 0.119	0.120 – 0.121	Grand Total
Cripple Creek	-	976	-	976
Green Mountain Falls	190	-	-	190
Unincorporated	84,919	264,586	2,237	351,743
Victor	-	182	-	182
Woodland Park	3,624	611	-	4,234
Grand Total	**88,732**	**266,356**	**2,237**	**357,325**

Table 18-5

Number of Parcels Exposed to Earthquake				
Land Type	**0.100-0.109**	**0.110-0.119**	**0.120-0.121**	**Grand Total**
Ag Residential	56	296	7	359
Agricultural	125	1,865	20	2,010
Comm Vacant	6	72	-	78
Commercial	8	87	-	95
Exempt	77	390	2	469
Industrial	2	4	-	6
Mineral	-	808	-	808
Mixed Use Comm	5	27	2	34
Mixed Use Res	2	3	-	5
Mobile Home	19	309	6	334
NONE	10	40	6	56
Producing Mine	-	284	-	284
Residential	1,138	6,493	31	7,662
Severed Mineral	-	1	-	1
State	1	21	-	22
State Assessed	-	2	-	2
Vacant Land	407	7,319	42	7,768
Grand Total	1,856	18,021	116	19,993

Table 18-6

Value of Parcels Exposed to Earthquake				
Land Type	**0.100-0.109**	**0.110-0.119**	**0.120-0.121**	**Grand Total**
Ag Residential	$1,632,350	$8,296,450	$258,830	$10,187,630
Agricultural	$96,610	$702,860	$31,060	$830,530
Comm Vacant	$115,300	$1,188,320	-	$1,303,620
Commercial	$2,138,100	$6,071,470	-	$8,209,570
Exempt	$10,686,870	$22,515,830	$18,970	$33,221,670
Industrial	$208,790	$59,250	-	$268,040

Mineral	-	$1,333,760	-	$1,333,760
Mixed Use Comm	$611,860	$1,948,770	$1,220,780	$3,781,410
Mixed Use Res	$91,600	$117,260		$208,860
Mobile Home	$101,160	$826,120	$24,530	$951,810
NONE	-	-	-	$-
Producing Mine	-	$33,680	-	$33,680
Residential	$26,997,810	$130,134,300	$618,080	$157,750,190
Severed Mineral		$10		$10
State	-	-	-	-
State Assessed	-	$9,030	-	$9,030
Vacant Land	$2,914,440	$49,163,450	$626,580	$52,704,470
Grand Total	**$45,594,890**	**$222,400,560**	**$2,798,830**	**$270,794,280**

Vulnerability

The County has adopted the 2015 International Building Code (IBC). The Code requires varying levels of seismic design, which depend on the importance factor determined by the structure's use and nature of occupancy. The American Society of Civil Engineers Standard Reference Number 7: Minimum Design Loads for Buildings and Other Structures determined the seismic provisions of the 2015 IBC. Structures that have the highest risk of injury or loss of life, or have critical community functions, have higher standards and codes for seismic design. Examples of these structures include schools, health care facilities, power-generating facilities, water and wastewater treatment facilities, police stations, and fire stations. Critical facilities have the highest design codes to make them more resistant to significant seismic activity; they also represent the highest vulnerability to earthquake losses within the County.

The Colorado Geological Survey performs subdivision development reviews to identify potential geologic problems and adequately address the issues. These reviews are required to be submitted by County planning departments for new subdivisions (voluntary for cities or towns) as required by Senate Bill 35 (1972). School sites must be submitted by school districts as directed by House Bill 1045 (1984). House Bill 1041 (1974) also requires reviews of the following: airports, landfills, water treatment plants, utility rights of way, highway rights of way, as well as the effects of large developments such as mines and ski areas.

18.5.3 Critical Facilities

All critical facilities in the County are at risk of the earthquake hazard. Table 18-7 lists the type and number of each facility by jurisdiction. An earthquake can cause a hazardous material release at fixed facilities or transportation-related incidents.

Vulnerability

The critical facilities in the unincorporated County that would be vulnerable to PGA hazards during an earthquake are in Table 18-7. The maximum considered event was used to estimate an earthquake expected to occur once in approximately 2,500 years; there is a 2 percent probability of exceeding this event in the next 50 years. The U.S. Geological Survey (n.d.a.) defines PGA as the largest increase in velocity recorded by a particular station during an earthquake, expressed as a fraction of standard gravity. For example, the Hayward Fault in California's highest number is 0.8, whereas the highest number in Teller County is 0.119.

Table 18-7

Teller County Critical Facilities Vulnerable to Earthquake Hazard, 2500 Year Peak Ground Acceleration	
Bridge	28
Communication	9
Electric Substation	7
EOC	1
Fire Station	14
Hospital	5
Law Enforcement	6
National Shelter System	12
School	11
Water Tank	7
Total	100

18.5.4 Environment

Secondary hazards associated with earthquakes will likely have the most damaging effects on the environment. Earthquakes impact the environment through landslides, flooding, damage from hazardous materials. Secondary hazards from earthquakes can cause fires and other cascading impacts on the environment.

Vulnerability

Environmental features vulnerable to earthquakes include areas of steep slopes, unstable soils, and water resources. Earthquakes can cause landslides, significantly damaging the surrounding habitat. Earthquakes can cause streams to reroute flow with changes in the topography. Rerouting can change water quality, resulting in damaged habitat and feeding areas. Streams fed by groundwater can dry up because of changes in underlying geology.

18.6 Development Trends

The Teller County Master Plan directs land-use, addresses growth management, and establishes standards and plans to protect the community from hazards. The Master Plan provides building standards through the Teller County code to ensure there is no increase in exposure in areas of high seismic risk. Development is regulated through building standards and performance measures to reduce risk. The International Building Code also establishes provisions to address seismic risk. There will be no change in vulnerability or exposure based on development trends within the County.

18.7 Issues

Important issues associated with an earthquake include but are not limited to the following:

- Many of the County's buildings pre-date 1975 when seismic provisions became uniformly applied through building code applications.
- Critical facility owners should create or enhance continuity of operations plans using the information on risk and vulnerability to earthquakes.

- There are earthen dams within the planning area that are vulnerable to earthquakes.
- Establish appropriate geotechnical standards that consider the probable impacts of earthquakes in the design and construction of new or expanded facilities.
- Earthquakes could trigger other natural hazard events such as dam failures, landslides, or volcanic activity, which could severely impact County facilities.
- A worst-case scenario would be the occurrence of a large seismic event during a flood or high-water event. Levee failures would happen at multiple locations, increasing the impacts of individual events.

1

Teller County 2021 Hazard Mitigation Plan

Part 3: Mitigation Strategy

Mitigation Strategy

19. Introduction

Part 3 describes the County's mitigation strategy, which is the primary focus of the County's mitigation planning efforts. This strategy represents the blueprint for the approaches chosen by the County to reduce or prevent losses caused by the hazards identified in Part 2 of the HMP, Chapters 6 through 17.

The strategy has three required components: mitigation goals and objectives, mitigation actions, and an action plan implementation process (see Figure 4). These components provide the framework to identify, prioritize, and implement actions to reduce risk from hazards.

Figure 4 Mitigation Strategy Process



20. Mitigation Goals and Objectives

Teller County and its planning partners established a guiding principle, a set of goals, and specific objectives for hazard mitigation in the 2015 HMP. The guiding principle provides an overarching vision for risk reduction in the community. Mitigation goals represent what the County and its partners seek to achieve through implementing the mitigation action plan. The goals are general guidelines and provide a framework for identifying more detailed objectives and actions. The HMC reviewed the goals and objectives from the 2015 HMP and determined that the previous goals and objectives still meet current planning priorities; therefore, the goals and objectives included in the 2021 plan update are substantially the same as the goals and objectives from the previous plan.



The guiding principle encompasses the range of objectives and actions to be considered. The guiding principle for the 2021 Teller County HMP update is:

Through public and private partnerships among local, state, and federal partners, reduce the risk to natural hazards in order to ensure the health, safety, welfare, and economic sustainability of the community.

The goals and objectives for the 2021 HMP update are listed below. The goals are general guidelines and provide a framework for identifying more detailed objectives and actions. Objectives are steps the County intends to complete to achieve the plan goals and will help to measure the effectiveness of the County's mitigation strategy and actions.

- **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
    - **Objective 1a:** Increase safety and disaster resilience in Teller County communities.
    - **Objective 1b:** Maintain essential services, facilities, and infrastructures before, during, and after hazard events.
- **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
    - **Objective 2a:** Reduce the vulnerability of structures, homes, and businesses.
    - **Objective 2b:** Encourage businesses, the public, and the community overall to reduce their vulnerability to identified hazards within Teller County.
- **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
    - **Objective 3a:** Strengthen and support Countywide disaster and emergency response efforts.
    - **Objective 3b:** Protect, maintain, and reduce the vulnerability of critical facilities, infrastructure, and essential services.
- **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.
    - **Objective 4a:** Maintain and enhance community information sharing.
    - **Objective 4b:** Maintain public education outreach efforts.

21. Development of Mitigation Actions

A mitigation action is a specific action, project, activity, or process taken to reduce or eliminate long-term risk to people and property from hazards and their impacts. Implementation of mitigation actions helps achieve the region's mitigation goals and minimize vulnerability to the threats and hazards identified in the plan. Mitigation plan regulations require the County and its partners to identify and analyze a comprehensive range of specific mitigation actions and projects to reduce the impacts identified in the County's risk assessment.

21.1 Development of Mitigation Actions

As part of the mitigation strategy update, members of the HMC evaluated all mitigation actions identified in the 2015 HMP to determine the status of the action and whether to include any ongoing or incomplete actions as mitigation actions in the 2021 plan update. During Meeting #2, members of the HMC worked through each action in the



2015 plan to document the status of the action. See Appendix A for an overview of the status of all actions from the 2015 plan update.

21.2 Identification and Analysis of Mitigation Actions

To achieve the mitigation goals identified above, the County and its partners have identified a comprehensive range of mitigation actions that are focused on reducing vulnerability and maximizing loss reduction. The actions can typically be broken out into the following types of activities, as indicated in Table 21-1:

- **Local Plans and Regulations:** Regulatory actions or planning processes that reduce vulnerability to hazards.
- **Structure and Infrastructure Projects:** Actions that involve modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area.
- **Natural Systems Protection:** Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems.
- **Education and Awareness Programs:** Actions that inform and educate citizens, elected officials, and property owners about hazards and possible ways to mitigate them.

Mitigation actions developed by the County and its planning partners are in the mitigation implementation plan provided in Chapter 21. The actions include both short- and long-term strategies for reducing vulnerabilities to hazards and are characterized as such in the "life of action" column of Table 21-1.

Table 21-1

2021 Mitigation Actions by Group	
Mitigation Group	**Related Mitigation Actions**
Local Plans and Regulations	MH-1, MH-2, MH-4, FL-1, SS-1, WF-2, WF-3, LS-1, TH-1, EP-2, FL-3, DF-1, EQ-2, EQ-6, FL-5, WF-9, WF-10, WF-11, WF-12, DF-3, DF-5
Structure and Infrastructure Projects	MH-3, MH-6, MH-8, WF-7, DR-1, EQ-3, EQ-4, MH-11, MH-12, MH-13, FL-4, DF-2, WW-2, MH-14, SS-2, MH-16, FL-6, FL-7, DF-4, MH-18, WF-10
Natural Systems Protection	FL-2, WF-1, WF-4, WF-5, WF-6
Education and Awareness Programs	MH-5, MH-7, WF-5, WF-8, EP-1, EP-2, HM-1, EQ-1, WW-1, MH-9, WF-6, EQ-5, MH-10, MH-15, MH-17, WF-9, WF-12, WF-13

21.3 2021 Mitigation Actions by Hazard

All mitigation actions identified in the plan address at least one of the hazards profiled in Chapters 6 through 17. Table 21-1 indicates which mitigation actions address which hazards.

Table 21-2

2021 Mitigation Actions by Hazard	
Hazard	**Related Mitigation Actions**
Multiple Hazards	MH-1 – MH-18
Flood	FL-1 – FL-7
Subsidence, Sink Holes, and Soil Erosion	SS-1, SS-2
Wildfire	WF-1 – WF-13
Landslide	LS-1
Tornado	TH-1
Thunderstorms, High Winds, and Hail	TH-1
Epidemic/Pandemic	EP-1, EP-2
Dam Failure	DF-1 – DF-5
Hazardous Materials	HM-1
Drought and Extreme Temperature	DR-1
Earthquake	EQ-1 – EQ-6
Severe Winter Weather	WW-1, WW-2

21.4 Evaluating and Prioritizing Mitigation Actions



Following HMC Meeting #2, members of the HMC completed worksheets to develop new 2021 mitigation actions. The worksheets included the following summary information shown in Table 21-3. For the 2021 plan update, expanded mitigation action descriptions identify the FEMA lifelines and set prioritization of Colorado resiliency criteria that each action would support. The lifelines and resiliency prioritization criteria are tools FEMA and the Colorado Division of Homeland Security, and Emergency Management developed to prioritize hazard mitigation projects and ensure these projects and actions are meeting critical community needs. The lifelines and resiliency prioritization criteria that each mitigation action would address are included in Appendix A.

Table 21-3

Summary information for Mitigation Action	
Description of the Action	**Specific** – Target a particular area for improvement **Measurable** – Quantify or at least suggest an indicator of progress **Assignable** – Specify who will do it

	Realistic – State what results can be achieved realistically, given available resources **Time-related** – Specify a timeline/timeframe to realistically achieve the result(s)
Action Status	**New** – Including an action for the first time **Existing** – The action was implemented before the 2021 plan update but is ongoing and additional or requires ongoing actions **Complete** – The action is complete
Type of Action	Local Plans and Regulations Structure and Infrastructure Projects Natural Systems Protection Education and Awareness Programs
Lead and supporting departments	Local or County agencies Other Partners
Timeline for Implementation	Less than 1 year (Short-Term) 1 to 3 years (Mid-Term) 3 to 5 years (Long-Term)
FEMA Lifelines Supported by the Action	Safety and Security Food, Water, Shelter Health and Medical Energy (Power and Fuel) Communications Transportation Hazardous Materials
Colorado Resiliency Prioritization Criteria Supported by the Action	Co-Benefits High Risk and Vulnerability Economic Benefit-Cost Social Equity Technical Soundness Innovation

	Adaptive Capacity Harmonize with Existing Activity Long-term and Lasting Impact
Other	Hazards Addressed by the Action Anticipated Cost and Funding Source Mitigation Goals Supported by the Action

Table 21-6 provides a complete mitigation implementation plan. Status updates for the mitigation actions that were included in the 2015 HMP and worksheets for new 2021 mitigation actions are in Appendix A.

21.5 Minimizing Loss

The County's mitigation strategy supports the mitigation goals identified in Chapter 19. However, equally important, the County and its partners seek to prioritize actions that lead to the greatest return on investment. The mitigation strategy incorporates the ultimate goal of the HMP, which is to minimize loss.

21.6 STAPLEE Analysis

The STAPLEE criteria self-evaluated each new mitigation action in the 2021 plan update, as described in Table 21-4. Members of the HMC rated each STAPLEE criteria to produce a total score that determined the relative priority of each action.

Table 21-4

STAPLEE Criteria	
STAPLEE Criteria	Evaluation Rating
S: Is it Socially acceptable?	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	
P: Is it Politically acceptable?	
L: Is there Legal authority to implement?	
E: Is it Economically beneficial?	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	

21.7 Mitigation Effectiveness Analysis

In addition to the STAPLEE analysis, members of the HMC rated the effectiveness of each new action developed during the 2021 planning process, as described in Table 21-6.

Table 21-5

Mitigation Effectiveness Criteria	
Mitigation Effectiveness Criteria	**Evaluation Rating**
Will the implemented action result in lives saved?	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	High = 5 Medium = 3 Low = 1

STAPLEE scores can range from a low of 0 to a high of 21. Mitigation effectiveness scores can run from a low of 2 to a high of 10. When these scores are combined, mitigation actions can score within a range of 2 to 31 points. The combined STAPLEE and mitigation effectiveness scores for each new mitigation action identified in this plan will serve as one of the tools the County and its partners use in prioritizing the mitigation actions they wish to pursue during the next planning cycle. Of course, actions may also be prioritized based on available funding, emerging hazards, or because they align with priorities identified in other planning efforts.

All mitigation actions included in the plan are prioritized based on the benefit to the community as high, medium, or low. Existing mitigation actions that benefit the community carried over. For new mitigation actions, the combined mitigation effectiveness and STAPLEE scores determined the high, medium, or low status:

- A new mitigation action score between 2 and 12, ranked low.
- A mitigation action score from 13 to 22, ranked medium.
- A mitigation action score of 23 or above ranked high.

FEMA regulations do not require a formal cost-benefit analysis to accept an HMP; however, FEMA does require a formal cost-benefit analysis of mitigation measures to approve a Hazard Mitigation Assistance grant funding application. Any future mitigation grant applications require a formal cost-benefit analysis.

Costs for each action were rated high, medium, or low using the method used in the previous HMP.

- **High:** Existing funding will not cover the cost of the project; implementation would require new revenue through an alternative source (for example, bonds, grants, or fee increases).

- **Medium:** The project could be implemented with existing funding but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
- **Low:** the project could be funded under the existing budget. The project is part of or can be part of an ongoing existing program.

21.8 2021 to 2026 Mitigation Implementation Plan

FEMA	**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 [Teller County]? (Requirement §201.6(c)(3)(iii))

The mitigation implementation plan in Table 21.6 lays the groundwork for how mitigation actions will be prioritized, implemented, and administered by the County and its partners. The implementation plan includes both short-term actions that focus on planning and assessment activities and long-term actions that will result in changes to natural systems or structural projects that reduce vulnerability to hazards. Status updates for the mitigation actions included in the 2015 HMP and worksheets for new 2021 mitigation actions are in Appendix A.

Table 21-6

2021 – 2026 Mitigation Implementation Plan									
ID	**Mitigation Action**	**Action Status**	**Type of Action and Hazard Addressed**	**Goals**	**Lead Entity**	**Support Entity**	**Implement Timeline + Anticipated Cost + Funding Source**	**STAPLEE + Mitiga-tion Effect-ivness Score**	**Priority: low, med, high**
Teller County									
MH-1	Future updates of the Growth Management Plan will include data from the current HMP and incorporate risk reduction principles	Existing	Local Plans and Regulations Multiple	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	County Administrators and Board of County Commissioners	-	Long-term Medium General fund and Community Development Block Grant (CDBG)	N/A	Low
MH-2	Update Teller County codes and policies as necessary and warranted by changing current conditions and potential effects of natural hazards	Existing	Local Plans and Regulations Multiple	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	County Administrator and the Board of County Commissioners	-	Ongoing Medium General Fund and CDBG	N/A	Med
MH-3	Continue to work with the Colorado Department of Transportation and neighboring jurisdictions to reduce hazards of flooding and landslides on the County's transportation routes	Existing	Structure and Infrastructure Projects Multiple	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	General/staff time. Federal Highway Administration	-	Ongoing Low Teller County Public Works Department	N/A	Low

MH-4	Sustain protection for critical infrastructure per implemented standard operating procedures (e.g., facility maintenance plans, etc.)	Existing	Local Plans and Regulations Multiple	1(a), 1(b), 2(b), 3(a), 3(b)	Teller County Public Works Department	-	Ongoing High General fund, Capital Improvement funds	N/A	Med
MH-5	Teller County will continue to cost-share through general funds provided to the Coalition for Upper South Platte, for the operations and maintenance of a County facility used to accept and recycle tree and shrub mitigation slash from the citizens of Teller County to educate on wildfires, soil erosion, and flooding	Existing	Education and Awareness Programs Multiple	1(a), 2(a), 2(b), 3(b), 4(a), 4(b)	Teller County Public Works	-	Short-term Low General fund	N/A	Low
MH-6	Generally, the loss of communication is due to severe thunderstorms, high winds, and lightning. Teller County continues to upgrade lightning and grounding protection equipment while building an inventory of readily available communication	Existing	Structure and Infrastructure Projects Multiple	1(a), 1(b), 2(a), 2(b), 3(a), 3(b), 4(a)	Teller County OEM	-	Short-term Medium General fund, Public Safety Comm-unications grant (as available)	N/A	Med

	replacement parts and supplies.								
MH-7	County must continue to improve its capability to ensure the inclusion of more citizens' participation in using available dissemination tools.	Existing	Education and Awareness Programs Multiple	1(a), 1(b), 3(a), 4(a), 4(b)	Teller County Sheriff's Office	-	Short-term Medium General fund, Homeland Security Grants, Enhanced 911 funds	N/A	High
MH-8	Continue to work with CDOT and neighboring jurisdictions to maintain safe ingress/egress for County residents heading in and out of the County	Existing	Structure and Infrastructure Projects Multiple	1(a), 1(b), 2(b), 3(a), 3(b), 4(a), 4(b)	Teller County Public Works, together with OEM	-	Ongoing Low General fund	N/A	Med
FL-1	Continue to reduce flood losses through compliance with NFIP and implementation of floodplain management	Existing	Local Plans and Regulations Flood	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	Teller County OEM	Public Works	Ongoing Low General Fund	N/A	Med
FL-2	Continue to improve floodplain and tributary hydrology/drainage, through engineering and eventual stabilization, modification, expansion, and improvement of floodplain and drainages	Existing	Natural Systems Protection Flood	1(a), 2(a), 3(b)	Teller County Public Works	-	Long-term High General Fund	N/A	Med

	within the Teller County boundaries								
SS-1	Working with local mine owners, identify areas at increased risk of subsidence, sink holes, or soil erosion based on previous mining or other development activities for inclusion in the next HMP update	New	Local Plans and Regulations Subsidence, Sink Holes, and Soil Erosion	1(a), 4(a)	Teller County OEM	CO Division of Reclamation, Mining, and Safety and Cripple Creek & Victor Mine	1 – 3 years/ Mid-term Low General Fund	21	Med
WF-1	Reduce the potential impacts of wildfire through an aggressive fuel reduction program on public and private lands	Existing	Natural Systems Protection Wildfire	1(a), 1(b), 2(a), 2(b), 3(a), (3b), 4(a), 4(b)	Teller County OEM	-	Ongoing Low General Fund	N/A	High
WF-2	Continue to update Teller County community wildfire protection plans, Woodland Park Healthy Forest Initiative, and assistance with Firewise Plans	Existing	Local Plans and Regulations Wildfire	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	Teller County Administrator, Board of County Commissioners, OEM, Fire District, USFS	-	Ongoing High General Fund, USDA, USFS, and State grant funds	N/A	High
WF-3	Form a Teller County Wildfire Council to mitigate fire risk	New	Local Plans and Regulations Wildfire	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	Teller County OEM	Public Works, Public Health, Information Technologies, Department of Human Services, Sheriff's Office, Finance, Community Development Services, Extension, Woodland	3-5 years/ Long-term Low General Fund	14	High

						Park, Cripple Creek, Divide Fire, USFS, BLM, Florissant Fire, 4Mile Fire, Victor, NETCO, UPRAD, SWTC			
WF-4	Continue to work with partners on mitigation projects around Woodland Park, Teller County, and Ute Corridor – wildfire in and around the City of Woodland Park and Teller County	New	Natural Systems Protection Wildfire	1(a), 1(b), 2(a), 2(b), 3(a), 3(b), 4(a), 4(b)	Teller County OEM and NE Teller County Fire	All other Fire and EMS agencies, including Sheriff's office and police department	3-5 years/ Long-term High General Fund; Grant Funding	16	High
WF-5	Establish a wood-chipping program that will assist residents in chipping woody debris and maintaining defensible space on their properties	New	Education and Awareness Programs/ Natural Systems Protection Wildfire	1(a), 2(a), 2(b)	Teller County OEM and NE Teller County Fire	All other County fire agencies	1-3 years/ Mid-term Low General Fund	29	High
WF-6	Re-establish the Teller County Wildfire Council and implement the recommendations of the 2020 Community Mitigation Assistance Team (CMAT) report as appropriate	New	Education and Awareness Programs/ Natural Systems Protection Wildfire	1(a), 1(b), 2(a), 2(b), 3(a), 3(b), 4(a), 4(b)	Teller County OEM	All County fire agencies, members of the Teller County Wildfire Council	3 to 5 years/ Long-Term Medium General Fund, Partner Funding	29	High
WF-7	Plan for and construct alternate evacuation routes for communities with single ingresses/egresses, as identified and appropriate	New	Structure and Infrastructure Projects	1(a), 3(a)	Teller County Wildfire Council	Teller County OEM, Teller County Community Development Services, Teller County Public Works, Homeowners Associations, County Administrator	3 to 5 years/ Long-Term High BRIC, Forest Restoration and Wildfire Risk	27	High

							Mitigation Grant		
LS-1	Continue to identify and mark areas of high landslide risk. Compile this information to include in the next HMP update	Existing	Local Plans and Regulations Landslide	1(a), 3(a), 4(a), 4(b)	Teller County Search and Rescue and Teller County OEM	-	Ongoing Low General Fund	20	Med
TH-1	Adopt current versions of building codes as appropriate to ensure minimum safety standards (particularly related to wind loads and roof construction) for homes and other buildings in the County	New	Local Plans and Regulations Thunderstorms, High Winds, and Hail/ Tornado	1(a), 2(a)	Teller County Building Department	County Administration, County OEM	1 – 3 years/ Long-term Low General Fund	24	High
EP-1	Integrate with partners to slow the spread of COVID-19	New	Education and Awareness Programs Epidemic	1(a), 1(b), 2(a), 2(b), 3(a), 3(b), 4(a), 4(b)	Teller County OEM	Public Works, Public Health, Information Technologies, Department of Human Services, Sheriff's Office, Finance, Community Development Services, Extension, Woodland Park, Cripple Creek, Divide Fire, USFS, BLM, Florissant Fire, 4Mile Fire, Victor, NETCO, UPRAD, SWTC	1-3 years/ Long-term Low General Fund	14	High
EP-2	Increase contact tracing, improve testing, and community compliance related to COVID-19	New	Education and Awareness Programs/ Local Plans and Regulations	1(a), 1(b), 2(a), 2(b), 3(a), 3(b),	Teller County Office of Emergency Management	Teller County Public Health, Administration, Sheriff's Office, Fire Department, EMS, Finance, Local Municipalities	1-3 years/ Long-term Low	11	High

			Epidemic	4(a), 4(b)			State of Colorado Emergency Funding		
HM-1	Educate the public on safely using and storing necessary flammable materials, including machine fuels. Only store gasoline, oily rags, and other flammable materials in approved safety cans	New	Education and Awareness Programs Hazardous Materials	1(a), 1(b), 2(a), 2(b), 3(b), 4(a), 4(b)	County OEM and County FPDs	-	< 1 year/ Short-term Low General Fund	19	Med
DR-1	Identify new well sites for communities affected by dropping water tables and redundant sources of water, potentially through a service agreement with a regional supplier	New	Structure and Infrastructure Projects Drought and Extreme Temperature	1(a), 2(a), 3(b)	Community water suppliers	County OEM	1 – 3 years/ Long-term High Utility fees	18	Low
EQ-1	Assess and identify the vulnerability of key County facilities as to potential levels of impact and incorporate earthquake preparedness information as part of public information emergency preparedness campaign	Existing	Education and Awareness Programs Earthquake	1(a), 1(b), 2(a), 2(b), 3(b), 4(a), 4(b)	Teller County OEM	-	Ongoing Medium General fund, EMPG, and DHS preparedness grants	N/A	Low
WW-1	Establish a Teller County Emergency Response Team (multijurisdictional) for severe winter	New	Education and Awareness Programs	1(a), 1(b), 2(a), 2(b),	Teller County OEM	Public Works, Public Health, Information Technologies, Department of Human	<1 year Low	14	High

	weather (e.g., snowstorms) to identify mitigation needs		Severe winter weather	3(a), 3(b), 4(a) 4(b)		Services, Sheriff's Office, Finance, Community Development Services, Extension, Woodland Park, Cripple Creek, Divide Fire, USFS, BLM, Florissant Fire, 4Mile Fire, Victor, NETCO, UPRAD, SWTC	General Fund		
Woodland Park									
MH-9	Work with E-911 to have an event at the Senior Center to aid seniors in signing up for peak alerts	New	Education and Awareness Programs Multiple	1(a), 1(b), 3(a), 4(a), 4(b)	Woodland Park Police Department, Emergency Management	E-911	Less than 1 year/ Short-term Low General Fund; Partnership with E-911	19	Med
FL-3	Update and revise Woodland Park Stormwater Management Plan	Existing	Local Plans and Regulations Flood	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	Woodland Park City Engineer	-	Ongoing Medium General fund	N/A	High
WF-8	Undertake an emergency awareness program to educate the City's citizens on what they can do to mitigate risks to their own property in case of wildfires- utilizing the Firewise Program	Existing	Education and Awareness Programs Wildfire	1(a), 2(a), 2(b), 3(a), 4(a), 4(b)	Woodland Park Police Department-Emergency Management	-	Ongoing Low General fund and Emergency Management Grants	N/A	Low

DF-1	Conduct a dam break analysis and emergency action plan for the City-owned reservoir on Loy Creek	Existing	Local Plans and Regulations Dam Failure	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	Woodland Park Utilities Director	-	Short-term Low City Utility and General Fund	N/A	Med
EQ-2	City will conduct a detailed earthquake vulnerability analysis for Woodland Park to utilize the results for the need for increased standards and potential hardening of buildings, especially critical facilities	Existing	Local Plans and Regulations Earthquake	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	Woodland Park City Engineer	-	1-3 years/ Mid-term Medium General fund	N/A	Med
EQ-3	Implement a plan to install a number of automatic gas shut off valves per year in the City in case of a seismic event	New	Structure and Infrastructure Projects Earthquake	1(b), 3(b)	Woodland Park Buildings and Grounds	Woodland Park Finance, Woodland Park Streets, Black Hills Energy	3-5 years/ Long-term High General Fund, Utility Fees, Grant Funding	28	High
EQ-4	Implement a plan to secure all hot water tanks in City buildings in case of a seismic event to reduce the risk of injury and infrastructure damage	New	Structure and Infrastructure Projects Earthquake	1(b), 3(b)	Woodland Park Buildings and Grounds	Woodland Park Finance	3-5 years/ Long-term Medium General Fund, Grant Funding	24	High
EQ-5	Educate the public on earthquake risks	New	Education and Awareness Programs Earthquake	1(a), 2(b), 4(a), 4(b)	Woodland Park Police Department-Emergency Management	-	3-5 years/ Long-term Low	16	Med

							General Fund; Emergency Management Grants		
EQ-6	Develop a post-disaster action plan for earthquakes	New	Local Plans and Regulations Earthquake		Woodland Park Police Department-Emergency Management	-	3-5 years/ Long-term Low General Fund; Emergency Management Grants	16	Med
Cripple Creek									
MH-10	Continue to inform the citizens and tourists of the City of Cripple Creek about emergencies, severe weather updates, dangers, etc. through website	Existing	Education and Awareness Programs Multiple	1(a), 1(b), 2(a), 2(b), 3(a), 3(b), 4(a), 4(b)	Cripple Creek Dispatch	-	Ongoing Medium General fund and Grants	N/A	High
MH-11	Work with Colorado Division of Reclamation, Mining, and Safety as well as the Cripple Creek & Victor mine to correct and prevent sinkholes, soil erosion, flooding, and landslides due to past, present, and future mining operations	Existing	Structure and Infrastructure Projects Multiple	1(a), 1(b), 2(a), 3(a), 3(b)	Cripple Creek Public Works	CO Division of Reclamation, Mining, and Safety, Cripple Creek & Victor Mine	Ongoing High State and Grant Funding	N/A	Med

MH-12	Develop infrastructure to redirect potential flooding off the City's wastewater treatment plant facility and processing ponds. The wastewater treatment plant is on a sizable floodplain.	New	Structure and Infrastructure Projects Multiple	1(a), 1(b), 2(a), 2(b), 3(b)	Water/Waste water Department; City of Cripple Creek	Public Works Department – City of Cripple Creek; Army Corps of Engineers	1-3 years/ Mid-term High DOLA or State Water Resources Grant	21	Med
MH-13	Develop infrastructure to mitigate or redirect potential flooding at the City's Water Treatment Plant	New	Structure and Infrastructure Projects Multiple	1(a), 1(b), 2(a), 3(b)	Water/ Wastewater Department	Public Works Department – City of Cripple Creek; Army Corps of Engineers	1-3 years/ Mid-term High DOLA or State Water Resources Grant	29	High
FL-4	Continue to improve the City of Cripple Creek infrastructure and stormwater projects to minimize the impact of localized flooding	Existing	Structure and Infrastructure Projects Flood	1(a), 1(b), 2(a), 2(b), 3(b)	Cripple Creek Public Works	-	Ongoing High General fund	N/A	Low
FL-5	Work with FEMA and/or the Colorado Water Conservation Board to update floodplain maps in the city	New	Local Plans and Regulations Flood	1(a), 1(b), 2(a), 2(b), 4(a)	Building Director	Public Works; FEMA; Colorado Water Conservation Board; Double Eagle Hotel and Casino	1 – 3 years/ Mid-term Low Enterprise fund	23	High
WF-9	Continue to educate the public on wildfire mitigation and preparation using the National Fire Protection Association's Firewise program	Existing	Education and Awareness Programs Wildfire	1(a), 1(b), 2(a), 2(b), 3(a), 4(a), 4(b)	Cripple Creek Fire Chief	-	Ongoing Low General fund and National Fire Protection	N/A	High

							Association Grants		
DF-2	Assess maintenance needs at Cripple Creek #2 and Cripple Creek #3 dams and complete repairs as needed	New	Structure and Infrastructure Projects Dam Failure	1(a), 1(b), 2(a), 3(b)	Cripple Creek Public Works	-	1 – 3 years/ Mid-term Low Enterprise fund	31	High
DF-3	Create dam inundation maps for the Cripple Creek #2 dam, showing the limits of dam failure flooding, to increase understanding of dam failure risks in the community. Evaluate the need for dam inundation maps for the Cripple Creek #3 dam.	New	Local Plans and Regulations Dam Failure	4(a)	City of Cripple Creek	Colorado Division of Water Resources, Dam Safety Branch	Less than 1 year/ Short-term Medium General Fund, National Dam Safety Program State Assistance Grants	23	High
WW-2	Work with Colorado Department of Transportation, Teller County, and Cripple Creek Public Works to improve infrastructure and minimize the impacts of severe winter weather. Repave Galena Avenue, Bennett Street, and other main thoroughfares.	Existing	Structure and Infrastructure Projects Severe Winter Weather	1(a), 1(b), 2(a), 3(a), 3(b)	Cripple Creek Public Works	CDOT	Ongoing Low General and State funding/ budgets	N/A	High
City of Victor									
MH-14	Improve perimeter security of the Bison Reservoir Dam, which is a major water supply for both the City and the wildland-urban interface	Existing	Structure and Infrastructure Projects Multiple	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	City Admin-istrator	-	Short-term Medium Department of Homeland	N/A	High

							Security, in cooperation with Cripple Creek and Victor Gold Mine		
MH-15	Work together with Teller County and the Cripple Creek/V Gold Mine educate the community as to all-hazards preparedness for potential emergencies and disasters	Existing	Education and Awareness Programs Multiple	1(a), 1(b), 2(a), 2(b), 3(a), 3(b), 4(a), 4(b)	Victor Fire Chief	Teller County OEM, Sheriff, Cripple Creek, and Victor Gold Mine Health and Safety Manager	Ongoing Low General fund, DHS, private donations (Cripple Creek and Victor Gold Mine)	N/A	Low
MH-16	Replace water valve tower (100+ years old) in Reservoir #2, which is threatened by soil erosion/subsidence, to mitigate threat to city's water supply and threat of dam failure	New	Structure and Infrastructure Projects Multiple (Subsidence, Sink Holes, and Soil Erosion; Dam Failure)	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	City of Victor	-	Less than 1 year/ Short-term High CC&V, DOLA, State Loan	29	High
FL-6	Increase size, basin, and replace aged equipment of WWTF; WWTF is a few years from reaching life expectancy. This action would reduce impervious surface in the floodplain and would update the WWTF to comply with floodplain regulations.	New	Structure and Infrastructure Projects Flood	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	City of Victor	-	1-3 years/ Mid-term High DOLA, State, user fees increase	25	High

FL-7	Continue to improve upgrading the Victor flood control infrastructure through improving conditions of streets and curbs and the installation of new culverts and street drainage systems	Existing	Structure and Infrastructure Projects Flood	1(a), 1(b), 2(a), 2(b), 3(b)	Victor City Administrators Office	-	Annually/ Ongoing High Colorado Department of Local Affairs and CDBG Grants	N/A	Med
SS-2	Recap Landfill due to age and to prevent soil erosion/contamination of nearby streams and land	New	Structure and Infrastructure Projects Subsidence, Sink Holes, and Soil Erosion	2 (a), 2(b), 3 (a), 3(b)	City of Victor	-	1-3 years/ Mid-term High Grant (e.g., EPA Brownfield)	21	Med
WF-10	Upgrade the water supply by increasing the volume of available storage and increasing water pressure- upgrading water distribution infrastructure by providing increased water pressure to increase the ability to fight fires in the wildland-urban interface	Existing	Structure and Infrastructure Projects Wildfire	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	City Administrator	-	Short-term High Colorado Department of Local Affairs and CDBG grants and Power and Water Development Authority	N/A	High
WF-11	Develop a Community Wildfire Protection Plan (CWPP)	New	Local Plans and Regulations Wildfire	1(a), 1(b), 2(a), 2(b), 4(a), 4(b)	City Administrator	-	1 – 3 years/ Mid-term High	25	High

							State Fire Assistance Program and other grant funding		
DF-4	Assess maintenance needs and repair aging infrastructure and water pipelines at Victor #2 and Bison Park dams	New	Structure and Infrastructure Projects Dam Failure	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	City of Victor	Colorado Department of Local Affairs Newmont Mine State of Colorado	1 – 3 Years/ Mid-term Medium CIP Funds, State Grant Funding	29	High
DF-5	Create dam inundation maps for the Victor #2 and Bison Park dams, showing the limits of dam failure flooding, to increase understanding of dam failure risks in the community.	New	Local Plans and Regulations	4(a)	City of Victor	Colorado Division of Water Resources, Dam Safety Branch	Less than 1 year/ Short-term Medium CIP Funds, National Dam Safety Program State Assistance Grants	23	High
Four Mile Fire Protection District									
MH-17	Establish a resident coalition between the district homeowners associations (HOAs) and landowner associations to identify and prioritize hazard mitigation projects, including fuels management projects	New	Education and Awareness Programs Multiple (Wildfire, Flood, Drought, and others as identified)	1(a), 2(a), 2(b), 4(a), 4(b)	Four Mile FPD	CUSP Teller County OEM		1 – 3 years Low Grant Funding, County General Fund	21

MH-18	Work with HOAs to establish new water sources to supplement low-flow wells	New	Structure and Infrastructure Projects Multiple (Drought, Wildfire)	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	Four Mile FPD	HOAs	1 – 3 years Medium Community Fundraising	29
WF-12	Expand the community risk assessment for wildfire risk to include all subdivisions in the Four Mile FPD	New	Education and Awareness Programs/ Local Plans and Regulations Wildfire	1(a), 2(a), 2(b), 4(a), 4(b)	Four Mile FPD	-	3 – 5 years Low FPD Operating Funds	22
WF-13	Continue program to assess wildfire risks at individual residential properties and make recommendations regarding maintaining defensible space	New	Education and Awareness Programs Wildfire	1(a), 2(a), 2(b), 4(a), 4(b)	Four Mile FPD	-	Ongoing Low FPD Operating Funds, NFPA Firewise Program Funding	22

Plan Adoption

Section 201.6(c)(5) of 44 CFR requires documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting federal approval of the plan. For multi-jurisdictional plans, each jurisdiction requesting approval must document that is has been formally adopted. Before adoption, the plan will go to FEMA and the DHSEM for a pre-adoption review. Once DHSEM and FEMA approve the pre-adoption, the planning partners will formally adopt the plan update. All five partners understand the plan must be adopted before the HMP is DMA compliant and eligible for the associated benefits. Copies of the resolutions adopting this plan for all planning partners are on file with Teller County and included in Appendix C.

22. Plan Implementation and Maintenance Strategy

22.1 Overview

44CFR Section 201.6(c)(4) requires HMPs to outline a plan maintenance process that includes the following:

- The method and schedule of monitoring, evaluating, and updating the mitigation plan within a five- year cycle
- A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate
- A discussion of how the community will continue public participation in the plan maintenance process

This section details the formal process that will ensure that the Teller County Multi-Jurisdictional HMP will meet these requirements and remain an active and relevant document and that the planning partners maintain their eligibility for applicable funding sources. The plan's format allows the partners to review and update sections when new information becomes available. Easily incorporate new data as it becomes available, ensuring the plan remains current and relevant.

22.2 Implementation

The effectiveness of the HMP depends on the implementation of the plan and incorporation of the outlined action items into existing plans, policies, and programs. The updated plan includes a range of action items that, if implemented, would reduce losses from hazard events in the Teller County planning area. Together, the action items in the plan update provide the framework for activities that the partnership can choose to complete over the next five years. The HMC established goals and objectives and prioritized mitigation actions implemented through existing plans, policies, and programs.

The Teller County OEM will assume lead responsibility for planning and facilitating implementation and maintenance meetings. Although the Teller County OEM will have primary responsibility for convening these meetings, plan implementation and evaluation will be a shared responsibility among all planning partners and agencies identified as lead agencies in the mitigation action plans.

22.3 Hazard Mitigation Committee

The HMC is made up of volunteers and paid staff who contributed significantly to the development of the updated plan. The purpose of this committee was to oversee the development of the plan update and make recommendations on key elements, including the maintenance strategy. The HMC should remain a viable body with an active role in the plan's maintenance strategy.

The HMC should include representatives of the planning partner organizations, the residents of Teller County, and other stakeholders. The HMC will convene to perform annual reviews at a place and time to be determined. The make-up of this committee can be dynamic, which will allow differing views to have a say in the implementation of the plan. The Teller County OEM will strive for accurate "stakeholder" representation on this committee. Individuals involved in this plan update process will be contacted and given the option to remain involved in the process.

A committee similar to the one that participated in this HIM will oversee the development process. Keeping an interim steering committee intact provides a head start on future updates.

22.4 Annual progress report

The minimum task of the HMC will be evaluating the progress of the plan, including the following:

- Summary of any hazard events that occurred during the prior year and their impact on the planning area
- Review of progress made toward successful implementation of mitigation initiatives identified in the plan
- Review of progress made in integrating hazard mitigation into other plans and programs
- Continue reviewing public education and involvement programs
- Discuss incomplete target strategies
- Re-evaluate the action plans to determine if the timeline needs to be amended (such as changing a long-term project to a short-term project because of funding availability)
- Recommendations for new projects
- Changes in or potential for new funding options (grant opportunities)
- Impact of any other planning programs or initiatives that involve hazard mitigation.

For continuity, a mitigation strategy evaluation form will be used by each jurisdiction as a yearly progress report and submitted to the Teller County OEM. The Mitigation Strategy Evaluation and Mitigation Action Evaluation forms are in Appendix B.

All planning partners are responsible for submitting progress reports. The result of those progress reports is a formal annual report, shared in the following ways:

- Posted on the website page dedicated to the HMP
- Provided to the local media through a press release
- Presented in the form of a council/board report to all participating jurisdictional governing bodies.

Each planning partner will decide how to use the report and when to share it. Annual progress reporting is not a requirement specified under 44 CFR. However, yearly progress reporting can enhance funding opportunities and create a plan implementation record for future updates.

22.5 Plan updates

44 CFR requires that local HMPs be reviewed, revised if appropriate, and resubmitted for approval to remain eligible for benefits under the DMA (Section 201.6(d)(3)). The Teller County planning partners intend to update the plan on a five-year cycle from the date of plan approval by FEMA. The following triggers can accelerate the cycle to less than five years:

- A Presidential Disaster Declaration that impacts the Teller County planning area
- A hazard event that causes loss of life
- A comprehensive update of the Teller County Growth Management Plan or participating city's master plan

The update process will not start from scratch and develop an entirely new HMP for the Teller County planning area. The update builds on needs identified by the planning team, and at a minimum, includes the elements below:

- The HMC convenes the update process.
- Review the hazard risk assessment and, if necessary, update the risks using the best information and technologies available.
- The action plans will be reviewed and revised to account for any initiatives completed, dropped, or changed and to account for changes in the risk assessment or new partnership policies identified under other planning mechanisms, as appropriate (such as the master plan).
- Send the draft update to the appropriate agencies and organizations for comment.
- Allow the public the opportunity to comment on the update before adoption.
- The planning partner governing bodies will adopt their respective portions of the updated plan.

22.6 Continuing public involvement

Continue to appraise the public of HMP actions through the Teller County OEM's website and distribute copies of the annual progress report to stakeholders and the media, where appropriate. Each planning partner will provide links to the HMP on their jurisdictional websites to increase avenues of public access to the plan. The Teller County OEM has agreed to maintain the HMP website. This site will not only house the final HMP update; it will be the one-stop-shop for information regarding the plan and plan implementation. The Teller County Library system will also receive a copy of the plan.

A new public involvement strategy will be initiated based on guidance from the HMC each time the plan is updated. This strategy is determined by the needs and capabilities of the planning partners at the time of the update. At a minimum, this strategy will include local media outlets within the planning area.

22.7 Incorporation into other planning mechanisms

The hazards, risks, vulnerability, and mitigations analysis in this plan update used the best science and technology available at the time of preparation. This information is invaluable in making decisions required through other planning efforts, such as growth management planning and capital facilities planning.

All municipal planning partners are committed to creating a linkage between the HMP and their master plans by identifying a mitigation initiative as such and giving that action a high priority. Other planning processes and programs to be coordinated with the recommendations of the HMP include the following:

- Partners' emergency response plans
- Land use plans
- Growth management plans
- Capital improvement programs
- County and municipal codes
- Community design guidelines
- Water-efficient landscape design guidelines
- Stormwater management programs
- Source-water protection area planning
- Water system vulnerability assessments
- Community wildfire protection plans

As information that can enhance this plan becomes available from other planning mechanisms, the update process will include the new information.

City of Cripple Creek – Jurisdiction Annex – Teller County
Multi-Jurisdictional Hazard Mitigation Plan

January 2021

Prepared for:

CITY OF CRIPPLE CREEK

Prepared by:

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Cripple Creek

1. Hazard Mitigation Plan Points of Contact

Primary Point of Contact

Ray White, City Administrator, rwhite@cripple-creek.co.us, 719-689-2502

Secondary Point of Contact

Ryan Lohmeier, Acting Fire Chief, rlohmeier@cripple-creek.co.us, 719-689-0240

Throughout the 2021 update process, the Hazard Mitigation Plan (HMP) includes the following participation roles:

Table 1-1

2021 Cripple Creek Plan Update Participants		
Name	**Position**	**Role in Hazard Mitigation**
Diann Pritchard	Cripple Creek Police	Supporting Point of Contact (POC)
Chief Charles "Bud" Bright	Cripple Creek Police	Supporting POC
Paul Harris	Finance Director, City of Cripple Creek	Supporting POC

2. Jurisdiction Profile

The City of Cripple Creek is the seat of Teller County, Colorado. Cripple Creek Colorado (n.d.) was the site of the last and greatest mining boom in the State, attracting tens of thousands of people to the western flank of Pikes Peak in the 1890s. The town was destroyed by fire in 1896. The town and surrounding mining districts were rebuilt and reached peak production and population in the early twentieth century before experiencing a long decline. After World War II, the town turned to tourism for its primary economic engine. Since the 1970s, the large Cripple Creek and Victor Gold Mine has also provided steady production and employment.

In 1990, Colorado voters allowed Cripple Creek to establish legalized gambling. Casino gambling has successfully brought revenue and vitality back into the area and provides funding for the State Historical Fund, administered by the Colorado Office of Archaeology and Historic Preservation. In 2012, Colorado casinos produced over $104 million in tax revenue for these programs (Cripple Creek Colorado, n.d.).

2.1 Population and Employment

According to the United States Census Bureau (2018a.) American Community Survey (ACS) 5-Year Estimates the population of Cripple Creek was 1,136 people. In 2018, 95 percent of the population was White, 0.0 percent were Black or Africa American, 0.0 percent were Native American or Alaskan Native, 0.3 percent two or more races, and 4.8 percent some other race. Additionally, 17.7 percent of the

population was Hispanic or Latino (United States Census Bureau, 2018a.). 92.1 percent only speak English at home, whereas 7.9 percent speak a language other than English, for example, 7.6 percent Spanish, 0.3 percent other Indo-European languages (United States Census Bureau, 2018a.).

The United States Census Bureau (2018b.) stated, approximately 970 people (61.1 percent) of Cripple Creek were employed. The two major industries are mining and gambling. Employment industries in Cripple Creek include:

- Agriculture
- Fishing and Hunting and Mining
- Manufacturing
- Transportation and Warehousing and Utilities
- Real Estate and Rental and Leasing
- Scientific
- General Administrative
- Educational Services
- Social Assistance
- Travel Accommodation
- Public Administration
- Forestry
- Construction
- Retail Trade
- Finance and Insurance
- General Professional
- Management
- Waste management services
- Healthcare
- Arts, Entertainment, and Recreation
- Food Services
- Other Services

Mean household income in 2018 was $42,541, and an estimated 17.7 percent of the City's population was living below the poverty level in 2018, which is higher than the national average of 13.1% for the same year (United States Census Bureau, 2018b.).

2.2 Development Trends

The City of Cripple Creek (n.d.b.) Planning and Community Development Department's role is to develop and apply land use, building, and historic preservation regulations that retain the quality of life and heritage of the Cripple Creek community (City of Cripple Creek, n.d.b.). According to the City of Cripple Creek (2009) Master Plan, the City faced economic challenges. The City expanded gaming limits and hours through State legislation to improve the economy. However, the City of Cripple Creek again faces major fiscal challenges caused by the reduction of gaming devices over the past eleven years. The number of devices in town plummeted from an all-time high in 2008 of 5,170 to 3,608 in 2020. That is a total reduction of 1,565 machines, or 30 percent (City of Cripple Creek, 2019).

Tourism provides a significant source of revenue for the City, with about 62 percent of the City's budget coming from gambling taxes and device fees. The majority of the City's operating revenue comes from device fees, which declines with the reducing number of devices in town. To make up for the loss in device fee revenue, the City became more reliant on grants from outside agencies to operate and complete infrastructure projects. Future development seeks to improve the gaming, tourism, and lodging industries, with more hotel rooms in 2020-2022 (City of Cripple Creek, 2019).

According to the City of Cripple Creek (2009) Master Plan, the existing community boundaries are more than adequate to meet near, and long-term anticipated growth. The United States Census Bureau (2018a.) showed that residential development in the City has been slow, with the decrease of housing units from 891 housing units in 2010 to 730 units in 2018, according to ACS 5-year estimates.

2.3 Geography and Climate

Mount Pisgah (10,400 feet) overlooks the City of Cripple Creek. The City lies west of Colorado Springs in a granite pocket 9,600 feet above sea level at the edge of Pike National Forest. Cripple Creek has a natural setting, nestled in a valley and surrounded by steep slopes that remain undeveloped. The City has multiple active and abandoned mines nearby. The gold-bearing areas of the Cripple Creek district were the core of an ancient volcano within the central Colorado volcanic field, last active over 30 million years ago during the Oligocene era (City of Cripple Creek, 2009).

Average temperatures decrease with an increase in elevation, about 4 degrees per 1,000 feet, and subzero temperatures are common in the winter. The majority of snowfall occurs during March and April. Due to the generally high elevation of the county, summers are relatively cool.

Precipitation is highest in July and August. However, there are exceptions with very dry summers. Early fall tends to be temperate and drier. Total annual precipitation is 16 inches, falling primarily in spring and summer.

2.4 Governance

The City Administrator governs the City of Cripple Creek (n.d.a.) The City Council appoints the Administrator. The mission statement of the City is to be responsive to the needs of the community and region and operate the City in a manner that is cost-effective and professional. City of Cripple Creek (n.d.a.) departments include:

- City Administrator
- Butte Theater
- Custodial Department
- Building Department
- Finance, Fire and Emergency Services
- Human Resources
- Jail Museum, Parks and Recreation
- Public Works
- Plant Operations
- Animal Control
- City Clerk
- Planning and Community Development Department
- Historic Preservation Department
- Heritage Center
- Marketing and Special Events
- Police & Dispatch
- Transportation

3. Risk Assessment

FEMA	**B1.** Does the plan include a description of the type, location, and extent of all natural hazards affecting the City of Cripple Creek? (Requirement §201.6(c)(2)(i)) **B2.** Does the plan include information on previous occurrences of hazard events and the probability of future hazard events for the City of Cripple Creek? (Requirement §201.6(c)(2)(i)) **B3.** Does the plan include 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 44 Code of Federal Regulations § 201.6(c)(2)(ii))

The risk assessment for Cripple Creek used the same methodology as the risk assessment in the base plan. The assessment identified past hazard events and the mapped hazard areas to determine current

and future hazard risks and vulnerabilities. Risks to the City's critical facilities and individual parcels are quantified where possible.

The City of Cripple Creek reviewed the hazard rankings developed for Teller County during HMC Meeting #2 and concurred with the rankings. The hazard rankings are shown in Table 3-1.

Table 3-1

Teller County - Local Hazards							
	Probability 1=lowest, 5=highest	*Magnitude 1=lowest, 5=highest*	*Onset 1=slowest, 5=fastest*	*Duration 1=shortest, 5=longest*	*Change in Risk ↑ ↓ ↔ since 2015*	*Average*	*Rank*
Wildfire	5.00	4.00	4.00	3.00	↔	4.33	1
Thunderstorms High Winds and Hail	5.00	4.00	3.00	2.00	↑	4.00	2
Landslide	4.00	2.00	5.00	2.00	↑	3.67	3
Tornado	3.00	3.00	5.00	1.00	↑	3.67	3
Hazardous Materials	3.00	2.00	5.00	1.00	↑	3.33	5
Severe Winter Weather	5.00	2.00	3.00	2.00	↑	3.33	5
Epidemic/ Pandemic	3.00	5.00	2.00	5.00	↑	3.33	5
Drought and Extreme Temperature	4.00	2.00	3.00	4.00	↑	3.00	8
Subsidence Sink Holes and Soil Erosion	3.00	1.00	5.00	2.00	↑	3.00	8
Dam Failure	1.00	2.00	5.00	1.00	↑	2.67	10
Earthquake	1.00	2.00	5.00	3.00	↑	2.67	10
Flood	3.00	2.00	3.00	1.00	↔	2.67	10

3.1 Cripple Creek Specific Hazard Event History

Table 3-2 lists the hazard event history for Cripple Creek in reverse chronological order. Table data is from the Colorado Department of Public Safety (2018) and the Federal Emergency Management Agency (2020).

Table 3-2

Past Hazard Events for the City of Cripple Creek			
Type of Event	**FEMA Disaster # (if applicable)**	**Date of Hazard Event**	**Preliminary Damage Assessment (if available)**
Colorado COVID-19 Pandemic	DR-4498	Incident Period: January 20, 2020, and continuing; Major Disaster Declared on March 28, 2020	Total Public Assistance Grants Dollars Obligated: $99,489,897.26
Colorado COVID-19	EM-3436	Incident Period: January 20, 2020, and continuing. Emergency Declaration declared on March 13, 2020	
Colorado Chateau Fire	FM-5247	Incident Period: June 30, 2018 - July 06, 2018 Fire Management Assistance Declaration declared on June 30, 2018	
Drought, Teller County	S3627	2014	
Colorado Extreme Weather, Statewide	State declaration	2014	
Drought, Statewide	S3405, S3508, S3518, S3539	2013	
Drought, Statewide	S3455, S3456, S3459, S3461, S3463, S3466	2013	
Colorado Winter Storm, Statewide	State declaration	2013	
Drought, Teller County	S3548	2013	
Drought, Excessive Heat, High Winds, Statewide	S3260	2012	
Drought, Statewide	S3267, S3269, S3276, S3281, S3282, S3284, S3289, S3290, S3315, S3319, S3347	2012	
Wildfire, Teller County	State declaration	2011	

Severe Blizzard, Statewide	State declaration	2009	
Colorado Nash Ranch Fire	FM-2778	Incident Period: June 24, 2008 Fire Management Assistance Declaration declared on June 27, 2008	
Drought, Teller County	S2750	2008	
Colorado Snow	EM-3270	Incident Period: December 18, 2006 - December 22, 2006 Emergency Declaration declared on January 07, 2007	Public Assistance - Dollars Approved $8,606,436.54 Total Public Assistance Grants (PA) - Dollars Obligated $8,610,144.47 Emergency Work (Categories A-B) - Dollars Obligated
Wildfire- multiple Executive Orders, Teller County	State declaration	2006	
Flooding, Teller County	State declaration	2006	
Heat, High Winds, Insect Pests, Late Freeze, Drought, Teller County	S2329	2006	
Drought, Wind, Heavy Rain, Hail, Teller County	S2188	2005	
Colorado Snowstorm	EM-3185	Incident Period: March 17, 2003 - March 20, 2003 Emergency Declaration declared on April 09, 2003	Public Assistance - Dollars Approved $6,136,470.94 Total Public Assistance Grants (PA) - Dollars Obligated $6,169,487.30 Emergency Work (Categories A-B) - Dollars Obligated
Wildfires, Statewide and Hayman Fire	DR-1421	Incident Period: April 23, 2002 - August 06, 2002	

		Major Disaster Declaration declared on June 19, 2002	
Colorado Drought	EM-3025	Incident Period: January 29, 1977 Emergency Declaration declared on January 29, 1977	
Colorado Heavy Rains, Snowmelt, Flooding	DR-385	Incident Period: May 23, 1973 Major Disaster Declaration declared on May 23, 1973	
Colorado Tornadoes, Severe Storms, Flooding	DR-200	Incident Period: June 19, 1965 Major Disaster Declaration declared on June 19, 1965	

3.2 Critical Infrastructure Risk Assessment

Table 3-3 provides an assessment of the exposure of critical infrastructure and facilities in Cripple Creek based on the best-available hazard data.

Table 3-3

Type of Facility	Earthquake	Flood (100-year floodplain)	Landslide Debris Area	Wildfire		Hazardous Materials (Less than 2 miles away)
				Low	Very Low	
Bridge	1	1	-	-	1	1
Communication Tower	1	-	-	-	1	1
Electric Substation	1	-	-	-	1	1
Fire Station	1	1	-	-	1	1
Hospital	3	2	-	-	3	3
Law Enforcement	2	1	-	-	2	2
National Shelter System	3	-	-	-	3	3
School	2	-	-	-	2	2

3.3 Vulnerability to Specific Hazards

Vulnerability to some hazards occurs within specific geographic areas. The City of Cripple Creek's vulnerability to these hazards, including flood, wildfire, landslide, dam failure, and earthquake, differs from that of Teller County as a whole. The sections below discuss locations and residential populations vulnerable to these identified hazards, where quantifiable.

3.3.1 Flood

Mapped floodplains in the City of Cripple Creek occur primarily along two small drainages, Cripple Creek and Pony Creek. Approximately 109 acres, or 11 percent of the area of the City, are within the mapped 100-year floodplain. Historically, flooding along these drainages has not affected structures in the City. However, as shown in Table 3-3, 337 parcels in the City are within the 100-year floodplain and are vulnerable to flooding. The floodplain area includes 81 residential, mixed-use residential, and mobile home parcels. According to the United States Census Bureau (2018a.) ACS five-year estimates, the average household size in Cripple Creek is 2.1 people. Based on the number of residential parcels in the 100-year floodplain, an estimated residential population of 170 people is exposed to flood hazards.

The City of Cripple Creek plans to preserve land within the floodplain for natural resources protection and recreational use, as indicated in Action Ef2 in the City of Cripple Creek (2009) Community Master Plan. The City will revise mapping for the floodplains and introduce a preservation framework for the floodplain, creek edges, and buffers (City of Cripple Creek, 2009). Preservation of the floodplains for these uses will reduce the vulnerability of developed areas near floodplains in the City.

Probability

As noted in Section 6.4 of the base plan, changes in snowmelt patterns and more intense precipitation in the future will increase the probability of flooding in Cripple Creek, which can affect buildings of all types indicated in Table 3-4 below.

Table 3-4

Parcels Within 100-Year Floodplain		
Parcel Type	**# of Parcels**	**Value**
Agricultural	7	
Commercial (Vacant)	72	$2,654,580
Commercial	9	$7,546,450
Exempt	27	$3,101,820
Mineral	0	$0
Mixed Use Commercial	3	$340,950
Mixed Use Residential	1	$14,770
Mobile Home	3	$4,430
None (Uncategorized)	1	$0
Residential	77	$712,030
State	19	$160
Vacant	118	$484,370
Total	**337**	**$14,859,710**

3.3.2 Wildfire

Areas within the city boundaries have a low or very low potential for a wildfire of any intensity (Dillon, 2018). However, according to the Colorado Wildfire Risk Assessment (CO-WRA), areas within the Wildland-Urban Interface (WUI) outside of the developed area of the City have a moderate to a high probability of experiencing a wildfire that is low to moderate in intensity (Colorado State Forest Service 2020). Mountainous areas in the Front Range west of the City also have a moderate to a high probability of experiencing more intense fires, which could affect Cripple Creek indirectly as a result of public health concerns due to wildfire smoke or directly by threatening homes and other structures and displacing residents.

As shown in Table 3-5, the total number of parcels in Cripple Creek, 1,686 parcels, are in areas with a very low or low potential for wildfire, including 628 residential parcels. Based on this analysis, the entire residential population of the City (an estimated 1,136 people) lives in areas with very low or low potential for wildfire.

Cripple Creek effectively plans for future development within the existing city boundaries. The boundary is not likely to extend into the WUI outside of the developed area of the City, which will substantially minimize future development impact on the wildfire risk. However, future population growth may increase the risk of wildfires near Cripple Creek.

Probability

As noted in 6.4 of the base plan, extreme climatic events, including wildfire, will become more frequent. Climate change necessitates an improvement in fuel load reduction and emergency response.

Table 3-5

Parcels Exposed to Wildfire Hazards				
	Very Low Risk Area		**Low Risk Area**	
Parcel Type	# of Parcels	Value	# of Parcels	Value
Agricultural	10	$110	1	$90
Commercial (Vacant)	196	$11,054,360	5	$116,620
Commercial	59	$29,372,280	0	$0
Exempt	88	$4,487,320	8	$778,610
Mineral	1	$3,910	0	$0
Mixed Use Commercial	12	$2,496,360	0	$0
Mixed Use Residential	2	$70,590	0	$0
Mobile Home	24	$24,620	0	$0
None (Uncategorized)	1	$0	1	$0
Residential	593	$4,986,420	9	$71,500
State	6	$4,320	17	$160
Vacant	622	$2,034,400	31	$142,100

Total	1,614	$54,534,690	72	$1,109,080

3.3.3 Landslide

Previous landslides indicate the probability of future events. Cripple Creek does not have a history of past landslides. The topography of Cripple Creek is relatively flat, compared to the surrounding mountainous areas of the Front Range. Therefore, there is a low probability of landslides occurring within the City.

At an elevation of 9,494 feet and just below timberline, Cripple Creek lies in a broad open valley surrounded by steep slopes that remain undeveloped (City of Cripple Creek, 2009). Chapter 17-Subdivisions of the City of Cripple Creek (2020) municipal code outlines specifications and plans to accompany final plats. The municipal code requires a report prepared by a licensed engineering geologist to examine the slope, stability, and erosion characteristics of the property. If the geologist finds evidence of an unsuitable surface and/or subsurface conditions, the application can be denied (City of Cripple Creek, 2020). Section 13-2-110 of the City of Cripple Creek (2020) municipal code states that a watershed district permit application requires submitting elevations, dimensions, location, extension, and slopes shown by contours and/or other means, for all proposed excavating, grading, filling, or surfacing. These permitting requirements minimize the potential for development in areas of increased landslide risk.

Probability

The probability of a landslide occurring in Cripple Creek is low, based on the absence of debris fields from previous landslides and steep slopes.

3.3.4 Dam Failure

The City owns two operational dams, Cripple Creek #2 and Cripple Creek #3, both located in unincorporated areas of the County on the slopes of Pikes Peak. Both dams are considered significant hazard, which means that failure of the dam could cause cause economic loss, environmental damage, or disruption of lifeline facilities. Loss of human life would not be probable. The City plans to complete inspection of these dams to assess maintenance needs in 2022.

The City has created an Emergency Action Plan (EAP) for Cripple Creek #2 dam (City of Cripple Creek 2019); however, dam inundation maps showing the limits of flooding in the event of a dam failure have not been developed. The EAP lists critical infrastructure and structures that are within the breach path of the dam. These include: Highway 81, Gold Camp Road, Beaver Valley Road and private barns along this road, Pringtime Dam, and Skaguay Dam. The breach path for Cripple Creek #2 dam is entirely within unincorporated parts of Teller County. Overflow from Cripple Creek #3 dam would flow into the Cripple Creek #2 reservoir; therefore, the City has not developed an EAP for this dam.

Dam failures have affected City-owned dams in the past. In 1965, flooding caused the Cripple Creek #3 dam to fail, and the subsequent release of water caused the Cripple Creek #2 dam and a third dam, then owned by the City, Cripple Creek #1, to fail as well. The Cripple Creek #2 and Cripple Creek #3 dams were reconstructed around 1971 by the USACE.

Probability

The probability of a failure of the dams owned by the city is considered low. Dam failure events are infrequent; their frequency coincides with that of the events that may cause them, including earthquakes, landslides, and excessive rainfall and snowmelt. Dams may pose "residual risk" – risk remaining after implementation of safeguards. Residual risk is associated with events that go beyond a dam's design to withstand. Based on two occurrences of dam failure in the past 45 years in Teller County, there is an estimated 1 and 10 percent chance of occurrence in any given year.

3.3.5 Earthquake

Earthquake hazards across unincorporated areas of Teller County are similar to earthquake hazards in Cripple Creek. A full hazard profile for earthquakes is in Section 18 of the base plan. The expected peak ground acceleration (PGA) is a measure of the ground shaking produced by an earthquake. In the Cripple Creek area, future earthquakes have a 2 percent probability of exceeding the expected severity over 50 years. The expected PGA ranges from 11 to 12 percent severity. This level of shaking could feel strong to people on the ground, but would likely result in only light damage to buildings and infrastructure.

The City of Cripple Creek's Planning and Community Development Department and Building Department guides land use, subject to current zoning and subdivision regulations. The City of Cripple Creek (2020) municipal code does not directly address earthquake hazards; however, any new development is subject to the standards of the 2015 International Building Code. The International Building Code includes standards to reduce seismic risks to structures. This international code is also in the City of Cripple Creek (2020) municipal code, Chapter 18- Building Regulations, Article 3-International Building Code.

Probability

The seismic hazard in Cripple Creek is low, but it is possible a damaging earthquake could occur. Table 3-6 shows the parcels in Cripple Creek that are within the earthquake hazard area.

Table 3-6

Parcels Within Earthquake Hazard Area		
Parcel Type	**# of Parcels (PGA 0.110 – 0.119)**	**Value**
Agricultural	11	$200
Commercial (Vacant)	201	$11,170,980
Commercial	59	$29,372,280
Exempt	96	$5,265,930
Mineral	1	$3,910
Mixed Use Commercial	12	$2,496,360
Mixed Use Residential	2	$70,590
Mobile Home	24	$24,620
None (Uncategorized)	2	-
Residential	602	$5,057,920
State	23	$4,480
Vacant Land	653	$2,176,500
Total	**1,686**	**$55,643,770**

4. Capabilities Assessment

FEMA	**C1.** Does the City of Cripple Creek plan document existing authorities, policies, programs, resources, and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))

This section identifies Cripple Creek's existing capabilities related to the City's hazard mitigation program. Local hazard mitigation capabilities include the planning and regulatory, administrative and technical, financial, and education and outreach capabilities that are currently being leveraged or are available to reduce risk.

4.1 Administrative and Technical Resources

Table 4-1 shows Cripple Creek's administrative and technical resources available to engage in and improve mitigation planning and program implementation.

Table 4-1

Human and Technical Resources Integrated with Hazard Mitigation	
Resource:	**Yes/No**
Emergency Manager	Yes
Floodplain Administrator	Yes
Community Planning:	
- **Planner/Engineer (Land Development)**	Yes, Historic Preservation and Planning Coordinator
- **Planner/Engineer/Scientist (Natural Hazards)**	No
- **Engineer/Professional (Construction)**	No
- **Resiliency Planner**	No
- **Transportation Planner**	No
Building Official	Yes, Planning and Community Development Director (Building Department)
GIS Specialist and Capability	No
Grant Manager, Writer, or Specialist	No
Warning Systems/Services:	
- **General**	Yes
- **Flood**	Yes
- **Wildfire**	Yes
- **Tornado**	Yes
- **Geological Hazards**	Yes
Other	N/A

4.2 Financial Resources

Cripple Creek maintains fiscal and financial resources to support its mitigation program. Table 4-2 identifies specific resources that may be available to fund mitigation activities.

Table 4-2

Accessible Financial Resources	
Financial Resource	**Yes/No**
Levy for Specific Purposes with Voter Approval	Yes
Utility Fees	Yes
System Development / Impact Development Fee	Yes
General Obligation Bonds to Incur Debt	Yes
Special Tax Bonds to Incur Debt	Yes
Withheld Spending in Hazard-Prone Areas	No
Stormwater Service Fees	No
Capital Improvement Project Funding	Yes
Community Development Block Grants	Yes
Other	Yes – General and Enterprise Funds

Table 4-3 identifies current and potential sources of funding to implement identified mitigation actions contained within the HMP. Funds are also available from federal and state agencies and programs.

Table 4-3

Financial Resources Integrated with Hazard Mitigation		
Funding Source	Fund Administrator	Description
LOCAL		
General Fund	City Council	Funding available for mitigation efforts supporting government-wide projects and activities.
Enterprise Fund	City Council	Funding available for capital projects.
FEDERAL		
Building Resilient Infrastructure and Communities (BRIC) Program	Federal Emergency Management Agency (FEMA)/Colorado Division of Homeland Security and Emergency Management (DHSEM)	Authorized by the Disaster Relief and Recovery Act of 2018, the BRIC program is replacing FEMA's Pre-Disaster Mitigation Program. BRIC will support states, local communities, tribes, and territories to undertake projects that mitigate hazard risks and increase community resiliency. Grant awards will prioritize infrastructure projects and projects that support community lifelines: safety and security; food, water, shelter; health and medical; energy; communications; transportation; and hazardous material.
Hazard Mitigation Grant Program	Colorado Division of Homeland Security and Emergency Management (DHSEM)	Post-disaster funds to hazard reduction projects impacted by recent disasters.
Flood Mitigation Assistance Program	Colorado Division of Homeland Security	Provides funds for flood mitigation on buildings that carry flood insurance and have been damaged by

	and Emergency Management (DHSEM)	flooding. Provides funding to support the development of the flooding hazard portion of state and local mitigation plans and up to 100% of the cost of eligible mitigation activities. This funding is only available to communities participating in the NFIP.
Community Development Block Grant Program	U.S. Department of Housing and Urban Development/ Colorado Department of Local Affairs	Funds projects that benefit low- and moderate-income communities, prevent or eliminate slums or blight, or meet urgent community development needs posing a serious and immediate threat to community health or welfare.
Emergency Management Performance Grants Program	Federal Emergency Management Agency (FEMA)/Colorado Division of Homeland Security and Emergency Management (DHSEM)	Provides funding to states for local or tribal planning, operations, acquisition of equipment, training, exercises, and construction and renovation projects.
National Earthquake Hazards Reduction Program (NEHRP)	Colorado Geological Survey (CGS)	Supports enhanced earthquake risk assessments in local HMPs. Provides funding for earthquake modeling and loss estimation, partnership building, planning, and training activities. Provides funding for prevention materials and activities. Provides support for limited post-event inspection and reporting.
State Fire Assistance Program	U.S. Forest Service/ Colorado Division of Homeland Security and Emergency Management (DHSEM)	Provides funding opportunities for local wildland-urban interface planning, prevention, and mitigation projects, including fuels reduction work, education and prevention projects, community planning, and alternative uses of fuels.
National Dam Safety Program State Assistance Grants	Federal Emergency Management Agency (FEMA)/Division of Water Resources (DWR) Dam Safety	Grant assistance to State Dam Safety programs to reduce risks to life and property associated with dams, increase awareness of the benefits and risks related to dams, and advance the state in the practice of dam risk management.
Rehabilitation of High Hazard Potential Dams Grant Program	FEMA/DWR Dam Safety	Provides technical, planning, design, and construction assistance in grants for the rehabilitation of eligible high hazard potential dams.
Risk Mapping, Assessing, and Planning	FEMA	Provides funding and technical support for hazard studies, flood mapping products, risk assessment

		tools, mitigation and planning, and outreach and support.
Conservation Reserve Program	U.S. Department of Agriculture Farm Service Agency and Natural Resource Conservation Service	Retires eligible cropland from agricultural production and plants the land with permanent grass cover to reduce wind erosion and dust hazards.
STATE		
Flood Response Fund	Colorado Water Conservation Board (CWCB)	Created and appropriated funding to the Flood Response Fund, administered by CWCB.
Emergency Dam Repair Cash Fund	Colorado Water Conservation Board (CWCB)	As determined by CWCB, money is transferred from the CWCB Construction Fund to the Emergency Dam Repair Cash Fund as needed.
Forest Restoration and Wildfire Risk Mitigation Grant	Colorado State Forest Service (CSFS)	Assists with funding community-level actions across the State implemented to protect populations and property in the wildland-urban interface and to promote forest health and the utilization of woody material. Includes funding for capacity building.
Rockfall Mitigation Program	Colorado Department of Transportation (CDOT)	Provides internal mitigation design and review for projects funded by rockfall mitigation budget; provides personnel designated as first responders during rockfall related emergencies; installs control devices on rock walls for prevention; post falling rock signs on highways.
Colorado Wildfire Preparedness Plan and Fund	Division of Fire Prevention & Control (DFPC)	Amended to read Wildfire Emergency Response Fund creation, Wildfire Preparedness Fund creation. DFPC may use the money from the Wildfire Preparedness Fund to implement the Wildfire Preparedness Plan.
OTHER		
Community Planning Assistance Teams	American Planners Association Foundation	Provides pro bono technical assistance for planning frameworks or community vision plans for communities needing extra assistance. Local governments are responsible for travel costs.

4.3 Planning and Regulatory Resources

Table 4-4 summarizes Cripple Creek's planning and regulatory capabilities, including plans, policies, and programs with integrated hazard mitigation principles.

Table 4-4

Planning and Regulatory Resources Integrated with Hazard Mitigation	
Planning/Regulatory Resource	**Yes/No**
Building Codes (Year)	Yes, 2015

Building Code Effectiveness Grading Schedule (BCEGS) Rating	No
Capital Improvements Program or Plan	Yes
Community Rating System (CRS)	No
Community Wildfire Protection Plan (CWPP)	Yes, 2018
Comprehensive, Master, or General Plan	Yes, 2009
Economic Development Plan	No
Elevation Certificates	Yes
Erosion/Sediment Control Program	Yes
Floodplain Management Plan or Ordinance	Yes
Flood Insurance Study	Yes, 2009
Growth Management Ordinance	Yes
Non-Flood Hazard-Specific Ordinance or Plan (e.g., steep slope, wildfire, snow load)	Yes, snow removal
National Flood Insurance Program	Yes
Site Plan Review Requirements	Yes, Article 4 of the Development Code
Stormwater Program, Plan, or Ordinance	Yes
Zoning Ordinance	Yes
Other	Yes – Cripple Creek Development Code 2014

4.4 Education and Outreach Resources

Table 4-5 summarizes Teller County's education and outreach capabilities, including programs that educate and notify residents, business owners, and other stakeholders regarding hazard risks.

Table 4-5

Education and Outreach Resources	
Education and Outreach Resource	**No or Yes**
Local Citizen Groups that communicate hazard risks	Yes, Aspen Mine Center 2012
StormReady	No
Firewise	Yes

4.5 National Flood Insurance Program Participation

FEMA	**C2.** Does the Plan address [Cripple Creek's] participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3))

The City of Cripple Creek voluntarily participates in the National Flood Insurance Program (NFIP) through its adoption and enforcement of floodplain regulations since 1985. The City of Cripple Creek Municipal Code, Chapter 16, Article 2- Flood Damage Prevention regulates and promotes public health, safety, and general welfare to minimize public and private losses due to flood conditions in specific areas. The City of Cripple Creek (2020) floodplain regulations help:

- Protect human life and health
- Minimize expenditure of public money for costly flood control projects
- Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public
- Minimize prolonged business interruptions
- Minimize damage to critical facilities, infrastructure, and other public facilities (e.g., water, sewer, gas mains, electric and communication stations, and streets and bridges located in floodplains)
- Help maintain a stable tax base by providing for the sound use and development of flood-prone areas
- Ensure notification for potential buyers that a property is in a flood hazard area
- Ensure those that occupy special flood hazard areas assume responsibility for their actions (*Section 16-2-10*)

The City of Cripple Creek (2020) regulations apply to all areas of Special Flood Hazard Areas and areas removed from the floodplain by the issuance of a FEMA Letter of Map Revision Based on Fill (LOMR-F) within the jurisdiction of the City based on a scientific and engineering report *The Flood Insurance Study for Teller County and Incorporated Areas* from September 25, 2009, with accompanying Flood Insurance Rate Maps (FIRMs). To accomplish its purpose, the City of Cripple Creek (2020) relies on the following methods for reducing flood losses (*Section 16-2-20)*:

- Restrict or prohibit uses that are dangerous to health, safety, or property in times of flood, or cause excessive increases in flood heights or velocities
- Require that uses vulnerable to floods, including facilities which serve such uses, protect against flood damage at the time of construction
- Control the alteration of natural floodplains, stream channels, and natural protective barriers
- Control filling, grading, dredging, and other development which may increase flood damage
- Prevent or regulate the construction of flood barriers which will naturally divert floodwaters, or which may increase flood hazards to other lands
- Require development permits for new construction or development in Special Flood Hazard Areas

The City Administrator is appointed to administer and implement the City's flood damage prevention regulations. The City of Cripple Creek (2020) Administrator is responsible for:

- Permit review

- Maintenance of base flood data (e.g., floodplain studies), and other information, including the elevation of all new or substantially improved structures, floodproofing certifications, and records of public inspections
- Notifying adjacent communities and the CWCB before alteration or relocation of a watercourse
- Interpretation of FIRM boundaries

Provisions for flood hazard reduction include the following:

- General standards (anchoring, construction materials and methods, utilities, and subdivision proposals)
- Specific standards for residential and non-residential construction (elevation to or above Base Flood Elevation, floodproofing, and structural components)
- Specific standards for manufactured homes and recreational vehicles (anchoring, elevation)
- Special Standards for floodways (areas within Areas of Special Flood Hazard), areas of shallow flooding, and extensive alteration of the floodway fringe

In 2020, the Colorado Water Control Board (CWCB) provided the following information on flood losses in Cripple Creek under the NFIP:

Table 4-6

Flood Loss Properties			
Total Policies	**Total Claims**	**Number of Repetitive Losses**	**Total Payments since 1978**
9	0	0	$0

4.6 FEMA Funded Hazard Mitigation Projects

Table 4-6 outlines potential funding sources available to local jurisdictions with a FEMA-approved HMP.

Table 4-6

Mitigation Plan Requirement for Governments Applying for Certain FEMA Grants			
Enabling Legislation	**FEMA Assistance Program**	**Is a Mitigation Plan Required?**	
		State Applicant	**Local Sub- Applicant**
Stafford Act	Individual Assistance (IA)	No	No
	Public Assistance (PA) Categories A and B (e.g., debris removal, emergency protective measures)	No	No
	Public Assistance (PA) Categories C through G (e.g., repairs to	Yes	No

	damaged infrastructure, publicly-owned buildings)		
	Fire Mitigation Assistance Grants (FMAG)	Yes	No
	Hazard Mitigation Grant Program (HMGP)planning grant	Yes	No
	Hazard Mitigation Grant Program (HMGP) project grant	Yes	Yes
	Building Resilient Infrastructure and Communities (BRIC)	Yes	Yes
National Flood Insurance Act	Flood Mitigation Assistance (FMA) planning grant	Yes	No
	Flood Mitigation Assistance (FMA) project grant	Yes	Yes

4.7 Integration of Mitigation into Existing Planning Mechanisms

FEMA	**C1.** Does the plan document [the City of Cripple Creek's] existing authorities, policies, programs, and resources, and its ability to expand on an improve these existing policies and programs? (Requirement §201.6(c)(3))

FEMA	**C6.** Does the plan describe a process by which [the City of Cripple Creek] will incorporate 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))

Integration of the principles of mitigation into Cripple Creek's daily operations and ongoing planning activities is a priority of the City's mitigation program. These activities will support:

- Raising awareness of the importance of hazard mitigation for the whole community
- Facilitating an understanding that hazard mitigation is not just an "emergency services" function and building ownership of mitigation activities across the organization
- Reduction in duplication or contradiction across regional plans
- Maximize planning resources through linked or integrated planning efforts

The City will consider integrating mitigation principles into planning mechanisms, including:

- Budget decision-making
- Building and zoning ordinances and decision-making
- Emergency planning mechanisms
- Economic development planning and decision-making

4.71. Existing Plans

The existing plans listed in Table 4-7 provide ongoing opportunities for integrating hazard mitigation, and the City will consider hazard mitigation data and principles and ensure that plans align with the HMP when these plans are updated.

Table 4-7

Existing Plans	
Plan	**Description**
City of Cripple Creek Community Master Plan 2009	This document outlines a set of guidelines and principles for preserving, developing, and planning the future of Cripple Creek. This plan includes floodplain data and mapping to address flooding and provide options for "green" stormwater improvements.
City of Cripple Creek Transit Five-Year Development and Coordination Plan 2009	The purpose of this study is to develop a five-year business plan that will guide Cripple Creek Transit (CCT) in policy, funding, capital, and service development decisions through 2020.
Cripple Creek Fire Department Strategic Plan 2019	The intent of the Cripple Creek Fire Department Strategic Plan is to guide the department in providing results-oriented services throughout the community. The Cripple Creek Fire Department is an all-hazards response organization that seeks to improve the level of service provided to the community continually. This plan addresses wildland fire in unincorporated Teller County, which presents significant risk and planning challenges to the Cripple Creek Fire Department.

The City is encouraged to consider integration into planning mechanisms, such as:

- Operating and capital improvement budgets
- Building and zoning ordinances
- Comprehensive land-use planning
- Municipal ordinances
- Emergency response plans
- Local school district projects
- Economic development plans

5. Hazard Mitigation Action Plan and Evaluation of Recommended Initiatives

FEMA	**C4.** Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects to reduce the effects of hazards, emphasizing new and existing buildings and infrastructure in the City of Cripple Creek? (Requirement §201.6(c)(3)(ii))

5.1 2015 Initiative Review and Status

The 2021 plan mitigation strategy included an assessment of each 2015 plan mitigation action. Results from the evaluation determined the current status of the mitigation action, if the action was ongoing or incomplete, and whether to carry over the action to the 2021 plan update. Members of the HMC worked through each previous action during HMC Meeting #2 to document steps to fulfill the action. See Appendix F of the base plan for an overview of the status of all actions from the 2015 plan update.

5.2 2021-2026 Mitigation Implementation Plan

The mitigation Implementation Plan (IP) lays the groundwork for how the City's mitigation actions will be prioritized, implemented, and administered. The IP includes both short-term strategies that focus on planning and assessment activities and long-term strategies that will result in ongoing capability or structural projects to reduce vulnerability to hazards. See Appendix F of the base plan for the Mitigation Action Worksheet instructions and completed Mitigation Action Worksheets. New actions are in Table 5-1.

Table 5-1

2021 – 2026 Mitigation Implementation Plan: City of Cripple Creek									
ID	**Mitigation Action**	**Action Status**	**Type of Action and Hazard Addressed**	**Goals**	**Lead Entity**	**Support Entity**	**Implement Timeline + Anticipated Cost + Funding Source**	**STAPLEE + Mitiga-tion Effect-ivness Score**	**Priority: low, med, high**
MH-10	Continue to inform the citizens and tourists of the City of Cripple Creek about emergencies, severe weather updates, dangers, etc. through website	Existing	Education and Awareness Programs Multiple	1(a), 1(b), 2(a), 2(b), 3(a), 3(b), 4(a), 4(b)	Cripple Creek Dispatch	-	Ongoing Medium General fund and Grants	N/A	High
MH-11	Work with Colorado Division of Reclamation, Mining, and Safety as well as the Cripple Creek & Victor mine to correct and prevent sinkholes, soil erosion, flooding, and landslides due to past, present, and future mining operations	Existing	Structure and Infrastructure Projects Multiple	1(a), 1(b), 2(a), 3(a), 3(b)	Cripple Creek Public Works	CO Division of Reclamation, Mining, and Safety, Cripple Creek & Victor Mine	Ongoing High State and Grant Funding	N/A	Med
MH-12	Develop infrastructure to redirect potential flooding off the City's wastewater treatment plant facility and processing ponds. The wastewater treatment plant is on a sizable floodplain.	New	Structure and Infrastructure Projects Multiple	1(a), 1(b), 2(a), 2(b), 3(b)	Water/Waste water Department; City of Cripple Creek	Public Works Department – City of Cripple Creek; Army Corps of Engineers	1-3 years/ Mid-term High DOLA or State Water Resources Grant	21	Med

MH-13	Develop infrastructure to mitigate or redirect potential flooding at the City's Water Treatment Plant	New	Structure and Infrastructure Projects Multiple	1(a), 1(b), 2(a), 3(b)	Water/ Wastewater Department	Public Works Department – City of Cripple Creek; Army Corps of Engineers	1-3 years/ Mid-term High DOLA or State Water Resources Grant	29	High
FL-4	Continue to improve the City of Cripple Creek infrastructure and stormwater projects to minimize the impact of localized flooding	Existing	Structure and Infrastructure Projects Flood	1(a), 1(b), 2(a), 2(b), 3(b)	Cripple Creek Public Works	-	Ongoing High General fund	N/A	Low
FL-5	Work with the Army Corps of Engineers to update floodplain maps in the city	New	Local Plans and Regulations Flood	1(a), 1(b), 2(a), 2(b), 4(a)	Building Director	Public Works; Army Corps of Engineers; Double Eagle Hotel and Casino	1 – 3 years/ Mid-term Low Enterprise fund	23	High
WF-9	Continue to educate the public on wildfire mitigation and preparation using the National Fire Protection Association's Firewise program	Existing	Education and Awareness Programs Wildfire	1(a), 1(b), 2(a), 2(b), 3(a), 4(a), 4(b)	Cripple Creek Fire Chief	-	Ongoing Low General fund and National Fire Protection Association Grants	N/A	High
DF-2	Assess maintenance needs at Cripple Creek #2 and Cripple Creek #3 dams and complete repairs as needed	New	Structure and Infrastructure Projects Dam Failure	1(a), 1(b), 2(a), 3(b)	Cripple Creek Public Works	-	1 – 3 years/ Mid-term Low Enterprise fund	31	High

DF-3	Create dam inundation maps for the Cripple Creek #2 dam, showing the limits of dam failure flooding, to increase understanding of dam failure risks in the community. Evaluate the need for dam inundation maps for the Cripple Creek #3 dam.	New	Local Plans and Regulations Dam Failure	4(a)	City of Cripple Creek	Colorado Division of Water Resources, Dam Safety Branch	Less than 1 year/ Short-term Medium General Fund, National Dam Safety Program State Assistance Grants	23	High
WW-2	Work with Colorado Department of Transportation, Teller County, and Cripple Creek Public Works to improve infrastructure and minimize the impacts of severe winter weather. Repave Galena Avenue, Bennett Street, and other main thoroughfares.	Existing	Structure and Infrastructure Projects Severe Winter Weather	1(a), 1(b), 2(a), 3(a), 3(b)	Cripple Creek Public Works	CDOT	Ongoing Low General and State funding/ budgets	N/A	High

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City of Victor – Jurisdiction Annex – Teller County Multi-Jurisdictional Hazard Mitigation Plan

January 2021

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City of Victor

1. Hazard Mitigation Plan Points of Contact

Primary Point of Contact

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Secondary Point of Contact

Kurt Yeater, Public Works Superintendent, kyeater@cityofvictor.com, 719-373-2107

Throughout the 2021 update process, the Hazard Mitigation Plan (HMP) includes the following participation roles:

Table 1-1

2021 City of Victor Plan Update Participants		
Name	**Position**	**Role in Hazard Mitigation**
Becky Frank	City of Victor, Assistant City Administrator (Former)	Community Development Director (Former), Supporting Agency
Richard Mann	Victor City Administrator	Hazard Mitigation Lead

2. Jurisdiction Profile

The City of Victor is a statutory city located in Teller County, Colorado, 10,000 feet above sea level and southwest of Pikes Peak. In the late 19th century, the region became the second largest gold mining district in the United States, producing over $10 billion of mined gold (adjusted to current dollars) (City of Victor, n.d.a.). Around the turn of the century, the City reached its peak population of approximately 18,000 residents. Depleted ores in mines, labor strife, and an exodus of miners during World War I caused a steep decline in the City's economy.

The population of Victor was 397 in the 2010 census. There is a resumed mining effort on Battle Mountain and a growing tourism-based economy in the City. Known as the City of Gold Mines, Victor is a well-preserved mining community with unique 1890s structures and turn-of-the-century architecture (City of Victor, n.d.a.).

2.1 Population and Employment

According to the 2018 ACS-5 Year Estimates, the total population of the City of Victor is 429 people (United States Census Bureau, 2018). In 2018, 97.2 percent of the 2018 population was White, 0.0 percent African American, 0.0 percent American Indian and Alaskan, 0.0 percent Asian, 1.9 percent Native Hawaiian and Other Pacific Islander, and 0.9 percent of the population were two or more races (White and American Indian and Alaska Native). Additionally, 2.1 percent of the population is Hispanic or Latino (of any race) (United States Census Bureau, 2018). 99.3 percent of the population speaks only English, and 0.7 percent of the population speaks a language other than English (Spanish) (United States Census Bureau, 2018). 17.2 percent of Victor's population is over the age of 65.

The United States Census Bureau (2018) reported 404 people 16 and over in the City of Victor were employed, or 68.3 percent of the population based on the labor force participation rate. The mean income in the City of Victor is $60,680. An estimated 5.8 percent of the population is living in poverty according to the 2018 ACS 5-Year Estimates (United States Census Bureau, 2018).

The largest industries in Victor by employment are Arts, entertainment, and recreation, and accommodation and food services. Other employment industries in the City of Victor include:

- Educational Services and Health Care and Social Assistance
- Forestry
- Public Administration
- Manufacturing
- General Management
- Waste Management Services
- Retail Trade
- Other services
- Agriculture
- Fishing and Hunting and Mining
- Transportation, Warehousing, and Utilities
- Professional Scientific
- General Administrative
- Wholesale Trade
- Construction

2.2 Development Trends

Victor is subject to zoning and planning regulations included in the City's Land Development Code, located in the Municipal Code, Chapter 16. Until recently, the economy of Victor has depended on recreational resources, tourism, and mining. There are vast acreages of federally-owned properties available for use for recreational activities such as camping, hiking, fishing, mountain biking, snowmobiling, and cross-country skiing. Tourism has developed as an industry in Victor, and many tourists come to Victor for the lack of commercialism and the historic downtown atmosphere (City of Victor, 1997).

The elevation and mild year-round weather conditions in Victor lend themselves to ranching operations. In the past, those same conditions have supported sizeable truck farming operations; however, this type of agriculture activity has mostly disappeared in the last two decades as residential development took over the acreage. According to the 2019 Cripple Creek and Victor Housing Study, only one new home was in Victor since 2011 (Sillivan & Brown, 2019). Despite the demand for housing in the area, new development is not happening (Sullivan & Brown, 2019). Commercial development centers around Victor Avenue, extending out on Third and Fourth Streets with some commercial uses on Diamond Avenue and Fifth Street. The amount of vacant land partially reflects the gradual loss in population since 1962 when gold mining declined. However, about 20 percent of the vacant land is not buildable due to topography. The agricultural activity around Victor is limited to rangeland feed for livestock (City of Victor, 1997).

2.3 Geography and Climate

High relief terrain surrounds the City of Victor. Several mountains, including Big Bull Mountain (elevation 10,832 feet), Straub Mountain (elevation 10,052 feet), Brind Mountain (elevation 10,492 feet), Squaw Mountain (elevation 10,364 feet), Little Pisgah Peak (elevation 9,808 feet), and Battle Mountain (elevation 9,267 feet), encircle the City (City of Victor, 1992). The City of Victory (1992) land remains mostly undeveloped due to the steep topography.

The climate consists of comfortable summers and relatively cool winters. Victor has an elevation of 9,794 feet and an annual rainfall of 19 inches and a snowfall of 90 inches. The annual mean temperature is 39

degrees Fahrenheit. The mean monthly temperature is 24 degrees in winter and 59 degrees in summer. Temperature extremes range from -20 degrees in the winter to 92 degrees in the summer. The region sees an average of 300 days of sunshine per year.

The geology includes bedrock overlain by thin soils ranging from a few inches to a few feet in depth. Vegetation is light, and the natural landscape was significantly disturbed by past mining activities. Wilson Creek, lying within the Pikes Peak watershed, is the primary drainage and originates northeast and around Victor (City of Victor, 1997).

2.3 Governance

Victor is a statutory city, one of the three incorporated cities in Teller County. The Colorado Revised Statutes and a set of ordinances, compiled into municipal code, guide the development of Victor. A five-member council governs Victor – the Mayor and two members from each of the two wards. Elected officials include the City Council members and the Mayor, with overlapping terms of four years. Elections are held every odd-numbered year in November.

The City Council and Mayor form the legislative branch of the City. The City Administrator carries out administrative duties. The City Council establishes and continuously reviews the goals that direct their plans. The adopted city City budget addresses those goals (City of Victor, n.d.b.).

3. Risk Assessment

FEMA	**B1.** Does the plan include a description of the type, location, and extent of all natural hazards affecting the City of Victor? (Requirement §201.6(c)(2)(i)) **B2.** Does the plan include information on previous occurrences of hazard events and the probability of future hazard events for the City of Victor? (Requirement §201.6(c)(2)(i)) **B3.** Does the plan include 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 44 Code of Federal Regulations § 201.6(c)(2)(ii))

The risk assessment for Victor used the same methodology as the risk assessment in the base plan. The assessment identified past hazard events and the mapped hazard areas to determine current and future hazard risks and vulnerabilities. Risks to the City's critical facilities and individual parcels are quantified where possible.

The City of Victor reviewed the hazard rankings developed for Teller County during HMC Meeting #2 and concurred with the rankings. The hazard rankings are shown in Table 3-1 below.

Table 3-1

City of Victor - Local Hazards							
	Probability 1=lowest, 5=highest	*Magnitude 1=lowest, 5=highest*	*Onset 1=slowest, 5=fastest*	*Duration 1=shortest, 5=longest*	*Change in Risk ↑ ↓ ↔ since 2015*	*Average*	*Rank*
Wildfire	5.00	4.00	4.00	3.00	↔	4.33	1
Thunderstorms High Winds and Hail	5.00	4.00	3.00	2.00	↑	4.00	2
Landslide	4.00	2.00	5.00	2.00	↑	3.67	3
Tornado	3.00	3.00	5.00	1.00	↑	3.67	3
Hazardous Materials	3.00	2.00	5.00	1.00	↑	3.33	5
Severe Winter Weather	5.00	2.00	3.00	2.00	↑	3.33	5
Epidemic/ Pandemic	3.00	5.00	2.00	5.00	↑	3.33	5
Drought and Extreme Temperature	4.00	2.00	3.00	4.00	↑	3.00	8
Subsidence Sink Holes and Soil Erosion	3.00	1.00	5.00	2.00	↑	3.00	8
Dam Failure	1.00	2.00	5.00	1.00	↑	2.67	10
Earthquake	1.00	2.00	5.00	3.00	↑	2.67	10
Flood	3.00	2.00	3.00	1.00	↔	2.67	10

3.1 City of Victor Specific Hazard Event History

Table 3-2 lists the hazard event history for the City of Victor in reverse chronological order. Table data is from the Colorado Department of Public Safety (2018) and the Federal Emergency Management Agency (2020).

Table 3-2

Past Hazard Events for the City of Victor			
Type of Event	**FEMA Disaster Number (if applicable)**	**Date of Hazard Event**	**Preliminary Damage Assessment (if available)**
Colorado COVID-19 Pandemic	DR-4498	Incident Period: January 20, 2020, and continuing; Major Disaster Declared on March 28, 2020	Total Public Assistance Grants Dollars Obligated: $99,489,897.26
Colorado COVID-19	EM-3436	Incident Period: January 20, 2020, and continuing. Emergency Declaration declared on March 13, 2020	
Colorado Chateau Fire	FM-5247	Incident Period: June 30, 2018 - July 06, 2018 Fire Management Assistance Declaration declared on June 30, 2018	
Drought, Teller County	S3627	2014	
Colorado Extreme Weather, Statewide	State declaration	2014	
Drought, Statewide	S3405, S3508, S3518, S3539	2013	
Drought, Statewide	S3455, S3456, S3459, S3461, S3463, S3466	2013	
Colorado Winter Storm, Statewide		2013	
Drought, Teller County	S3548	2013	
Drought, Excessive Heat, High Winds, Statewide	S3260	2012	
Drought, Statewide	S3267, S3269, S3276, S3281, S3282, S3284, S3289, S3290, S3315, S3319, S3347	2012	
Wildfire, Teller County	State declaration	2011	

Severe Blizzard, Statewide	State declaration	2009	
Colorado Nash Ranch Fire	FM-2778	Incident Period: June 24, 2008 Fire Management Assistance Declaration declared on June 27, 2008	
Drought, Teller County	S2750	2008	
Colorado Snow	EM-3270	Incident Period: December 18, 2006 - December 22, 2006 Emergency Declaration declared on January 07, 2007	Public Assistance - Dollars Approved $8,606,436.54 Total Public Assistance Grants (PA) - Dollars Obligated $8,610,144.47 Emergency Work (Categories A-B) - Dollars Obligated
Wildfire- multiple Executive Orders, Teller County	State declaration	2006	
Flooding, Teller County	State declaration	2006	
Heat, High Winds, Insect Pests, Late Freeze, Drought, Teller County	S2329	2006	
Drought, Wind, Heavy Rain, Hail, Teller County	S2188	2005	
Colorado Snowstorm	EM-3185	Incident Period: March 17, 2003 - March 20, 2003 Emergency Declaration declared on April 09, 2003	Public Assistance - Dollars Approved $6,136,470.94 Total Public Assistance Grants (PA) - Dollars Obligated $6,169,487.30 Emergency Work (Categories A-B) - Dollars Obligated

Wildfires, Statewide and Hayman Fire	DR-1421	Incident Period: April 23, 2002 - August 06, 2002 Major Disaster Declaration declared on June 19, 2002	
Colorado Drought	EM-3025	Incident Period: January 29, 1977 Emergency Declaration declared on January 29, 1977	
Colorado Heavy Rains, Snowmelt, Flooding	DR-385	Incident Period: May 23, 1973 Major Disaster Declaration declared on May 23, 1973	
Colorado Tornadoes, Severe Storms, Flooding	DR-200	Incident Period: June 19, 1965 Major Disaster Declaration declared on June 19, 1965	

3.2 Critical Infrastructure Risk Assessment

Table 3-3 provides an assessment of the exposure of critical infrastructures and facilities in Victor based on the best-available hazard data.

Table 3-3

Critical Infrastructure in Victor						
Type of Facility	**Earthquake**	**Flood (100-year floodplain)**	**Landslide Debris Area**	**Wildfire**		**Hazardous Materials (Less than 2 miles away)**
				Low	**Very Low**	
Bridge	-	-	-	-	-	-
Communication Tower	-	-	-	-	-	-
Electric Substation	-	-	-	-	-	-
Fire Station	1	-	-	-	2	1
Hospital	-	-	-	-	-	-
Law Enforcement	1	-	1	-	-	1
National Shelter System	-	-	-	-	-	-
School	-	-	-	-	-	-

3.3 Vulnerability to Specific Hazards

Vulnerability to some hazards occurs within specific geographic areas. The City of Victor's vulnerability to these hazards, including flood, wildfire, landslide, dam failure, and earthquake, differs from that of

Teller County as a whole. The sections below discuss locations and residential populations vulnerable to these identified hazards, where quantifiable.

3.3.1 Flood

The City of Victor does not have 100-year floodplains mapped. According to the City of Victor (1997) Comprehensive Plan, Victor historically experienced intense rainstorms, resulting in localized flooding and storm drainage problems from rainfall. Mapped floodplains exist south of the city limits, along Wilson Creek and the fork of North Fork Wilson Creek and South Fork Wilson Creek. Historically, flooding along these drainages has not affected structures in the City, and there is no future development planned on these floodplains.

New development in the City of Victor is subject to zoning and planning regulations under Municipal Code, Chapter 16, Land Development Code. The Land Development Code requires developers and city planners to consider potential hazard risks to proposed development, including flooding risks.

Probability

As noted in Section 6.4 of the base plan, changes in snowmelt patterns and more intense precipitation in the future will increase the probability of flooding in Victor. Because no drainages run through the City, there is a low risk of riverine flooding. However, nuisance flooding along roadways and in low-lying areas may occur.

3.3.2 Wildfire

As shown in Table 3-4, the total number of parcels in Victor, 766 parcels, are in areas with a very low potential for a wildfire that would be difficult for responders to contain, according to data compiled by the United States Department of Agriculture (USDA), including 338 residential parcels (Dillon, 2018). Based on this analysis, the entire residential population of the City (an estimated 429 people) lives in areas with very low potential for wildfire.

However, according to the Colorado Wildfire Risk Assessment (CO-WRA), areas within the Wildland-Urban Interface (WUI) outside of the developed area of the City are at a moderate to high risk from wildfire (Colorado State Forest Service, 2020). The measure of wildfire risk presented in the CO-WRA considers more than the potential for a wildfire to occur. The Colorado State Forest Service determines wildfire risk by factoring burn probability, fire intensity, and the value of resources (including housing within the WUI, forest assets, riparian assets, and drinking water importance areas) at risk from wildfire. The Colorado State Forest Service models a higher burn probability (i.e., the probability that an area will burn in a given year) for areas of Victor within the WUI. Based on higher modeled burn probability and consideration of risks to community resources, the CO-WRA presents a higher risk of wildfire to the community (Colorado State Forest Service, n.d.).

The Teller County (2011) Community Wildfire Protection Plan (CWPP) noted that Victor has a large concentration of structures located in the WUI, making the City particularly vulnerable to wildfire. The Teller County (2011) CWPP did not include recommendations for County incorporated communities; however, the CWPP recommended the City of Victor develop their own wildfire protection plan.

Mountainous areas in the Front Range west of the City also have a moderate to a high probability of experiencing more intense fires, which could affect Victor indirectly due to public health concerns due to wildfire smoke or directly by threatening homes and other structures and displacing residents.

Victor effectively plans for future development within the existing city boundaries. The boundary is not likely to extend into the WUI outside of the developed area of the City, which will substantially minimize future development impact on the wildfire risk. However, future population growth may increase the risk of wildfires near the City of Victor.

Probability

The City of Victor has 182 acres that are considered a very low risk for wildfire. However, changes in climate conditions in the west will likely increase wildfires in unincorporated Teller County near Victor.

Table 3-4

Parcels Exposed to Wildfire Hazards		
	Very Low Risk Area	
Parcel Type	**# of Parcels**	**Value**
Commercial (Vacant)	14	$49,340
Commercial	27	$1,189,590
Exempt	43	$729,870
Mineral	3	$10,010
Mixed Use Commercial	17	$435,810
Mixed Use Residential	1	$8,840
Mobile Home	16	$16,740
None (Uncategorized)	2	-
Residential	321	$1,980,130
State	3	-
Vacant Land	319	$448,590
Total	**776**	**$4,868,920**

3.3.3 Landslide

Previous landslides indicate the probability of future events. Victor does not have a history of past landslides. According to the City of Victor 1997 Comprehensive Plan Section 3.7.3, the General Soil Map for Teller County indicates that Victor's soil is well-drained, varying from gently sloping to steep with rock outcroppings and rock slides on high mountain slopes. Rock accumulation from Pikes Peak granite and stream outwash constitute 85 to 90 percent of the soil material in the area around Victor. The slopes vary from 9 to 25 percent, and bedrock begins from 0 to 60 inches below the surface. Soils from this material are incredibly gravelly and highly susceptible to gully erosion in disturbed areas, even on gentle slopes (City of Victor, 1997).

Most of the developed area of Victor has a gently sloping topography. Steeper slopes are north of the City and Elkton and Cresson Mine Road and south of the City near Wilson Creek. Future development in these areas could increase the risk of landslides. Additionally, as incidents of wildfires increase and

hillsides are void of vegetation, rain-soaked hillsides are more likely to slide, resulting in increased damage to homes and other structures.

In the City of Victor (2020) Chapter 16-Land Development Code, Section 16-5-40 outlines regulations for development standards. These regulations dictate whether the development location, site, and design are non-intrusive, intended to blend in with the existing natural environment and to minimize disruption to the existing terrain, vegetation, drainage patterns, natural slopes, and any other distinct features. Sec. 13-4-50 of the City of Victor (2020) municipal code states that a watershed district permit application requires submitting elevations, dimensions, location, extension, and slopes shown by contours and/or other means for all proposed excavating, grading, filling, or surfacing. These permitting requirements minimize the potential for landslide risks on new developments (City of Victor, 2020).

Probability

While no parcels in the City of Victor are in areas of past landslide debris, the probability of a landslide occurring in Victor is moderate, based on the soil profile. Additionally, as stream flows and velocities change due to future climate conditions, erosion patterns in the area of Wilson Creek may also change.

3.3.4 Dam Failure

The City of Victor owns two dams, Bison Park and Victor #2, which are located northeast of the City in unincorporated Teller County. Both dams are considered significant hazard, which means that failure of the dam could cause cause economic loss, environmental damage, or disruption of lifeline facilities. Loss of human life would not be probable. Bison Park dam was constructed in 1902, and Victor #2 dam was constructed in 1897. Both dams are in need of maintenance.

The City of Victor has developed Emergency Action Plans (EAPs) for both the Bison Park and Victor #2 dams (City of Victor 2021a, City of Victor 2021b); however, dam inundation maps showing the limits of flooding in the event of a dam failure have not been developed. The EAPs list critical infrastructure and structures that are within the breach paths. For both dams, these include: Highway 81, Altman Dam, Gold Camp Road, five homes along Beaver Valley Road, Pringtime Dam, and Skaguay Dam (City of Victor 2021a, City of Victor 2021b). The breach paths for both dams are entirely within unincorporated parts of Teller County.

Probability

The probability of a dam failure affecting dams owned by the City of Victor is considered low. Dam failure events are infrequent; their frequency coincides with that of the events that may cause them, including earthquakes, landslides, and excessive rainfall and snowmelt. Dams may pose “residual risk” – risk remaining after implementation of safeguards. Residual risk is associated with events that go beyond a dam’s design to withstand. Based on two occurrences of dam failure in the past 45 years in Teller County, there is an estimated 1 and 10 percent chance of occurrence in any given year.

3.3.5 Earthquake

Earthquake hazards across unincorporated areas of Teller County are similar to earthquake hazards in Victor. A full hazard profile for earthquakes is in Chapter 18 of the base plan. The expected peak ground acceleration (PGA) is a measure of the ground shaking produced by an earthquake. In the City of Victor area, future earthquakes have a 2 percent probability of exceeding the expected severity over 50 years. The expected PGA ranges from 11 to 12 percent of gravity. This level of shaking could feel strong to people on the ground, but would likely result in only light damage to buildings and infrastructure.

The City of Victor's (1997) Comprehensive Plan, adopted by the Planning Commission, guides land use in the Victor area. Development in the planning area is regulated through building standards and performance measures to reduce hazard risks. Any new development is subject to the standards of adopted building codes. The International Building Code (2012) includes standards to reduce seismic risks to structures. This international code is also in the City of Victor (2020) municipal code, Chapter 18-Building Regulations.

Probability

The seismic hazard in Victor is low, but it is possible a damaging earthquake could occur. Table 3-5 shows parcels in the city that are within the earthquake hazard area.

Table 3-5

Parcels Within Earthquake Hazard Area		
Parcel Type	**# of Parcels (0.110 – 0.119)**	**Value**
Commercial (Vacant)	14	$49,340
Commercial	27	$1,189,590
Exempt	43	$729,870
Mineral	3	$10,010
Mixed Use Commercial	17	$435,810
Mixed Use Residential	1	$8,840
Mobile Home	16	$16,740
None (Uncategorized)	2	-
Residential	321	$1,980,130
State	3	-
Vacant Land	319	$448,590
Total	**766**	**$4,868,920**

4. Capabilities Assessment

FEMA	**C1.** Does the City of Victor's plan document existing authorities, policies, programs, and resources, and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))

This section identifies the City of Victor's existing mitigation capabilities. These are the administrative and technical, financial, and planning and regulatory resources that are currently available to assist in reducing the County's vulnerability to hazards. This section addresses the capabilities of the Teller County government. Capability assessments for each participating jurisdiction are in the jurisdictional annexes.

4.1 Administrative and Technical Resources

Table 4-1 describes the City's administrative and technical capabilities to engage in and improve mitigation planning and program implementation.

Table 4-1

Human and Technical Resources Integrated with Hazard Mitigation	
Resource	**Yes/No**
Emergency Manager	Yes
Floodplain Administrator	No
Community Planning:	
- **Planner/Engineer (Land Development)**	Yes
- **Planner/Engineer/Scientist (Natural Hazards)**	No
- **Engineer/Professional (Construction)**	No
- **Resiliency Planner**	No
- **Transportation Planner**	No
Building Official	Yes
GIS Specialist and Capability	Yes
Grant Manager, Writer, or Specialist	Yes
Warning Systems/Services:	
- **General**	Yes (Nixle and ReadyOp)
- **Flood**	Yes
- **Wildfire**	Yes
- **Tornado**	Yes
- **Geological Hazards**	Yes
Other	N/A

4.2 Financial Resources

Victor maintains fiscal and financial resources to support its mitigation program. Table 4-2 identifies specific resources used to fund mitigation activities.

Table 4-2

Accessible Financial Resources	
Financial Resource	**Yes/No**
Levy for Specific Purposes with Voter Approval	Yes
Utility Fees	No
System Development / Impact Development Fee	No
General Obligation Bonds to Incur Debt	No
Special Tax Bonds to Incur Debt	No
Withheld Spending in Hazard-Prone Areas	No
Stormwater Service Fees	No
Capital Improvement Project Funding	Yes
Community Development Block Grants	Yes
Other	Yes – National Trust for Historic Preservation

Table 4-3 identifies current and potential sources of funding to implement identified mitigation actions contained within the HMP. Funding is also available from federal and state agencies and programs.

Table 4-3

Financial Resources Integrated with Hazard Mitigation		
Funding Source	**Fund Administrator**	**Description**
LOCAL		
General Fund	City Council	Funding available for mitigation efforts supporting government-wide projects and activities.
Utility Enterprise Fund	City Council	Operation of water and wastewater operations.
Capital Improvement and Equipment Fund	City Council	Funding available for the construction of new infrastructure, infrastructure improvements, and critical infrastructure protection.
Conservation Trust Fund	City Council	Funding applies to the acquisition, development, and maintenance of new conservation sites or capital improvements or maintenance for recreational purposes on any public site.
FEDERAL		
Building Resilient Infrastructure and Communities (BRIC) Program	Federal Emergency Management Agency (FEMA)/Colorado Division of Homeland Security and Emergency Management (DHSEM)	Authorized by the Disaster Relief and Recovery Act of 2018, the BRIC program is replacing FEMA's Pre-Disaster Mitigation Program. BRIC will support states, local communities, tribes, and territories to undertake projects that mitigate hazard risks and increase community resiliency. Grant awards will prioritize infrastructure projects and projects that support community lifelines: safety and security; food, water, shelter; health and medical; energy; communications; transportation; and hazardous material.
Hazard Mitigation Grant Program	Colorado Division of Homeland Security and Emergency Management (DHSEM)	Post-disaster funds to hazard reduction projects impacted by recent disasters.
Flood Mitigation Assistance Program	Colorado Division of Homeland Security and Emergency Management (DHSEM)	Provides funds for flood mitigation on buildings that carry flood insurance and have been damaged by flooding. Provides funding to support the development of the flooding hazard portion of state and local mitigation plans and up to 100% of the cost of eligible mitigation activities. This funding is only available to communities participating in the NFIP.
Community Development	U.S. Department of Housing and Urban Development/	Funds projects that benefit low- and moderate-income communities, prevent or eliminate slums

Block Grant Program	Colorado Department of Local Affairs	or blight, or meet urgent community development needs posing a serious and immediate threat to community health or welfare.
Emergency Management Performance Grants Program	Federal Emergency Management Agency (FEMA)/Colorado Division of Homeland Security and Emergency Management (DHSEM)	Provides funding to states for local or tribal planning, operations, acquisition of equipment, training, exercises, and construction and renovation projects.
National Earthquake Hazards Reduction Program (NEHRP)	Colorado Geological Survey (CGS)	Supports enhanced earthquake risk assessments in local HMPs. Provides funding for earthquake modeling and loss estimation, partnership building, planning, and training activities. Provides funding for prevention materials and activities. Provides support for limited post-event inspection and reporting.
State Fire Assistance Program	U.S. Forest Service/ Colorado Division of Homeland Security and Emergency Management (DHSEM)	Provides funding opportunities for local wildland-urban interface planning, prevention, and mitigation projects, including fuels reduction work, education and prevention projects, community planning, and alternative uses of fuels.
National Dam Safety Program State Assistance Grants	Federal Emergency Management Agency (FEMA)/Division of Water Resources (DWR) Dam Safety	Grant assistance to State Dam Safety programs to reduce risks to life and property associated with dams, increase awareness of the benefits and risks related to dams, and advance the state in the practice of dam risk management.
Rehabilitation of High Hazard Potential Dams Grant Program	FEMA/DWR Dam Safety	Provides technical, planning, design, and construction assistance in grants for the rehabilitation of eligible high hazard potential dams.
Risk Mapping, Assessing, and Planning	FEMA	Provides funding and technical support for hazard studies, flood mapping products, risk assessment tools, mitigation and planning, and outreach and support.
Conservation Reserve Program	U.S. Department of Agriculture Farm Service Agency and Natural Resource Conservation Service	Retires eligible cropland from agricultural production and plants the land with permanent grass cover to reduce wind erosion and dust hazards.
STATE		
Flood Response Fund	Colorado Water Conservation Board (CWCB)	Created and appropriated funding to the Flood Response Fund, administered by CWCB.
Emergency Dam Repair Cash Fund	Colorado Water Conservation Board (CWCB)	As determined by CWCB, money is transferred from the CWCB Construction Fund to the Emergency Dam Repair Cash Fund as needed.

Forest Restoration and Wildfire Risk Mitigation Grant	Colorado State Forest Service (CSFS)	Assists with funding community-level actions across the state implemented to protect populations and property in the wildland-urban interface and to promote forest health and the utilization of woody material. Includes funding for capacity building.
Rockfall Mitigation Program	Colorado Department of Transportation (CDOT)	Provides internal mitigation design and review for projects funded by rockfall mitigation budget; provides personnel designated as first responders during rockfall related emergencies; installs control devices on rock walls for prevention; post falling rock signs on highways.
Colorado Wildfire Preparedness Plan and Fund	Division of Fire Prevention & Control (DFPC)	Amended to read Wildfire Emergency Response Fund creation, Wildfire Preparedness Fund creation. DFPC may use the money in the Wildfire Preparedness Fund to implement the Wildfire Preparedness Plan.
OTHER		
Community Planning Assistance Teams	American Planners Association Foundation	Provides pro bono technical assistance for planning frameworks or community vision plans for communities needing extra assistance. Local governments are responsible for travel costs.

4.3 Planning and Regulatory Resources

Table 4-4 summarizes Victor's planning and regulatory capabilities, including plans, policies, and programs with integrated hazard mitigation principles.

Table 4-4

Planning and Regulatory Resources Integrated with Hazard Mitigation	
Planning/Regulatory Resource	**Yes/No**
Building Codes (Year)	Yes (2012), Electrical (2020), and Plumbing (2018)
Building Code Effectiveness Grading Schedule (BCEGS) Rating	No
Capital Improvements Program or Plan	Yes
Community Rating System (CRS)	No
Community Wildfire Protection Plan (CWPP)	No
Comprehensive, Master, or General Plan	Yes, 1997 update
Economic Development Plan	No – in progress
Elevation Certificates	No
Erosion/Sediment Control Program	Yes
Floodplain Management Plan or Ordinance	Yes
Flood Insurance Study	No

Growth Management Ordinance	Yes
Non-Flood Hazard-Specific Ordinance or Plan (e.g., steep slope, wildfire, snow load)	No
National Flood Insurance Program	No
Site Plan Review Requirements	Yes
Stormwater Program, Plan, or Ordinance	Yes
Zoning Ordinance	Yes
Other	Yes – City of Victor Source Water Protection Plan

4.4 Education and Outreach Resources

Table 4-5 summarizes Victor's education and outreach capabilities, including programs used to educate and notify residents, business owners, and other stakeholders regarding hazard risks.

Table 4-5

Education and Outreach Resources	
Education and Outreach Resource	**No or Yes & Year Adopted**
Local Citizen Groups that communicate hazard risks	No
StormReady	No
Firewise	No
Other	City blog and Nixle used to communicate information on hazard risks.

4.5 National Flood Insurance Program Participation

FEMA	**C2.** Does the Plan address [the City of Victor's] participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3))

The City of Victor does not participate in the National Flood Insurance Program (NFIP). However, Municipal Code, Chapter 16, Land Development Code requires developers and city planners to consider potential flood hazards to proposed development.

4.6 FEMA Funded Hazard Mitigation Projects

Table 4-6 outlines potential funding sources available to local jurisdictions with a FEMA-approved HMP.

Table 4-6

Mitigation Plan Requirement for Governments Applying for Certain FEMA Grants			
Enabling Legislation	**FEMA Assistance Program**	**Is a Mitigation Plan Required?**	
		State Applicant	**Local Sub- Applicant**
Stafford Act	Individual Assistance (IA)	No	No
	Public Assistance (PA) Categories A and B (e.g., debris removal, emergency protective measures)	No	No
	Public Assistance (PA) Categories C through G (e.g., repairs to damaged infrastructure, publicly-owned buildings)	Yes	No
	Fire Mitigation Assistance Grants (FMAG)	Yes	No
	Hazard Mitigation Grant Program (HMGP)planning grant	Yes	No
	Hazard Mitigation Grant Program (HMGP) project grant	Yes	Yes
	Building Resilient Infrastructure and Communities (BRIC)	Yes	Yes

4.7 Integration of Mitigation into Existing Planning Mechanisms

FEMA	**C1.** Does the plan document [the City of Victor's] existing authorities, policies, programs, and resources, and its ability to expand on an improve these existing policies and programs? (Requirement §201.6(c)(3))

FEMA	**C6.** Does the plan describe a process by which [the City of Victor] will incorporate 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))

Integration of the principles of mitigation into the City of Victor's daily operations and ongoing planning activities is a priority of the City's mitigation program. These activities will support:

- Raising awareness of the importance of hazard mitigation for the whole community
- Facilitating an understanding that hazard mitigation is not just an "emergency services" function and building ownership of mitigation activities across the organization
- Reduction in duplication or contradiction across regional plans

- Maximization of planning resources through linked or integrated planning efforts

The City will consider integrating mitigation principles into planning mechanisms, including:

- Budget decision-making
- Building and zoning ordinances and decision-making
- Emergency planning mechanisms
- Economic development, planning, and decision-making

4.7.1 Existing Plans

The existing plans listed in Table 4-7 provide ongoing opportunities for integration of hazard mitigation, and the City will work with plan owners and stakeholders when these plans are updated to consider hazard mitigation data and principles and ensure that plans align with the HMP.

Table 4-7

Existing Plans	
Plan	**Description**
City of Victor 1992 Comprehensive Plan and 1997 Update and 3 Mile Plan	The City's comprehensive plan assists in making decisions about the physical development of the community for the next 5 to 10 years. This plan addresses water runoff, flooding and rainstorms, and landslide potential.
City of Victor Source Water Protection Plan 2014	The goal of the Colorado Rural Water Association's (CRWA) Source Water Protection Program is to assist rural and small communities served by public water systems to reduce or eliminate the potential risks to drinking water supplies. This plan addresses flooding, wildfires, and hazardous waste.

5. Hazard Mitigation Action Plan and Evaluation of Recommended Initiatives

FEMA	**C4.** Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects to reduce the effects of hazards, emphasizing new and existing buildings and infrastructure in the City of Victor? (Requirement §201.6(c)(3)(ii))

5.1 2015 Initiative Review and Status

The 2021 plan mitigation strategy included an assessment of each 2015 plan mitigation action. Results from the evaluation determined the current status of the mitigation action, if the action was ongoing or incomplete, and whether to carry over the action to the 2021 plan update. Members of the HMC worked through each previous action during HMC Meeting #2 to document steps to fulfill the action. See Appendix F of the base plan for an overview of the status of all actions from the 2015 plan update.

5.2 2021-2026 Mitigation Implementation Plan

The mitigation Implementation Plan (IP) lays the groundwork for how the City's mitigation actions will be prioritized, implemented, and administered. The IP includes both short-term strategies that focus on planning and assessment activities and long-term strategies that will result in ongoing capability or structural projects to reduce vulnerability to hazards. See Appendix F of the base plan for the Mitigation Action Worksheet instructions and completed Mitigation Action Worksheets. New actions are in Table 5-1.

Table 5-1

2021 – 2026 Mitigation Implementation Plan: City of Victor									
ID	**Mitigation Action**	**Action Status**	**Type of Action and Hazard Addressed**	**Goals**	**Lead Entity**	**Support Entity**	**Implement Timeline + Anticipated Cost + Funding Source**	**STAPLEE + Mitiga-tion Effect-ivness Score**	**Priority: low, med, high**
MH-14	Improve perimeter security of the Bison Reservoir Dam, which is a major water supply for both the City and the wildland-urban interface	Existing	Structure and Infrastructure Projects Multiple	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	City Admin-istrator	-	Short-term Medium Department of Homeland Security, in cooperation with Cripple Creek and Victor Gold Mine	N/A	High
MH-15	Work together with Teller County and the Cripple Creek/V Gold Mine educate the community as to all-hazards preparedness for potential emergencies and disasters	Existing	Education and Awareness Programs Multiple	1(a), 1(b), 2(a), 2(b), 3(a), 3(b), 4(a), 4(b)	Victor Fire Chief	Teller County OEM, Sheriff, Cripple Creek, and Victor Gold Mine Health and Safety Manager	Ongoing Low General fund, DHS, private donations (Cripple Creek and Victor Gold Mine)	N/A	Low
MH-16	Replace water valve tower (100+ years old) in Reservoir #2, which is threatened by soil erosion/subsidence, to mitigate threat to city's	New	Structure and Infrastructure Projects Multiple (Subsidence,	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	City of Victor	-	Less than 1 year/ Short-term High	29	High

	water supply and threat of dam failure		Sink Holes, and Soil Erosion; Dam Failure)				CC&V, DOLA, State Loan		
FL-6	Increase size, basin, and replace aged equipment of WWTF; WWTF is a few years from reaching life expectancy. This action would reduce impervious surface in the floodplain and would update the WWTF to comply with floodplain regulations.	New	Structure and Infrastructure Projects Flood	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	City of Victor	-	1-3 years/ Mid-term High DOLA, State, user fees increase	25	High
FL-7	Continue to upgrade the Victor flood control infrastructure through improving conditions of streets and curbs and the installation of new culverts and street drainage systems	Existing	Structure and Infrastructure Projects Flood	1(a), 1(b), 2(a), 2(b), 3(b)	Victor City Administrators Office	-	Annually/ Ongoing High Colorado Department of Local Affairs and CDBG Grants	N/A	Med
SS-2	Recap Landfill due to age and to prevent soil erosion/contamination of nearby streams and land	New	Structure and Infrastructure Projects Subsidence, Sink Holes, and Soil Erosion	2 (a), 2(b), 3 (a), 3(b)	City of Victor	-	1-3 years/ Mid-term High Grant (e.g., EPA Brownfield)	21	Med
WF-10	Upgrade the water supply by increasing the volume of available storage and increasing water pressure-upgrading water	Existing	Structure and Infrastructure Projects Wildfire	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	City Admin-istrator	-	Short-term High Colorado Department of Local Affairs	N/A	High

	distribution infrastructure by providing increased water pressure to increase the ability to fight fires in the wildland-urban interface						and CDBG grants and Power and Water Development Authority		
WF-11	Develop a Community Wildfire Protection Plan (CWPP)	New	Local Plans and Regulations Wildfire	1(a), 1(b), 2(a), 2(b), 4(a), 4(b)	City Administrator	-	1 – 3 years/ Mid-term High State Fire Assistance Program and other grant funding	25	High
DF-4	Assess maintenance needs and repair aging infrastructure and water pipelines at Victor #2 and Bison Park dams.	New	Structure and Infrastructure Projects Dam Failure	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	City of Victor	Colorado Department of Local Affairs Newmont Mine State of Colorado	1 – 3 Years/ Mid-term Medium CIP Funds, State Grant Funding	29	High
DF-5	Create dam inundation maps for the Victor #2 and Bison Park dams, showing the limits of dam failure flooding, to increase understanding of dam failure risks in the community.	New	Local Plans and Regulations	4(a)	City of Victor	Colorado Division of Water Resources, Dam Safety Branch	Less than 1 year/ Short-term Medium CIP Funds, National Dam Safety Program State Assistance Grants	23	High

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City of Woodland Park
– Jurisdiction Annex –
Teller County
Multi-Jurisdictional Hazard Mitigation Plan

January 2021

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City of Woodland Park

1. Hazard Mitigation Plan Points of Contact

Primary Point of Contact

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Secondary Point of Contact

Robin Lindberg, Woodland Park Police Department, rlindberg@city-woodlandpark.org, 719-687-9262

Throughout the 2021 update process, the Hazard Mitigation Plan (HMP) includes the following participation roles:

Table 1-1

2021 City of Woodland Park Plan Update Participants		
Name	**Position**	**Role in Hazard Mitigation**
Dianna Van Auken	Teller Senior Coalition, Woodland Park	Community Partner
Andy Leibbrand	Commander, Woodland Park PD	Hazard Mitigation Lead
Robin Lindberg	Woodland Park PD	Supporting POC

2. Jurisdiction Profile

Woodland Park is a home rule municipality situated 18 miles west of Colorado Springs. It is the most populous city in Teller County, with over 8,000 residents. Unspoiled wilderness surrounds Woodland Park, including the one million acres of Pike National Forest. Tourism fuels the economy of the City, with over 300 days of sunshine each year, the region is ideal for year-round outdoor adventures.

Officially incorporated In 1891, after becoming a resort town and business center for the surrounding area, Woodland Park's population was only 121 residents. Woodland Park's primary business was sawmilling; logs were cut and sold for road ties and braces used for the gold mines of Cripple Creek and Victor. Today, tourism is the primary economy, often turning first-time visitors into lifelong residents (Elevate Colorado, n.d.b.).

2.1 Population and Employment

According to the United States Census Bureau (2018a.) ACS 5-Year Estimates, the population in the City of Woodland Park in 2018 was 7,421; 97.7 percent of the population was White, 0.8 percent were Black or African American, 1.7 percent were American Indian or Alaskan, 0.9 percent were Asian, 0.1 percent Native Hawaiian or Other Pacific Islander, and 0.2 percent other races. Additionally, 3.4 percent of the population was Hispanic or Latino (of any race). 98.0 percent of the population speak only English at home, while 2.0 percent speak a language other than English (United States Census Bureau, 2018d.).

The United States Census Bureau (2018c.) states the City of Woodland Park has approximately 6,140 employed people. According to the United States Census Bureau (2018b.) 2014-2018 ACS 5-year estimates, 63.6 percent of the population is in the labor force. Employment industries include:

- Agriculture, Forestry, Fishing and Hunting, and Mining
- Manufacturing
- Retail Trade
- Finance and Insurance, Real Estate, and Rental and Leasing
- General Management
- Waste Management Services
- Healthcare and Social Assistance
- Accommodation and Food Services
- Other Services
- Construction
- Wholesale Trade
- Transportation and Warehousing, and Utilities
- Professional Scientific
- General Administrative
- Educational Services
- Arts, Entertainment, and Recreation
- Public Administration

Median household income from 2014-2018 (in 2018 dollars) was $71,295. An estimated 7.5 percent of the City's population was living below the poverty level in 2018, which is lower than the national average of 13.1% in the same year (United States Census Bureau, 2018e.).

2.2 Development and Trends

The City's land use regulations (e.g., zoning code, subdivision regulations) and 2010 Comprehensive Plan guide City plans, promoting public safety, health, convenience, comfort, prosperity, and the general welfare of the community. It is the mission of the Planning and Building Department to serve the citizens and businesses with useful and accurate information regarding land use and zoning and with the orderly development of Woodland Park.

Although Woodland Park's population has grown significantly in the past two decades, the growth has slowed recently due to changes in the local economy. The median age of city residents will likely rise as the population under age 18 drops. The percentage of the population over the age of 60 continues to increase. As the number of people with fixed incomes grows, the need for more affordable housing, health care, transportation, and other community services may increase.

Woodland Park is surrounded by a national forest, which has essentially created an urban growth boundary for the community. Based on the City of Woodland Park (2010) Comprehensive Plan, national economic conditions created an increase in foreclosures and slowed the number of development applications and building permits that the City was receiving. The City's diverse economic environment relies upon tourism, mining, construction, education/health/social services, retail, real estate, and light manufacturing. The City also functions as the region's retail and service center.

The City’s 2010 comprehensive plan projected an annual growth rate of 0.48% for the next several years (City of Woodland Park, 2010b). According to the Colorado State Demographer, the City’s recorded growth rate between 2010 and 2019 was 9.7%, or about 1.1% annually (Colorado State Demography Office, 2020).

2.3 Geography and Climate

Woodland Park is in the Rocky Mountains 18 miles west of Colorado Springs and 10 miles north of the summit of Pikes Peak. The official elevation of Woodland Park is 8,465 feet above sea level. Elevations within the city range from about 8,100 feet to 9,000 feet. Woodland Park is on the divide between the South Platte River Basin to the north and the Arkansas River Basin to the south. From the center of the City, the Trout Creek Valley extends to the north, and Fountain Creek Valley extends to the south. Land to the north, east, and west of the City is part of the 1.1 million-acre Pike National Forest.

Woodland Park has a temperate climate, receiving an average of 19.4 inches of precipitation annually. Typically, the City receives the highest levels of precipitation in July, 3.3 inches on average. July is typically the warmest month, with an average temperature of 58 degrees Fahrenheit. January is typically the coldest month, with an average temperature of 20 degrees (Climate-data.org n.d.).

2.4 Governance

The people guide the legislative affairs of the City by electing Woodland Park's City Council. The Council includes the Mayor and six council members. The City Council has the responsibilities delegated to it by the Charter of the City of Woodland Park, by Title 31 of the Constitution of Colorado, and by general law.

The City Council is authorized by Section 5.2 of the City Charter to establish, amend, and abolish Advisory and Appeal Boards or Commissions as necessary. The City Council delegates the rules and duties for the Boards and Commissions (Elevate Colorado, n.d.a.).

3. Risk Assessment

FEMA	**B1.** Does the plan include a description of the type, location, and extent of all natural hazards affecting the City of Woodland Park? (Requirement §201.6(c)(2)(i)) B2. Does the plan include information on previous occurrences of hazard events and the probability of future hazard events for the City of Victor? (Requirement §201.6(c)(2)(i)) B3. Does the plan include 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 44 Code of Federal Regulations § 201.6(c)(2)(ii))

The risk assessment for Woodland Park used the same methodology as the risk assessment in the base plan. The assessment identified past hazard events and the mapped hazard areas to determine current and future hazard risks and vulnerabilities. Risks to the City's critical facilities and individual parcels are quantified where possible.

Woodland Park reviewed the hazard rankings developed for Teller County during HMC Meeting #2 and decided to develop their own hazard rankings. Woodland Park's hazard rankings are shown in Table 3-1 below and included in Appendix E of the base plan.

Table 3-1

Woodland Park - Local Hazards							
	Probability 1=lowest, 5=highest	*Magnitude 1=lowest, 5=highest*	*Onset 1=slowest, 5=fastest*	*Duration 1=shortest, 5=longest*	*Change in Risk ↑ ↓ ↔ since 2015*	*Average*	*Rank*
Wildfire	4.00	3.00	5.00	3.00	↑	4.00	1
Hazardous Materials	3.00	4.00	5.00	1.00	↑	4.00	1
Earthquake	1.00	5.00	5.00	3.00	↔	3.67	3
Severe Winter Weather	4.00	3.00	4.00	3.00	↔	3.67	3
Thunderstorms, High Winds, and Hail	5.00	2.00	4.00	1.00	↔	3.67	3
Landslide	2.00	3.00	5.00	3.00	↔	3.33	6
Dam Failure	1.00	3.00	5.00	2.00	↔	3.00	7
Tornado	2.00	2.00	5.00	1.00	↔	3.00	7
Flood	2.00	2.00	4.00	3.00	↔	2.67	8
Subsidence, Sink Holes, and Soil Erosion	2.00	2.00	3.00	2.00	↔	2.33	9
Drought and Extreme Temperature	1.00	2.00	2.00	5.00	↑	1.67	10

Note: The epidemic/pandemic hazard was not ranked by the City. Risks associated with this hazard are discussed in the base plan for Teller County as a whole.

3.1. City of Woodland Park-Specific Hazard Event History

Table 3-2 lists the hazard event history for the City of Woodland Park in reverse chronological order.

Table 3-2

Past Hazard Events for the City of Woodland Park			
Type of Event	**FEMA Disaster Number (if applicable)**	**Date of Hazard Event**	**Preliminary Damage Assessment (if available)**
Colorado COVID-19 Pandemic	DR-4498	Incident Period: January 20, 2020, and continuing; Major Disaster Declared on March 28, 2020	Total Public Assistance Grants Dollars Obligated: $99,489,897.26
Colorado COVID-19	EM-3436	Incident Period: January 20, 2020, and continuing. Emergency Declaration declared on March 13, 2020	
Colorado Chateau Fire	FM-5247	Incident Period: June 30, 2018 - July 06, 2018 Fire Management Assistance Declaration declared on June 30, 2018	
Drought, Teller County	S3627	2014	
Colorado Extreme Weather, Statewide	State declaration	2014	
Drought, Statewide	S3405, S3508, S3518, S3539	2013	
Drought, Statewide	S3455, S3456, S3459, S3461, S3463, S3466	2013	
Colorado Winter Storm, Statewide	State declaration	2013	
Drought, Teller County	S3548	2013	
Colorado High Park And Waldo Canyon Wildfires	DR-4067	Incident Period: June 09, 2012 - July 11, 2012 Major Disaster Declaration declared on June 28, 2012	Public Assistance - Dollars Approved $4,046,793.01 Total Public Assistance Grants (PA) - Dollars Obligated $4,024,549.15 Emergency Work (Categories A-B) - Dollars Obligated
Drought, Excessive Heat, High Winds, Statewide	S3260	2012	

Drought, Statewide	S3267, S3269, S3276, S3281, S3282, S3284, S3289, S3290, S3315, S3319, S3347	2012	
Wildfire, Teller County	State declaration	2011	
Severe Blizzard, Statewide	State declaration	2009	
Colorado Nash Ranch Fire	FM-2778	Incident Period: June 24, 2008 Fire Management Assistance Declaration declared on June 27, 2008	
Drought, Teller County	S2750	2008	
Colorado Snow	EM-3270	Incident Period: December 18, 2006 - December 22, 2006 Emergency Declaration declared on January 07, 2007	Public Assistance - Dollars Approved $8,606,436.54 Total Public Assistance Grants (PA) - Dollars Obligated $8,610,144.47 Emergency Work (Categories A-B) - Dollars Obligated
Wildfire- multiple Executive Orders, Teller County	State declaration	2006	
Flooding, Teller County	State declaration	2006	
Heat, High Winds, Insect Pests, Late Freeze, Drought, Teller County	S2329	2006	
Drought, Wind, Heavy Rain, Hail, Teller County	S2188	2005	
Colorado Snowstorm	EM-3185	Incident Period: March 17, 2003 - March 20, 2003 Emergency Declaration declared on April 09, 2003	Public Assistance - Dollars Approved $6,136,470.94 Total Public Assistance Grants (PA) - Dollars Obligated $6,169,487.30

			Emergency Work (Categories A-B) - Dollars Obligated
Wildfires, Statewide and Hayman Fire	DR-1421	Incident Period: April 23, 2002 - August 06, 2002 Major Disaster Declaration declared on June 19, 2002	
Colorado Drought	EM-3025	Incident Period: January 29, 1977 Emergency Declaration declared on January 29, 1977	
Colorado Heavy Rains, Snowmelt, Flooding	DR-385	Incident Period: May 23, 1973 Major Disaster Declaration declared on May 23, 1973	
Colorado Tornadoes, Severe Storms, Flooding	DR-200	Incident Period: June 19, 1965 Major Disaster Declaration declared on June 19, 1965	

3.2. Critical Infrastructure Risk Assessment

Table 3-3 provides an assessment of the exposure of critical infrastructures and facilities in Woodland Park based on the best-available hazard data.

Table 3-3

Type of Facility	Earthquake	Flood (100-year floodplain)	Landslide Debris Area	Wildfire				Hazardous Materials (Less than 2 miles away)
				High	Medium	Low	Very Low	
Bridge	2	2	-	-	-	-	5	5
Communication Tower	4	-	-	4	-	-	-	4
Electric Substation	-	-	-	-	-	-	-	-
Fire Station	1	-	-	-	-	-	1	1
Hospital	1	-	-	-	-	-	1	1
Law Enforcement	2	-	-	-	-	-	2	2
National Shelter System	7	-	-	-	-	-	7	7
School	5	-	-	-	-	-	5	5
Water Tank	1	-	-	-	1	-	-	1

3.3. Vulnerability to Specific Hazards

Vulnerability to hazards occurs within specific geographic areas. The City of Woodland Park's vulnerability to various hazards including flood, wildfire, landslide, and earthquake differs from that of Teller County as a whole. The sections below discuss locations and residential populations vulnerable to these identified hazards, where quantifiable.

3.3.1. Flood

Woodland Park straddles the divide between the two basins in Teller County, the South Platte River and Arkansas River basins. Woodland Park is also part of the Fountain Creek Watershed, located in the Central Front Range, draining south into the Arkansas River at Pueblo. Storm flows in this watershed typically occur between May and August.

Creeks that could flood and affect Woodland Park are Fountain Creek, Lovell Gulch, and Loy Gulch. Flooding issues in Woodland Park are primarily the result of local drainage problems. The City's drainage system in most developed areas can handle no more than a five-year flood event. In many areas, the development modified natural water channels, diminishing their conveyance capacity. Additionally, highly erodible soils block culverts and local drainage structures and have led to aggradation in several reaches of Fountain Creek (e.g., at the County Road 21 crossing) (Teller County Office of Emergency Management, 2015).

Approximately 167 acres, or 4 percent of the area of the City, are within the mapped 100-year floodplain. As shown in Table 3-4, the total number of parcels in Woodland Park, 163 parcels, are in the 100-year floodplain and are vulnerable to flooding. These parcels include 76 residential and mobile home parcels. According to the United States Census Bureau (2018a.), the average household size in Woodland Park is 2.41 people. Based on the number of residential parcels in the 100-year floodplain, an estimated 182 residents are at risk from flood hazards.

Historically, flooding along these drainages affected City structures. For instance, in August 2013, the first floor of the Woodland Park City Hall was flooded, forcing many offices to relocate to other sections of the building the following day (Langenberg, R., 2013).

The City of Woodland Park (2010a.) limits development in the floodplain and along riparian corridors. The City of Woodland Park (2020) municipal code, Section 4.5: National Flood Insurance Program Participation, contains specific codes and regulations that address flooding.

Probability

As noted in Section 6.4 of the base plan, changes in snowmelt patterns and more intense precipitation in the future will increase the probability of flooding in Woodland Park.

Table 3-4

Parcels Within 100-Year Floodplain		
Parcel Type	**# of Parcels**	**Value**
Ag Residential	1	$95,020
Agricultural	1	$150
Commercial (Vacant)	14	$416,270

Commercial	19	$7,500,260
Exempt	36	$9,049,900
Industrial	2	$1,202,340
Mixed Use Commercial	1	$1,665,990
Mobile Home	1	$18,110
NONE	4	$-
Residential	75	$1,541,200
State		
Vacant Land	9	$114,890
Total	163	$21,604,130

3.3.2. Wildfire

Woodland Park currently has 18 acres at very high risk, 323 acres at high risk, 511 at medium risk, 718 at low risk, and 2,664 at very low risk of exposure to a wildfire. According to the Colorado Wildfire Risk Assessment (CO-WRA), areas within the wildland-urban interface (WUI) outside of the developed area of the City have a very low-low to a high probability of experiencing a wildfire that is low to highest in intensity (Colorado State Forest Service, 2020).

As shown in Table 3-5, 246 parcels are in areas with a very high or potentially high risk of wildfire, including 165 residential parcels located in areas with high potential. The average household size in Woodland Park is 2.4 people. Based on this analysis, an estimated 396 people, or 5.3 percent of the City's population, live in areas with a high potential for wildfire.

The City of Woodland Park and the surrounding unincorporated area of Teller County expect significant growth in the WUI in and around the City. This growth increases the risk of wildfires. The Hayman Fire revealed water systems are also vulnerable to the impacts of wildfire. To address these risks, Woodland Park incorporated long-term planning of fuel breaks between development and the wildland interface. However, according to the City of Woodland Park (2010a.) *Wildland-Urban-Interface Lessons Learned*, there continue to be regulation and best practice gaps in existing development. Additionally, regulations for new building and development tend to reflect older versions of nationally recognized codes (City of Woodland Park, 2010a.).

Probability

As noted in 6.4 of the base plan, extreme climatic events, including wildfire, will become more frequent. Climate change necessitates an improvement in fuel load reduction and emergency response.

Table 3-5

Parcels Exposed to Wildfire Hazards										
	Very Low		Low		Medium		High		Very High	
Parcel Type	Number of Parcels	Value	Number of Parcels	Value	Number of Parcels	Value	Number of Parcels	Value	Number of Parcels	Value
Ag Residential	-	-	-	-	-	-	1	$95,020	-	-
Agricultural	-	-	-	-	2	$250	2	$230	1	$140
Commercial (Vacant)	61	$1,883,640	11	$264,700	7	$180,440	5	$182,240	-	-
Commercial	190	$34,684,820	8	$1,545,920	4	$513,380	9	$1,401,710	-	-
Exempt	133	$8,252,060	11	$134,340	23	$3,088,590	11	$6,002,100	-	-
Industrial	4	$1,340,320	-	-	-	-	-	-	-	-
Mixed Use Commercial	8	$655,830	1	$109,430	2	$267,710	-	-	2	$1,712,030
Mobile Home	1	$18,110	-	-	1	$8,540	-	-	-	-
NONE	4	-	-	-	-	-	4	$-	-	-
Residential	2,273	$50,677,710	274	$7,713,090	414	$11,458,000	165	$4,948,240	-	-
State	3	$50,420	1	$117,250	1	$8,920	-	-	-	-
Vacant Land	206	$2,081,560	25	$363,150	56	$955,580	44	$644,190	2	$5,710
Total	2,883	$99,644,470	331	$10,247,880	510	$16,481,410	241	$13,273,730	5	$1,717,880

3.3.3. Landslide

Previous landslides indicate the probability of future events. Woodland Park does not have a history of past landslides. According to the Colorado Geological Survey, a hilly area with no history of landslides does not mean it is not susceptible to landslides (Teller County Office of Emergency Management, 2015). Highway 24, which cuts through Woodland Park, experiences rockfalls. However, much of this activity occurs across the county line in El Paso County, southeast of Woodland Park. Since this is the primary transportation between Teller County/Woodland Park and Colorado Springs, rockfall on this highway can impact commuters, travelers, and commercial hauling into and out of the County (Teller County Office of Emergency Management, 2015).

Woodland Park is surrounded by a national forest, which is essentially the City's urban growth boundary. The City of Woodland Park (2020) municipal code addresses steep slopes; Chapter 18.33: Use Regulations- Performance Standards outlines criteria for prioritizing tree retention on all development sites, including trees located in sensitive environmental areas (e.g., steep slopes and grade of 3:1 or greater). Additionally, Woodland Park allows clustered development to preserve unique or sensitive natural resources (e.g., steep slopes and geologic features). The City of Woodland Park (2020) municipal code Chapter 18.40 lists mandatory standards for land-disturbing activity, including graded slopes and fills. The regulation states that the angle for graded slopes and soil fill should be no greater than the angle which can be retained by vegetative cover or other adequate erosion control devices or structures (City of Woodland Park, 2020).

Probability

The probability of a landslide occurring in Woodland Park is moderate, as wildfires increase.

3.3.4. Earthquake

Earthquake hazards across unincorporated areas of Teller County are similar to earthquake hazards in Woodland Park. A full hazard profile for earthquakes is in Chapter 18 of the base plan. The expected peak ground acceleration (PGA) is a measure of the ground shaking produced by an earthquake. In the City of Woodland Park area, future earthquakes have a 2 percent probability of exceeding the expected severity over 50 years. The expected PGA ranges from 11 to 12 percent severity. This level of shaking could feel strong to people on the ground, but would likely result in only light damage to buildings and infrastructure.

The City of Woodland Park (2010b.) comprehensive plan guides land use in the area. Development in the planning area is regulated through building standards and performance measures to reduce hazard risks. Any new development is subject to the standards of the 2015 International Building Code. The International Building Code includes standards to reduce seismic risks to structures. This international code is also in the City of Woodland Park (2020) municipal code.

Probability

The seismic hazard in Woodland Park is low, but it is still likely that future damaging earthquakes will occur. Table 3-6 shows parcels in Woodland Park that are within the earthquake hazard area.

Table 3-6

Parcels Within Earthquake Hazard Area				
Parcel Type	**0.100 – 0.109**	**Value 0.100-0.109**	**0.110 – 0.119**	**Value 0.110-0.119**
Ag Residential	-	-	1	$95,020
Agricultural	1	$210	4	$410
Commercial (Vacant)	75	$2,327,630	9	$183,390
Commercial	209	$37,873,770	2	$272,060
Exempt	172	$11,648,370	6	$5,828,720
Industrial	4	$1,340,320	-	-
Mixed Use Commercial	12	$1,079,010	1	$1,665,990
Mobile Home	2	$26,650	-	-
NONE	6	$-	2	$-
Residential	3,079	$73,316,190	47	$1,480,850
State	5	$176,590	-	-
Vacant Land	305	$3,782,970	28	$267,220
Total	3,870	$131,571,710	100	$9,793,660

4. Capabilities Assessment

FEMA	**C1.** Does the City of Woodland Park's plan document existing authorities, policies, programs, resources, and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))

This section identifies the City of Woodland Park's existing mitigation capabilities. These are the administrative and technical, financial, and planning and regulatory resources that are currently available to assist in reducing the City's vulnerability to hazards.

4.1. Administrative and Technical Resources

Table 4-1 describes the City's administrative and technical capabilities to engage in and improve mitigation planning and program implementation.

Table 4-1

Human and Technical Resources Integrated with Hazard Mitigation	
Resource	**Yes/No**
Emergency Manager	Yes
Floodplain Administrator	Yes
Community Planning:	
- **Planner/Engineer (Land Development)**	Yes, City Planner
- **Planner/Engineer/Scientist (Natural Hazards)**	No
- **Engineer/Professional (Construction)**	Yes
- **Resiliency Planner**	No
- **Transportation Planner**	No
Building Official	Yes
GIS Specialist and Capability	Yes
Grant Manager, Writer, or Specialist	Yes
Warning Systems/Services:	
- **General**	Yes
- **Flood**	Yes
- **Wildfire**	Yes
- **Tornado**	Yes
- **Geological Hazards**	Yes
Other	Emergency Management Team, Heavy Equipment (e.g., snowplows, excavators, etc.), Generators, Building/Planning Department, Streets Department, PPE Cache, Require Department Directors to take basic Incident Command System (ICS) training

4.2. Financial Resources

The City maintains fiscal and financial resources to support its mitigation program. Table 4-2 identifies specific resources that are available to fund mitigation activities.

Table 4-2

Accessible Financial Resources	
Financial Resource	**Yes/No**
Levy for Specific Purposes with Voter Approval	Yes
Utility Fees	Yes
System Development / Impact Development Fee	Yes
General Obligation Bonds to Incur Debt	Yes

Special Tax Bonds to Incur Debt	No
Withheld Spending in Hazard-Prone Areas	No
Stormwater Service Fees	Yes
Capital Improvement Project Funding	Yes
Community Development Block Grants	No
Other	Yes – Lodging Tax Fund; Conservation Trust Fund; State Funds: HUTF (Highway User Tax Fund), Certified Small Business Community (CSBC), Department of Local Affairs (DOLA)

Table 4-3 identifies current and potential sources of funding to implement identified mitigation actions contained within the HMP. Funding is also available from federal and state agencies and programs.

Table 4-3

Financial Resources Integrated with Hazard Mitigation		
Funding Source	**Fund Administrator**	**Description**
LOCAL		
General Fund	City Council	Funding available for mitigation efforts supporting government-wide projects and activities.
Street Capital Improvements Fund	City Council	Funding available for street improvements, street repair, trails repair/maintenance, parking lot repair, sidewalk improvements, vehicle replacements, machinery and improvements
Culture and Recreation Fund	City Council	The Culture and Recreation Fund consists of three operational centers: Parks and Recreation, Ute Pass Culture Center (UPCC), and the Woodland Aquatic Center (WAC).
Lodging Tax Fund	City Council	Lodging tax revenue for economic enhancement and sustainability of the City, including capital projects and annual operating and maintenance expenses for beautification and streetscape projects throughout the City.
Conservation Trust Fund	City Council	Conservation Trust Fund revenues are lottery proceeds distributed to eligible local governments for the restricted purpose of acquisition, development, and maintenance of new conservation sites or capital improvements or maintenance for recreational purposes on any public site.
Stormwater Management Fund	City Council	According to City of Woodland Park (2020) Code (Chapter 13.50), these funds are applicable for

		the design and construction of stormwater management facilities; development of stormwater management master plan; revisions, updates, or expansion of flood delineation maps and studies; purchase of stormwater facility maintenance equipment or computer software; related debt service; and repair and maintenance of the City's stormwater management facilities.
Water Utility Enterprise Fund	City Council	Water Distribution Improvements, Equipment Field Services, Water System Engineering
Wastewater Utility Enterprise Fund	City Council	Wastewater collection improvements (e.g., emergency sewer replacements), equipment plant
Emergency Fund	City Council	Funds available for emergency purposes as determined by City Council.
FEDERAL		
Building Resilient Infrastructure and Communities (BRIC) Program	Federal Emergency Management Agency (FEMA)/Colorado Division of Homeland Security and Emergency Management (DHSEM)	Authorized by the Disaster Relief and Recovery Act of 2018, the BRIC program is replacing FEMA's Pre-Disaster Mitigation Program. BRIC will support states, local communities, tribes, and territories to undertake projects that mitigate hazard risks and increase community resiliency. Grant awards will prioritize infrastructure projects and projects that support community lifelines: safety and security; food, water, shelter; health and medical; energy; communications; transportation; and hazardous material.
Hazard Mitigation Grant Program	Colorado Division of Homeland Security and Emergency Management (DHSEM)	Post-disaster funds to hazard reduction projects impacted by recent disasters.
Flood Mitigation Assistance Program	Colorado Division of Homeland Security and Emergency Management (DHSEM)	Provides funds for flood mitigation on buildings that carry flood insurance and have been damaged by flooding. Provides funding to support the development of the flooding hazard portion of state and local mitigation plans and up to 100% of the cost of eligible mitigation activities. This funding is only available to communities participating in the NFIP.
Community Development Block Grant Program	U.S. Department of Housing and Urban Development/ Colorado Department of Local Affairs	Funds projects that benefit low- and moderate-income communities, prevent or eliminate slums or blight, or meet urgent community development needs posing a serious and immediate threat to community health or welfare.
Emergency Management	Federal Emergency Management Agency	Provides funding to states for local or tribal planning, operations, acquisition of equipment,

Performance Grants Program	(FEMA)/Colorado Division of Homeland Security and Emergency Management (DHSEM)	training, exercises, and construction and renovation projects.
National Earthquake Hazards Reduction Program (NEHRP)	Colorado Geological Survey (CGS)	Supports enhanced earthquake risk assessments in local HMPs. Provides funding for earthquake modeling and loss estimation, partnership building, planning, and training activities. Provides funding for prevention materials and activities. Provides support for limited post-event inspection and reporting.
State Fire Assistance Program	U.S. Forest Service/ Colorado Division of Homeland Security and Emergency Management (DHSEM)	Provides funding opportunities for local wildland-urban interface planning, prevention, and mitigation projects, including fuels reduction work, education and prevention projects, community planning, and alternative uses of fuels.
National Dam Safety Program State Assistance Grants	Federal Emergency Management Agency (FEMA)/Division of Water Resources (DWR) Dam Safety	Grant assistance to State Dam Safety programs to reduce risks to life and property associated with dams, increase awareness of the benefits and risks related to dams, and advance the state in the practice of dam risk management.
Rehabilitation of High Hazard Potential Dams Grant Program	FEMA/DWR Dam Safety	Provides technical, planning, design, and construction assistance in grants to rehabilitate eligible high hazard potential dams.
Risk Mapping, Assessing, and Planning	FEMA	Provides funding and technical support for hazard studies, flood mapping products, risk assessment tools, mitigation and planning, and outreach and support.
Conservation Reserve Program	U.S. Department of Agriculture Farm Service Agency and Natural Resource Conservation Service	Retires eligible cropland from agricultural production and plants the land with permanent grass cover to reduce wind erosion and dust hazards.
STATE		
Flood Response Fund	Colorado Water Conservation Board (CWCB)	Created and appropriated funding to the Flood Response Fund, administered by CWCB.
Emergency Dam Repair Cash Fund	Colorado Water Conservation Board (CWCB)	As determined by CWCB, money is transferred from the CWCB Construction Fund to the Emergency Dam Repair Cash Fund as needed.
Forest Restoration and Wildfire Risk Mitigation Grant	Colorado State Forest Service (CSFS)	Assists with funding community-level actions across the state implemented to protect populations and property in the wildland-urban

		interface and to promote forest health and the utilization of woody material. Includes funding for capacity building.
Rockfall Mitigation Program	Colorado Department of Transportation (CDOT)	Provides internal mitigation design and review for projects funded by rockfall mitigation budget; provides personnel designated as first responders during rockfall related emergencies; installs control devices on rock walls for prevention; post falling rock signs on highways.
Colorado Wildfire Preparedness Plan and Fund	Division of Fire Prevention & Control (DFPC)	Amended to read Wildfire Emergency Response Fund creation, Wildfire Preparedness Fund creation. DFPC may use the money in the Wildfire Preparedness Fund to implement the Wildfire Preparedness Plan.
OTHER		
Community Planning Assistance Teams	American Planners Association Foundation	Provides pro bono technical assistance for planning frameworks or community vision plans for communities needing extra assistance. Local governments are responsible for travel costs.

4.3. Planning and Regulatory Resources

Table 4-4 summarizes Woodland Park's planning and regulatory capabilities, including plans, policies, and programs with integrated hazard mitigation principles.

Table 4-4

Planning and Regulatory Resources Integrated with Hazard Mitigation	
Planning/Regulatory Resource	**Yes/No**
Building Codes (Year)	Yes, 2019
Building Code Effectiveness Grading Schedule (BCEGS) Rating	No
Capital Improvements Program or Plan	Yes
Community Rating System (CRS)	No
Community Wildfire Protection Plan (CWPP)	Yes, Greater Woodland Park Woodland Park Healthy Forest Initiative Community Wildfire Protection Plan 2017
Comprehensive, Master, or General Plan	Yes, 2010
Economic Development Plan	No
Elevation Certificates	No
Erosion/Sediment Control Program	Yes
Floodplain Management Plan or Ordinance	Yes
Flood Insurance Study	Yes

Growth Management Ordinance	Yes
Non-Flood Hazard-Specific Ordinance or Plan (e.g., steep slope, wildfire, snow load)	Yes, Section 17.40. 020 (steep slopes)
National Flood Insurance Program	Yes
Site Plan Review Requirements	Yes
Stormwater Program, Plan, or Ordinance	Yes
Zoning Ordinance	Yes
Other	Woodland Park Emergency Management Plan, 2008; Continuity of Operations Plan (COOP)

4.4. Education and Outreach Resources

Table 4-5 summarizes Teller County's education and outreach capabilities, including programs used to educate and notify residents, business owners, and other stakeholders regarding hazard risks.

Table 4-5

Education and Outreach Resources	
Education and Outreach Resource	**No or Yes & Year Adopted**
Local Citizen Groups that communicate hazard risks	Yes, Catamount Center for Environmental Science & Education, The City of Woodland Park Citizens Academy, Community Wildfire Preparedness Fair (2020)
StormReady	No
Firewise	Yes, implemented in Forest Edge and Majestic Park neighborhoods

4.5. National Flood Insurance Program Participation

FEMA	**C2.** Does the plan address the City of Woodland Park's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3))

The City of Woodland Park voluntarily participates in the National Flood Insurance Program (NFIP) and has agreed to adopt and enforce floodplain development regulations that meet or exceed the minimum outlined in the Federal Emergency Management Agency (2011) NFIP Regulations 44 Code of Regulations Part 60. Title 20 of the City of Woodland Park (2020) Code of Ordinances includes the City's Flood Damage Prevention Regulations. The Code also provides the basis for floodplain and floodway regulation in Woodland Park, including administrative procedures for Flood Hazard Development Permits, variance procedures, and procedures/requirements for flood hazard reduction.

The relationship between floodplains and development activity is also in several articles of Title 17 of the City of Woodland Park (2020) Code, which addresses subdivision of land, including preliminary and final plat requirements, and Title 18, which addresses zoning. The City developed the City of Woodland Park Stormwater Master Plan in 2015 which define drainage and stormwater management planning for

many portions of the City (Woodland Park, 2010b.). They also reference construction activities with potential to affect floodplains, drainage, and/or stormwater quality management. The City periodically updates these plans and is updating the City-wide drainage and stormwater master plan this year. The Planning and Building Department and the City Engineer address issues related to floodplain management.

The City of Woodland Park (2020) municipal code Title 20- Flood Damage Prevention and Regulation promotes public health, safety, and general welfare, and minimizes public and private losses due to flood conditions in specific areas. The regulation provisions include (City of Woodland Park, 2020):

- Protect human life and health
- Minimize expenditure of public money for costly flood control projects
- Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public
- Minimize prolonged business interruptions
- Minimize damage to critical facilities, infrastructure, and other public facilities (e.g., water, sewer, gas mains; electric and communication stations; and streets and bridges located in floodplains)
- Help maintain a stable tax base by providing for the sound use and development of flood-prone areas
- Ensure flood hazard property notifications go to potential buyers

These regulations apply to all areas of Special Flood Hazards Areas (SFHAs) within the jurisdiction of Woodland Park that is in FEMA's 2009 flood insurance study and accompanying maps (City of Woodland Park, 2020). To accomplish its purpose, Woodland Park uses the following methods to reduce flood losses (*Section 20.02.040):*

- Restrict or prohibit uses that are dangerous to health, safety, or property in times of flood, or cause excessive increases in flood heights or velocities
- Require that uses vulnerable to floods, including facilities which serve such uses, are protected against flood damage at the time of construction
- Control the alteration of natural floodplains, stream channels, and natural protective barriers
- Control filling, grading, dredging, and other development which may increase flood damage
- Prevent or regulate the construction of flood barriers which will divert floodwaters, or which may increase flood hazards to other lands

The City Manager, or designated representative, is appointed to administer and implement the City's flood damage prevention regulations. The City of Woodland Park (2020) Administrator is responsible for:

- Permit review;
- Maintenance of base flood data (e.g., floodplain studies), and other information, including the elevation of all new or substantially improved structures, floodproofing certifications, and records of public inspections;
- Notifying adjacent communities and the CWCB before alteration or relocation of a watercourse; and
- Interpret areas of special flood hazard and Flood Insurance Rate Map boundaries

Provisions for flood hazard reduction include the following:

- General standards (anchoring, construction materials and methods, utilities, and subdivision proposals)
- Specific standards for residential and non-residential construction (elevation to or above Base Flood Elevation, floodproofing, and structural components)
- Specific standards for manufactured homes and recreational vehicles (anchoring, elevation)
- Special Standards for floodways (areas within Areas of Special Flood Hazard), areas of shallow flooding, and extensive alteration of the floodway fringe

In 2020, the Colorado Water Control Board (CWCB) provided the following information on flood losses in Woodland Park under the NFIP (Teller County Office of Emergency Management, 2015):

Table 4-6

Flood Losses in Woodland Park			
Total Policies	**Total Claims**	**Number of Repetitive Losses**	**Total Payments since 1978**
55	10	0	$12,025

There are no repetitive loss properties or severe repetitive loss properties in Woodland Park.

4.6. FEMA Funded Hazard Mitigation Projects

Table 4-7 outlines potential funding sources available to local jurisdictions with a FEMA-approved HMP.

Table 4-7

Mitigation Plan Requirement for Governments Applying for Certain FEMA Grants			
Enabling Legislation	**FEMA Assistance Program**	**Is a Mitigation Plan Required?**	
		State Applicant	**Local Sub-Applicant**
Stafford Act	Individual Assistance (IA)	No	No
	Public Assistance (PA) Categories A and B (e.g., debris removal, emergency protective measures)	No	No
	Public Assistance (PA) Categories C through G (e.g., repairs to damaged infrastructure, publicly-owned buildings)	Yes	No
	Fire Mitigation Assistance Grants (FMAG)	Yes	No

	Hazard Mitigation Grant Program (HMGP)planning grant	Yes	No
	Hazard Mitigation Grant Program (HMGP) project grant	Yes	Yes
	Building Resilient Infrastructure and Communities (BRIC)	Yes	Yes
National Flood Insurance Act	Flood Mitigation Assistance (FMA) planning grant	Yes	No
	Flood Mitigation Assistance (FMA) project grant	Yes	Yes

4.7. Integration of Mitigation into Existing Planning Mechanisms

FEMA	**C1.** Does the plan document [the City of Woodland Park's] existing authorities, policies, programs, and resources, and its ability to expand on an improve these existing policies and programs? (Requirement §201.6(c)(3))

FEMA	**C6.** Does the plan describe a process by which [the City of Woodland Park] will incorporate 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))

Integration of the principles of mitigation into Woodland Park's daily operations and ongoing planning activities is a priority of the City's mitigation program. These activities will support:

- Raising awareness of the importance of hazard mitigation for the whole community
- Facilitating an understanding that hazard mitigation is not just an "emergency services" function and building ownership of mitigation activities across the organization
- Reduction in duplication or contradiction across regional plans
- Maximization of planning resources through linked or integrated planning efforts

Woodland Park will consider integrating mitigation principles into planning mechanisms, including:

- Budget decision-making
- Building and zoning ordinances and decision-making
- Emergency planning mechanisms
- Economic development, planning, and decision-making

4.7.1. Existing Plans

The existing plans listed in Table 4-8 provide ongoing opportunities for integration of hazard mitigation, and the City will work with plan owners and stakeholders when these plans are updated to consider hazard mitigation data and principles and ensure that plans align with the HMP.

Table 4-8

Existing Plans	
Plan	**Description**
City of Woodland Park Comprehensive Plan 2010	This plan is a carefully crafted framework and suggested guide for identifying countless ideas to transform aspirational ideas and intentions into future reality. To this end, the plan articulates specific goals, objectives, and suggested actions. As designed, the plan provides maximum flexibility, agility, and adaptability to changing circumstances and conditions. This plan addresses hazards such as erosion and flooding, wildfires, drought readiness, and hazardous materials. The plan includes policies such as the urban interface wildfire protection guidelines within the Municipal Code and low impact development design guidelines to prevent erosion and flooding.
The Greater Woodland Park Healthy Forest Initiative Community Wildfire Protection Plan 2017	The goal of this plan is to restore areas of forest to conditions more consistent with pre-settlement forests as they existed before fire suppression and reduce the impacts associated with wildfire to our communities and our watersheds. This plan addresses flooding and wildfire hazards.
City of Woodland Park Emergency Management Plan, 2008	As its overall purpose, the Woodland Park Emergency Management Plan seeks to prepare for measures to be taken which shall preserve life and minimize damage, respond during emergencies and provide necessary assistance, recover by developing a system to return the City to its normal state of affairs, and to mitigate the effects of a hazard. This plan addresses the response to a range of hazards, including wildfires, floods, landslides, tornadoes, winter storms, dam failures, drought, earthquakes, and hazardous material accidents.
Water Quality Management Plan 2010	The Pikes Peak Area Council of Governments (PPACG) is required under federal and state statutes to develop a Water Quality Management Plan (208 Plan) that recommends future policies and technical strategies for each of the five watersheds within the Pikes Peak Region – El Paso, Teller, and Park counties. The City of Woodland Park contributes to this plan. This plan addresses watershed issues and hazards, including agriculture, erosion, mine discharge and runoff, wildfires, and wetland conservation.

The City will consider integrating mitigation principles into planning mechanisms, including:

- Operating and capital improvement budgets
- Building and zoning ordinances
- Comprehensive land-use plan
- Municipal ordinances
- Emergency response plans
- Local school district projects

- Economic development plans

5. Hazard Mitigation Action Plan and Evaluation of Recommended Initiatives

FEMA	**C4.** Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure in the City of Woodland Park? (Requirement §201.6(c)(3)(ii))

5.1. 2015 Initiative Review and Status

The 2021 plan mitigation strategy included an assessment of each 2015 plan mitigation action. Results from the evaluation determined the current status of the mitigation action, if the action was ongoing or incomplete, and whether to carry over the action to the 2021 plan update. Members of the HMC worked through each previous action during HMC Meeting #2 to document steps to fulfill the action. See Appendix A of the base plan for an overview of the status of all actions from the 2015 plan update.

5.2. 2021-2026 Mitigation Implementation Plan

The mitigation Implementation Plan (IP) lays the groundwork for how the City's mitigation actions will be prioritized, implemented, and administered. The IP includes both short-term strategies that focus on planning and assessment activities and long-term strategies that will result in ongoing capability or structural projects to reduce vulnerability to hazards. See Appendix F of the base plan for the Mitigation Action Worksheet instructions and completed Mitigation Action Worksheets. New actions are in Table 5-1.

Table 5-1

2021 – 2026 Mitigation Implementation Plan: City of Woodland Park									
ID	**Mitigation Action**	**Action Status**	**Type of Action and Hazard Addressed**	**Goals**	**Lead Entity**	**Support Entity**	**Implement Timeline + Anticipated Cost + Funding Source**	**STAPLEE + Mitiga-tion Effect-ivness Score**	**Priority: low, med, high**
MH-9	Work with E-911 to have an event at the Senior Center to aid seniors in signing up for peak alerts	New	Education and Awareness Programs Multiple	1(a), 1(b), 3(a), 4(a), 4(b)	Woodland Park Police Department, Emergency Management	E-911	Less than 1 year/ Short-term Low General Fund; Partnership with E-911	19	Med
FL-3	Update and revise Woodland Park Stormwater Management Plan	Existing	Local Plans and Regulations Flood	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	Woodland Park City Engineer	-	Ongoing Medium General fund	N/A	High
WF-8	Undertake an emergency awareness program to educate the City's citizens on what they can do to mitigate risks to own property in case of wildfires- utilizing the Firewise Program	Existing	Education and Awareness Programs Wildfire	1(a), 2(a), 2(b), 3(a), 4(a), 4(b)	Woodland Park Police Department-Emergency Management	-	Ongoing Low General fund and Emergency Management Grants	N/A	Low

DF-1	Conduct a dam break analysis and emergency action plan for the City-owned reservoir on Loy Creek	Existing	Local Plans and Regulations Dam Failure	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	Woodland Park Utilities Director	-	Short-term Low City Utility and General Fund	N/A	Med
EQ-2	City will conduct a detailed earthquake vulnerability analysis for Woodland Park to utilize the results for the need for increased standards and potential hardening of buildings, especially critical facilities	Existing	Local Plans and Regulations Earthquake	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	Woodland Park City Engineer	-	1-3 years/ Mid-term Medium General fund	N/A	Med
EQ-3	Implement a plan to install a number of automatic gas shut off valves per year in the City in case of a seismic event	New	Structure and Infrastructure Projects Earthquake	1(b), 3(b)	Woodland Park Buildings and Grounds	Woodland Park Finance, Woodland Park Streets, Black Hills Energy	3-5 years/ Long-term High General Fund, Utility Fees, Grant Funding	28	High
EQ-4	Implement a plan to secure all hot water tanks in City buildings in case of a seismic event to reduce the risk of injury and infrastructure damage	New	Structure and Infrastructure Projects Earthquake	1(b), 3(b)	Woodland Park Buildings and Grounds	Woodland Park Finance	3-5 years/ Long-term Medium General Fund, Grant Funding	24	High
EQ-5	Educate the public on earthquake risks	New	Education and Awareness Programs Earthquake	1(a), 2(b), 4(a), 4(b)	Woodland Park Police Department-Emergency Management	-	3-5 years/ Long-term Low General Fund; Emergency	16	Med

							Management Grants		
EQ-6	Develop a post-disaster action plan for earthquakes	New	Local Plans and Regulations Earthquake		Woodland Park Police Department-Emergency Management	-	3-5 years/ Long-term Low General Fund; Emergency Management Grants	16	Med

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Four Mile Fire Protection District
– Jurisdiction Annex –
Teller County
Multi-Jurisdictional Hazard Mitigation Plan

January 2021

Prepared for:

Prepared by:

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Suite 250

Boulder, CO 80301

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Four Mile Fire Protection District

1. Hazard Mitigation Plan Points of Contact

Primary Point of Contact

Chief Jay Teague, 4milechief@gmail.com, 719-689-3417

Secondary Point of Contact

Lindy Luksch, lluksch3@gmail.com, 720-732-6171

Throughout the 2021 update process, the following participation roles were recorded for the Hazard Mitigation Plan (HMP):

Table 1-1

2021 Four Mile Fire Protection District Plan Update Participants		
Name	**Position**	**Role in Hazard Mitigation**
Steve Witcher	Four Mile Fire Protection District	Supporting POC
Jason Feagin	Four Mile Fire Protection District Board	Supporting POC
Lindy Luksch	Four Mile Fire Protection District	Supporting POC
Jon Luksch	Four Mile Fire Protection District	Supporting POC
Jay Teague	Fire Chief, Four Mile Fire Protection	Hazard Mitigation Lead
Randy L Bruggink	Four Mile Fire Protection District	Supporting POC

2. District Profile

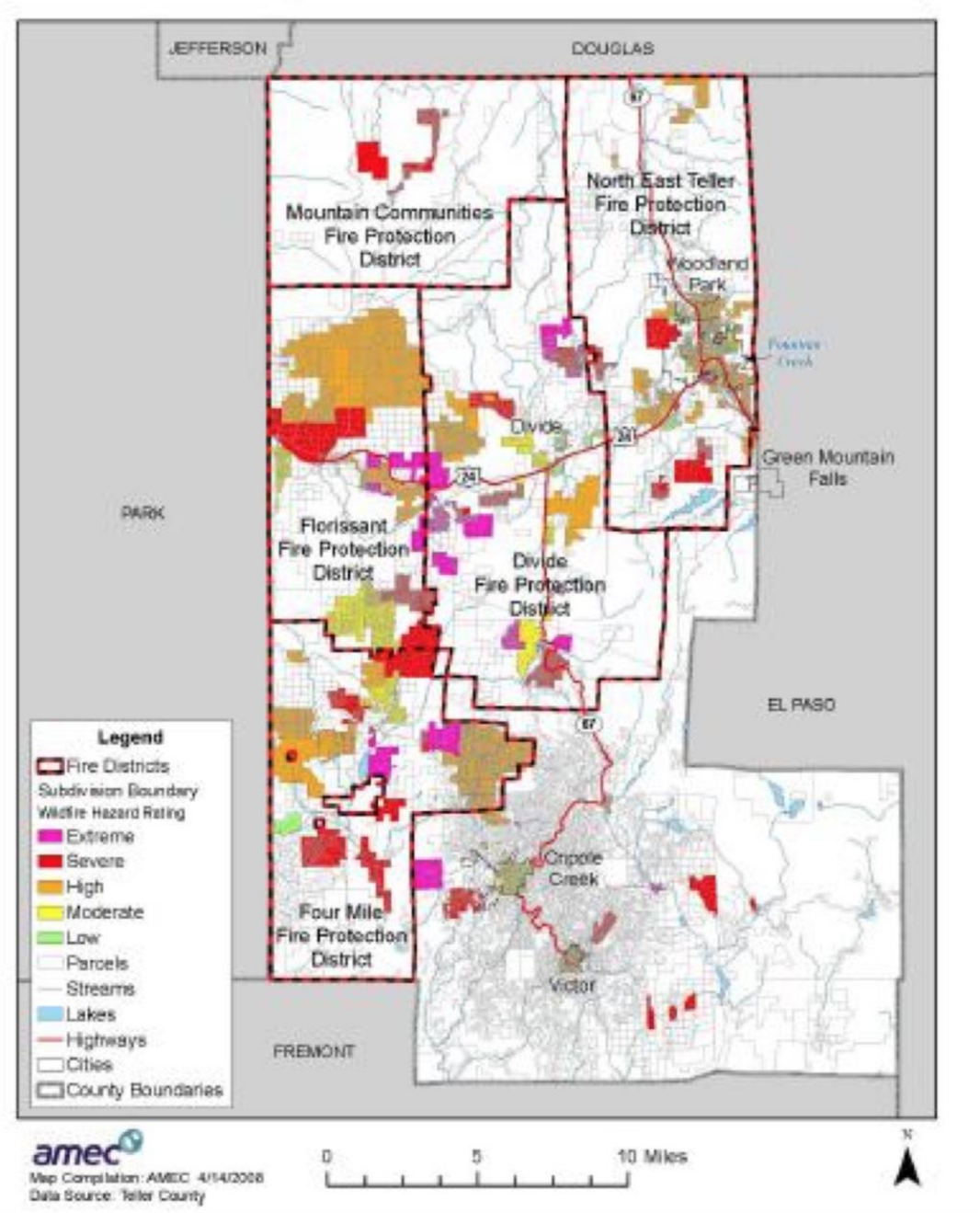
Founded in 1994, the Four Mile Fire Protection District (FPD) covers 68 square-miles in Teller and Park Counties. Four Mile FPD's management includes Alpine Vale, Barnard, Chateau West, Cripple Creek Mountain Estates, Florissant, Fourmile Creek, Hay Creek, Hidden Canyon, Highland Meadows, Lakemoor West, and Wrights Reservoir (5280Fire, n.d.). Four Mile FPD provides fire protection and emergency medical services to their District. The Four Mile Fire Protection District (n.d.) has two stations, 14 apparatus, and operated primarily with volunteer personnel.

FPD's staff include one paid part-time fire chief and 40 to 50 volunteers. Station locations:

- **Station 1:** 8437 Teller County Rd. 11, Florissant, CO 80816
- **Station 2:** 142 Anges, Florissant, CO 80813

Figure 2-1 shows the boundaries of Teller County's fire protection districts and wildfire hazard ratings for specific areas.

Figure 2-1 Teller County (2011) Wildfire Hazard Four Mile Fire Protection District



3. Risk Assessment

FEMA	**B1.** Does the plan include a description of the type, location, and extent of all natural hazards affecting the Four Mile Fire Protection District? (Requirement §201.6(c)(2)(i)) **B2.** Does the plan include information on previous occurrences of hazard events and the probability of future hazard events for the Four Mile Fire Protection District? (Requirement §201.6(c)(2)(i)) **B3.** Does the plan include 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 44 Code of Federal Regulations § 201.6(c)(2)(ii))

The risk assessment for the Four Mile FPD used the same methodology as the risk assessment in the base plan. The assessment identified past hazard events and the mapped hazard areas to determine current and future hazard risks and vulnerabilities. Risks to the Four Mile FPD's critical facilities and individual parcels are quantified where possible.

The Four Mile FPD reviewed the hazard rankings developed for Teller County during HMC Meeting #2 and decided to develop their own hazard rankings. The Four Mile FPD's hazard rankings are shown in Table 3-1 and included in Appendix E of the base plan.

Table 3-1

Four Mile Protection District - Local Hazards							
	Probability 1=lowest, 5=highest	*Magnitude 1=lowest, 5=highest*	*Onset 1=slowest, 5=fastest*	*Duration 1=shortest, 5=longest*	*Change in Risk ↑ ↓ ↔ since 2015*	*Average*	*Rank*
Wildfire	5.00	5.00	5.00	5.00	↔	5.00	1
Thunderstorms, High Winds, and Hail	4.00	3.00	5.00	1.00	↔	4.00	2
Severe Winter Weather	3.00	3.00	3.00	3.00	↔	3.00	3
Landslide	1.00	3.00	4.00	1.00	↔	2.67	4
Flood	1.00	3.00	4.00	3.00	↔	2.67	4
Subsidence, Sink Holes, and Soil Erosion	1.00	3.00	4.00	1.00	↔	2.67	4

Drought and Extreme Temperature	3.00	3.00	1.00	5.00	↔	2.33	7
Tornado	2.00	2.00	2.00	1.00	↔	2.00	8
Dam Failure	1.00	1.00	3.00	2.00	↔	1.67	9
Earthquake	1.00	1.00	1.00	1.00	↔	1.00	10
Hazardous Materials	1.00	1.00	1.00	1.00	↔	1.00	10

Note: The Four Mile FPD did not rank the epidemic/pandemic hazard. Risks associated with this hazard are discussed in the base plan for Teller County as a whole.

3.1 Four Mile Fire Protection District-Specific Hazard Event History

Table 3-2 lists the hazard event history for the Four Mile FPD in reverse chronological order. Table data is from the Federal Emergency Management Agency (202) and the Colorado Department of Public Safety (2018).

Table 3-2

Past Hazard Events for the Four Mile Fire Protection District			
Type of Event	**FEMA Disaster Number (if applicable)**	**Date of Hazard Event**	**Preliminary Damage Assessment (if available)**
Colorado COVID-19 Pandemic	DR-4498	Incident Period: January 20, 2020, and continuing; Major Disaster Declared on March 28, 2020	Total Public Assistance Grants Dollars Obligated: $99,489,897.26
Colorado COVID-19	EM-3436	Incident Period: January 20, 2020, and continuing. Emergency Declaration declared on March 13, 2020	
Colorado Chateau Fire	FM-5247	Incident Period: June 30, 2018 - July 06, 2018 Fire Management Assistance Declaration declared on June 30, 2018	
Drought, Teller County	S3627	2014	
Colorado Extreme Weather, Statewide	State declaration	2014	
Drought, Statewide	S3405, S3508, S3518, S3539	2013	

Drought, Statewide	S3455, S3456, S3459, S3461, S3463, S3466	2013	
Colorado Winter Storm, Statewide	State declaration	2013	
Drought, Teller County	S3548	2013	
Colorado High Park and Waldo Canyon Wildfires	DR-4067	Incident Period: June 09, 2012 - July 11, 2012 Major Disaster Declaration declared on June 28, 2012	Public Assistance - Dollars Approved $4,046,793.01 Total Public Assistance Grants (PA) - Dollars Obligated $4,024,549.15 Emergency Work (Categories A-B) - Dollars Obligated
Drought, Excessive Heat, High Winds, Statewide	S3260	2012	
Drought, Statewide	S3267, S3269, S3276, S3281, S3282, S3284, S3289, S3290, S3315, S3319, S3347	2012	
Wildfire, Teller County	State declaration	2011	
Severe Blizzard, Statewide	State declaration	2009	
Colorado Nash Ranch Fire	FM-2778	Incident Period: June 24, 2008 Fire Management Assistance Declaration declared on June 27, 2008	
Drought, Teller County	S2750	2008	
Colorado Snow	EM-3270	Incident Period: December 18, 2006 - December 22, 2006 Emergency Declaration declared on January 07, 2007	Public Assistance - Dollars Approved $8,606,436.54 Total Public Assistance Grants (PA) - Dollars Obligated $8,610,144.47 Emergency Work (Categories A-B) - Dollars Obligated

Wildfire- multiple Executive Orders, Teller County	State declaration	2006	
Flooding, Teller County	State declaration	2006	
Heat, High Winds, Insect Pests, Late Freeze, Drought, Teller County	S2329	2006	
Drought, Wind, Heavy Rain, Hail, Teller County	S2188	2005	
Colorado Snowstorm	EM-3185	Incident Period: March 17, 2003 - March 20, 2003 Emergency Declaration declared on April 09, 2003	Public Assistance - Dollars Approved $6,136,470.94 Total Public Assistance Grants (PA) - Dollars Obligated $6,169,487.30 Emergency Work (Categories A-B) - Dollars Obligated
Wildfires, Statewide	DR-1421	Incident Period: April 23, 2002 - August 06, 2002 Major Disaster Declaration declared on June 19, 2002	
Colorado Drought	EM-3025	Incident Period: January 29, 1977 Emergency Declaration declared on January 29, 1977	
Colorado Heavy Rains, Snowmelt, Flooding	DR-385	Incident Period: May 23, 1973 Major Disaster Declaration declared on May 23, 1973	
Colorado Tornadoes, Severe Storms, Flooding	DR-200	Incident Period: June 19, 1965 Major Disaster Declaration declared on June 19, 1965	

3.2 Critical Infrastructure Risk Assessment

Table 3-3 provides an assessment of the exposure of critical infrastructures and facilities in the Four Mile FPD based on the best-available hazard data.

Table 3-3

Critical Infrastructure Risk Assessment									
Type of Facility	**Earthquake**	**Flood (100-year floodplain)**	**Landslide Debris Area**	**Wildfire**					**Hazardous Materials (Less than 2 miles away)**
				Very High	**High**	**Medium**	**Low**	**Very Low**	
Bridge	8	8	-	1	1	1	3	2	1
Communication Tower	-	-	-	-	-	-	-	-	-
Electric Substation	-	-	-	-	-	-	-	-	-
Fire Station	2	-	-	-	-	-	1	1	2
Hospital	-	-	-	-	-	-	-	-	-
Law Enforcement	-	-	-	-	-	-	-	-	-
National Shelter System	-	-	-	-	-	-	-	-	-
School	-	-	-	-	-	-	-	-	-

3.3 Vulnerability to Specific Hazards

Vulnerability to some hazards occurs within specific geographic areas. The Four Mile FPD's vulnerability to these hazards, including flood, wildfire, landslide, and earthquake, differs from that of Teller County as a whole. The sections below discuss locations and residential populations vulnerable to these identified hazards, where quantifiable.

3.3.1 Flood

Mapped floodplains in the Four Mile FPD occur primarily along Four Mile Creek, Hay Creek, Dry Creek, Slater Creek, Little High Creek, and Cripple Creek. Approximately 1,722 acres, or 4.2 percent of the area of the District, are within the mapped 100-year floodplain. Historically, flooding along these drainages has not affected structures in the District. There are currently 39 residential parcels within the 100-year floodplain. Based on the 2018 average household size for Teller County (2.35 people), an estimated residential population of 92 people is exposed to flood hazards (United States Census Bureau, 2018).

The Four Mile Fire Protection District within Teller County has experienced little growth over the past ten years. Economic problems have impacted growth when compared to the rest of Colorado. The County and its planning partners can efficiently manage future growth within flood hazard areas. All municipal planning partners have plans (e.g., Teller County Growth Management Plan) to address frequently flooded areas.

Probability

As noted in Section 6.4 of the base plan, changes in snowmelt patterns and more intense precipitation in the future will increase the probability of flooding in the Four Mile FPD, which can affect buildings of all types indicated in Table 3-3 below.

Table 3-4

Parcels Within 100-Year Floodplain		
Parcel Type	**Number of Parcels**	**Value**
Ag Residential	29	$838,590
Agricultural	41	$51,370
Commercial	1	$960
Exempt	4	$249,250
Mixed Use Commercial	1	$46,460
Mobile Home	0	$0
None (Uncategorized)	4	-
Residential	39	$1,027,430
Vacant	30	$492,470
Total	**149**	**$2,706,530**

3.3.2 Wildfire

Before settlement of the region, wildfires were a natural part of the Rocky Mountain ecosystem. Frequent low-intensity fires thinned the trees, maintained forest diversity, removed dead or downed fuels, and recycled nutrients for healthy forest growth. Fire suppression practices over the last century

interfered with the natural wildfire cycle. Forest fuel levels increased over time so that fires ignite more easily and burn with greater intensity. Due to prolonged drought and overcrowded forest conditions, many types of trees are also more susceptible to insects and disease, making them more vulnerable to wildfires. Rapidly expanding residential and other development in the wildlands have significantly increased the likelihood of wildfires and the difficulty of managing those wildfires. In drought conditions and increased forest fuel levels, wildfires can reach catastrophic levels (Teller County, Park County, & Fremont County, 2013).

The 2011 update is the most recent version of the Teller County CWPP. The CWPP identified an area of the Four Mile Fire Protection District as a "second-tier priority" for potential property loss. Several Four Mile FPD subdivisions are in or near the second-tier priority area, as seen in the Teller County, Park County, and Fremont County (2013) CWPP. The 2005 version of the CWPP referenced wildfire evacuations that occurred in the past.

The Four Mile Fire Protection District (2013) CWPP, addresses the Teller Hazard fire ratings (low-moderate, high, and severe) and are consistent with Teller County's evaluations. The Four Mile FPD CWPP identified high-priority subdivisions with dangerous fuel conditions both inside and around the subdivision boundaries. These fuel reduction subdivision projects include Highland Meadows, Lakemore West, and Cripple Creek Mountain Estates. According to the Four Mile FPD CWPP, these high-priority subdivisions have only one access road or length routes in and out. The CWPP recommends these subdivisions create an evacuation plan with assistance from their local fire department. The subdivisions should also identify a secondary emergency evacuation route. (Teller County, Park County, & Fremont County, 2013).

The Four Mile FPD, have a moderate to a high probability of experiencing a wildfire that is low to high in intensity (Colorado State Forest Service, 2020). The mountainous areas of Rattlesnake Gulch, Mount Pisgah, Booger Red Hill, and northwest of the City of Cripple Creek also have a moderate-high to a high probability experiencing more intense fires. Additionally, in the Four Mile FPD, 1,482 acres rank as a very high potential, 5,600 acres rank as a high potential, 3,463 acres rank as a medium potential, 12,518 acres rank as a low potential, and 18,274 rank as a very low potential for wildfires.

As shown in Table 3-5, the total number of parcels in the District, 3,244 parcels, are in areas with a very low to a very high potential for wildfires. There are a total number of 913 parcels in the District with a high to a very high potential for wildfire, including 306 residential parcels. Based on the average household size for Teller County (2.35 people), an estimated residential population, 2,146 people live in areas with high to a very high potential for wildfire.

Probability

As noted in 6.4 of the base plan, extreme climatic events, including wildfire, will become more frequent. Climate change necessitates an improvement in fuel load reduction and emergency response.

Table 3-5

Parcels Exposed to Wildfire Hazards										
	Very Low Risk Area		**Low Risk Area**		**Medium Risk Area**		**High Risk Area**		**Very High Risk Area**	
Parcel Type	# of Parcels	Value	# of Parcels	Value	# of Parcels	Value	# of Parcels	Value	# of Parcels	Value
Ag Residential	6	$131,050	13	$409,160	10	$343,950	27	$756,130	24	$754,700
Agricultural	22	$3,040	39	$39,720	21	$21,040	73	$60,640	30	$113,080
Commercial	-	-	3	$201,590	-	-	-	-	1	$960
Exempt	7	$361,250	8	$182,770	2	$30,630	11	$478,200	4	$322,710
Mixed Use Commercial	-	-	-	-	-	-	1	$39,210	2	$157,240
Mobile Home	12	$16,870	13	$33,180	4	$13,540	15	$43,530	-	-
None/ Uncategorized	-	-	-	-	-	-	1	-	3	-
Residential	250	$4,636,470	290	$5,646,730	60	$1,188,190	233	$5,159,650	58	$1,616,480
Vacant	674	$2,695,510	778	$3,714,150	119	$1,096,820	321	$3,561,430	109	$1,442,340
Total	971	$7,844,190	1,144	$10,227,300	216	$2,694,170	682	$10,098,790	231	$4,407,510

3.3.3 Landslide

The Four Mile FPD includes areas impacted by past landslide debris, particularly the areas surrounding Booger Red Hill. There is a high probability of landslides occurring within the Four Mile FPD.

No residential parcels in the Four Mile FPD are in areas of past landslide debris (see Table 3-6); however, future development in Four Mile FPD could lead to more homes in the landslide risk area. Additionally, as incidents of wildfires increase and hillsides are void of vegetation, rain-soaked hillsides are more likely to slide, resulting in damage to homes and other structures. The County addresses construction on steep slopes in its ordinances and plans and can address potential future growth in landslide hazard areas.

Probability

The probability of a landslide occurring in the Four Mile FPD is high, based on debris fields from previous landslides and steep slopes.

Table 3-6

Parcels Within Landslide Debris Areas		
Parcel Type	**# of Parcels**	**Value**
Ag Residential	-	-
Agricultural	-	-
Commercial	-	-
Exempt	2	$110,830
Mixed-Use Commercial	-	-
Mobile Home	-	-
None (Uncategorized)	2	-
Residential	-	-
Vacant	-	-
Total	4	$110,830

3.3.4 Earthquake

Earthquake hazards across unincorporated areas of Teller County are similar to earthquake hazards in the Four Mile FPD. A full hazard profile for earthquakes is in Chapter 18 of the base plan. The expected peak ground acceleration (PGA) is a measure of the ground shaking produced by an earthquake. In the Four Mile FPD area, future earthquakes have a 2 percent probability of exceeding the expected severity over 50 years. The expected PGA ranges from 11 to 12 percent severity. This level of shaking could feel strong to people on the ground, but would likely result in only light damage to buildings and infrastructure. There are 41,337 acres exposed to earthquakes (39,672 acres exposed to PGA:0.110-0.119, and 1,665 acres exposed to PGA: 0.120-0.121).

The Teller County Growth Management Plan adopted by the Teller County Planning Department guides land use in the Four Mile Fire Protection District. The County's Building Code addresses Earthquake Loads in Section 1613 and a Seismic Design category in Section 1613.1.1. Additionally, any new development in the Four Mile Fire Protection District is subject to the latest building code adopted by

Teller County (2015 International Building Code). Article IV of the International Building Code includes standards to reduce seismic risks to structures.

Probability

The seismic hazard in the Four Mile Fire Protection District is low, but it is possible a damaging earthquake could occur. Table 3-7 shows parcels in the district that are within the earthquake hazard area.

Table 3-7

Parcels Within Earthquake Hazard Area				
Parcel Type	**Values 0.110 – 0.119**	**Values 0.110 – 0.119**	**Values 0.120 – 0.121**	**Value 0.120 – 0.121**
Ag Residential	73	$2,136,160	7	$258,830
Agricultural	168	$226,320	17	$11,200
Commercial	4	$202,550		
Exempt	30	$1,356,590	2	$18,970
Mixed Use Commercial	2	$85,670	1	$110,780
Mobile Home	39	$83,880	5	$23,240
None (Uncategorized)	2	$-	2	$-
Residential	862	$17,676,200	29	$571,320
Vacant	1,959	$11,883,670	42	$626,580
Total	3,139	$33,651,040	105	$1,620,920

4. Capabilities Assessment

FEMA	**C1.** Does the Four Mile Fire Protection District plan document existing authorities, policies, programs, resources, and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))

This section identifies the Four Mile FPD's existing capabilities related to the District's hazard mitigation program. Local hazard mitigation capabilities include the planning and regulatory, administrative and technical, financial, and education and outreach capabilities that are currently being leveraged or are available to reduce risk.

4.1 Administrative and Technical Resources

Table 4-1 describes the District's administrative and technical capabilities to engage in and improve mitigation planning and program implementation.

Table 4-1

Human and Technical Resources Integrated with Hazard Mitigation	
Resource	Yes/No
Emergency Manager	Yes
Floodplain Administrator	Not applicable (N/A)
Community Planning:	
- **Planner/Engineer (Land Development)**	N/A
- **Planner/Engineer/Scientist (Natural Hazards)**	N/A
- **Engineer/Professional (Construction)**	N/A
- **Resiliency Planner**	N/A
- **Transportation Planner**	N/A
Building Official	N/A
GIS Specialist and Capability	No
Grant Manager, Writer, or Specialist	No
Warning Systems/Services:	
- **General**	Yes
- **Flood**	Yes
- **Wildfire**	Yes
- **Tornado**	Yes
- **Geological Hazards**	Yes
Other	N/A

4.2 Financial Resources

The Four Mile FPD maintains fiscal and financial resources to support its mitigation program. Table 4-2 identifies specific resources used to fund mitigation activities.

Table 4-2

Accessible Financial Resources	
Financial Resource	Yes/No
Levy for Specific Purposes with Voter Approval	Yes
Utility Fees	No
System Development / Impact Development Fee	No
General Obligation Bonds to Incur Debt	No
Special Tax Bonds to Incur Debt	No
Withheld Spending in Hazard-Prone Areas	No
Stormwater Service Fees	No
Capital Improvement Project Funding	No
Community Development Block Grants	No
Other	Yes – Future investments include approved funding increase- mill levy

Table 4-3 identifies current and potential sources of funding to implement identified mitigation actions contained within the HMP. The Four Mile FPD is primarily funded through mill levies assessed against all residents in the district and local community fundraising. These funds are used to maintain the district's facilities and equipment and purchase protective gear and supplies. The district relies upon grant funding to implement hazard mitigation projects and is planning to partner with CUSP to leverage grant funding to pursue mitigation projects starting in 2021. Funds are also available from federal and state agencies and programs.

Table 4-3

Financial Resources Integrated with Hazard Mitigation		
Funding Source	**Fund Administrator**	**Description**
FEDERAL		
Building Resilient Infrastructure and Communities (BRIC) Program	Federal Emergency Management Agency (FEMA)/Colorado Division of Homeland Security and Emergency Management (DHSEM)	Authorized by the Disaster Relief and Recovery Act of 2018, the BRIC program is replacing FEMA's Pre-Disaster Mitigation Program. BRIC will support states, local communities, tribes, and territories to undertake projects that mitigate hazard risks and increase community resiliency. Grant awards will prioritize infrastructure projects and projects that support community lifelines: safety and security; food, water, shelter; health and medical; energy; communications; transportation; and hazardous material.
Hazard Mitigation Grant Program	Colorado Division of Homeland Security and Emergency Management (DHSEM)	Post-disaster funds to hazard reduction projects impacted by recent disasters.
Flood Mitigation Assistance Program	Colorado Division of Homeland Security and Emergency Management (DHSEM)	Provides funds for flood mitigation on buildings that carry flood insurance and have been damaged by flooding. Provides funding to support the development of the flooding hazard portion of state and local mitigation plans and up to 100% of the cost of eligible mitigation activities. This funding is only available to communities participating in the NFIP.
Community Development Block Grant Program	U.S. Department of Housing and Urban Development/ Colorado Department of Local Affairs	Funds projects that benefit low- and moderate-income communities, prevent or eliminate slums or blight, or meet urgent community development needs posing a serious and immediate threat to community health or welfare.
Emergency Management	Federal Emergency Management Agency (FEMA)/Colorado	Provides funding to states for local or tribal planning, operations, acquisition of

Performance Grants Program	Division of Homeland Security and Emergency Management (DHSEM)	equipment, training, exercises, and construction and renovation projects.
National Earthquake Hazards Reduction Program (NEHRP)	Colorado Geological Survey (CGS)	Supports enhanced earthquake risk assessments in local HMPs. Provides funding for earthquake modeling and loss estimation, partnership building, planning, and training activities. Provides funding for prevention materials and activities. Provides support for limited post-event inspection and reporting.
State Fire Assistance Program	U.S. Forest Service/ Colorado Division of Homeland Security and Emergency Management (DHSEM)	Provides funding opportunities for local wildland-urban interface planning, prevention, and mitigation projects, including fuels reduction work, education and prevention projects, community planning, and alternative uses of fuels.
National Dam Safety Program State Assistance Grants	Federal Emergency Management Agency (FEMA)/Division of Water Resources (DWR) Dam Safety	Grant assistance to State Dam Safety programs to reduce risks to life and property associated with dams, increase awareness of the benefits and risks related to dams, and advance the state in the practice of dam risk management.
Rehabilitation of High Hazard Potential Dams Grant Program	FEMA/DWR Dam Safety	Provides technical, planning, design, and construction assistance in grants for the rehabilitation of eligible high hazard potential dams.
Risk Mapping, Assessing, and Planning	FEMA	Provides funding and technical support for hazard studies, flood mapping products, risk assessment tools, mitigation and planning, and outreach and support.
Conservation Reserve Program	U.S. Department of Agriculture Farm Service Agency and Natural Resource Conservation Service	Retires eligible cropland from agricultural production and plants the land with permanent grass cover to reduce wind erosion and dust hazards.
STATE		
Flood Response Fund	Colorado Water Conservation Board (CWCB)	Created and appropriated funding to the Flood Response Fund, administered by CWCB.
Emergency Dam Repair Cash Fund	Colorado Water Conservation Board (CWCB)	As determined by CWCB, money is transferred from the CWCB Construction Fund to the Emergency Dam Repair Cash Fund as needed.
Forest Restoration and Wildfire Risk Mitigation Grant	Colorado State Forest Service (CSFS)	Assists with funding community-level actions across the state implemented to protect populations and property in the wildland-urban

		interface and to promote forest health and the utilization of woody material. Includes funding for capacity building.
Rockfall Mitigation Program	Colorado Department of Transportation (CDOT)	Provides internal mitigation design and review for projects funded by rockfall mitigation budget; provides personnel designated as first responders during rockfall related emergencies; installs control devices on rock walls for prevention; post falling rock signs on highways.
Colorado Wildfire Preparedness Plan and Fund	Division of Fire Prevention & Control (DFPC)	Amended to read Wildfire Emergency Response Fund creation, Wildfire Preparedness Fund creation. DFPC may use the money from the Wildfire Preparedness Fund to implement the Wildfire Preparedness Plan.
OTHER		
Community Planning Assistance Teams	American Planners Association Foundation	Provides pro bono technical assistance for planning frameworks or community vision plans for communities needing extra assistance. Local governments are responsible for travel costs.

4.3 Planning and Regulatory Resources

Table 4-4 summarizes the Four Mile FPD's planning and regulatory capabilities, including plans, policies, and programs with integrated hazard mitigation principles. The District does not guide or regulate development. Properties within the District are part of unincorporated Teller County.

Table 4-4

Planning and Regulatory Resources Integrated with Hazard Mitigation	
Planning/Regulatory Resource	**Yes/No**
Building Codes (Year)	No
Building Code Effectiveness Grading Schedule (BCEGS) Rating	No
Capital Improvements Program or Plan	No
Community Rating System (CRS)	No
Community Wildfire Protection Plan (CWPP)	No
Comprehensive, Master, or General Plan	No
Economic Development Plan	No
Elevation Certificates	No
Erosion/Sediment Control Program	No
Floodplain Management Plan or Ordinance	No

Flood Insurance Study	No
Growth Management Ordinance	No
Non-Flood Hazard-Specific Ordinance or Plan (e.g., steep slope, wildfire, snow load)	No
National Flood Insurance Program	N/A
Site Plan Review Requirements	No
Stormwater Program, Plan, or Ordinance	No
Zoning Ordinance	No
Other	N/A

4.4 Education and Outreach Resources

Table 4-5 summarizes the Four Mile FPD's education and outreach capabilities, including programs that educate and notify residents, business owners, and other stakeholders regarding hazard risks.

Education and Outreach Resources

Table 4-5

Education and Outreach Resources	
Education and Outreach Resource	**No or Yes & Year Adopted**
Local Citizen Groups that communicate hazard risks	Yes, Public education is part of district operations budgeting. Ex: Teller County "Be Aware and Prepare," Woodland Park Field Office- Wildfire Mitigation and Education, Pikes Peak Wildfire Prevention Partners
StormReady	No
Firewise	Yes, Fire mitigation consultations with homeowners. Future investments include community outreach improvements - stop the bleed; wildland mitigation; Offers WASP Patented Fire Gutter Mount Sprinkler System to residents (effective for wildfire embers)

4.5 FEMA Funded Hazard Mitigation Projects

Table 4-6 outlines potential funding sources available to local jurisdictions with a FEMA-approved HMP.

Table 4-6

Mitigation Plan Requirement for Governments Applying for Certain FEMA Grants			
Enabling Legislation	**FEMA Assistance Program**	**Is a Mitigation Plan Required?**	
		State Applicant	**Local Sub-Applicant**
Stafford Act	Individual Assistance (IA)	No	No

	Public Assistance (PA) Categories A and B (e.g., debris removal, emergency protective measures)	No	No
	Public Assistance (PA) Categories C through G (e.g., repairs to damaged infrastructure, publicly-owned buildings)	Yes	No
	Fire Mitigation Assistance Grants (FMAG)	Yes	No
	Hazard Mitigation Grant Program (HMGP)planning grant	Yes	No
	Hazard Mitigation Grant Program (HMGP) project grant	Yes	Yes
	Building Resilient Infrastructure and Communities (BRIC)	Yes	Yes

4.6 Integration of Mitigation into Existing Planning Mechanisms

FEMA	**C1.** Does the plan document [Four Mile Fire Protection District's] existing authorities, policies, programs, and resources, and its ability to expand on an improve these existing policies and programs? (Requirement §201.6(c)(3))

FEMA	**C6.** Does the plan describe a process by which [Four Mile Fire Protection District] will incorporate 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))

Integration of the principles of mitigation into the Four Mile FPD's daily operations and ongoing planning activities is a priority of the District's mitigation program. These activities will support:

- Raising awareness of the importance of hazard mitigation for the whole community
- Facilitating an understanding that hazard mitigation is not just an "emergency services" function and building ownership of mitigation activities across the organization
- Reduction in duplication or contradiction across regional plans
- Maximization of planning resources through linked or integrated planning efforts

The Four Mile FPD will consider integrating mitigation principles into planning mechanisms, including:

- Budget decision-making
- Building and zoning ordinances and decision-making
- Emergency planning mechanisms
- Economic development planning and decision-making

4.6.1 Existing Plans

The existing plan included in Table 4-7 provides an opportunity to coordinate future updates of the District's community wildfire protection plan (CWPP) and the HMP to ensure that these plans are

consistent and support mitigation activities that are high priorities. The Four Mile FPD will work with plan stakeholders during future updates to ensure that the latest hazard information available is in future plan updates.

Table 4-7

Existing Plans	
Plan	**Description**
Four Mile-Currant Creek (FMCC) Community Wildfire Protection Plan 2013	The purpose of this plan is to provide a strategy for improving community awareness and preparedness, acting cooperatively and efficiently in fuel mitigation projects, and increasing community understanding of an emergency response.

5. Hazard Mitigation Action Plan and Evaluation of Recommended Initiatives

FEMA	**C4.** Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure [in the Four Mile Fire Protection District]? (Requirement §201.6(c)(3)(ii))

5.1 2015 Initiative Review and Status

The 2021 plan mitigation strategy included an assessment of each 2015 plan mitigation action. Results from the evaluation determined the current status of the mitigation action, if the action was ongoing or incomplete, and whether to carry over the action to the 2021 plan update. The Four Mile FPD was not a participating jurisdiction in the 2015 HMP planning process and did not have any mitigation actions included in the 2015 plan.

5.2 2021-2026 Mitigation Implementation Plan

The mitigation Implementation Plan (IP) lays the groundwork for prioritizing, implementing, and administering the Four Mile FPD mitigation actions. The IP includes both short-term strategies that focus on planning and assessment activities and long-term strategies for ongoing capability or structural projects that reduce vulnerability to hazards. See Appendix F of the base plan for the Mitigation Action Worksheet instructions and completed Mitigation Action Worksheets. New actions are in Table 5-1.

Table 5-1

2021 – 2026 Mitigation Implementation Plan: Four Mile Fire Protection District									
ID	**Mitigation Action**	**Action Status**	**Type of Action and Hazard Addressed**	**Goals**	**Lead Entity**	**Support Entity**	**Implement Timeline + Anticipated Cost + Funding Source**	**STAPLEE + Mitigation Effectiveness Score**	**Priority: low, med, high**
MH-17	Establish a resident coalition between the district homeowners associations (HOAs) and landowner associations to identify and prioritize hazard mitigation projects, including fuels management projects	New	Education and Awareness Programs Multiple (Wildfire, Flood, Drought, and others as identified)	1(a), 2(a), 2(b), 4(a), 4(b)	Four Mile FPD	CUSP Teller County OEM	1 – 3 years Low Grant Funding, County General Fund	21	Med
MH-18	Work with HOAs to establish new water sources to supplement low-flow wells	New	Structure and Infrastructure Projects Multiple (Drought, Wildfire)	1(a), 1(b), 2(a), 2(b), 3(a), 3(b)	Four Mile FPD	HOAs	1 – 3 years Medium Community Fundraising	29	High
WF-12	Expand the community risk assessment for wildfire risk to include all subdivisions in the Four Mile FPD	New	Education and Awareness Programs/ Local Plans and Regulations Wildfire	1(a), 2(a), 2(b), 4(a), 4(b)	Four Mile FPD	-	3 – 5 years Low FPD Operating Funds	22	Med
WF-13	Continue program to assess wildfire risks at individual residential properties and make	New	Education and Awareness Programs	1(a), 2(a), 2(b),	Four Mile FPD	-	Ongoing Low	22	Med

	recommendations regarding maintaining defensible space		Wildfire	4(a), 4(b)			FPD Operating Funds, NFPA Firewise Program Funding		

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Teller County 2021 Hazard Mitigation Plan

Appendix A

Table A-1: Status of 2015 Mitigation Actions

Action Number	Problem/Project Description	Lead & Support Agency	Target Funding Source	Target Completion Date	Priority	2021 Status Update
Countywide Mitigation Actions						
1	Continued Improvement of All Hazards Mitigation Plan/Holistic updating of previous plan and realignment of achievable mitigation projects	Teller County Office of Emergency Management (OEM)	County General fund and Emergency Management Performance Grant (EMPG)	Short Term/2014	Medium	Deleted. Procedures for interim review and update of the HMP are included in the plan implementation section.
2	National Flood Insurance Program implementation/floodplain management/Continue to reduce flood losses through compliance with NFIP and implementation of floodplain management	Teller County OEM together with Public Works	County General fund	Ongoing	Medium	Carried forward. Flood plain manager is identified (Bryan Kincaid) Public works, trained, qualified. Works the flood plain issues and concerns.
3	Continued wildfire fuel reduction projects/Reduce the potential impacts of wildfire through an aggressive fuel reduction program on public and private lands	Teller County OEM	County General fund	Ongoing	High	Carried forward. Teller County wildfire council was started in 2019. Continues in 2020. Have our first project with CUSP identified and ready for implementation. The slash site continues to be operated by CUSP on a somewhat regular basis.
4	Continuity of Government Planning/Teller County will continue to annually exercise and improve the County's Continuity of Operations Plan to ensure that essential personnel, elected officials and county resources are prepared to sustain services critical to their citizens	Teller County OEM and County Administrators	General fund EMPG, Department of Homeland Security (DHS)	Short Term	High	Deleted. This is a preparedness/response action. The COOP plan has been requested to be updated by all officials and department heads. Duties and activities are being updated also, and the plan is due for completion by 12/2020.
5	Update Teller County Growth Management Plan/ The County has a continuous process for updating the growth management plan	General fund and Community Development Block Grant (CDBG)	County Administrators and Board of County Commissioners	Long Term	Low	Carried forward. Added language to emphasize the need to incorporate risk reduction measures into the plan.
6	Update Teller County codes and policies as necessary and warranted by changing current conditions and potential effects of natural hazards	General Fund and CDBG	County Administrator and the Board of County Commissioners	Ongoing	Medium	Carried forward.
7	Roadway hazards reduction/ Continue to work with Colorado Department of Transportation and neighboring jurisdictions to reduce hazards of flooding and landslides on the County's transportation routes	General/staff time. Federal Highway Administration	Teller County Public Works Department	Ongoing	Low	Carried forward.
8	Critical Infrastructure Protection/Sustain protection for critical infrastructure per implemented standard operating procedures (i.e. facility maintenance plans, etc.)	Teller County Public Works Department	General fund, Capital Improvement funds	Ongoing	Medium	Carried forward.
9	County Road ROW as firebreaks and snow storage/ Continue to utilize county road ROW as firebreaks and snow storage reducing the potential spread of wildfire and impacts of heavy snow on County roadways	Teller County Public Works Department	General fund, Capital Improvement funds	Ongoing	Medium	Deleted. Have our first project with CUSP identified and ready for implementation. The slash site continues to be operated by CUSP on a somewhat regular basis.
10	Continue to update Teller County community wildfire protection plans, Woodland Park Healthy Forest Initiative and assistance with Firewise Plans/ Wildfire is identified to be the most serious hazard in Teller County.	Teller County Administrator, Board of County Commissioners, OEM, Fire District, USFS	General fund, USDA, USFS, and State grant funds	Ongoing	High	Carried forward. Have our first project with CUSP identified and ready for implementation. The slash site continues to be operated by CUSP on a somewhat regular basis.
11	Continue to conduct public education throughout Teller County/Primary focus in to continue to provide updated, current all hazards preparedness information on the Teller County OEM/Sheriffs	OEM	County General fund, Homeland Security fund, private donations	Ongoing/Annually	High	Deleted. This is an ongoing public outreach/communications action conducted as part of regular operations of the County OEM. It was determined to not be a mitigation action.

Action Number	Problem/Project Description	Lead & Support Agency	Target Funding Source	Target Completion Date	Priority	2021 Status Update
	websites and update the "Disaster Strikes Home "Community Readiness brochure.					
12	Community Slash/Mulch Project/ Teller County will continue to cost share through general funds provided to the Coalition for Upper South Platte, for the operations and maintenance of a County facility used to accept and recycle tree and shrub mitigation slash from the citizens of Teller County to educate on wildfires, soil erosion, and flooding	Teller County Public Works	General fund	Short Term	Low	Carried forward. CUSP continues to operate the slash site.
13	Communication Redundancy/Generally, the loss of communication is due to severe thunderstorms, high winds, and lightening. Teller County continues to upgrade lightning and grounding protection equipment while building an inventory of readily available communication replacement parts and supplies.	Teller County OEM	General fund, Public Safety Communications grant (as available)	Short Term	Medium	Carried forward. TC has developed draft communication equipment service policies and procedures to ensure the reliability of all TC communications equipment. TC is in the process to moving all emergency responders to the 800MGHZ radio communications system and is keeping the UHF/VHF radio systems for redundancy.
14	Continue improvement of all Hazards Emergency Warning capabilities/County must continue to improve its capability to ensure the inclusion of more citizens' participation in using available dissemination tools.	Teller County Sheriff's Office	General fund, Homeland Security Grants, Enhanced 911 funds	Short Term	High	Carried forward. TC continues to find ways to provide warning capabilities to various parts of the county to include EAS/IPAWS systems.
15	Earthquake Preparedness/Teller County could be significantly impacted/affected by two faults that have been identified within the Ute Pass area of El Paso County. Teller County will work to access and identify the vulnerability of key County facilities as to potential levels of impact and incorporate earthquake preparedness information as part of public information emergency preparedness campaign	Teller County OEM	General fund, EMPG and DHS preparedness grants	2015	Low	Carried forward.
16	Continuity of Government Planning/Teller County will continue to annually exercise and improve the County's Continuity of Operations Plan to ensure that essential personnel, elected officials and county resources are prepared to sustain services critical to their citizens	Teller County OEM and County Administrators	General fund EMPG, Department of Homeland Security (DHS)	Short Term	High	Deleted. This action duplicates action #4 above from the previous HMP. This is a preparedness/response action. The COOP plan has been requested to be updated by all officials and department heads. Duties and activities are being updated also, and the plan is due for completion by 12/2020.
17	Continued Improvement of Floodplain and Tributary Hydrology/Drainage/Drainage Study/engineering and eventual stabilization, modification, expansion, and improvement of floodplain and tributary drainages within the Teller County boundaries	Teller County Public Works Department	General fund	Long Term	Medium	Carried forward.
18	Maintain safe ingress/egress for County residents/Continue to work with CDOT and neighboring jurisdictions to maintain safe ingress/egress for County residents heading in and out of the County	Teller County Public Works together with OEM	General fund	Ongoing	Medium	Carried forward. TC is working with CUSP and other contractors to identify and construct alternate emergency egresses in various rural residential areas.
Woodland Park Initiatives						
19	Update and revise Woodland Park Stormwater Management Plan	Woodland Park City Engineer	General fund	2014	High	Carried forward. Work to update and expand the City's stormwater system is completed as grant funding is obtained. Revise strategy to discuss stormwater system improvements.

Action Number	Problem/Project Description	Lead & Support Agency	Target Funding Source	Target Completion Date	Priority	2021 Status Update
20	Earthquake Vulnerability Analysis/ City will conduct a detailed earthquake vulnerability analysis for Woodland Park to utilize the results for the need for increased standards and potential hardening of buildings, especially critical facilities	Woodland Park City Engineer	General fund	2015	Medium	Carried forward. No action completed between 2015 – 2020.
21	Maintain up-to-date emergency planning documents/ Including the City's Continuity of Operations Plan and support transparency of documents as appropriate for emergency response and planning	Woodland Park Police Department- Emergency Management	General fund and Emergency Management grants	Ongoing	Medium	Deleted; this is not a mitigation action. Emergency plans have been updated, most recently during the COVID-19 response. City completed a continuity of operations plan in the summer of 2019.
22	Woodland Park emergency awareness program/Undertake an emergency awareness program to educate the City's citizens on what they can do to mitigate risks to own property in case of wildfires- utilizing the Firewise Program	Woodland Park Police Department- Emergency Management	General fund and Emergency Management Grants	Ongoing	Low	Carried forward. City working with the County OEM, LEPC, and the Northeast Teller County Fire Protection District and Ute Pass Regional Ambulance District to plan a FireWise evacuation exercise, tentatively scheduled for Fall 2020 or early 2021. Community education efforts are ongoing.
23	Provide a short-term place for those impacted by road closures/ Work with community churches to provide a short-term place (not overnight) for those impacted by the highway being closed (not a shelter)	Woodland Park Police Department- Emergency Management	General fund, Emergency Management Grants, local donations	Ongoing	Medium	Deleted. City has identified approximately half a dozen churches that will provide temporary safe places for people stranded by road closures.
24	Conduct a dam break analysis and emergency action plan for the City owned reservoir on Loy Creek	Woodland Park Utilities Director	City Utility and General Fund	Short Term	Medium	Carried forward.
Cripple Creek Initiatives						
25	Work with Colorado Department of Transportation, Teller County, and Cripple Creek Public Works to improve infrastructure and minimize the impacts of severe winter weather	Cripple Creek Public Works together with Colorado Department of Transportation	General and State funding/budgets	Ongoing	High	Carried forward. CDOT has installed winter markings along Hwy 67 near town (high snowmark poles on road edges). City completed a project in 2018 on Teller 1 to flatten out a curve in the road and install guard rails, flashing lights, and street lights to address accident risks. Bennett Avenue and Galena Street, main thoroughfares, needs to be repaved. This is being completed in sections but will be a multi-year project.
26	Wildfire education/Continue to educate public on wildfire mitigation and preparation using the National Fire Protection Association's Firewise program	Cripple Creek Fire Chief	General fund and National Fire Protection Association Grants	Ongoing	High	Carried forward. City has sent out a mailer to the community on wildfire threats and mitigation. City is in the process of hiring a new fire chief who will be in charge of this program.
27	Continue to inform the citizens and tourists of the City of Cripple Creek about emergencies, severe weather updates, dangers etc. through website	Cripple Creek Dispatch	General fund and Grants	Ongoing	High	Carried forward. City posts closings and weather information on the City website and has worked with news stations in Colorado Springs to install cameras on City buildings to show weather conditions in the city. City uses Nixle and Ever Bridge programs in conjunction with the County to send out alerts. City may add more live maps to the website, showing current weather conditions.
28	Work with Colorado Division of Reclamation, Mining, and Safety as well as the Cripple Creek & Victor mine to correct and prevent sinkholes, soil erosion, flooding and landslides due to past, present, and future mining operations	Cripple Creek Public Works together with CO Division of Reclamation, Mining, and Safety and Cripple Creek & Victor Mine	State and Grant Funding	Ongoing	Medium	Carried forward. City reviews applications by the mine for expansions. The City's fire and EMS staff train with the mine's emergency response staff to respond to collapses and other emergency events. The mine is responsible for building holding ponds and other structures to mitigate risks for flooding and landslides from mine operations.
29	Work with Colorado Division of Reclamation with local Cripple Creek- Victor school district, local churches, Teller County OEM to provide	Cripple Creek, Teller County OEM, Red Cross and Local Churches	Disaster assistance funding, local funds	Ongoing	High	Deleted. This is a response action, rather than a mitigation action. Emergency shelters, including the City's high school and County fairgrounds, have been identified and were operated during the High Chateau fire in 2018.

Action Number	Problem/Project Description	Lead & Support Agency	Target Funding Source	Target Completion Date	Priority	2021 Status Update
	emergency shelter for displaced residents and tourists during catastrophic events and/or highway closures					Maintain coordination with all parties to operate shelters in the event of a disaster/highway closure.
30	Continue to work with Teller County OEM and Colorado Department of Transportation to minimize impacts on life safety, property, and the environment in the event of a hazardous material spill or leak	Cripple Creek Public Works and Fire together with County HAZMAT	General fund and Colorado Department of Transportation funding	Ongoing	Medium	Deleted. This is a response action, rather than a mitigation action. City fire department coordinates with the County and other stakeholders. City has worked with the mine to develop a route for trucks carrying hazardous materials through town and has completed roadway improvements to minimize risks to transport trucks.
31	Continue to improve the City of Cripple Creek infrastructure and storm water projects to minimize the impact of localized flooding	Cripple Creek Public Works	General fund	Ongoing	Low	Carried forward. In 2014, the City completed the Big Bennett Avenue project to install a new stormwater system. City is working to obtain funding to update flood maps with the USACE.
Victor Initiatives						
32	Victor flood control/Continue to improve upgrading the Victor flood control infrastructure through improving conditions of streets and curbs and the installation of new culverts and street drainage systems	Victor City Administrators Office	Colorado Department of Local Affairs and CDBG Grants	Annually/Ongoing	Medium	Carried forward. City has completed a CDBG to update stormwater system in downtown. Additional work is needed to improve stormwater drainage in residential areas. City is currently mapping stormwater infrastructure within the city limits.
33	Upgrade of domestic water supply and storage/City currently has plans to upgrade the water supply by increasing the volume of available storage and increasing water pressure- upgrading water distribution infrastructure by providing increased water pressure to increase the ability to fight fires in the wildland-urban interface	City Administrator (Victor)	Colorado Department of Local Affairs and CDBG grants and Power and Water Development Authority	Short Term	High	Carried forward. City has installed a new water tank above town. The old tank has been kept for redundancy. The City also has installed a pressure relief valve (PRV) to help increase water pressure to the north end of town. The City has developed a master water plan for Goldfield, an unincorporated part of Teller County that is on the City's water system. Projects included in this plan are ongoing.
34	Critical Infrastructure Hardening/Improvement to perimeter security of the Bison Reservoir Dam which is a major water supply for both the City and the wildland-urban interface	City Administrator	Department of Homeland Security in cooperation with Cripple Creek and Victor Gold Mine	Short Term	High	Carried forward. City is constructing a new valve tower for the dam to replace the old one, which shifted in the spring of 2020. Construction planned to start between fall 2020 and spring 2021. The City has been partnering with the mine on this project. City has increased signage around the dam for perimeter security and also completed fuels management and a source water protection plan for the reservoir. Fuels management will be an ongoing project within the watershed boundaries.
35	Victor Emergency Response Enhancements/ To increase capacity of City response to all hazards, the City is working with area first responders to develop memorandums of interest and contract first responder, services	City Administrator, Teller County Sheriff and Victor Fire Chief	General fund, U.S. Fire Administration	Annually/Ongoing	Medium	Deleted; this is not a mitigation action. City is hiring a new fire chief and is in the process of restructuring the fire department. New fire chief will be responsible for developing/maintaining mutual aid agreements and contracting for any needed services.
36	Victor Public Education/ Work together with Teller County and the Cripple Creek/V Gold Mine educate the community as to all hazards preparedness for potential emergencies and disasters	Teller County OEM, Sheriff, Victor Fire Chief, Cripple Creek and Victor Gold Mine Health and Safety Manager	General fund, DHS, private donations (Cripple Creek and Victor Gold Mine)	Ongoing	Low	Carried forward. Victor will participate in the County CERT program, which is under development.

2021 – 2026 Mitigation Implementation Plan			
ID	**Mitigation Action**	**FEMA Lifelines**	**Colorado Resiliency Prioritization Criteria**
Teller County			
MH-1	Future updates of the Growth Management Plan will include data from the current HMP and incorporate risk reduction principles	Food Water Shelter, Energy, Communication, Transportation	Harmonize with Existing Activity, Co-Benefits, Long-Term and Lasting Impact
MH-2	Update Teller County codes and policies as necessary and warranted by changing current conditions and potential effects of natural hazards	Safety and Security, Food Water Shelter, Energy, Communication, Transportation	Co-Benefits, Economic Cost-Benefit, Harmonize with Existing Activity
MH-3	Continue to work with the Colorado Department of Transportation and neighboring jurisdictions to reduce hazards of flooding and landslides on the County's transportation routes	Safety and Security, Transportation	Co-Benefits, Economic Benefit-Cost, Social Equity, High Risk and Vulnerability
MH-4	Sustain protection for critical infrastructure per implemented standard operating procedures (e.g., facility maintenance plans, etc.)	Safety and Security, Food Water Shelter, Transportation	Harmonize with Existing Activity
MH-5	Teller County will continue to cost-share through general funds provided to the Coalition for Upper South Platte, for the operations and maintenance of a County facility used to accept and recycle tree and shrub mitigation slash from the citizens of Teller County to educate on wildfires, soil erosion, and flooding	Safety and Security, Food Water Shelter	Co-Benefits, High Risk and Vulnerability, Harmonize with Existing Activity
MH-6	Generally, the loss of communication is due to severe thunderstorms, high winds, and lightning. Teller County continues to upgrade lightning and grounding protection	Safety and Security, Communication	High Risk and Vulnerability, Technical Soundness

	equipment while building an inventory of readily available communication replacement parts and supplies.		
MH-7	County must continue to improve its capability to ensure the inclusion of more citizens' participation in using available dissemination tools.	Safety and Security, Communication	Harmonize with Existing Activity, Co-Benefits, Social Equity
MH-8	Continue to work with CDOT and neighboring jurisdictions to maintain safe ingress/egress for County residents heading in and out of the County	Transportation, Safety and Security, Communication	High Risk and Vulnerability, Social Equity
FL-1	Continue to reduce flood losses through compliance with NFIP and implementation of floodplain management	Safety and Security, Food Water Shelter, Transportation, Communication	Co-Benefits, Economic Benefit-Cost, Social Equity, Technical Soundness
FL-2	Continue to improve floodplain and tributary hydrology/drainage, through engineering and eventual stabilization, modification, expansion, and improvement of floodplain and drainages within the Teller County boundaries	Safety and Security, Food Water Shelter, Transportation, Communication	Co-Benefits, Economic Benefit-Cost, Harmonize with Existing Activity, Long-term and Lasting Impact
SS-1	Working with local mine owners, identify areas at increased risk of subsidence, sink holes, or soil erosion based on previous mining or other development activities for inclusion in the next HMP update	Safety and Security	Co-Benefits, High Risk and Vulnerability, Economic Benefit-Cost, Harmonize with Existing Activity
WF-1	Reduce the potential impacts of wildfire through an aggressive fuel reduction program on public and private lands	Safety and Security, Food Water Shelter	Co-Benefits, High Risk and Vulnerability, Economic Benefit-Cost, Social Equity, Harmonize with Existing Activity
WF-2	Continue to update Teller County community wildfire protection plans, Woodland Park Healthy Forest Initiative, and assistance with Firewise Plans	Safety and Security, Food Water Shelter	Co-Benefits, Economic Benefit-Cost, High Risk and Vulnerability
WF-3	Form a Teller County Wildfire Council to mitigate fire risk	Safety and Security, Food Water Shelter	Co-Benefits, Economic Benefit-Cost, High Risk and Vulnerability, Social Equity, Adaptive Capacity

WF-4	Continue to work with partners on mitigation projects around Woodland Park, Teller County, and Ute Corridor – wildfire in and around the City of Woodland Park and Teller County	Safety and Security, Food Water Shelter	Co-Benefits, Economic Benefit-Cost, High Risk and Vulnerability
WF-5	Establish a wood-chipping program that will assist residents in chipping and woody debris and maintaining defensible space on their properties	Safety and Security, Food Water Shelter	High Risk and Vulnerability, Harmonize with Existing Activity, Technical Soundness
WF-6	Re-establish the Teller County Wildfire Council and implement the recommendations of the 2020 Community Mitigation Assistance Team (CMAT) report as appropriate	Safety and Security, Food Water Shelter	High Risk and Vulnerability, Adaptive Capacity, Harmonize with Existing Activity
WF-7	Plan for and construct alternate evacuation routes for communities with single ingresses/egresses, as identified and appropriate	Safety and Security, Transportation	High Risk and Vulnerability, Technical Soundness
LS-1	Continue to identify and mark areas of high landslide risk. Compile this information to include in the next HMP update.	Safety and Security	High Risk and Vulnerability
TH-1	Adopt current versions of building codes as appropriate to ensure minimum safety standards (particularly related to wind loads and roof construction) for homes and other buildings in the County	Food Water Shelter	High Risk and Vulnerability, Long-Term and Lasting Impact
EP-1	Integrate with partners to slow the spread of COVID-19	Health and Medical	Co-Benefits, Adaptive Capacity, Long-term and Lasting Impact
EP-2	Increase contact tracing, improve testing, and community compliance related to COVID-19	Safety and Security, Health and Medical, Communications	High Risk and Vulnerability, Social Equity, Technical Soundness, Innovation, Adaptive Capacity, Harmonize with Existing Activity
HM-1	Educate the public on safely using and storing necessary flammable materials, including machine fuels. Only store gasoline, oily rags, and other flammable materials in approved safety cans.	Safety and Security, Hazardous Materials	High Risk and Vulnerability
DR-1	Identify new well sites for communities affected by dropping water tables and redundant sources of water, potentially through a service agreement with a regional supplier	Safety and Security, Food Water Shelter	Co-Benefits, High Risk and Vulnerability

EQ-1	Assess and identify the vulnerability of key County facilities as to potential levels of impact and incorporate earthquake preparedness information as part of public information emergency preparedness campaign	Safety and Security, Communication	Economic Benefit-Cost, Social Equity, Harmonize with Existing Activity
WW-1	Establish a Teller County Emergency Response Team (multijurisdictional) for severe winter weather (e.g., snowstorms) to identify mitigation needs	Safety and Security	Co-Benefits, Economic Benefit-Cost, Adaptive Capacity
Woodland Park			
MH-9	Work with E-911 to have an event at the Senior Center to aid seniors in signing up for peak alerts	Communication	Social Equity, High Risk and Vulnerability
FL-3	Update and revise Woodland Park Stormwater Management Plan	Safety and Security	Co-Benefits, High Risk and Vulnerability
WF-8	Undertake an emergency awareness program to educate the City's citizens on what they can do to mitigate risks to own property in case of wildfires- utilizing the Firewise Program	Safety and Security, Food Water Shelter	High Risk and Vulnerability, Harmonize with Existing Activity
DF-1	Conduct a dam break analysis and emergency action plan for the City-owned reservoir on Loy Creek	Safety and Security, Food Water Shelter, Energy	Harmonize with Existing Activity
EQ-2	City will conduct a detailed earthquake vulnerability analysis for Woodland Park to utilize the results for the need for increased standards and potential hardening of buildings, especially critical facilities	Safety and Security, Energy, Communication	Co-Benefits, High Risk and Vulnerability, Harmonize with Existing Activity
EQ- 3	Implement a plan to install a number of automatic gas shut off valves per year in the City in case of a seismic event	Safety and Security, Energy	Co-Benefits, High Risk and Vulnerability
EQ-4	Implement a plan to secure all hot water tanks in City buildings in case of a seismic event to reduce the risk of injury and infrastructure damage	Safety and Security; Food, Water, Shelter	High Risk and Vulnerability, Technical Soundness
EQ-5	Educate the public on earthquakes risks	Safety and Security	Harmonize with Existing Activity

EQ-6	Develop a post-disaster action plan for earthquakes	Safety and Security, Food Water Shelter, Transportation, Energy, Health and Medical, Communications, Hazardous Materials	High Risk and Vulnerability
Cripple Creek			
MH-10	Continue to inform the citizens and tourists of the City of Cripple Creek about emergencies, severe weather updates, dangers, etc. through website	Safety and Security, Communications	High Risk and Vulnerability
MH-11	Work with Colorado Division of Reclamation, Mining, and Safety as well as the Cripple Creek & Victor Mine to correct and prevent sinkholes, soil erosion, flooding, and landslides due to past, present, and future mining operations	Safety and Security	Co-Benefits, High Risk and Vulnerability
MH-12	Develop infrastructure to redirect potential flooding off the City's wastewater treatment plant facility and processing ponds. The wastewater treatment plant is on a sizable floodplain	Safety and Security, Food Water Shelter	High Risk and Vulnerability, Long-Term and Lasting Impact
MH-13	Develop infrastructure to mitigate or redirect potential flooding at the City's Water Treatment Plant	Safety and Security, Food Water Shelter	High Risk and Vulnerability, Long-Term and Lasting Impact
FL-4	Continue to improve the City of Cripple Creek infrastructure and stormwater projects to minimize the impact of localized flooding	Safety and Security	High Risk and Vulnerability
FL-5	Work with FEMA and/or the Colorado Conservation Board to update floodplain maps in the city	Food Water Shelter, Energy, Transportation	High Risk and Vulnerability, Harmonize with Existing Activity, Technical Soundness
WF-9	Continue to educate the public on wildfire mitigation and preparation using the National Fire Protection Association's Firewise program	Safety and Security, Food Water shelter	High Risk and Vulnerability, Harmonize with Existing Activity
DF-2	Assess maintenance needs at Cripple Creek #2 and Cripple Creek #3 dams and complete repairs as needed	Safety and Security, Food Water Shelter, Energy, Transportation	Co-Benefits, High Risk and Vulnerability, Long-Term and Lasting Impact, Technical Soundness

DF-3	Create dam inundation maps for the Cripple Creek #2 dam, showing the limits of dam failure flooding, to increase understanding of dam failure risks in the community. Evaluate the need for dam inundation maps for the Cripple Creek #3 dam.	Safety and Security, Transportation	High Risk and Vulnerability, Technical Soundness
WW-2	Work with Colorado Department of Transportation, Teller County, and Cripple Creek Public Works to improve infrastructure and minimize the impacts of severe winter weather. Repave Galena Avenue, Bennett Street, and other main thoroughfares.	Safety and Security, Transportation	Co-Benefits, Harmonize with Existing Activity
City of Victor			
MH-14	Improve perimeter security of the Bison Reservoir Dam, which is a major water supply for both the City and the wildland-urban interface	Safety and Security	High Risk and Vulnerability
MH-15	Work together with Teller County and the Cripple Creek/V Gold Mine educate the community as to all-hazards preparedness for potential emergencies and disasters	Safety and Security, Food Water Shelter	Co-Benefits, Harmonize with Existing Activity
MH-16	Replace water valve tower (100+ years old) in Reservoir #2 due to soil erosion/subsidence, threat to city's water supply. This action would reduce impervious surface in the flood zone and prevent the City from being out of compliance with floodplain regulations.	Safety and Security, Food Water Shelter	High Risk and Vulnerability, Long-Term and Lasting Impact
FL-6	Increase size, basin, and replaced aged equipment of WWTF; WWTF is a few years from reaching life expectancy. This action would reduce impervious surface in the floodplain and would update the WWTF to comply with floodplain regulations.	Safety and Security, Food Water Shelter	Co-Benefits, Economic Benefit-Cost, Harmonize with Existing Activity, Technical Soundness
FL-7	Continue to upgrade the Victor flood control infrastructure through improving conditions of streets and curbs and the installation of new culverts and street drainage systems	Safety and Security	Co-Benefits, Harmonize with Existing Activity, Long-term and Lasting Impact
SS-2	Recap Landfill due to age and to prevent soil erosion/contamination of nearby streams and land	Safety and Security, Food Water Shelter, Hazardous Material	High Risk and Vulnerability

WF-10	Upgrade the water supply by increasing the volume of available storage and increasing water pressure- upgrading water distribution infrastructure by providing increased water pressure to increase the ability to fight fires in the wildland-urban interface	Safety and Security, Food Water Shetler	Co-Benefits, High Risk and Vulnerability, Harmonize with Existing Activity, Adaptive Capacity
WF-11	Develop a Community Wildfire Protection Plan (CWPP).	Safety and Security, Food Water Shelter, Transportation, Communications, Energy	High Risk and Vulnerability, Innovation, Harmonize with Existing Activity, Social Equity
DF-4	Assess maintenance needs and repair aging infrastructure and water pipelines at Victor #2 and Bison Park dams	Safety and Security, Food Water Shelter, Energy, Transportation	High Risk and Vulnerability, Long-Term and Lasting Impact, Technical Soundness
DF-5	Create dam inundation maps for the Victor #2 and Bison Park dams, showing the limits of dam failure flooding, to increase understanding of dam failure risks in the community	Safety and Security, Transportation	High Risk and Vulnerability, Technical Soundness
Four Mile Fire Protection District			
MH-17	Establish a resident coalition between the district homeowners associations (HOAs) and landowner associations to identify and prioritize hazard mitigation projects, including fuels management projects	Safety and Security, Food Water Shelter	High Risk and Vulnerability, Harmonize with Existing Activity, Social Equity, Technical Soundness
MH-18	Work with HOAs to establish new water sources to supplement low-flow wells	Safety and Security, Food Water Shelter	Co-Benefits, High Risk and Vulnerability
WF-12	Expand the community risk assessment for wildfire risk to include all subdivisions in the Four Mile FPD	Safety and Security, Food Water Shelter	High Risk and Vulnerability, Harmonize with Existing Activity, Social Equity, Technical Soundness
WF-13	Continue program to assess wildfire risks at individual residential properties and make recommendations regarding maintaining defensible space	Safety and Security, Food Water Shelter	High Risk and Vulnerability, Harmonize with Existing Activity, Technical Soundness

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email:
Tyler Lambert	719-687-1866 X4	tlambert@netellerfire.org

1. Identify the Problem

Wildfire in and around the City of Woodland Park and Teller County.
Flooding from burn scars and closing Highway 24.
Increased call volumes in EMS and longer wait times for transport.

2. Mitigation Action and Alternatives

Continue to work with partners on mitigation projects around Woodland Park, Teller County and the Ute Pass corridor. Work with Teller County to come up with a mitigation program to help homeowners mitigate on private properties within the County or Fire Protection Districts. Needed funding mechanism to be able to increase full-time staffing levels.

3. Action Status:

☐ New ☒ Existing ☐ Complete

4. Type of Action:

☒ Plans and Regulations ☒ Infrastructure/Capital Project ☐ Natural Systems Protection
☒ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☒ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

Teller County OEM and NE Teller County Fire

5b. Supporting Departments/Organizations:

All other Fire and EMS agencies to include Sheriff's office and Police departments

6a. Timeline: ☐ Immediate ☐ < 1 year ☒ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☒ Drought & Extreme Temperature
☐ Earthquake
☒ Flood
☐ Severe Winter Weather
☒ Wildfire
☐ Tornado
☐ Dam Failure
☐ Hazardous Materials
☒ Landslide
☒ Subsidence, Sinkholes, and Soil Erosion
☒ Thunderstorms, High Winds, and Hail
☐ Epidemic/Pandemic

8a. Anticipated Cost (if known):

8b. Funding Available?: ☐ Yes ☐ Anticipated ☒ No

8c. Funding Source: ☐ Existing Budget ☒ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

- ☒ Safety and Security
- ☒ Food, Water, Shelter
- ☒ Health and Medical
- ☐ Energy (Power & Fuel)
- ☐ Communications
- ☐ Transportation
- ☐ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

- ☒ Co-Benefits
- ☒ High Risk and Vulnerability
- ☐ Economic Benefit-Cost
- ☐ Social Equity
- ☐ Technical Soundness
- ☐ Innovation
- ☐ Adaptive Capacity
- ☒ Harmonize with Existing Activity
- ☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	2	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	1	
P: Is it Politically acceptable?	2	
L: Is there Legal authority to implement?	2	
E: Is it Economically beneficial?	3	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	5	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email:
Andrew Lemmons	(719) 687-6416	lemmonsa@co.teller.co.us

1. Identify the Problem

Continuation of Novel Coronavirus Pandemic

2. Mitigation Action and Alternatives

Reduce and ultimately eliminate interpersonal Community transmission of COVID-19 through individual case investigation Contact tracing, testing, and Community Safety compliance education

3. Action Status:

☐ New ☒ Existing ☐ Complete

4. Type of Action:

☒ Plans and Regulations ☒ Infrastructure/Capital Project ☐ Natural Systems Protection
☒ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☒ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

Teller County Office of Emergency Management

5b. Supporting Departments/Organizations:

Teller County Public Health, Administration, Sheriff's Office
Fire, EMS, Finance, Local municipalities

6a. Timeline: ☐ Immediate ☐ < 1 year ☒ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

- ☐ Drought & Extreme Temperature
- ☐ Earthquake
- ☐ Flood
- ☐ Severe Winter Weather
- ☐ Wildfire
- ☐ Tornado
- ☐ Dam Failure
- ☐ Hazardous Materials
- ☐ Landslide
- ☐ Subsidence, Sinkholes, and Soil Erosion
- ☐ Thunderstorms, High Winds, and Hail
- ☒ Epidemic/Pandemic

8a. Anticipated Cost (if known):

8b. Funding Available?: ☒ Yes ☐ Anticipated ☐ No

8c. Funding Source: ☒ Existing Budget ☐ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

State of Colorado Emergency Funding

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

- ☒ Safety and Security
- ☐ Food, Water, Shelter
- ☒ Health and Medical
- ☐ Energy (Power & Fuel)
- ☒ Communications
- ☐ Transportation
- ☐ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

- ☒ Co-Benefits
- ☒ High Risk and Vulnerability
- ☒ Economic Benefit-Cost
- ☒ Social Equity
- ☒ Technical Soundness
- ☒ Innovation
- ☒ Adaptive Capacity
- ☒ Harmonize with Existing Activity
- ☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	2	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	2	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	1	
P: Is it Politically acceptable?	2	
L: Is there Legal authority to implement?	2	
E: Is it Economically beneficial?	2	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	0	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	5	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	1	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email:
Sheryl Decker	**719-689-2988**	**deckers@co.teller.co.us**

1. Identify the Problem

Wildfire
COVID-19
Snow Storm

2. Mitigation Action and Alternatives

Form TC Wildfire Council
Integrating with Partners
Established Teller County Emergency Response Team (multi-jurisdictional)

3. Action Status:

☐ New ☒ Existing ☐ Complete

4. Type of Action:

☒ Plans and Regulations ☐ Infrastructure/Capital Project ☐ Natural Systems Protection
☒ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☒ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

Teller County OEM

5b. Supporting Departments/Organizations:

Public Works, Public Health, Information Technologies, Department of Human Services, Sheriff's Office, Finance, Community Development Services, Extension, Woodland Park, Cripple Creek,
Divide Fire, USFS, BLM, Florissant Fire, 4Mile Fire, Victor, NETCO, UPRAD, SWTC

6a. Timeline: ☐ Immediate ☐ < 1 year ☐ 1 – 3 years ☒ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☒ Flood
☐ Severe Winter Weather
☒ Wildfire
☐ Tornado
☐ Dam Failure
☒ Hazardous Materials
☐ Landslide
☐ Subsidence, Sinkholes, and Soil Erosion
☒ Thunderstorms, High Winds, and Hail
☒ Epidemic/Pandemic

8a. Anticipated Cost (if known): Unknown

8b. Funding Available: ☐ Yes ☒ Anticipated ☐ No

8c. Funding Source: ☒ Existing Budget ☐ Grant ☐ Bond/Levy ☐ No/minimal cost

Other: Use of any grants or state and federal resources

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☒ Safety and Security
☒ Food, Water, Shelter
☒ Health and Medical
☒ Energy (Power & Fuel)
☒ Communications
☒ Transportation
☒ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☒ High Risk and Vulnerability
☒ Economic Benefit-Cost
☐ Social Equity
☐ Technical Soundness
☐ Innovation
☐ Adaptive Capacity
☐ Harmonize with Existing Activity
☐ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	**Score**	**Evaluation Ratings**
S: Is it Socially acceptable?	1	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	2	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	2	
L: Is there Legal authority to implement?	3	
E: Is it Economically beneficial?	0	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	**Score**	**Evaluation Ratings**
Will the implemented action result in lives saved?	3	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name:	**Phone:**	**Email:**
Don Angell		**angelld@co.teller.co.us**

1. Identify the Problem

2. Mitigation Action and Alternatives

Educate the public on safely using and storing necessary flammable materials, including machine fuels. Approved safety cans should be used for storing gasoline, oily rags, and other flammable materials. (New)

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☐ Plans and Regulations ☐ Infrastructure/Capital Project ☐ Natural Systems Protection
☒ Education and Awareness

5. Goals Supported:

☐ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☐ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☐ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☐ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

County OEM and County FPDs

5b. Supporting Departments/Organizations:

6a. Timeline: ☐ Immediate ☒ < 1 year ☐ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☐ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☐ Flood
☐ Severe Winter Weather
☐ Wildfire
☐ Tornado
☐ Dam Failure
☐ Hazardous Materials
☐ Landslide
☐ Subsidence, Sinkholes, and Soil Erosion
☐ Thunderstorms, High Winds, and Hail
☐ Epidemic/Pandemic

8a. Anticipated Cost (if known): no/minimal cost

8b. Funding Available: ☐ Yes ☐ Anticipated ☐ No

8c. Funding Source: ☐ Existing Budget ☐ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☐ Safety and Security ☐ Energy (Power & Fuel) ☐ Transportation

☐ Food, Water, Shelter ☐ Communications ☐ Hazardous Materials

☐ Health and Medical

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits ☐ Social Equity ☐ Adaptive Capacity

☐ High Risk and Vulnerability ☐ Technical Soundness ☐ Harmonize with Existing Activity

☐ Innovation

☐ Economic Benefit-Cost ☐ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	**Score**	**Evaluation Ratings**
S: Is it Socially acceptable?		Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?		
A: Does the responsible agency/department have the Administrative capacity to execute this action?		
P: Is it Politically acceptable?		
L: Is there Legal authority to implement?		
E: Is it Economically beneficial?		
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)		

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	**Score**	**Evaluation Ratings**
Will the implemented action result in lives saved?		High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?		High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email:
Robin Lindberg	719-838-1744	rlindberg@city-woodlandpark.org

1. Identify the Problem

Seniors sometimes have issues signing up for peak alerts due to unfamiliarity with technology

2. Mitigation Action and Alternatives

work with E-911 to have an event at the Senior Center to aide seniors in signing up

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☐ Plans and Regulations ☐ Infrastructure/Capital Project ☐ Natural Systems Protection
☒ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☐ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☐ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☒ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

Woodland Park PD

5b. Supporting Departments/Organizations:

E-911

6a. Timeline: ☐ Immediate ☒ < 1 year ☐ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☒ Temporary ☐ Short-Term (Interim) ☐ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☒ Earthquake
☒ Flood
☒ Severe Winter Weather
☒ Wildfire
☒ Tornado
☒ Dam Failure
☒ Hazardous Materials
☒ Landslide
☒ Subsidence, Sinkholes, and Soil Erosion
☒ Thunderstorms, High Winds, and Hail
☐ Epidemic/Pandemic

8a. Anticipated Cost (if known): Unknown

8b. Funding Available?: ☐ Yes ☐ Anticipated ☒ No

8c. Funding Source: ☒ Existing Budget ☐ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

- ☒ Safety and Security
- ☐ Food, Water, Shelter
- ☐ Health and Medical
- ☐ Energy (Power & Fuel)
- ☒ Communications
- ☐ Transportation
- ☐ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

- ☐ Co-Benefits
- ☒ High Risk and Vulnerability
- ☐ Economic Benefit-Cost
- ☒ Social Equity
- ☐ Technical Soundness
- ☐ Innovation
- ☐ Adaptive Capacity
- ☐ Harmonize with Existing Activity
- ☐ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	3	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	3	
L: Is there Legal authority to implement?	2	
E: Is it Economically beneficial?	2	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	4	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	3	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email: pharris@cripple-creek.co.us
Paul Harris	**(719) 689-2502**	

1. Identify the Problem

City's Wastewater Treatment Plant is located in a large flood plain. If flooded, waste from the facility could overflow the holding tanks and run downstream into the creek that flows down to Canon City. In addition, if the facility was forced to shut down/go offline for an extended period it would present major health, safety, and sanitation issues for the community. Visitation to the casinos industry, etc. would have to be stopped until the problem was resolved.

2. Mitigation Action and Alternatives

The city, working with an outside engineering firm, needs to develop infrastructure to redirect and or mitigate potential flooding of the facility and processing ponds.

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☐ Plans and Regulations ☒ Infrastructure/Capital Project ☐ Natural Systems Protection
☐ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.

☐ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

Water/Wastewater Department Director, Mickey Groves – City of Cripple Creek

5b. Supporting Departments/Organizations:

Public Works Department – City of Cripple Creek
Army Corps of Engineers

6a. Timeline: ☐ Immediate ☐ < 1 year ☒ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☒ Flood
☐ Severe Winter Weather
☐ Wildfire
☐ Tornado
☐ Dam Failure
☒ Hazardous Materials
☐ Landslide
☒ Subsidence, Sinkholes, and Soil Erosion
☒ Thunderstorms, High Winds, and Hail
☐ Epidemic/Pandemic

8a. Anticipated Cost (if known): Unknown

8b. Funding Available: ☐ Yes ☐ Anticipated ☒ No

8c. Funding Source: ☐ Existing Budget ☒ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

Possible DOLA or State Water Resources Grant

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☒ Safety and Security
☐ Energy (Power & Fuel)
☐ Transportation
☒ Food, Water, Shelter
☐ Communications
☒ Hazardous Materials
☒ Health and Medical

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☐ Social Equity
☐ Adaptive Capacity
☒ High Risk and Vulnerability
☐ Technical Soundness
☐ Harmonize with Existing Activity
☐ Innovation
☒ Economic Benefit-Cost
☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	3	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	3	
L: Is there Legal authority to implement?	3	
E: Is it Economically beneficial?	3	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	3	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name: **Paul Harris**	**Phone:** **(719) 689-2502**	**Email: pharris@cripple-creek.co.us**

1. Identify the Problem

City's Water Treatment Plant is located in a potential flood plain and its storage tanks are vulnerable to human attack. If flooded, the facility could potential be shut down for an extended period, leaving the city without drinkable water. In addition, if the facility was forced to shut down/go offline for an extended period it would present major health, safety, and sanitation issues for the community. Visitation to the casinos industry, etc. would have to be stopped until the problem was resolved.

2. Mitigation Action and Alternatives

The city, working with an outside engineering firm, needs to develop infrastructure to redirect and or mitigate potential flooding of the facility and additional space around the facility should be secured and security measures added so that access to a human attack would be more difficult. The facility sits unmanned most of the time.

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☐ Plans and Regulations ☒ Infrastructure/Capital Project ☐ Natural Systems Protection
☐ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☐ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

Water/Wastewater Department Director, Mickey Groves – City of Cripple Creek

5b. Supporting Departments/Organizations:

Public Works Department – City of Cripple Creek
Army Corps of Engineers

6a. Timeline: ☐ Immediate ☐ < 1 year ☒ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☒ Flood
☐ Severe Winter Weather
☐ Wildfire
☐ Tornado
☐ Dam Failure
☒ Hazardous Materials
☐ Landslide
☒ Subsidence, Sinkholes, and Soil Erosion
☒ Thunderstorms, High Winds, and Hail
☐ Epidemic/Pandemic

8a. Anticipated Cost (if known): Unknown

8b. Funding Available: ☐ Yes ☐ Anticipated ☒ No

8c. Funding Source: ☐ Existing Budget ☒ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

Possible DOLA or State Water Resources Grant

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☒ Safety and Security
☒ Food, Water, Shelter
☒ Health and Medical
☐ Energy (Power & Fuel)
☐ Communications
☐ Transportation
☐ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☒ High Risk and Vulnerability
☒ Economic Benefit-Cost
☐ Social Equity
☐ Technical Soundness
☐ Innovation
☐ Adaptive Capacity
☐ Harmonize with Existing Activity
☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	3	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	3	
L: Is there Legal authority to implement?	3	
E: Is it Economically beneficial?	3	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	3	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email:
Richard Mann	**719-689-5641**	**rmann@cityofvictor.com**

1. Identify the Problem

Recapping of Landfill due to age

2. Mitigation Action and Alternatives

Alleviate erosion of landfill that may present hazards to area streams and land

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☐ Plans and Regulations ☒ Infrastructure/Capital Project ☒ Natural Systems Protection
☐ Education and Awareness

5. Goals Supported:

☐ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☐ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

City of Victor

5b. Supporting Departments/Organizations:

EPA- Brownsfield

6a. Timeline: ☐ Immediate ☐ < 1 year ☒ 1 – 3 years ☒ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☐ Flood
☐ Severe Winter Weather
☐ Wildfire
☐ Tornado
☐ Dam Failure
☒ Hazardous Materials
☐ Landslide
☒ Subsidence, Sinkholes, and Soil Erosion
☐ Thunderstorms, High Winds, and Hail
☐ Epidemic/Pandemic

8a. Anticipated Cost (if known): Estimated $200,000 dollars

8b. Funding Available: ☐ Yes ☒ Anticipated ☐ No

8c. Funding Source: ☐ Existing Budget ☒ Grant ☐ Bond/Levy ☐ No/minimal cost

Other: EPA- Brownsfield

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☐ Safety and Security
☒ Energy (Power & Fuel)
☐ Transportation
☐ Food, Water, Shelter
☐ Communications
☒ Hazardous Materials
☒ Health and Medical

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☒ Social Equity
☒ Adaptive Capacity
☐ High Risk and Vulnerability
☐ Technical Soundness
☒ Harmonize with Existing Activity
☐ Economic Benefit-Cost
☒ Innovation
☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	3	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	3	
L: Is there Legal authority to implement?	3	
E: Is it Economically beneficial?	3	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	1	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email:
Richard Mann	**719-689-5641**	**rmann@cityofvictor.com**

1. Identify the Problem

City of Victor water valve tower in Reservoir #2 needs replacement due to environmental shifting
And age of tower which is over 100 years. This is a vital infrastructure and can lead to massive loss
of city's water and damage to others if corrections are not addressed immediately.

2. Mitigation Action and Alternatives

Short term correction is complete, long-term correction is in process

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☒ Plans and Regulations ☒ Infrastructure/Capital Project ☒ Natural Systems Protection
☐ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☒ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

City of Victor

5b. Supporting Departments/Organizations:

CC&V, DOLA, STATE

6a. Timeline: ☒ Immediate ☒ < 1 year ☐ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☒ Drought & Extreme Temperature
☐ Earthquake
☐ Flood
☒ Severe Winter Weather
☒ Wildfire
☐ Tornado
☒ Dam Failure
☐ Hazardous Materials
☐ Landslide
☒ Subsidence, Sinkholes, and Soil Erosion
☐ Thunderstorms, High Winds, and Hail
☐ Epidemic/Pandemic

8a. Anticipated Cost (if known): Estimated $500,000 dollars

8b. Funding Available: ☐ Yes ☒ Anticipated ☐ No

8c. Funding Source: ☒ Existing Budget ☒ Grant ☐ Bond/Levy ☐ No/minimal cost

Other: STATE Loan, CC&V potential

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☒ Safety and Security
☐ Energy (Power & Fuel)
☐ Transportation
☒ Food, Water, Shelter
☐ Communications
☐ Hazardous Materials
☒ Health and Medical

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☒ Social Equity
☐ Adaptive Capacity
☒ High Risk and Vulnerability
☐ Technical Soundness
☐ Harmonize with Existing Activity
☐ Innovation
☒ Economic Benefit-Cost
☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	3	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	3	
L: Is there Legal authority to implement?	3	
E: Is it Economically beneficial?	3	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	3	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email:
Richard Mann	**719-689-5641**	**rmann@cityofvictor.com**

1. Identify the Problem

Age and life expectancy of WWTF- The WWTF is a few years form reaching life expectancy

2. Mitigation Action and Alternatives

Increase size and basin and replace aged equipment

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☒ Plans and Regulations ☒ Infrastructure/Capital Project ☒ Natural Systems Protection
☐ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☒ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

City of Victor

5b. Supporting Departments/Organizations:

DOLA, STATE

6a. Timeline: ☐ Immediate ☐ < 1 year ☒ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☐ Flood
☐ Severe Winter Weather
☐ Wildfire
☐ Tornado
☐ Dam Failure
☒ Hazardous Materials
☐ Landslide
☐ Subsidence, Sinkholes, and Soil Erosion
☐ Thunderstorms, High Winds, and Hail
☒ Epidemic/Pandemic

8a. Anticipated Cost (if known): Estimated $3 to 4 million dollars

8b. Funding Available: ☐ Yes ☒ Anticipated ☐ No

8c. Funding Source: ☒ Existing Budget ☒ Grant ☐ Bond/Levy ☐ No/minimal cost

Other: STATE Loan, DOLA, user fees increase

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☒ Safety and Security
☐ Energy (Power & Fuel)
☐ Transportation
☐ Food, Water, Shelter
☐ Communications
☒ Hazardous Materials
☒ Health and Medical

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☐ Social Equity
☐ Adaptive Capacity
☒ High Risk and Vulnerability
☐ Technical Soundness
☐ Harmonize with Existing Activity
☐ Economic Benefit-Cost
☒ Innovation
☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	3	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	3	
L: Is there Legal authority to implement?	3	
E: Is it Economically beneficial?	3	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	1	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email:
Andrew Leibbrand	**719-393-5420**	**aleibbrand@city-woodlandpark.org**

1. Identify the Problem

Currently the City of Woodland Park does not have automatic gas shut off valves in case of a seismic event. These events could consist of several different natural disasters such as earthquakes, tornados, or landslides. This problem can exist anytime there is a potential for buildings or grounds to shift and disrupt or dislodge natural gas piping. There are also several hot water tanks that are unsecured and pose a burn risk during a seismic event.

2. Mitigation Action and Alternatives

Implement a plan to install a number of automatic shut off valves per year in the City.
Implement a plan to secure all hot water tanks in City Buildings

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☐ Plans and Regulations ☒ Infrastructure/Capital Project ☐ Natural Systems Protection
☐ Education and Awareness

5. Goals Supported:

☐ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☐ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☐ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☐ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

City of Woodland Park – Buildings and Grounds

5b. Supporting Departments/Organizations:

City of Woodland Park – Finance, Streets

6a. Timeline: ☐ Immediate ☐ < 1 year ☐ 1 – 3 years ☒ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature

☒ Earthquake

☐ Flood

☐ Severe Winter Weather

☐ Wildfire

☒ Tornado

☐ Dam Failure

☐ Hazardous Materials

☒ Landslide

☒ Subsidence, Sinkholes, and Soil Erosion

☐ Thunderstorms, High Winds, and Hail

☐ Epidemic/Pandemic

8a. Anticipated Cost (if known): $200 - $1,500 per each depending on building need.

8b. Funding Available: ☐ Yes ☐ Anticipated ☒ No

8c. Funding Source: ☒ Existing Budget ☒ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☒ Safety and Security
☒ Energy (Power & Fuel)
☐ Transportation
☐ Food, Water, Shelter
☐ Communications
☐ Hazardous Materials
☐ Health and Medical

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☐ Social Equity
☐ Adaptive Capacity
☒ High Risk and Vulnerability
☒ Technical Soundness
☐ Harmonize with Existing Activity
☐ Innovation
☐ Economic Benefit-Cost
☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	2	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	3	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	2	
L: Is there Legal authority to implement?	3	
E: Is it Economically beneficial?	3	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	2	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	5	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email:
Andrew Leibbrand	(719) 393-5420	aleibbrand@city-woodlandpark.org

1. Identify the Problem

Moderate to large earthquake

2. Mitigation Action and Alternatives

- Work w/ Colorado Geological services for study
- Education and awareness
- Develop post disaster action plan

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☒ Plans and Regulations ☒ Infrastructure/Capital Project ☐ Natural Systems Protection
☒ Education and Awareness

5. Goals Supported:

☑ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☑ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☑ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☑ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

City of Woodland Park Police Department

5b. Supporting Departments/Organizations:

Road crews
Water Department

6a. Timeline: ☐ Immediate ☐ < 1 year ☒ 1 – 3 years ☒ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

- ☐ Drought & Extreme Temperature
- ☒ Earthquake
- ☐ Flood
- ☐ Severe Winter Weather
- ☐ Wildfire
- ☐ Tornado
- ☐ Dam Failure
- ☐ Hazardous Materials
- ☐ Landslide
- ☐ Subsidence, Sinkholes, and Soil Erosion
- ☐ Thunderstorms, High Winds, and Hail
- ☐ Epidemic/Pandemic

8a. Anticipated Cost (if known): Unknown. If large event, large cost

8b. Funding Available?: ☐ Yes ☐ Anticipated ☒ No

8c. Funding Source: ☒ Existing Budget ☒ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

- ☒ Safety and Security
- ☒ Food, Water, Shelter
- ☒ Health and Medical
- ☒ Energy (Power & Fuel)
- ☒ Communications
- ☒ Transportation
- ☒ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

- ☐ Co-Benefits
- ☐ High Risk and Vulnerability
- ☒ Economic Benefit-Cost
- ☐ Social Equity
- ☐ Technical Soundness
- ☐ Innovation
- ☒ Adaptive Capacity
- ☐ Harmonize with Existing Activity
- ☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	2	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	2	
P: Is it Politically acceptable?	2	
L: Is there Legal authority to implement?	~~2~~ 3	
E: Is it Economically beneficial?	2	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	2	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	3	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	2	High = 5 Medium = 3 Low = 1

Appendix B

Mitigation Strategy Evaluation and Mitigation Action Evaluation Forms

Every year, each jurisdiction will submit the Hazard Mitigation Strategy Evaluation Form. This provides the Hazard Mitigation Committee with all the information needed to compile a formal annual report on the progress of the plan. If any additional mitigation initiatives have been identified that were not previously addressed in the hazard mitigation plan, the jurisdiction will also complete a Mitigation Action Evaluation form to attach with the Strategy Evaluation.

Hazard Mitigation Strategy Evaluation Form

Jurisdiction: _____

Prepared By: _____ Title: _____

For the 12-month period ending: _____ Date: _____

Instructions: Complete one for each jurisdiction. Check the box beside Yes or No options.

Complete descriptions for each question to which a Yes response applies, inserting additional lines as needed.

During the preceding 12 months:

1. Did the jurisdiction experience any hazard events resulting in losses?

☐ No ☐ Yes – Describe (e.g. deaths, injuries, property damage, and indirect impacts such as loss of use, economic or environmental impacts, if a damage assessment was conducted, emergency or disaster declaration):

2. Have there been any observed impacts, physical changes, or new studies that would materially affect the hazards analysis?

☐ No ☐ Yes – Describe:

3. Have any additional mitigation initiatives been identified, not previously addressed in the hazard mitigation plan?

☐ No ☐ Yes – For each new initiative, complete a Mitigation Action Evaluation form.

4. Have any identified mitigation initiatives been completed and successful?

☐ No ☐ Yes – Review:

5. Were there targeted strategies in the past year that did not get completed?

☐ No ☐ Yes – Discuss:

6. Do any mitigation strategies in the current plan need timeline amendments (such as changing a long-term project to short-term project due to funding)?

☐ No ☐ Yes – Describe:

7. Have there been any changes in potential or new funding options, including grant opportunities?

☐ No ☐ Yes – Describe:

8. Were there any other planning programs or initiatives that involved hazard mitigation? If so, what was their impact?

☐ No ☐ Yes – Describe:

9. Has public awareness of hazards improved?

☐ No ☐ Yes – Describe:

Mitigation Action Evaluation

Action ID: **Action Name:**

Action Description:

Affected Jurisdiction(s):

Lead/Participating Agencies:

Status and Priority Level:

Actual Time to Complete/Anticipated Completion:

Actual Cost to Complete/Anticipated Cost:

Funding Source:

Anticipated Benefit vs. Cost – (For those projects with a measurable benefit in terms of future loss reduction, please quantify. For projects less easily quantified, please provide a qualitative assessment of the benefit in relation to the cost):

Other Comments:

Prepared By: _____ **Date:** _____

Teller County 2021 Hazard Mitigation Plan

Appendix C

735523 RESOLUTION Page 1 of 2
03/02/2021 11:16 AM Fees: $0.00 Doc Fee:
Krystal Brown, Clerk and Recorder, Teller, CO

THE BOARD OF COUNTY COMMISSIONERS
TELLER COUNTY, COLORADO

RESOLUTION NO. 02-25-2021 (10)

A RESOLUTION APPROVING THE TELLER COUNTY, COLORADO HAZARD MITIGATION PLAN UPDATE.

WHEREAS, Teller County recognizes the threat that natural hazards pose to people and property within our community; and

WHEREAS, undertaking hazard mitigation actions will reduce the potential for harm to people and property from future hazard occurrences; and

WHEREAS, the adopted Hazard Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

WHEREAS, the Colorado Division of Homeland Security and Emergency Management, and Federal Emergency Management Agency, Region VIII officials have reviewed the Teller County, Colorado Hazard Mitigation Plan Update and approved it contingent upon this official approval by the participating governing body; and

WHEREAS, Teller County fully participated in the mitigation planning process to prepare this Hazard Mitigation Plan Update; and

WHEREAS, the Board of County Commissioners hereby finds, determines and declares that adoption of this Resolution is necessary for the preservation and protection of the public health, safety and welfare of the inhabitants of Teller County, Colorado;

NOW, THEREFORE BE IT RESOLVED that the Board of County Commissioners of Teller County, Colorado, by virtue of the authority vested in the Board by the laws and Constitution of Colorado, DOES HEREBY APPROVE THE 2021 TELLER COUNTY HAZARD MITIGATION PLAN UPDATE; and

NOW, THEREFORE BE IT FURTHER RESOLVED that the Board of County Commissioners of Teller County, Colorado, will submit this Approval Resolution to the Colorado Division of Homeland Security and Emergency Management, and Federal Emergency Management Agency, Region VIII officials to enable the Plan's final approval.

APPROVED THIS 25th DAY OF FEBRUARY 2021 AT THE BOARD OF COUNTY COMMISSIONERS OF TELLER COUNTY, COLORADO, MEETING HELD AT THE CENTENNIAL BUILDING IN CRIPPLE CREEK, COLORADO.

THE BOARD OF COUNTY COMMISSIONERS
OF TELLER COUNTY, COLORADO

Robert Campbell, Chairman

ATTEST:

Krystal Brown, Clerk & Recorder

CITY OF CRIPPLE CREEK, COLORADO
RESOLUTION NO. 2021-05

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CRIPPLE CREEK, COLORADO ADOPTING THE TELLER COUNTY HAZARD MITIGATION PLAN AS THE CITY OF CRIPPLE CREEK MULTI-HAZARD MITIGATION PLAN.

WHEREAS, *the City of Cripple Creek*, with the assistance from *WSP Consulting*, has gathered information and prepared the Teller County Hazard Mitigation Plan; and,

WHEREAS, the Teller County Hazard Mitigation Plan has been prepared in accordance with FEMA requirements at 44 C.F.R. 201.6; and,

WHEREAS, *the City of Cripple Creek* is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the Plan and the actions in the Plan; and

WHEREAS, *City Council of the City of Cripple Creek* has reviewed the Plan and affirms that the Plan will be updated no less than every five years;

NOW, THEREFORE, BE IT RESOLVED by *the City Council* that *the City of Cripple Creek* adopts the Teller County Hazard Mitigation Plan as this jurisdiction's Multi-Hazard Mitigation Plan, and resolves to execute the actions in the Plan.

RESOLVED, APPROVED AND ADOPTED this 7th day of April, 2021.

CITY OF CRIPPLE CREEK, COLORADO

Milford Ashworth, Mayor

ATTEST:

Janell Sciacca, CMC
City Clerk

RESOLUTION NO. 2021-03-18.01

CITY OF VICTOR

A RESOLUTION CONSENTING TO AND ADOPTING THE TELLER COUNTY HAZARD MITIGATION PLAN FOR THE CITY OF VICTOR, COLORADO.

WHEREAS, the Victor City Council, with the assistance from Teller County Operations of Emergency Management, has gathered information and prepared the Teller County Hazard Mitigation Plan; and,

WHEREAS, the Teller County Hazard Mitigation Plan has been prepared in accordance with FEMA requirements at 44 C.F.R. 201.6; and,

WHEREAS, the Victor City Council is a local unit of government that has afforded the staff an opportunity to comment and provide input in the Plan and the actions in the Plan; and

WHEREAS, the Victor City Council has reviewed the Plan and affirms that the Plan will be updated no less than every five years;

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF VICTOR, COLORADO, AS FOLLOWS:

Section 1. The Victor City Council adopts the Teller County Hazard Mitigation Plan as this jurisdiction's Multi-Hazard Mitigation Plan and resolves to execute the actions in the Plan for the City of Victor, Colorado.

ADOPTED THIS 18TH DAY OF MARCH, 2021, AT THE REGULAR MEETING OF THE CITY OF VICTOR CITY COUNCIL.

CITY OF VICTOR, COLORADO

Bruce M. Davis, Mayor

ATTEST:

Glori Thurston, City Clerk

Exhibit 1: Adoption Resolution

City of Woodland Park

220 W. South Avenue, Woodland Park, Colorado

RESOLUTION NO. 875, SERIES 2021

WHEREAS, the City of Woodland Park, with the assistance from the Woodland Park Police Department, has gathered information and prepared the Teller County Hazard Mitigation Plan; and,

WHEREAS, the Teller County Hazard Mitigation Plan has been prepared in accordance with FEMA requirements at 44 C.F.R. 201.6; and,

WHEREAS, Teller County Emergency Management Office hosted a public meeting on November 10, 2020 that afforded the citizens of Woodland Park an opportunity to comment and provide input in the Plan and the actions in the Plan; and

WHEREAS, Woodland Park City Council has reviewed the Plan and affirms that the Plan will be updated by Teller County no less than every five years;

NOW THEREFORE, BE IT RESOLVED by Woodland Park City Council that City of Woodland Park adopts the 2020 Teller County Hazard Mitigation Plan and Woodland Park Jurisdiction Annex as this jurisdiction's Multi-Hazard Mitigation Plan, and resolves to execute the actions in the Plan.

ADOPTED this 6th day of May, 2021 at the meeting of the Woodland Park City Council.

Hilary LaBarre, Mayor Pro-tem

ATTEST:

Suzanne Leclercq, City Clerk

Exhibit 1: Adoption Resolution

Four Mile Protection District
Board of Four Mile Protection District
8437 Teller County Road 11, Florissant Colorado 80816

Resolution

WHEREAS, Four Mile Fire Protection District, with assistance from Jay Teague Fire Chief Four Mile Fire Protection District, has gathered information and prepared the Teller County Hazard Mitigation Plan; and,

WHEREAS, the Teller County Hazard Mitigation Plan has been prepared in accordance with FEMA requirements at 44 C.F.R. 201.6; and,

WHEARAS, Four Mile Fire Protection District is a local unit of government that has afforded the citizens an opportunity to comment and provide input in the Plan and the actions in the Plan; and,

WHEARAS, Four Mile Fire Protection District has reviewed the Plan and affirms that the Plan will be updated no less than every five years;

NOW THEREFORE, BE IT RESOLVED by Four Mile Fire Protection District Board that Four Mile Fire Protection District adopts the Teller County Hazard Mitigation Plan as the jurisdiction's Multi-Hazard Mitigation Plan, as this jurisdiction's Multi-hazard Mitigation Plan, and resolves to execute the actions in the Plan.

Adopted the 19th day of May 2021 at the meeting of the Four Mile Fire Protection District Board.

Linda (Lindy) Luksch
Board President, Four Mile Fire Protection District

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

FEMA

R8-MT

June 28, 2021

Teller County Board of County Commissioners
112 North "A" Street
P.O. Box 959
Cripple Creek, CO 808213

Dear Teller County Commissioners:

We are pleased to announce the approval of the Teller County Multi-Jurisdictional Hazard Mitigation Plan 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 Teller County, the Cities of Cripple Creek and Victor, the Municipality of Woodland Park and the Four Mile 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 June 27, 2026. 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 Mark Thompson, State Hazard Mitigation Officer, Colorado Department of Emergency Services, at markw.thompson@state.co.us or (720) 852-6600 with any questions on the plan approval or mitigation grant programs.

Sincerely,

Jeanine D. Petterson

Jeanine D. Petterson
Mitigation Division Director

Enclosure
cc: Mark Thompson, 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*.

Jurisdiction: Teller County, CO	**Title of Plan: Teller County Multi-Jurisdictional Hazard Mitigation Plan, 2020 Update**	**Date of Plan:** January 25, 2021
Local Point of Contact: Don Angell	**Address:** 112 North "A" Street P.O. Box 959 Cripple Creek, CO 80813	
Title: Director of Emergency Management		
Agency: Teller County Office of Emergency Management		
Phone Number: (719) 689-2988	**E-Mail:** angelld@co.teller.co.us	

State Reviewer: Patricia L. Gavelda Mark W. Thompson	**Title:** DHSEM Local Hazard Mitigation Planning Program Manager; Mitigation Planning Specialist	**Date:** 12/8/2020; 1/29/2021

FEMA Reviewer: Laura Weinstein, IR Logan Sand, QC	**Title:** CERC Mitigation Champion Community Planner	**Date:** 2/22/2021 3/3/2021
Date Received in FEMA Region VIII	1/29/2021	
Plan Not Approved		
Plan Approvable Pending Adoption	3/3/2021	
Plan Approved	**6/28/2021**	

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 Rqtms.	E. Adoption Resolution
1	Teller County	County	Don Angell	angelld@co.teller.co.us	Y	Y	Y	Y	Y
2	Cripple Creek	Statutory City	Ray White	rwhite@cripple-creek.co.us	Y	Y	Y	Y	Y
3	Woodland Park	Home Rule Municipality	Commander Andrew Leibbrand	aleibbrand@city-woodlandpark.org	Y	Y	Y	Y	Y
4	Victor	Statutory City	Richard Mann	rmann@cityofvictor.com	Y	Y	Y	Y	Y
5	Four Mile FPD	Special District	Chief Jay Teague	4milechief@gmail.com	Y	Y	Y	Y	Y

SECTION 2:
REGULATION CHECKLIST

REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or	Met	Not Met
ELEMENT A. PLANNING PROCESS			
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))	Base Plan Chapter 3 and Table 1-1; Jurisdictional Annexes Section 1	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 §))	Base Plan Section 3.4 and Appendix D (PDF pages 497 - 498)	X	
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Base Plan Section 3.7	X	
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	Base Plan Section 3.5	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))	Base Plan Section 22.6	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))	Base Plan Section 22.5	X	
ELEMENT A: REQUIRED REVISIONS:			
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT			
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))	Base Plan Chapters 7 – 18; Jurisdictional Annexes Section 3	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))	Base Plan Chapters 7 – 18; Jurisdictional Annexes Section 3	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))	Base Plan Chapters 7 – 18; Jurisdictional Annexes Section 3	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))	Base Plan Section 5.5; Jurisdictional Annexes Section 4.6	X	

REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or	Met	Not Met
ELEMENT B: REQUIRED REVISIONS:			
ELEMENT C. MITIGATION STRATEGY			
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))	Base Plan Section 5.7; Jurisdictional Annexes Section 4.7	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))	Base Plan Section 3.5.1; Jurisdictional Annexes Section 4.5	X	
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Base Plan Section 3.3	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))	Base Plan Section 21.8; Jurisdictional Annexes Section 5	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))	Base Plan Section 21.8; Jurisdictional Annexes Section 5	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))	Base Plan Section 22.7; Jurisdictional Annexes Section 4.7	X	
ELEMENT C: REQUIRED REVISIONS:			
ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION			
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Base Plan Chapters 7 – 18; Jurisdictional Annexes Sections 2.2 and Section 3	X	
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Base Plan Appendix A	X	
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	Base Plan Sections 2.3 and 3.3	X	

REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or	Met	Not Met
ELEMENT D: REQUIRED REVISIONS			
ELEMENT E. PLAN ADOPTION			
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	N/A	
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	Pending APA	X	
ELEMENT E: REQUIRED REVISIONS			
OPTIONAL: HIGH HAZARD POTENTIAL DAM RISKS			
HHPD1. Did Element A4 (planning process) describe the incorporation of existing plans, studies, reports, and technical information for high hazard potential dams?	-		X
HHPD2. Did Element B3 (risk assessment) address HHPDs?	Base Plan Chapter 15; Jurisdictional Annexes Section 3.3	X	
HHPD3. Did Element C3 (mitigation goals) include mitigation goals to reduce long-term vulnerabilities from high hazard potential dams that pose an unacceptable risk to the public?	Base Plan Section 3.3	X	
HHPD4. Did Element C4-C5 (mitigation actions) address HHPDs prioritize mitigation actions to reduce vulnerabilities from high hazard potential dams that pose an unacceptable risk to the public?	Base Plan Section 21.8; Jurisdictional Annexes Section 5.2	NA	
REQUIRED REVISIONS			
ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)			
F1.			
F2.			
ELEMENT F: REQUIRED REVISIONS			

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

Strengths

State

- This planning process is well documented and quickly allows the reader to understand the process and results. The planning team had a good number of people on it that clearly demonstrated broad participation in this planning effort.

FEMA

- The Planning Team should be applauded for keeping the planning process on track despite local disruptions and other adverse impacts associated with the COVID-19 pandemic, which began shortly after initiating the planning process. Noteworthy modifications included pivoting from in-person meetings to web-based alternatives and taking other strategies to remotely engage the Hazard Mitigation Committee (HMC) members, other stakeholders, and the public at large.

- The placement of a small icon next to the locations in the text where HMC feedback was incorporated into the Plan is a clever idea. It is wonderful to see the many instances where a deliverable from one of the HMC meetings was used to inform the Plan.

- The Planning Team did a nice job of providing opportunities to engage the public in the planning process, including distribution of an online survey, hosting a virtual public meeting, and inviting the public to review and comment on the draft plan.

- In addition to including meeting invitations, agendas, minutes, sign-in sheets, and survey results, Appendices A and D also contain an array of planning process worksheets created by the Planning Team to help inform the Plan update. A remarkable amount of data was requested from the HMC on topics such as critical facilities and infrastructure of importance, historic hazard events, hazard identification and risk ranking, capability assessment, mitigation strategy status, and identification of new actions. The worksheets are comprehensive and user-friendly, making it easy and streamlined for participants to inform the Plan update.

- The Plan clearly articulates the roles and responsibilities for participation as members of the HMC. There is also a good level of detail and direction about the role of the HMC to implement and maintain the plan. The Committee's continued involvement through implementation and maintenance will help keep this an effective local plan throughout its lifecycle.

Opportunities for Improvement

State

- Teller County invited representatives from neighboring counties to participate about halfway through the planning process. Consider inviting them before the next update begins. Teller and the neighboring counties are all on very similar HMP timelines and all will likely benefit from earlier and more frequent interactions.

FEMA

- Between the planning mechanisms cited in Section 3.5, the Plan references, and the jurisdictional-specific capability assessments, it is clear that a comprehensive list of existing plans, studies, reports, and technical information was reviewed and incorporated into the Plan. However, for the next update, please add more narrative that explicitly states how each of these resources was used, and where information from the sources may be found in the Plan. While there are some citations throughout, it is not completely clear how each item listed was used to inform the Plan.

- Representatives from El Paso County and Chaffee County were present at HMC Workshop #3. In concurrence with DHSEM comments, neighboring counties should be invited to participate in the planning process early on. Because hazard risks are shared amongst neighboring communities, there may be opportunities for collaborative mitigation action. In addition to the two aforementioned counties, the Plan also describes outreach to Park County; however, there is no mention of Fremont County and Douglas County. Were they also invited to participate in the planning process? If so, please document outreach efforts in the Plan and, if not, be sure to include them on the invite list for future updates.

- Although the Local Planning Committee included a diverse group of stakeholders, more involvement from community planners and those with the authority to regulate development is encouraged. This includes representation from local planning commissions and/or the offices responsible for each jurisdiction's land use and comprehensive planning activities. This would help the Committee develop and incorporate mitigation strategies into existing planning mechanisms and programs, as suggested in the plan, particularly non-structural mitigation strategies that can be achieved through land use policy or other regulatory measures.

- Page 37 of the Plan lists community partners that the County collaborates with on an ongoing basis, including federal and regional partners, academia, business and industry, healthcare, utilities, transportation, and community non-profit interests. While several of the organizations listed were invited to participate in the HMC and/or other planning process activities, it is not clear if all of them received an invitation. These community partners are key stakeholders each with a unique perspective to bring to the hazard mitigation discussion. Their participation in future plan updates is strongly encouraged.

- The Plan indicates that the draft plan was advertised to the public through announcements on the County's social media accounts, including Twitter and Facebook. While this outreach is good for those that follow the County on social media, its reach is likely limited. To reach a greater portion of the region's population, consider additional outlets such as press releases to local news and media sources, email lists, and other agency websites to spread the word. Additionally, it is unclear what methods were used to advertise the online survey and public

meeting to the community. For future updates, please include documentation of method(s) used to inform the public of engagement opportunities.

Element B: Hazard Identification and Risk Assessment

Strengths

State

- The HIRA in this plan succinctly describes the hazards of concern and makes it easy for a reader to understand the 5Ws as they apply to them.

FEMA

- Each hazard profile is thorough and well-organized, and includes useful information that goes beyond standard FEMA requirements. The HIRA's inclusion of a specific subsection on "Potential Impacts from Future Climate Conditions", as well as a conclusive summary of "Issues" associated with each hazard, is especially notable as a unique and strong feature.

- The Plan includes excellent maps detailing the 1-percent annual flood chance for the included jurisdictions. The large scale of the maps makes it easy to see the areas within each jurisdiction that are vulnerable to flood hazards and helps visually communicate risk to property, infrastructure, and people.

- The Plan includes vulnerability assessments for Special Improvement Districts. The Planning Team is praised for their efforts to capture hazard risk for the participating Fire Protection District.

- Although GIS data showing dam inundation areas in Teller County was not publicly available at the time of Plan update, the Planning Team is commended for their efforts to seek out supplemental information necessary to effectively assess jurisdictional vulnerability associated with dam failure. Setting up interviews with local dam owners produced excellent and detailed information including potential exposure of structures and critical infrastructure to the hazard.

Opportunities for Improvement

FEMA

- It is recommended that Drought and Extreme Temperatures be separated into their own hazard profiles. These are two very distinct hazards that have their own impacts and are not directly correlated with one another. For example, there can be extreme heat events outside of a drought. Separate these hazards in the next plan update.

- For the *Identified Hazards of Concern* section (Part 2, Section 6.2) it would be helpful to list and briefly describe each of the hazards identified for Colorado in the State Hazard Mitigation Plan (SHMP), noting the ones that are included/aligned with the HIRA for Teller County. The hazards explicitly identified in the SHMP but not profiled in this Plan should be noted and the rationale for their omission explicitly stated. The Plan only provides rationale for omission of avalanche. If there are other hazards that are commonly recognized, such as dense fog or pest infestation, a reason for their omission should be included.

- Section 6.2 provides a comprehensive list of all hazards profiled in the Plan. However, this list is not inclusive of high winds and hail which are profiled with thunderstorms in Chapter

11. For clarity and consistency, it would be helpful to add high winds and hail to this list to ensure that it is representative of all hazards profiled in the Plan.

- While the maps included in the Appendices are helpful, consider including them near the portion of the narrative that addresses what is shown on the map. This would help clarify the information presented and more clearly describe any unique or varied vulnerabilities for the participating jurisdictions.

- To better link the HIRA with the Mitigation Strategy, consider establishing more direct connections between key vulnerabilities or similar problem statements in Chapters 7 thru 18 and the jurisdictional annexes with specific mitigation actions proposed in Chapter 21. For example, where a mitigation action will address a major issue identified for a hazard, consider adding a footnote or cross-reference to the text noting the relevant Action(s) and/or Action Number(s).

- The Plan's Hazard Ranking methodology, defined in Table 6-1, is a clear and consistent way to evaluate, describe, and quantify the degree of relative risk for each hazard assessed. However, it is unclear what set or sets of data were used to generate the Hazard Ranking results displayed in Table 3-1. Are the hazard ranking results solely based on input received from HMC members during Meetings #1 and #2? Do the ranking results also factor in the data quantified through the Plan's HIRA? As the Plan reads, it sounds like HMC input was the only metric used to tabulate the risk ranking results. While stakeholder input is valuable and crucial to understanding risk and vulnerability, it is recommended that participant input is not used alone in calculating the Risk Assessment Ranking as it tends to be more qualitative in nature. The findings of the HIRA should form the foundation of the risk ranking and participant input should be an additional weighting.

- Each participating jurisdiction was asked to review the hazard rankings developed for Teller County and from there they could decide whether they concurred with the rankings for their jurisdiction, or if they wished to develop their own rankings. This seems odd as the vulnerability assessment completed for each participating jurisdiction should expose each identified hazard's unique impact on the community. Due to the diverse characteristics of the planning area, it seems unlikely that all jurisdictions participating in this Plan update will have the same risk ranking for each hazard. For example, Cripple Creek elected to use the hazard rankings developed for Teller County. In Teller County, landslides ranked as the number three local hazard, with a high probability of event occurrence. However, for Cripple Creek, the risk analysis found probability to be low and stated that it is unlikely for a landslide to occur in the City. As this is the case, mitigating for landslides might be a lower priority in Cripple Creek than in Unincorporated Teller County. When inputting values into each jurisdictions risk ranking table, please carefully consider the unique impacts that each hazard has on the community and confirm that the hazard rankings accurately portray this risk. This will help with the creation of a more targeted mitigation strategy.

- It appears that the ranking numbers associated Magnitude and Frequency in the Hazard Ranking Output tables in Chapters 7 thru 18 may have been flipped. The numbers inputted for magnitude and frequency in the aforementioned tables are not consistent with the hazard ranking numbers shown in Table 3-1.

Element C: Mitigation Strategy

Strengths

State

- The mitigation strategy in this plan does a good job of addressing the hazards of concern. It is the culmination of a good planning process that links the building blocks of the plan into a coherent flow.

FEMA

- The tables/matrices that summarize the inventory and analysis of existing capabilities are very effective. The comprehensive inventory demonstrates that Teller County and the participating jurisdictions are thinking holistically about what already exists within the planning area to accomplish hazard mitigation. For the next update, consider building out this discussion by identifying gaps in existing resources and capabilities that should be addressed as part of the Mitigation Strategy.

- The mitigation strategy includes a number of land use planning, administration, and regulatory actions to strengthen the existing built environment – and direct new growth away from hazard-prone areas. Adopting new building codes, updating the Teller County Growth Management Plan, and developing a Community Wildfire Protection Plan for the City of Victor are a few best practice examples. The implementation of these types of actions/projects will have a positive impact to further reduce community hazard risk. FEMA appreciates the continued commitment to advance these planning and regulatory mitigation actions.

- The Mitigation Implementation Plan (Table 21-6) provides a summary of each proposed mitigation action/initiative with relevant attribute information. Mapping each action back to its applicable goal(s) and objective(s) is an excellent way to document how specific actions are designed to support a more coordinated strategy for risk reduction.

- The combined STAPLEE and mitigation effectiveness analysis is a great method to prioritize mitigation actions. Also, as mentioned in the Plan, consideration of available funding, emerging hazards, or alignment with priorities identified in other planning efforts, are also important considerations when determining which initiative to pursue.

- All municipal planning partners are committed to creating a linkage between the HMP and other planning mechanisms by identifying a mitigation initiative as such and giving that action a high priority. Additionally, the section within each jurisdictional-specific annex pertaining to *Integration of Mitigation into Existing Planning Mechanisms* is exceptionally noteworthy. Describing existing plans and recommending integration of hazard mitigation principles into future updates is forward thinking and a great way to set the wheels in motion.

Opportunities for Improvement

FEMA

- Goal 3 speaks to reducing “hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.” This is an excellent goal in that

it includes reference to natural and historic resources. However, few references are made within the hazard profiles to call out and/or identify cultural and natural assets of value and potential hazard exposure. Consider including additional inventory and assessment of historic, cultural, and natural resources in future plan updates to ensure their protection is part of the mitigation discussion.

- Of the nine actions for Woodland Park, five are specific to earthquake. However, as indicated in the risk assessment, earthquake does not pose a significant threat to the community. In contrast, wildfire is the number one threat and only has one associated action. Further, hazardous materials were also ranked highly, yet there are no related actions. The mitigation strategy for Woodland Park should be expanded to include a comprehensive list of actions aimed at mitigating high risk hazards.

Element D: Plan Review, Evaluation, and Implementation (Plan Updates Only)

Strengths

FEMA

- The Plan includes a discussion of the processes undertaken to update the previous version of the hazard mitigation plan document and clearly describes changes that have been made.

- Chapter 22 does a good job detailing a thorough plan maintenance process that, if followed, provides a structure for tracking and updating mitigation actions. Additionally, the inclusion of an annual plan review and progress report is an excellent way to monitor the plan's implementation. The County OEM is strongly encouraged to coordinate these local efforts as suggested to help keep the plan a current and living document.

Opportunities for Improvement

FEMA

- In the next plan update, consider building a few more specific strategies to foster/support long-term public involvement. Are there annual events or other public-facing opportunities to keep the community informed about the HMP? This would be great to capture in Section 22.6.

B. Resources for Implementing Your Approved Plan

FEMA FUNDING SOURCES

Hazard Mitigation Grant Program (HMGP). The HMGP is a post-disaster mitigation program. It is made available to states by FEMA after each Federal disaster declaration. The HMGP can provide up to 75 percent funding for hazard mitigation measures. The HMGP can be used to fund cost-effective projects that will protect public or private property in an area covered by a federal disaster declaration or that will reduce the likely damage from future disasters. Examples of projects include acquisition and demolition of structures in hazard prone areas, flood-proofing or elevation to reduce future damage, minor structural improvements and development of state or local standards. Applicants who are eligible for the HMGP are state and local governments, certain nonprofit organizations or institutions that perform essential government services, and Indian tribes and authorized tribal organizations. Individuals or homeowners cannot apply directly for the HMGP; a

local government must apply on their behalf. Applications are submitted to your state and placed in rank order for available funding and submitted to FEMA for final approval. Eligible projects not selected for funding are placed in an inactive status and may be considered as additional HMGP funding becomes available. More information: https://www.fema.gov/hazard-mitigation-grant-program

Building Resilient Infrastructure and Communities (BRIC) Grant Program. The BRIC program supports states, local communities, tribes and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. BRIC is a new FEMA pre-disaster hazard mitigation program that replaces the existing Pre-Disaster Mitigation (PDM) program. The BRIC program guiding principles are supporting communities through capability- and capacity-building; encouraging and enabling innovation; promoting partnerships; enabling large projects; maintaining flexibility; and providing consistency: https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities

Rehabilitation of High Hazard Potential Dams (HHPD) Grant Program. This program provides technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible high hazard potential dams. For more information, please visit: https://www.fema.gov/emergency-managers/risk-management/dam-safety/grants#hhpd

Flood Mitigation Assistance (FMA) Grant Program. FMA provides funding to assist states and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the NFIP. The FMA is funded annually; no federal disaster declaration is required. Only NFIP insured homes and businesses are eligible for mitigation in this program. Funding for FMA is very limited and, as with the HMGP, individuals cannot apply directly for the program. Applications must come from local governments or other eligible organizations. The federal cost share for an FMA project is 75 percent. At least 25 percent of the total eligible costs must be provided by a non-federal source. Of this 25 percent, no more than half can be provided as in-kind contributions from third parties. FMA funds are distributed from FEMA to the state. More information: https://www.fema.gov/flood-mitigation-assistance-grant-program

Fire Management Assistance Grant (FMAG) Program. The FMAG program provides grants to states, tribal governments and local governments for the mitigation, management and control of any fire burning on publicly (non-federal) or privately owned forest or grassland that threatens such destruction as would constitute a major disaster. The grants are made in the form of cost sharing with the federal share being 75 percent of total eligible costs. Grant approvals are made within 1 to 72 hours from time of request. More information: http://www.fema.gov/fire-management-assistance-grant-program

Hazard Mitigation Grant Program (HMGP) Post Fire Grant Program. FEMA's Hazard Mitigation Grant Program (HMGP) has Post Fire assistance available to help communities implement hazard mitigation measures after wildfire disasters. States, federally-recognized tribes and territories affected by fires resulting in an Fire Management Assistance Grant (FMAG) declaration on or

after October 5, 2018, are eligible to apply. More information:
https://www.fema.gov/grants/mitigation/post-fire

Fire Prevention and Safety (FP&S) Grants. 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:
https://www.fema.gov/welcome-assistance-firefighters-grant-program

OTHER MITIGATION FUNDING SOURCES

Grant funding is available from a variety of federal and state agencies for training, equipment, and hazard mitigation activities. Several of these programs are described below.

Program 15.228: Wildland Urban Interface Community and Rural Fire Assistance. This program is designed to implement the National Fire Plan and assist communities at risk from catastrophic wildland fires. The program provides grants, technical assistance, and training for community programs that develop local capability, including: Assessment and planning, mitigation activities, and community and homeowner education and action; hazardous fuels reduction activities, including the training, monitoring or maintenance associated with such hazardous fuels reduction activities, on federal land, or on adjacent nonfederal land for activities that mitigate the threat of catastrophic fire to communities and natural resources in high risk areas; and, enhancement of knowledge and fire protection capability of rural fire districts through assistance in education and training, protective clothing and equipment purchase, and mitigation methods on a cost share basis.

Secure Rural Schools and Community Self-Determination Act - Title III- County Funds. The Self-Determination Act has recently been reauthorized and now includes specific language regarding the Firewise Communities program. Counties seeking funding under Title III must use the funds to perform work under the Firewise Communities program. Counties applying for Title III funds to implement Firewise activities can assist in all aspects of a community's recognition process, including conducting or assisting with community assessments, helping the community create an action plan, assisting with an annual Firewise Day, assisting with local wildfire mitigation projects, and communicating with the state liaison and the national program to ensure a smooth application process. Counties that previously used Title III funds for other wildfire preparation activities such as the Fire Safe Councils or similar would be able to carry out many of the same activities as they had before. However, with the new language, counties would be required to show that funds used for these activities were carried out under the Firewise Communities program. For more information, click here.

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, and restoration of fire-adapted ecosystems and promotion of community assistance. More information: https://www.westernforesters.org/wui-grants

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

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: https://www.blm.gov/services/financial-assistance-and-grants

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

General Services Administration, Sale of Federal Surplus Personal Property. This program sells property no longer needed by the federal government. The program provides individuals, businesses and organizations the opportunity to enter competitive bids for purchase of a wide variety of personal property and equipment. Normally, there are no restrictions on the property purchased. More information: http://www.gsa.gov/portal/category/21045

Hazardous Materials Emergency Preparedness Grants. Grant funds are passed through to local emergency management offices and HazMat teams having functional and active LEPC groups. More information: http://www.phmsa.dot.gov/hazmat/grants

U.S. Department of Homeland Security. Enhances the ability of states, local and tribal jurisdictions, and other regional authorities in the preparation, prevention, and response to terrorist attacks and other disasters, by distributing grant funds. Localities can use grants for planning, equipment, training and exercise needs. These grants include, but are not limited to areas of Critical

Infrastructure Protection Equipment and Training for First Responders, and Homeland Security Grants.

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: https://www.hud.gov/program_offices/comm_planning/cdbg

Building Blocks for Sustainable Communities. The EPA Office of Sustainable Communities sometimes offers grants to support activities that improve the quality of development and protect human health and the environment. When these grants are offered, they will always be announced on www.grants.gov. More information: https://www.epa.gov/smartgrowth/building-blocks-sustainable-communities#2016

OTHER RESOURCES

FEMA: Grant Application Training. Each year, FEMA partners with the State on training courses designed to help communities be more successful in their applications for grants. Contact your State Hazard Mitigation Officer for course offering schedules. Example Courses:

- Unified Hazard Mitigation Grant Assistance Application Development Course
- Benefit Cost Analysis (BCA) Course

FEMA: Community Assistance Visit. It may be appropriate to set up a Community Assistance Visit with FEMA to provide technical assistance to communities in the review and/or updating of their floodplain ordinances to meet the new model ordinance. Consider contacting your State NFIP Coordinator for more information.

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

NOAA/NIDIS: U.S. Drought Portal. NOAA's National Integrated Drought Information System's Drought Portal provides resources for communities to understand their drought conditions, vulnerability, and impacts. The Portal includes data and maps down by city, county, state, zip code,

and at watershed global scales. Communities can use this information to inform their hazard mitigation plans with update-to-date data regarding drought conditions, vulnerability, and impacts for sectors such as agriculture, water utilities, energy, and recreation.

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

National Integrated Drought Information System. The National Drought Resilience Partnership may provide some additional resources and ideas to mitigate drought hazards and increase awareness of droughts. Visit: https://www.drought.gov/drought/what-nidis/national-drought-resilience-partnership.

Beyond the Basics: Best Practices in Local Mitigation Planning. The product of a 5-year research study where the Costal 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/

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

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/

Teller County 2021 Hazard Mitigation Plan

Appendix D

Acknowledgements

Special Acknowledgements

The 2021 Teller County Multi-Jurisdictional Hazard Mitigation Plan update would not have been possible without the dedication and commitment to the planning process by the Teller County Office of Emergency Management, planning partners, and stakeholders. We greatly appreciate their time and dedication.

Participants

- Don Angell, Teller County Office of Emergency Management (Teller County OEM)
- Becky Frank, Teller County OEM
- Patti Alberts, Teller County OEM
- Andrew Lemmons, Teller County Public Health & Environment (TCPHE)
- Karissa Larson, Teller County Public Health & Environment (TCPHE)
- Julie Gilley, Teller County Department of Social Services
- Jacqueline Revello, Teller County Public Health & Environment (TCPHE)
- Sheriff Mikesell, Teller County Sheriff's Department
- Renee Bunting, Teller County Sheriff's Office
- Jessica Flohrs, Teller County
- Mark J. Platten, Teller County
- Marc Rucker, Teller County GIS
- Paul Harris, City of Cripple Creek
- Diann Pritchard, Cripple Creek Police Department
- Chief Charles "Bud" Bright, Cripple Creek Police Department
- Richard Mann, City of Victor
- Andy Leibbrand, Woodland Park Police Department
- Robin Lindberg, Woodland Park Police Department
- Dianne Van Auken, Teller Senior Coalition Woodland Park
- Randy Bruggink, Four Mile Fire Protection District
- Steve Witcher, Four Mile Fire Protection District
- Chief Jay Teague, Four Mile Fire Protection District

- Jason Feagin, Four Mile Fire Protection District Board
- Lindy Luksch, Four Mile Fire Protection District
- Jon Luksch, Four Mile Fire Protection District
- Randy Bruggink, Four Mile Fire Protection District
- Ron Barker, Divide Fire Protection District
- Tyler Lambert, NE Teller County Fire
- Mike Schaub, Pikes Peak Regional Office of Emergency Management (PPROEM)
- Rich Atkins, Chaffee County OEM
- Mark Thompson, Colorado Division of Homeland Security and Emergency Management (DHSEM)
- Mike McHargue, DHSEM
- Darrell Kirby, El Paso County Public Health
- Cpl. Nicholas Hazlett, Colorado State Patrol Troop, 2B/E (El Paso and Teller County Troop)
- Steve Krebs, Colorado State Patrol
- Jim Jenkins, American Red Cross
- Michael McKenna, Red Cross SE Area
- Shelby Bobst, Pikes Peak Community Foundation
- Cordell Atkins, Forest Ridge Senior Living

Teller County 2021 Hazard Mitigation Plan

Appendix D-1: HMC Meeting 1

Teller County Hazard Mitigation Plan 2021

Update KICKOFF WORKSHOP

DATE: Thursday, June 11, 2020
TIME: 8:00 a.m. - 10:30 a.m.
LOCATION: Zoom

Thank you for participating in the Hazard Mitigation Committee Meeting #1 for the **Teller County Hazard Mitigation Plan (HMP) Update**.

MEETING PURPOSE:

The County is required by law to update the HMP once every five years to be eligible for mitigation funding and your participation in the planning process is critical to ensure that the HMP is informed by the latest information regarding local capabilities and that the mitigation actions identified in the plan reflect your community's priorities.

The County has engaged Ecology and Environment, Inc. (E & E) to facilitate the HMP update process including facilitation of this workshop. The kickoff will be a two-hour meeting that will focus on providing partners with an overview of the planning process and outputs, an interactive discussion to discuss what has changed since the last update, and establishment of concrete action items to move forward.

AGENDA:

1. Welcome and Introductions (10 minutes)
2. Overview of the Planning Process (20 minutes)
3. Hazard Ranking and Risk Assessments (20 minutes)
4. Assessing Vulnerabilities / Review of Headlines Activity (20 minutes)
5. Review of Capability Assessment (10 minutes)
6. HMP Goals and Objectives (30 minutes)
7. Next Steps (10 minutes)

NEXT STEPS:

Please return your completed worksheets to Jessica Forbes-Guerrero by June 16, 2020.

Jessica Forbes-Guerrero, Ecology and Environment, Inc.
(o) 303-443-3282 | JForbes-Guerrero@ene.com

NOTES:

Teller County 2021 HMP Update
Meeting # 1 - Kickoff Workshop
Sign In Sheet

NAME	TITLE	DEPARTMENT/AGENCY	PHONE	EMAIL
1. Julie Gilley	Caseworker II	Teller County Department of Social Services		
2. Don Angell	Director	Teller County Office of Emergency Management (TCOEM)		
3. Mark Thompson	Mitigation Planning Specialist	Colorado Division of Homeland Security and Emergency Management (DHSEM)	(720) 630-0770	markw.thompson@state.co.us
4. Andrew Lemmons	Environmental Health Officer	Teller County Public Health & Environment (TCPHE)		
5. Karissa Larson		Teller County Public Health & Environment (TCPHE)	719-687-6416/719-649-3154	larsonk@co.teller.co.us
6. Becky Frank		City of Victor		bfrank@cityofvictor.com
7. Jacqueline Revello	Director	Teller County Public Health & Environment (TCPHE)	687-6416	
8. Renee Bunting	Deputy, Community Liaison	Teller County Sheriff's Office		

NAME	TITLE	DEPARTMENT/AGENCY	PHONE	EMAIL
9. Steve Witcher	Board Member	Four Mile Fire Protection District	719-689-0783	
10. Diann Pritchard	Dispatch Supervisor	Cripple Creek Police Department	719-689-2655	dpritchard@cripple-creek.co.us
11. Jim Jenkins	Program Manager/Business Development	American Red Cross	(719) 337-8508	jimmy.jenkins@redcross.org
12. Jay Teague	Fire Chief	Four Mile Fire Protection District	(719)689-3417	
13. Chief Charles "Bud" Bright	Police Chief	Cripple Creek Police Department	719-689-2655	cbright@cripple-creek.co.us
14. Jason Feagin		Four Mile Fire Protection District Board	719-689-3474	jasonkasey@gmail.com
15. Lindy Luksch	Board Member	Four Mile Fire Protection District	720.732.6171	lluksch3@gmail.com
16. Jon Luksch		Four Mile Fire Protection District	720.556.0056	jluksch33@gmail.com
17. Randy Bruggink		Four Mile Fire Protection District		
18. Cordell Atkins		Forest Ridge Senior Living		
19. Cpl. Nicholas Hazlett	Colorado State Patrol Troop	2B/E (El Paso and Teller County Troop)		

NAME	TITLE	DEPARTMENT/AGENCY	PHONE	EMAIL
20. Patti Alberts		Teller County Office of Emergency Management (OEM), Logistics		albertsp@co.teller.co.us
21. Michael McKenna		Red Cross SE Area	719 332 5267	mjmckenna15@centurylink.net
22. Shelby Bobst	Philanthropy Associate	Pikes Peak Community Foundation	719-445-0601	sbobst@ppcf.org
23. Mike McHargue	South Central Region Field Manager	DHSEM		
24. Dianne Van Auken	Transportation Manager	Teller Senior Coalition Woodland Park		dvanauken@tellerseniorcoalition.org
25. Randy Bruggink		Four Mile Fire Protection District	719-689-3500	conductorrandy@gmail.com

Teller County
2020 Hazard Mitigation Plan Update

Meeting #1 – Kickoff Workshop

Thursday, June 11 | 8 a.m. – 10:30 a.m. | Zoom Webinar

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Welcome and Introductions

- Name
- Organization/Department
- Did you participate in the last Hazard Mitigation Plan planning process?
  - What is keeping you up at night?

Meet the E & E Team



Trevor Clifford
Project Director



Nicki Hurley
GIS Analyst



Jessica Forbes-Guerrero
Project Manager



Sam Fisher
Emergency Planner

Meeting Objectives

- Overview of the Planning Process
- Hazard Ranking
- Assessing Vulnerability
- Local Capabilities
- Goals and Objectives
- Next Steps and Action Items



Talking Hazards

2013 Hazards of Concern

- Drought & Extreme Temperature
- Earthquake
- Flood
- Severe Winter Weather
- Wildfire
- Tornado
- Dam Failure
- Hazardous Materials
- Landslide
- Subsidence, Sinkholes, and Soil Erosion
- Thunderstorms, High Winds, and Hail

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Ranking Hazards

- Probability/Frequency - Likelihood of the hazard occurring and how often the hazard has resulted in an emergency or disaster.
- Magnitude – The extent or scale of the area potentially impacted, the overall impacts, and the chance of one hazard triggering another hazard, thus causing a cascading effect.
- Onset - The time between recognition of an approaching hazard and when the hazard begins to affect the community.
- Duration - The length of time the hazard remains active, the length of time emergency operations continue after the hazard event, and the length of time that recovery will take.

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Measuring Risk

Rating	Probability/ Frequency	Magnitude	Onset	Duration
1	Highly unlikely (less than every 25 years)	No injuries or deaths expected, minimal property damage	Greater than 30 days of warning	Only brief moments
2	Fairly unlikely (10-25 years)	Between 1 and 5 injuries or deaths, minor property damage	5-30 days of warning	1-24 hours
3	Moderate (5-10 years)	Between 5 and 25 injuries or deaths, moderate property damage	1-5 days of warning	Days to weeks
4	Likely (1-5 years)	Between 25 and 50 injuries or deaths, severe property damage	1-10 hours of warning	Weeks to months
5	Highly likely (once per year)	Greater than 50 injuries or deaths, catastrophic property damage	No warning	Months to years

The Planning Output

Example Hazard Ranking Results

Hazard Type	*Magnitude (1=lowest, 5=highest)*	*Frequency (1=lowest, 5=highest)*	*Onset (1=slowest, 5=fastest)*	*Duration (1=shortest, 5=longest)*		*Average*	*Rank*
Wildland Fire	3.71	4.43	4.29	4.14		4.14	1
Earthquake	4.29	2.86	4.86	3.57		3.89	2
Hazardous Materials Event	3.00	3.14	4.86	3.43		3.61	3
Flood	3.43	3.71	3.86	3.14		3.54	4
Severe Weather (Snow, Ice, Wind, Hail)	3.00	3.86	3.29	3.29		3.36	5
Terrorism	3.71	1.43	5.00	3.14		3.32	6
Caving Ground (Mine Collapse)	3.00	2.14	5.00	2.71		3.21	7
Drought	2.00	4.00	2.00	4.43		3.11	8
Epidemic	2.86	1.86	3.29	3.29		2.82	9
Avalanche	2.14	1.57	4.14	1.86		2.43	10

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Assessing Vulnerability

Workshop Exercise

- Think about what your department's news headlines related to hazards from the past 7 years would be
  - What are past events of importance?
  - What areas of your jurisdiction have been affected?
  - What populations have been impacted?
- Have vulnerabilities changed?
- Have priorities changed?
  - What are recent development trends?
  - Who are new partners to engage and support?



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Capabilities Assessment

Identifying Capabilities

- What hazards are you most concerned about that would impact your ability to provide essential functions?
- What would you consider your biggest vulnerability to those hazards?
- What would you consider your biggest strength is in being resilient to hazard events?

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Identifying Capabilities

- What plans and policies do you have in place to support risk reduction?

Plans and Policies	
Plans	**Policies and Regulations**
➢ Department Hazard Mitigation Plan or Hazard Analysis ➢ Department Emergency Operations or Emergency Response Plan ➢ Floodplain Management Plan ➢ Land Use Plan ➢ Stormwater Management Plan ➢ Continuity of Operations Plan or Business Continuity Plan ➢ Capital Improvements Plan	➢ Zoning Ordinance ➢ Flood Damage Prevention Ordinance ➢ Mutual Aid or Other Mutual Assistance Agreements ➢ National Flood Insurance Program ➢ Community Rating System ➢ Building Code ➢ Fire Code

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Identifying Capabilities

- What staff and equipment do you have in place to support risk reduction?

Staff and Equipment Capability	
Staff	**Equipment**
➢ Planners with knowledge of land development and land management practices ➢ Engineers or professionals trained in construction practices related to buildings and/or infrastructure ➢ Planners or engineers with an understanding of natural and/or human-caused hazards ➢ Emergency manager ➢ Floodplain manager ➢ Scientist familiar with hazards of the area ➢ Staff with education or expertise to assess vulnerability to hazards ➢ Personnel skilled in Geographic Information Systems (GIS) ➢ Resource development staff or grant writers	➢ Damage assessment tool ➢ Sandbagging machine ➢ Snow plows ➢ Generators ➢ Communication devices ➢ Personal Protective Equipment (PPE), such as hearing protective devices (earplugs, muffs), hard hats, respirators, gloves, eye protective devices (googles), full body suits ➢ Shelters ➢ Utility fleet

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Identifying Capabilities

- What fiscal mechanisms do you have in place to support risk reduction?

Fiscal Capability
➢ Capital Improvement Program ➢ Community Development Block Grants (CDBG) ➢ Special Purpose Taxes (or taxing districts) ➢ Utility Fees ➢ Development Impact Fees ➢ General Obligation, Revenue, and/or Special Tax Bonds ➢ Partnering arrangements or intergovernmental agreements

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Review of Mitigation Goals

Setting 2020 HMP Goals

- What does hazard mitigation look like in Teller County? What does the community value?
- Do any of the 2013 HMP goals need to be changed to address 2020 risks?
- Have priorities shifted that necessitate new goals?
- What goals are most critical for the upcoming 5-year planning period to further risk reduction?
- Consider developing goals through an all-hazards lens.



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2013 Guiding Principle

- Through public and private partnerships among local, regional, state and federal partners, reduce the risk to ~~natural~~ hazards in order to ensure the health, safety, welfare and economic sustainability of the community.

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2013 Goals

- Goal 1: Reduce the loss of life and personal injuries from hazard events.
- Goal 2: Reduce hazard impacts on public and private property and the local economy.
- Goal 3: Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
- Goal 4: Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

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2013 Mitigation Objectives

- Objective 1a: Educate members of the community in ways they can increase their safety and disaster resilience. (capture idea of personal responsibility)
- Objective 1b: Maintain essential services, facilities and infrastructures before, during and after hazard events.
- Objective 2a: Reduce the vulnerability of structures, homes and businesses to all hazards.
- Objective 2b: Encourage businesses, the public and the community overall to reduce their vulnerability to identified hazards within their immediate proximity and in Teller County.

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2013 Mitigation Objectives (cont.)

- Objective 3a: Strengthen and support countywide disaster and emergency planning and response efforts.
- Objective 3b: Protect, maintain and reduce the vulnerability of critical facilities, infrastructure, essential services, and natural and cultural resources.
- Objective 4a: Maintain and enhance community information sharing between internal and partner agencies and organizations and other stakeholders.
- Objective 4b: Maintain public education and outreach efforts through social media, traditional media sources, and other methods.

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Next Steps and Action Items

Key Dates and Data Gathering

- Provide completed worksheets (risk assessment, capability assessment, headlines, and data request) by June 16, 2020
- Mitigation Strategy Workshop in July 2020
- Draft Plan released in August 2020
- Draft Plan Workshop in August 2020
- Final Plan and Presentation in November 2020

What Can I Do?

- Submit worksheets
- Review draft plan once available
- Share information on the planning process
- Participate in upcoming workshops

Community Web Survey:
https://www.surveymonkey.com/r/68ML7WB

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Critical Actions for Success

- Dedicate the necessary time to review the documents
- Consider setting a regular meeting of your committee to discuss chapters/sections
- Designate a central individual to review all changes provided by staff before forwarding to E & E to alleviate conflicts

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Contact Information

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E & E Project Manager
Jessica Forbes-Guerrero
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JForbes-Guerrero@ene.com

Teller County 2021 Hazard Mitigation Plan Update

Hazard Mitigation Committee Meeting #1

DATE: Thursday 11 June 2020
TIME: 8:00-10:00am
LOCATION: Zoom Webinar

MATERIALS:

1. PowerPoint Presentation
2. Sign-in Sheet

Agenda

Agenda Items
Welcome and Introductions
Overview of the Planning Process, Purpose, and Requirements
Hazard Ranking and Risk Assessments
Assessing Vulnerabilities / Review of Headlines Activity
Review of Capability Assessment
HMP Goals and Objectives
Next Steps and Key Action Items

Summary

The Teller County Hazard Mitigation Committee (HMC) hosted the first of four meetings on June 11, 2020. This first meeting was the kick-off workshop for the 2021 Teller County Hazard Mitigation Plan Update, introducing the Project Team from Ecology and Environment, Inc. and the main point of contact for the project from the Teller County Office of Emergency Management. The meeting began with an overview of the planning process, the purpose, and requirements for the plan to achieve the approval from Colorado and FEMA. Mark Thompson with the Colorado Division of Homeland Security and Emergency Management (DHSEM) gave a presentation explaining hazard mitigation, benefits of an HMP, examples, projects, and requirements.

There were four discussions to engage members of the committee. The first was high-level discussion on hazards of concern. The second discussion involved assessing vulnerabilities. E & E and attendees filled out a headline worksheet together. The third discussion consisted of reviewing capabilities of the County. The fourth discussion was a review of the guiding principle, mitigation goals, and objectives from the 2013 plan and how they will be changed and updated for the 2021 plan update. Twenty-four members of the HMC and two members from Ecology & Environment participated in the workshop.

Overview of the Planning Process, Purpose, and Requirements

Mark Thompson gave a presentation on Local Hazard Mitigation Planning. He discussed what the ultimate purpose of hazard mitigation is, and what consequences the planning process and the plan are trying to prevent. Part of the discussion reviewed the benefits of a Hazard Mitigation Plan (HMP), from the planning process to Hazard Mitigation Assistance grant programs to the financial benefits. Hazard

mitigation examples and ongoing projects awarded in Colorado were discussed to help guide the County in establishing effective actions. To end, Mark presented the planning requirements and an overview of building a mitigation strategy.

The Project Team conducted an overview of the goal and purpose of mitigation plans and projects, and the process the County will be going through for this HMP update.

Hazard Ranking and Risk Assessments

The Project Team reviewed the 2013 HMP hazards of concern with the HMC. Members of the HMC were provided a worksheet after the workshop to rank the hazards based on probability, frequency, magnitude, onset, duration, and changes in perceived risk. Through the discussion of hazards, the HMC agreed to add pandemics/epidemics to the plan and keep severe winter weather and other extreme weather events as separate hazards.

Assessing Vulnerabilities / Review of Headlines Activity

The HMC was asked to think about and review what their department's/agency's news headlines related to hazards from the past 7 years. Members were asked:

- What are past events of importance?
- What areas of your jurisdiction have been affected?
- What populations have been impacted?
- Have vulnerabilities changed?
- Have priorities changed?
- What are recent development trends?
- Who are new partners to engage and support?

The Project Team led the HMC through a headlines worksheet exercise to guide input from the HMC. Headlines included the Four High Chateau Fire in 2018, the Bomb Cyclone Snowstorm in 2019, a 2018 hailstorm, a 2019 fuel spill, and a lightning strike in 2016. Members were asked to fill out worksheets and return them to the Project Team.

Review of Capability Assessment

Next, the Project Team presented the capability assessment portion of the HMP update. This requires the County and participating agencies/jurisdictions to identify capabilities to assist with hazard mitigation. The following questions were posed to the HMC:

- What hazards are you most concerned about that would impact your ability to provide essential functions?
- What would you consider your biggest vulnerability to those hazards?
- What would you consider your biggest strength is in being resilient to hazard events?

The Project Team reviewed examples and categories of capabilities, including plans and policies, staff and equipment, and fiscal mechanisms. HMC members were provided worksheets to fill out and return.

HMP Goals and Objectives

The final discussion involved a review of the 2013 HMP guiding principle, goals, and objectives. Setting 2021 HMP goals involved asking the following questions to the HMC members:

- What does hazard mitigation look like in Teller County? What does the community value?
- Do any of the 2013 HMP goals need to be changed to address 2021 risks?
- Have priorities shifted that necessitate new goals?
- What goals are most critical for the upcoming 5-year planning period to further risk reduction?
- Do we consider developing goals through an all-hazards lens?

The 2013 guiding principle was changed to remove the word "natural," making the plan more all-hazards friendly. It was decided that the 2013 goals and objectives will be revisited throughout the planning process to be updated or changed as necessary based on an updated risk assessment. Objectives went though an initial review and revision.

Next Steps and Key Action Items

A tentative schedule is outlined below and will be provided via email invites:

- Mitigation Strategy workshop in July 2020
- Draft Plan released in August 2020
- Draft Plan Workshop in August 2020
- Final Plan and Presentation in November 2020

E&E Tasks

- Send out Data Request Form
- Develop GIS Hazard Maps
- Develop updated hazard profiles

Steering Committee Member Tasks

- Provide Capabilities Assessment Worksheet
- Provide Risk Assessment Worksheet
- Provide Headlines Worksheet
- Submit completed data request
- Share Community Web Survey

Contact Information

County Project Lead
Don Angell
719-686-7990
angelld@co.teller.co.us

E & E Project Manager
Jessica Forbes-Guerrero
303-443-3282
JForbes-Guerrero@ene.com

Teller County - 2021 Hazard Rankings

Agency/Organization:						**Name:**
	Probability/ Frequency (1=lowest, 5=highest)	*Magnitude (1=lowest, 5=highest)*	*Onset (1=slowest, 5=fastest)*	*Duration (1=shortest, 5=longest)*	*Change in Risk (↑, ↓, ↔ since 2015)*	*Notes*
Dam Failure						
Drought and Extreme Temperature						
Earthquake						
Flood						
Hazardous Materials						
Landslide						
Severe Winter Weather						
Subsidence, Sink Holes, and Soil Erosion						
Thunderstorms, High Winds, and Hail						
Tornado						
Wildfire						

HEADLINES FORM

What headlines (good or bad) would your jurisdiction/organization have over the past five years, related to hazards?

Name: _____ Dept./Organization: _____

Headline	Hazard	Tell us the details! (What happened? Where and when? Who was affected? Why was it important?)

Notes:

Teller County 2021 Regional Hazard Mitigation Plan Up-

date DATA REQUEST FORM

Thank you for participating in the kickoff workshop for the **update of the Teller County Multi-Jurisdictional Hazard Mitigation Plan (HMP)**. The HMP is the document that guides the County and its partners in reducing risks and lessening the impact of disasters. The County has engaged Ecology and Environment, Inc. (E & E) to facilitate the HMP update process including facilitation of this workshop.

This data request is designed to gather existing information to inform plan development and ensure that it reflects the most current information available. **Please provide available information by June 16, 2020** to Jessica Forbes-Guerrero at jforbes-guerrero@ene.com. As a customer service, we have provided a secure FTP site (see page 2 of this data request) to serve as a one stop location for posting of project files, particularly files too large to send via email. We would prefer to receive documents in electronic versions (Microsoft Word for planning documents is preferred), but documents can also be sent in hard copy to Ecology and Environment, Inc., 5665 Flatiron Parkway, Suite 250, Boulder, CO 80301.

Project Points of Contact. *Please identify key staff/partners from your organization that should be included in project communications or can provide feedback on recent hazard mitigation efforts.*

Name	Title/Department	Email	Phone

Plans and Procedures. *Please provide key plans and documentation related to the risk assessment.*

- Historic damage reports from your jurisdiction
- List of critical facilities and infrastructure
- Recent risk studies and analyses
- County/municipal master plans
- County/municipal/organizational strategic plans
- County/municipal watershed plans

GIS Data. *To the extent possible, E & E would like to visually depict information in the risk assessment. Please provide the following GIS layers, if available:*

- Parcels and building footprints (preferably with assessed property values)
- Hazard layers (floodplains, wildland urban interface, earthquake, etc.)
- Land use data layers
- Critical facilities and infrastructure
- Emergency transportation routes
- Historical and cultural resource locations
- Any available damage assessments

GIS Contact:

Name	Title/Department	Email	Phone

SECURE FTP SITE

A password-protected shared FTP site is available for transferring large files. Please use the information below to log in. The login credentials for both sites are identical, and connection info is listed below:

Via Web Browser:
URL: http://its.ene.com
Username: ene
Password: sharedftp

Via FTP Client Program (FileZilla):
Host: ftp.ene.com
Username: ene
Password: sharedftp

Please save files you upload to the FTP site in a folder named "Teller County" and email Jessica Forbes-Guerrero (contact info below) when the files are available.

Note: The Web Browser method of using the FTP site has a physical limitation of 256MB per file uploaded. You must use an FTP client program (such as FileZilla) when uploading individual files larger than 256MB.

CONTACT INFORMATION:

Don Angell, Teller County
(o) 719-686-7990 | (c) 303-435-4637
angelld@co.teller.co.us

Jessica Forbes-Guerrero, E & E Project Manager
(o) 303-443-3282 | (c) 757-816-7762
jforbes-guerrero@ene.com

THANK YOU FOR YOUR PARTICIPATION!

CAPABILITY ASSESSMENT WORKSHEET INSTRUCTIONS

1. **Think about hazard mitigation in the context of your departmental/organizational mission and essential functions.** Not all hazards impact your operations in the same way and you may be uniquely vulnerable to certain hazards (e.g., facilities known to be in a hazard zone), or uniquely prepared for others (e.g., backup generators during a power disruption). You also might have functions that are specific to a particular hazard (e.g., public health's responsibility during a disease outbreak, or the fire department's role in fire prevention and suppression). This analysis also creates an important link between your department/organization's approach to hazard mitigation (how we reduce our risk) and continuity of operations (how we maintain our essential functions during a disruption). Based on this exercise, answer the following two questions for your department/organization:
    a. What hazards are you most concerned about that would impact your ability to provide your essential functions?
    b. What would you consider your **biggest vulnerability** to those hazards?
    c. What would you consider your **biggest strength** is in being resilient to hazard events?
2. **Think about what capabilities do you have to create a more resilient department organization to hazards and threats.** All partners in the community's hazard mitigation have a role in reducing vulnerability to hazards. That may come in the form of *policies* (e.g., policies restricting development in hazard zones), *plans* (e.g., strategies or operational plans to address hazards and threats), specialized *staff* (e.g., engineers, geospatial professionals), specialized *equipment or systems* (e.g., damage assessment tool, sandbagging machine), and *fiscal mechanisms* to support risk reduction (e.g., fees, grants). Based on this exercise answer the following questions for your department/organization:
    a. What **plans and policies** do you have in place to support community risk reduction?
    b. What **staff and equipment** do you have in place to support community risk reduction?
    c. What **fiscal mechanisms** to you have in place to support risk reduction?
    d. What **actions have you taken in the last 5 years** (since the last plan update) to build these capabilities?

Table 1 provides examples of plans and policies, staff and equipment, and fiscal mechanisms to support risk reduction. This list is not intended to be all-inclusive—please provide feedback on any asset or capability you think is appropriate.

3. **Think about your answers to the first two exercises—what strategies or actions might you propose to build on your existing capabilities and reduce both your department/organization's and the community's risks to hazards and threats.** A successful hazard mitigation strategy proposes actions that build on existing strengths and fill known gaps in capability. Based on this exercise, answer the following question:
    a. What **future investments** in any of these program elements do you foresee in the next 5 years to support risk reduction?

Table 1 Capability Element Examples

<table>
<tr><th colspan="2">Plans and Policies</th></tr>
<tr><td>Plans
➢ Department Hazard Mitigation Plan or Hazard Analysis
➢ Department Emergency Operations or Emergency Response Plan
➢ Floodplain Management Plan
➢ Land Use Plan
➢ Stormwater Management Plan
➢ Continuity of Operations Plan or Business Continuity Plan
➢ Capital Improvements Plan</td><td>Policies and Regulations
➢ Zoning Ordinance
➢ Flood Damage Prevention Ordinance
➢ Mutual Aid or Other Mutual Assistance Agreements
➢ National Flood Insurance Program
➢ Community Rating System
➢ Building Code
➢ Fire Code</td></tr>
<tr><th colspan="2">Staff and Equipment Capability</th></tr>
<tr><td>Staff
➢ Planners with knowledge of land development and land management practices
➢ Engineers or professionals trained in construction practices related to buildings and/or infrastructure
➢ Planners or engineers with an understanding of natural and/or human-caused hazards
➢ Emergency manager
➢ Floodplain manager
➢ Scientist familiar with hazards of the area
➢ Staff with education or expertise to assess vulnerability to hazards
➢ Personnel skilled in Geographic Information Systems (GIS)
➢ Resource development staff or grant writers</td><td>Equipment
➢ Damage assessment tool
➢ Sandbagging machine
➢ Snow plows
➢ Generators
➢ Communication devices
➢ Personal Protective Equipment (PPE), such as hearing protective devices (earplugs, muffs), hard hats, respirators, gloves, eye protective devices (googles), full body suits
➢ Shelters
➢ Utility fleet</td></tr>
<tr><th colspan="2">Fiscal Capability</th></tr>
<tr><td colspan="2">➢ Capital Improvement Program
➢ Community Development Block Grants (CDBG)
➢ Special Purpose Taxes (or taxing districts)
➢ Utility Fees
➢ Development Impact Fees
➢ General Obligation, Revenue, and/or Special Tax Bonds
➢ Partnering arrangements or intergovernmental agreements</td></tr>
</table>

CAPABILITY ASSESSMENT WORKSHEET

Contact Information:

Name:	**Department/Organization:**	**Title:**
Phone:	**E-Mail:**	

Responses:

1. What hazards are you most concerned about that would impact your ability to provide your essential functions?

2. What would you consider your **biggest vulnerability** to those hazards?

3. What would you consider your **biggest strength** is in being resilient to hazard events?

Before responding to questions 4, 5, and 6, please fill out the Local Mitigation Capabilities Tracker attached at the end of this worksheet. Use the fields under questions 4, 5, and 6 to record any additional capabilities in your jurisdiction.

4. What **plans and policies** do you have in place to support community risk reduction?

Plan/Policy	Notes

5. What **staff and equipment** do you have in place to support community risk reduction?

Staff/Equipment	Notes

6. What **fiscal mechanisms** to you have in place to support risk reduction?

Plan/Policy	Notes

7. What **actions have you taken in the last 5 years** (since the last plan update) to build these capabilities?

8. What **future investments** in any of these program elements do you foresee in the next 5 years to support risk reduction? (Note: FEMA has emphasized the importance of incorporating hazard mitigation principles in other community plans. Please note here what opportunities you see to incorporate hazard mitigation into other planning processes and plans.)

Local Mitigation Capabilities Tracker for Local and State Plan Updates

Planning and Regulatory	Yes/No
Building Codes	
Building Codes Year	
BCEGS Rating	
Capital Improvements Program (CIP) or Plan	
Community Rating System (CRS)	
Community Wildfire Protection Plan (CWPP)	
Comprehensive, Master, or General Plan	
Economic Development Plan	
Elevation Certificates	
Erosion/Sediment Control Program	
Floodplain Management Plan or Ordinance	
Flood Insurance Study	
Growth Management Ordinance	
Non-Flood Hazard-Specific Ordinance or Plan (e.g.- Steep Slope, Wildfire, Snow Load)	
NFIP	
Site Plan Review Requirements	
Stormwater Program, Plan, or Ordinance	
Zoning Ordinance	
Other	

Administrative and Technical	Yes/No
Emergency Manager	
Floodplain Administrator	
Community Planning:	
- Planner/Engineer (Land Devel)	
- Planner/Engineer/Scientist (Natual Hazards)	
- Engineer/Professional (Construction)	
- Resiliency Planner	
- Transportation Planner	
Building Official	
GIS Specialist and Capability	
Grant Manager, Writer, or Specialist	
Warning Systems/Services:	
- General	
- Flood	
- Wildfire	
- Tornado	
- Geological Hazards	
Other	

Financial	Yes/No
Has community used any of the following to fund mitigation activities:	
- Levy for Specific Purposes with Voter Approval	
- Utilities Fees	
- System Development / Impact Development Fee	
- General Obligation Bonds to Incur Debt	
- Special Tax Bonds to Incur Debt	
- Withheld Spending in Hazard-Prone Areas	
- Stormwater Service Fees	
- Capital Improvement Project Funding	
- Community Development Block Grants	
- Other	

Education & Outreach	Yes/No
Local Citizen Groups That Communicate Hazard Risks	
Firewise	
StormReady	
Other	

Teller County - 2020 Hazard Rankings

Agency/Organization:

Name: Becky Frank
Kelly Simkins
Don Angell

	Probability/ Frequency (1=lowest, 5=highest)	Magnitude (1=lowest, 5=highest)	Onset (1=slowest, 5=fastest)	Duration (1=shortest, 5=longest)	Change in Risk (↑, ↓, ↔ since 2015)	Notes
Dam Failure	1	2	5	1	—	
Drought and Extreme Temperature	4	2	3	4	↑	
Earthquake	1	2	5	1	↑	
Flood	3	2	3	1	↑	
Hazardous Materials	3	2	5	1	↑	
Landslide	4	2	5	2	↑	
Severe Winter Weather	~~4~~ 5	2	3	2	↑	
Subsidence, Sink Holes, and Soil Erosion	3	1	5	2	↑	
Thunderstorms, High Winds, and Hail	5	4	3	2	↑	
Tornado	3	3	5	1	↑	
Wildfire	5	4	4	3	↑	
Epidemic/Pandemic	3	5	2	5	↑	

Teller County - 2020 Hazard Rankings

Agency/Organization: Woodland Park Police Department **Name:** Robin Lindberg

	Probability/ Frequency (1=lowest, 5=highest)	Magnitude (1=lowest, 5=highest)	Onset (1=slowest, 5=fastest)	Duration (1=shortest, 5=longest)	Change in Risk (↑, ↓, ↔ since 2015)	Notes
Dam Failure	1	3	5	2	↔	
Drought and Extreme Temperature	1	2	2	5	↑	
Earthquake	1	5	5	4	↔	
Flood	2	2	4	3	↔	
Hazardous Materials	3	4	5	1	↑	Change in product for more ↑ risk
Landslide	2	3	5	3	↔	
Severe Winter Weather	4	3	4	3	↔	
Subsidence, Sink Holes, and Soil Erosion	2	2	3	2	↔	
Thunderstorms, High Winds, and Hail	5	2	4	1	↔	
Tornado	2	2	5	1	↔	
Wildfire	4	3	5	3	↑	

Teller County - 2021 Hazard Rankings						
Agency/Organization:						**Name:**
	Probability/ Frequency (1=lowest, 5=highest)	*Magnitude (1=lowest, 5=highest)*	*Onset (1=slowest, 5=fastest)*	*Duration (1=shortest, 5=longest)*	*Change in Risk (↑, ↓, ↔ since 2015)*	*Notes*
Dam Failure	1	1	3	2	same	
Drought and Extreme Temperature	3	3	1	5	same	
Earthquake	1	1	1	1	same	
Flood	1	3	4	3	same	
Hazardous Materials	1	1	1	1	same	
Landslide	1	3	4	1	same	
Severe Winter Weather	3	3	3	3	same	
Subsidence, Sink Holes, and Soil Erosion	1	3	4	1	same	
Thunderstorms, High Winds, and Hail	4	3	5	1	same	
Tornado	2	2	2	1	same	
Wildfire	5	5	5	5	same	

HEADLINES

What headlines (good or bad) would your jurisdiction/organization have over the past five years, related to hazards?

Name: Jay Teague Dept./Organization: Four Mile Fire Protection

Headline	Hazard	Tell us the details! (What happened? Where and when? Who was affected? Why was it important?)
High Chateau wildfire	Wildland	The fire was first reported around noon June 29 2019 roughly 4 miles south of Florissant Fossil Beds National Monument, and at its height forced more than 1,700 from two counties (Teller and Park) to evacuate. The fire burned an estimated 1425 acres and destroyed approximately 11 homes and numerous outbuildings. It was started on private property from an unsupervised campfire during a Type III fire ban in Teller County. A Type 4 Incident Management Team (Rocky Mountain Incident Management Team) was called in to fight the fire. Costs to fight the fire were approximately $3.5 million dollars.
Fuel Spill/ Theft Fourmile Fire Station	Hazmat	Motorhome pulled up to fuel tanks used to refuel fire and EMS apparatus siphoned gas from Farm tank. After filling tank the individual drove off and approximately 400 gallons of fuel penetrated the ground causing the station to mitigate the hazmat hazard. Station was closed due to fumes that got into the crawl space. Cost of mitigation was approximately $25.5 thousand. Insurance covered some of the cost.Fuel tanks have now been removed as it is difficult to guard against theft. Closing of the station hampered training and other events at the station although all calls were responded to.
COVID-19	Pandemic	

Notes:

HEADLINES

What headlines (good or bad) would your jurisdiction/organization have over the past five years, related to hazards?

Name: _____ Dept./Organization: _____

Headline	Hazard	Tell us the details! (What happened? Where and when? Who was affected? Why was it important?)
Four Mile – High Chateau Fire in 2018	**Wildfire**	**Lost 8 houses; residents were displaced due to evacuations during the 8 days the fire was active. Cost was app. $3.5 million to fight the fire. No lives were lost. Most of the area was large/small parcel residential. Fire burned in steep terrain, rural areas. The area is vulnerable to flooding in the event of severe t-storms. Many residents are still recovering, cleaning up. A lot of work has been done to remove burned trees, but a lot of work still needs to be done due to steep terrain/access issues. Communications were an issue during the fire. Needed to bring a mobile cell tower to the site and fire station to support emergency communications. There are a lot of blind spots for radio. Equipment needed to be brought in from outside because it isn't available locally, including bulldozers, water tenders, etc. Federal agencies assisted in gathering equipment. Aircraft were essential in limiting spread of fire.** **Department of Human Services, Public Health, Red Cross, CSU put together a Disaster Assistance Center during the fire response to help residents.**
Bomb cyclone snow storm, 2019	**Severe Winter Weather**	**Intense snow storm over several days, difficult to keep roads open. Motorists were stranded. The County did not have to open a shelter. Stranded motorists were found rooms in hotels.** **Roof damage in Victor – a roof blew off and damaged (poked a hole) in the roof of another building. Storm resulted in extensive private and public property damage.**

Headline	Hazard	Tell us the details! (What happened? Where and when? Who was affected? Why was it important?)
Flooding, occurs almost annually, one – two events per year	Flooding	Rain over 3 inches per hour results in flooding in seven – eight areas around the county that require emergency response. Result in short-term impacts to the transportation system. County Road 21 – Fountain Creek headwaters drain here – primary focus. Have completed a geomorphic assessment on this run through the County. Creekside Drive crossing – just below Fountain Creek almost at El Paso County line. Have contemplated a bridge rather than culverts at this location County will request list of problem areas from Fred.
COVID-19	Pandemic/ Epidemic	37 cases as of June 11, 2 deaths. Acquiring resources for the response (staffing and medical supplies) has been difficult. Cascading impacts – economic, mental health, burden on government staff, civil unrest, increase in crime and domestic abuse. Multi-agency response effort during pandemic – Teller County COVID website (Sheriff's department), one stop-shop for information regarding the pandemic – Community response from business community and front-line workers to keep essential businesses open. Emergency services continued operations during pandemic response. UC Health and Pikes Peak Task Force opened community testing center. County opened second testing center after first was shut down due to limited resources. National Guard and other stakeholders participated in the second testing center. Logistics acquired resources to keep the second center open. County provided contact tracing training for medical volunteers. Volunteer management has been a success.
Hail storm, 2018	Severe T-Storms…	Two years ago, property damage Countywide
Fuel spill, 2019	Hazardous Materials	Occurred at Four Mile Fire, dumped 500 gallons of fuel next to the station. Required soil remediation/removal. Spill caused by fuel theft.
Extended power outages (over 12 hours), not frequent	Severe Weather hazards	Wind storms and snow storms can cause outages. For Public Health, need to worry about vaccine storage and vulnerable residents (food and heat loss). Extended outages may cause people to need to relocate. Residents on oxygen may be compromised during extended outages.

Headline	Hazard	Tell us the details! (What happened? Where and when? Who was affected? Why was it important?)
		Extended outages affect communications and may prevent vulnerable residents from requesting help/assistance.
Lightning strike that caused structure fire, downtown Victor 2016	Severe T-storm	Burned out majority of building. Could have burned down whole block. Building smoldered for eight days, and block was evacuated for 4 days (businesses and approximately 30 residents). Level of response required drained municipal water supply.
Historic underground mine collapses/cave-ins	Soil Subsidence…	Can occur throughout the County. One collapse (in 2013 or 2014) shut down the highway into Cripple Creek for several days (a weekend). DRMS may have GIS data on these historic mines or potentially just where collapses have occurred. City of Victor has used ground-penetrating radar occasionally to explore areas that are potentially susceptible to collapse. There may be maps in the Cripple Creek museum that could provide a general idea of location. Generally assumed that mines occur throughout the southern area of the county.

Notes:

HEADLINES

What headlines (good or bad) would your jurisdiction/organization have over the past five years, related to hazards?

Name: Andrew Leibbrand **Dept./Organization:** City of Woodland Park Police Department

Headline	Hazard	Tell us the details! (What happened? Where and when? Who was affected? Why was it important?)
COVID-19	Pandemic	Global pandemic, shut down businesses, staff shortages
High Chateau Fire	Fire	Fire in neighboring jurisdiction, assited with personnel

Notes:

Local Mitigation Capabilities Tracker for Local and State Plan Updates

Planning and Regulatory	Yes/ No
Building Codes	
Building Codes Year	
BCEGS Rating	
Capital Improvements Program (CIP) or Plan	
Community Rating System (CRS)	
Community Wildfire Protection Plan (CWPP)	
Comprehensive, Master, or General Plan	
Economic Development Plan	
Elevation Certificates	
Erosion/Sediment Control Program	
Floodplain Management Plan or Ordinance	
Flood Insurance Study	
Growth Management Ordinance	
Non-Flood Hazard-Specific Ordinance or Plan (e.g.- Steep Slope, Wildfire, Snow Load)	
NFIP	
Site Plan Review Requirements	
Stormwater Program, Plan, or Ordinance	
Zoning Ordinance	
Other	

Administrative and Technical	Yes/ No
Emergency Manager	no
Floodplain Administrator	no
Community Planning:	
- Planner/Engineer (Land Devel)	no
- Planner/Engineer/Scientist (Natual Hazards)	no
- Engineer/Professional (Construction)	no
- Resiliency Planner	no
- Transportation Planner	no
Building Official	no
GIS Specialist and Capability	no
Grant Manager, Writer, or Specialist	no
Warning Systems/Services:	
- General Nixle	yes
- Flood	yes
- Wildfire	yes
- Tornado	yes
- Geological Hazards	yes
Other	

Financial	Yes/ No
Has community used any of the following to fund mitigation activities:	
- Levy for Specific Purposes with Voter Approval	yes
- Utilities Fees	no
- System Development / Impact Development Fee	no
- General Obligation Bonds to Incur Debt	no
- Special Tax Bonds to Incur Debt	no
- Withheld Spending in Hazard-Prone Areas	no
- Stormwater Service Fees	no
- Capital Improvement Project Funding	no
- Community Development Block Grants	no
- Other	

Education & Outreach	Yes/ No
Local Citizen Groups That Communicate Hazard Risks	yes
Firewise	yes
StormReady	no
Other fire mitigation consultations with homeowners	yes

CAPABILITY ASSESSMENT WORKSHEET

Contact Information:

Name: Jay Teague	**Department/Organization:** Four Mile Fire Protection Dist	**Title: Chief**
Phone: 719-689-3417	**E-Mail: 4milechief@gmail.com**	

Responses:

1. What hazards are you most concerned about that would impact your ability to provide your essential functions?

Large wildland fire incidents
Future pandemic
Response times affecting quality/ transport time for medical or fire incidents

2. What would you consider your **biggest vulnerability** to those hazards?

Staffing (all volunteer); lack of trained certified firefighters; High fuel loads / steep terrain; aged equipment; access to water (no hydrants); response times (all volunteer agency); Budget funding for equipment and apparatus
Impact of first responders getting infected limiting personnel for future response; Other services provided by department become overwhelmed by demands of pandemic; Need to maintain and train capable volunteers
No full time paramedic/ crew at station; responding crews take time to get to remote locations and subdivisions; if multiple calls happen at same time must rely on mutual aid that is responding from further distance

3. What would you consider your **biggest strength** is in being resilient to hazard events?

Task force coordination/ mutual aid; volunteer core is pro-active and dependable; continue to recruit newer volunteer members
Trained individuals from COVID-19, protocols established; rescue vehicle equipped; capable trained volunteer responders
Trained individuals; fully equipped rescue vehicle; capable and dependable volunteer staff

Before responding to questions 4, 5, and 6, please fill out the Local Mitigation Capabilities Tracker attached at the end of this worksheet. Use the fields under questions 4, 5, and 6 to record any additional capabilities in your jurisdiction.

4. What **plans and policies** do you have in place to support community risk reduction?

Plan/Policy	Notes
Community outreach and Firewise	WASP systems, mitigation assessments; seminars to homeowner associations
Alert public to Fire stage levels/bans	New district signs showing hazard level and if under fire ban

5. What **staff and equipment** do you have in place to support community risk reduction?

Staff/Equipment	Notes
40+ volunteers	EMT/EMRS, wildland and structure
2 Brush apparatus	Much of below equipment is older, maintenance is continual to keep apparatus in service
2 Fire engines	
3 Tenders	
Wildland ATV	
Rescue Rigs Rehab vehicle	

6. What **fiscal mechanisms** to you have in place to support risk reduction?

Plan/Policy	Notes
Public education budgeted	
Public knowledge and advertising of district	

7. What **actions have you taken in the last 5 years** (since the last plan update) to build these capabilities?

Apparatus maintenance /improvement
Focused training on wildland / S130-S190
Small chipper for small slash mitigation
Wildland ATV added to inventory
Fuel Tanks removed to eliminate spills risk on site
Improved knowledge /advertising of department/ services to community Chief part of OEM Command staff

8. What **future investments** in any of these program elements do you foresee in the next 5 years to support risk reduction? (Note: FEMA has emphasized the importance of incorporating hazard mitigation principles in other community plans. Please note here what opportunities you see to incorporate hazard mitigation into other planning processes and plans.)

Intercept protocol for EMS to ALS in process
Paid responders on duty 24/7 pending mill Levy increase
Station expansion; equipment upgrades
Community outreach improvements --- stop the bleed; wildland mitigation; WASP Improved funding increasing mill levy

CAPABILITY ASSESSMENT WORKSHEET INSTRUCTIONS

1. **Think about hazard mitigation in the context of your departmental/organizational mission and essential functions.** Not all hazards impact your operations in the same way and you may be uniquely vulnerable to certain hazards (e.g., facilities known to be in a hazard zone), or uniquely prepared for others (e.g., backup generators during a power disruption). You also might have functions that are specific to a particular hazard (e.g., public health's responsibility during a disease outbreak, or the fire department's role in fire prevention and suppression). This analysis also creates an important link between your department/organization's approach to hazard mitigation (how we reduce our risk) and continuity of operations (how we maintain our essential functions during a disruption). Based on this exercise, answer the following two questions for your department/organization:
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    b. What would you consider your **biggest vulnerability** to those hazards?
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    a. What **plans and policies** do you have in place to support community risk reduction?
    b. What **staff and equipment** do you have in place to support community risk reduction?
    c. What **fiscal mechanisms** to you have in place to support risk reduction?
    d. What **actions have you taken in the last 5 years** (since the last plan update) to build these capabilities?

Table 1 provides examples of plans and policies, staff and equipment, and fiscal mechanisms to support risk reduction. This list is not intended to be all-inclusive—please provide feedback on any asset or capability you think is appropriate.

3. **Think about your answers to the first two exercises—what strategies or actions might you propose to build on your existing capabilities and reduce both your department/organization's and the community's risks to hazards and threats.** A successful hazard mitigation strategy proposes actions that build on existing strengths and fill known gaps in capability. Based on this exercise, answer the following question:
    a. What **future investments** in any of these program elements do you foresee in the next 5 years to support risk reduction?

Teller County 2020 Hazard Mitigation Plan Update
Capability Assessment Worksheet Instructions

Table 1 Capability Element Examples

Plans and Policies	
Plans	**Policies and Regulations**
➢ Department Hazard Mitigation Plan or Hazard Analysis ➢ Department Emergency Operations or Emergency Response Plan ➢ Floodplain Management Plan ➢ Land Use Plan ➢ Stormwater Management Plan ➢ Continuity of Operations Plan or Business Continuity Plan ➢ Capital Improvements Plan	➢ Zoning Ordinance ➢ Flood Damage Prevention Ordinance ➢ Mutual Aid or Other Mutual Assistance Agreements ➢ National Flood Insurance Program ➢ Community Rating System ➢ Building Code ➢ Fire Code
Staff and Equipment Capability	
Staff	**Equipment**
➢ Planners with knowledge of land development and land management practices ➢ Engineers or professionals trained in construction practices related to buildings and/or infrastructure ➢ Planners or engineers with an understanding of natural and/or human-caused hazards ➢ Emergency manager ➢ Floodplain manager ➢ Scientist familiar with hazards of the area ➢ Staff with education or expertise to assess vulnerability to hazards ➢ Personnel skilled in Geographic Information Systems (GIS) ➢ Resource development staff or grant writers	➢ Damage assessment tool ➢ Sandbagging machine ➢ Snow plows ➢ Generators ➢ Communication devices ➢ Personal Protective Equipment (PPE), such as hearing protective devices (earplugs, muffs), hard hats, respirators, gloves, eye protective devices (googles), full body suits ➢ Shelters ➢ Utility fleet
Fiscal Capability	
➢ Capital Improvement Program ➢ Community Development Block Grants (CDBG) ➢ Special Purpose Taxes (or taxing districts) ➢ Utility Fees ➢ Development Impact Fees ➢ General Obligation, Revenue, and/or Special Tax Bonds ➢ Partnering arrangements or intergovernmental agreements	

Teller County - 2020 Hazard Rankings

Agency/Organization: Woodland Park Police Department **Name:** Robin Lindberg

	Probability/ Frequency (1=lowest, 5=highest)	Magnitude (1=lowest, 5=highest)	Onset (1=slowest, 5=fastest)	Duration (1=shortest, 5=longest)	Change in Risk (↑, ↓, ↔ since 2015)	Notes
Dam Failure	1	3	5	2	↔	
Drought and Extreme Temperature	1	2	2	5	↑	
Earthquake	1	5	5	4	↔	
Flood	2	2	4	3	↔	
Hazardous Materials	3	4	5	1	↑	Change in product for mine ↑ risk
Landslide	2	3	5	3	↔	
Severe Winter Weather	4	3	4	3	↔	
Subsidence, Sink Holes, and Soil Erosion	2	2	3	2	↔	
Thunderstorms, High Winds, and Hail	5	2	4	1	↔	
Tornado	2	2	5	1	↔	
Wildfire	4	3	5	3	↑	

CAPABILITY ASSESSMENT WORKSHEET

Contact Information:

Name:	Department/Organization:	Title:
Robin Lindberg	WPPD	Dispatcher / Emergency Management
Phone:	**E-Mail:**	
719-687-9262	rlindberg@city-woodlandpark.org	

Responses:

1. What hazards are you most concerned about that would impact your ability to provide your essential functions?

Wildfire, Landslide, earthquake, Epidemic/Pandemic

2. What would you consider your **biggest vulnerability** to those hazards?

damage to infrastructure, lack of resources, small number of employees

3. What would you consider your **biggest strength** is in being resilient to hazard events?

~~Wildfire~~ - experience, a good team, community notification systems, city emergency fund

Teller County 2020 Hazard Mitigation Plan Update
Capability Assessment Worksheet

Before responding to questions 4, 5, and 6, please fill out the Local Mitigation Capabilities Tracker attached at the end of this worksheet. Use the fields under questions 4, 5, and 6 to record any additional capabilities in your jurisdiction.

4. What **plans and policies** do you have in place to support community risk reduction?

Plan/Policy	Notes
EOPs	
COOP	
Zoning	
Building Codes	

5. What **staff and equipment** do you have in place to support community risk reduction?

Staff/Equipment	Notes
Emergency Management Team	
Heavy Equipment ~~(some plow~~	Snow Plows, excavators, etc.
Generators	for key locations (ie dispatch)
Building/Planning Dept	
Streets Dept	
PPE Cache	

6. What **fiscal mechanisms** to you have in place to support risk reduction?

Plan/Policy	Notes
~20% Emergency Fund	
Grants to offset cost	

Teller County 2020 Hazard Mitigation Plan Update
Capability Assessment Worksheet

7. What **actions have you taken in the last 5 years** (since the last plan update) to build these capabilities?

developed ~~wrote~~ a COOP
replaced outdated equipment
required department directors to take basic ICS
increase in City reserve funds

8. What **future investments** in any of these program elements do you foresee in the next 5 years to support risk reduction? (Note: FEMA has emphasized the importance of incorporating hazard mitigation principles in other community plans. Please note here what opportunities you see to incorporate hazard mitigation into other planning processes and plans.)

- More FEMA/ICS classes for more employees
- Purchase of more PPE to create a cache beforehand

Local Mitigation Capabilities Tracker for Local and State Plan Updates

Planning and Regulatory	Yes/No
Building Codes	Y
Building Codes Year	
BCEGS Rating	
Capital Improvements Program (CIP) or Plan	
Community Rating System (CRS)	
Community Wildfire Protection Plan (CWPP)	
Comprehensive, Master, or General Plan	
Economic Development Plan	
Elevation Certificates	
Erosion/Sediment Control Program	
Floodplain Management Plan or Ordinance	
Flood Insurance Study	
Growth Management Ordinance	
Non-Flood Hazard-Specific Ordinance or Plan (e.g.- Steep Slope, Wildfire, Snow Load)	
NFIP	
Site Plan Review Requirements	
Stormwater Program, Plan, or Ordinance	
Zoning Ordinance	Y
Other	

Administrative and Technical	Yes/No
Emergency Manager	Y
Floodplain Administrator	
Community Planning:	
- Planner/Engineer (Land Devel)	
- Planner/Engineer/Scientist (Natual Hazards)	
- Engineer/Professional (Construction)	
- Resiliency Planner	
- Transportation Planner	
Building Official	Y
GIS Specialist and Capability	Y
Grant Manager, Writer, or Specialist	Y
Warning Systems/Services:	
- General	Y
- Flood	Y
- Wildfire	Y
- Tornado	Y
- Geological Hazards	Y
Other	

Financial	Yes/No
Has community used any of the following to fund mitigation activities:	
- Levy for Specific Purposes with Voter Approval	
- Utilities Fees	
- System Development / Impact Development Fee	
- General Obligation Bonds to Incur Debt	
- Special Tax Bonds to Incur Debt	
- Withheld Spending in Hazard-Prone Areas	
- Stormwater Service Fees	
- Capital Improvement Project Funding	
- Community Development Block Grants	
- Other	

Education & Outreach	Yes/No
Local Citizen Groups That Communicate Hazard Risks	Y
Firewise	Y
StormReady	
Other	

Teller County 2020 Regional Hazard Mitigation Plan Update
Data Request Form

Teller County 2020 Regional Hazard Mitigation Plan Update

DATA REQUEST FORM

Thank you for participating in the kickoff workshop for the **update of the Teller County Multi-Jurisdictional Hazard Mitigation Plan (HMP)**. The HMP is the document that guides the County and its partners in reducing risks and lessening the impact of disasters. The County has engaged Ecology and Environment, Inc. (E & E) to facilitate the HMP update process including facilitation of this workshop.

This data request is designed to gather existing information to inform plan development and ensure that it reflects the most current information available. **Please provide available information by June 16, 2020** to Jessica Forbes-Guerrero at jforbes-guerrero@ene.com. As a customer service, we have provided a secure FTP site (see page 2 of this data request) to serve as a one stop location for posting of project files, particularly files too large to send via email. We would prefer to receive documents in electronic versions (Microsoft Word for planning documents is preferred), but documents can also be sent in hard copy to Ecology and Environment, Inc., 5665 Flatiron Parkway, Suite 250, Boulder, CO 80301.

Project Points of Contact. *Please identify key staff/partners from your organization that should be included in project communications or can provide feedback on recent hazard mitigation efforts.*

Name	Title/Department	Email	Phone
Andrew Leibbrand	Commander/WPPD	Aleibbrand@city-woodlandpark.org	687-9262
Sally Riley	Director/Building-Planning	SRiley@city-woodlandpark.org	
Darrin Tangeman	City Manager	Dtangeman@city-woodlandpark.org	

Plans and Procedures. *Please provide key plans and documentation related to the risk assessment.*

- Historic damage reports from your jurisdiction
- List of critical facilities and infrastructure
- Recent risk studies and analyses
- County/municipal master plans
- County/municipal/organizational strategic plans
- County/municipal watershed plans

GIS Data. *To the extent possible, E & E would like to visually depict information in the risk assessment. Please provide the following GIS layers, if available:*

- Parcels and building footprints (preferably with assessed property values)
- Hazard layers (floodplains, wildland urban interface, earthquake, etc.)
- Land use data layers
- Critical facilities and infrastructure
- Emergency transportation routes
- Historical and cultural resource locations
- Any available damage assessments

Teller County 2020 Regional Hazard Mitigation Plan Update
Data Request Form

GIS Contact:

Name	Title/Department	Email	Phone

SECURE FTP SITE

A password-protected shared FTP site is available for transferring large files. Please use the information below to log in. The login credentials for both sites are identical, and connection info is listed below:

Via Web Browser:
URL: http://its.ene.com
Username: ene
Password: sharedftp

Via FTP Client Program (FileZilla):
Host: ftp.ene.com
Username: ene
Password: sharedftp

Please save files you upload to the FTP site in a folder named "Teller County" and email Jessica Forbes-Guerrero (contact info below) when the files are available.

Note: The Web Browser method of using the FTP site has a physical limitation of 256MB per file uploaded. You must use an FTP client program (such as FileZilla) when uploading individual files larger than 256MB.

CONTACT INFORMATION:

Don Angell, Teller County
(o) 719-686-7990 | (c) 303-435-4637
angelld@co.teller.co.us

Jessica Forbes-Guerrero, E & E Project Manager
(o) 303-443-3282 | (c) 757-816-7762
jforbes-guerrero@ene.com

THANK YOU FOR YOUR PARTICIPATION!

Teller County Hazard Mitigation Plan

Teller County and its partners continue to work on updating the Hazard Mitigation Plan under the leadership of the County's contractor Ecology & Environment Inc. Please find attached the **"Teller County Mitigation Action Worksheet 2020"** to be completed by members of the Hazard Mitigation Committee.

Instructions:

- While completing the form please use SMART criteria (Specific, Measurable, Actionable, Realistic, and Time-related). Ideally, strategies should be able to reach significant milestones within five years, so that they can be revisited and adjusted during the next plan update.
- Identify alternatives where possible. In some cases a "no action" alternative will be the most realistic.
- For Question #5, please check off any of the plan goals that support your #4 selection.
- For Question #10, identify the State resiliency prioritization criteria that the action would support. Descriptions of the criteria are provided in the Colorado Resiliency Prioritization Criteria attachment.

Thank you in advance for your input! Please complete all pages of the form and return to Jessica Forbes-Guerrero (jforbes-guerrero@ene.com) by **Tuesday, July 14**.

Teller County 2021 Hazard Mitigation Plan

Appendix D-2: HMC Meeting 2

Teller County Hazard Mitigation Plan 2021

Update MITIGATION STRATEGIES WORKSHOP

DATE: Tuesday, July 7, 2020
TIME: 8:00 a.m. – 10:30 a.m.
LOCATION: Webinar (Zoom)

Thank you for participating in Hazard Mitigation Committee Meeting #2 for the **update of the Teller County Hazard Mitigation Plan (HMP)**.

MEETING PURPOSE:

This meeting builds on the concepts we discussed in the kickoff workshop. We will take our discussions on mitigation goals and risk assessments and begin the process of developing mitigation actions to reduce risks to community members and their property. Participants will be provided with example mitigation actions and will work together and individually to build out additional actions.

AGENDA:

1. Welcome and Introductions (5 minutes)
2. Review of HMP Goals (10 minutes)
3. Review of Risk Assessment (15 minutes)
4. Review of Mitigation Action Worksheet (15 minutes)
5. Mitigation Action Case Studies (30 minutes)
6. Mitigation Action Workshop (45 minutes)
7. Next Steps (15 minutes)

NEXT STEPS:

Please return your completed worksheets to Jessica Forbes-Guerrero by July 14, 2020.

Jessica Forbes-Guerrero, Ecology and Environment, Inc.
(o) 303-443-3282 | JForbes-Guerrero@ene.com

NOTES:

Teller County
2020 Hazard Mitigation Plan Update

Meeting #2 – Mitigation Strategies

Tuesday, July 7th | 8 a.m. – 10:30 a.m. | Webinar

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Welcome and Introductions

- Name
- Organization/Department

Meet the E & E Team



Jon McClurg
Project Director



Nicki Hurley
GIS Analyst



Jessica Forbes-Guerrero
Project Manager



Sam Fisher
Emergency Planner

Meeting Objectives

- Project Update
- Review of HMP Goals
- Review of Mitigation Action Worksheet
- Mitigation Action Workshop
- Next Steps and Action Items



What Have We Been Up To?

- Project Kickoff Workshop (Meeting #1)
- Hazard Ranking and Profiles
- Data Collection and Mapping
- Plan Development – Hazard Profiles and Capability Assessments
- Process Documentation

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Review of Mitigation Goals

HMP Goals

- **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
- **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
- **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
- **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

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HMP Objectives

- **Objective 1a:** Increase safety and disaster resilience in Teller County communities.
- **Objective 1b:** Maintain essential services, facilities, and infrastructures before, during, and after hazard events.
- **Objective 2a:** Reduce the vulnerability of structures, homes, and businesses.
- **Objective 2b:** Encourage businesses, the public, and the community overall to reduce their vulnerability to identified hazards within Teller County.

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HMP Objectives

- **Objective 3a:** Strengthen and support countywide disaster and emergency response efforts.
- **Objective 3b:** Protect, maintain, and reduce the vulnerability of critical facilities, infrastructure, and essential services.
- **Objective 4a:** Maintain and enhance community information sharing.
- **Objective 4b:** Maintain public education outreach efforts.

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Framing Through Risk

Hazard Rankings

Teller County - Local Hazards

	Probability (1=lowest, 5=highest)	*Magnitude (1=lowest, 5=highest)*	*Onset (1=slowest, 5=fastest)*	*Duration (1=shortest, 5=longest)*	*Change in Risk (↑, ↓, ↔ since 2015)*	*Average*	*Rank*
Dam Failure	1.00	2.00	5.00	1.00	↔	2.67	10
Drought and Extreme Temperature	4.00	2.00	3.00	4.00	↑	3.00	8
Earthquake	1.00	2.00	5.00	1.00	↑	2.67	10
Flood	30	2.00	3.00	1.00	↑	2.67	10
Hazardous Materials	3.00	2.00	5.00	1.00	↑	3.33	5
Landslide	4.00	2.00	5.00	2.00	↑	3.67	3
Severe Winter Weather	5.00	2.00	3.00	2.00	↑	3.33	5
Subsidence, Sink Holes, and Soil Erosion	3.00	1.00	5.00	2.00	↑	3.00	8
Thunderstorms, High Winds, and Hail	5.00	4.00	3.00	2.00	↑	4.00	2
Tornado	3.00	3.00	5.00	1.00	↑	3.67	3
Wildfire	5.00	4.00	4.00	3.00	↑	4.33	1
Epidemic/Pandemic	3.00	5.00	2.00	5.00	↑	3.33	5

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Linking Strategies to Risk

- Start with a problem statement – what are we trying to fix?
- How does your strategy address our plan goals and prioritized hazards?
- Do specific properties need strategies developed for them?

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Mitigation Action Planning

Looking Back at 2015

- What is our status?
  - Completed, ongoing, carryover, cancelled
- Amendments needed?
- Resource and information gaps?

*Refer to 2015 Mitigation Actions



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Developing Effective Strategies

SMART actions!

- ***Specific*** – target a specific area for improvement
- ***Measurable*** – quantify or at least suggest an indicator of progress
- ***Assignable*** – specify who will do it
- ***Realistic*** – state what results can be achieved realistically, given available resources
- ***Time-related*** – specify when the result(s) can be achieved

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Mitigation Actions

1. IDENTIFY THE PROBLEM

2. IDENTIFY THE MITIGATION ACTION AND/OR ALTERNATIVES

3. ACTION STATUS

- ***New*** – The action is new and will be included for the first time in the 2020 plan update.
- ***Existing*** – The action was implemented prior to the 2020 plan update, but is ongoing and additional or ongoing action is required for completion.
- ***Complete*** – The action has been completed.

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Mitigation Actions

4. TYPE OF ACTION

- ***Plans and Regulations*** – Regulatory actions or planning processes that reduce vulnerability to hazards
- ***Infrastructure/Capital Project*** – Actions that involve modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area
- ***Natural Systems Protection*** – Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems
- ***Education and Awareness*** – Actions to inform and educate residents, elected officials, and property owners about hazards and potential ways to mitigate them.
- ***Preparedness and Response*** – Actions that protect people and property during and immediately after a hazard or hazard event.

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Example Strategies

- **Plans and Regulations**
  - Develop/update land use requirements or building codes for new development
  - Identify updated floodplains
  - Map cell towers in the area
- **Infrastructure/Capital Project**
  - Build updated and enhanced culvert/bridge/road
  - Assess and retrofit water detention pond
- **Natural Systems Protection**
  - Restrict development in sensitive habitats
  - Restore damaged/degraded natural systems

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Example Strategies (cont.)

- **Education and Awareness**
  - Develop a continuous public education program
  - Identify opportunities to integrate community partners into the County's mitigation program
  - Strengthen awareness of health systems/disease prevention
- **Preparedness and Response**
  - Preposition supplies needed for utility restoration efforts
  - Conduct an earthquake damage repair planning exercise
  - Prepare for water supply and utility system threats resulting from drought

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Mitigation Actions

5. GOALS SUPPORTED

5a/b. LEAD/SUPPORT DEPARTMENT ORGANIZATION

- Government agencies
- Regional agencies
- Others?

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Mitigation Actions

6a. TIMELINE FOR IMPLEMENTATION

- >1 Year
- 1-3 Years
- 3-5 Years

6b. LIFE OF ACTION

- Temporary
- Short-Term
- Long-Term

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Mitigation Actions

7. HAZARDS ADDRESSED







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Mitigation Actions

8. ANTICIPATED COST/FUNDING AVAILABILITY/FUNDING SOURCE



Mitigation Actions

9. FEMA COMMUNITY LIFELINES SUPPORTED?





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Mitigation Actions

10. COLORADO RESILIENCY PRIORITIZATION CRITERIA SUPPORTED?

Criteria	Definition
Co-Benefits	Provide solutions that address problems across multiple sectors creating maximum benefits.
Innovation	Advance new approaches and techniques that will encourage continual improvement and advancement of best practices serving as models for others in Colorado and beyond.
High Risk and Vulnerability	Ensure that strategies directly address the reduction of risk to human well-being, physical infrastructure, and natural systems.
Adaptive Capacity	Include flexible and adaptable measures that consider future unknowns of changing climate, economic, and social conditions.

Mitigation Actions

10. COLORADO RESILIENCY PRIORITIZATION CRITERIA SUPPORTED?

Criteria	Definition
Economic Benefit-Cost	Make good financial investments that have the potential for economic benefit to the investor and the broader community through both direct and indirect returns.
Harmonize with Existing Activity	Expand, enhance, or leverage work being done to build on existing efforts.
Social Equity	Provide solutions that are inclusive with consideration to populations that are often most fragile and vulnerable to sudden impacts due to their continual state of stress.
Long-Term and Lasting Impact	Create long-term gains to the community with solutions that are replicable and sustainable, creating benefit for present and future generations.
Technical Soundness	Identify solutions that reflect best practices that have been tested and proven to work in similar regional context.

Mitigation Actions

11-12. SCORING

STAPLEE:

- Is it **Socially** acceptable?
- Is it **Technically** feasible and potentially successful?
- Does the responsible agency/department have the **Administrative** capacity to execute this action?
- Is it **Politically** acceptable?
- Is there **Legal** authority to implement?
- Is it **Economically** beneficial?
- Will the project have either a neutral or positive impact on the natural **Environment**?

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Mitigation Actions

11-12. SCORING

Mitigation Effectiveness Criteria:

- Will the implemented action result in **lives saved**?
- Will the implemented action result in a **reduction of disaster damage**?

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Example Hazard Mitigation Actions

- Establish a community outreach program and conduct workshops to educate property owners at risk from wildfire about specific maintenance strategies to reduce their risk from wildfire.
- Acquire generators for specific public building/school.
- Assess burn scars following severe wildfires to determine landslide risks and implement temporary or permanent measures to stabilize slopes and loose soils such as spreading straw to protect soils and revegetation, creating check dams along drainages using straw bales, or felling dead trees to slow water runoff after rainfall.
- Work with high hazard dam owners to identify potential mitigation actions for aging infrastructure.

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Suggested Actions from the Community Survey

- Incentivize or require wildfire mitigation measures around each house/building, provide education/assistance for property owners
- Implement CWPPs
- Require emergency egress points for every subdivision
- Ban campfires
- Chain call list for emergency notifications
- Enforce FEMA floodplain regulations

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Worksheet Example



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Mitigation Action Workshop

Activity Logistics

- Group Discussion

As a group, we'll walk through worksheets for two to three potential mitigation actions addressing the county's highest priority hazards: wildfire, thunderstorms, high wind, and hail, and landslide.

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Next Steps and Wrap Up

Key Dates and Data Gathering

- Provide completed mitigation action worksheets by **July 14, 2020**
- Public outreach event **TBD**
- Draft Plan released in **August 2020**
- Draft Plan Workshop in **August 2020**
- Final Plan and Presentation in **September 2020**

Public survey:
https://www.surveymonkey.com/r/68ML7WB

What Can I Do?

- Submit worksheets
- Review draft plan once available
- Share information on the planning process
- Participate in upcoming workshops

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Critical Actions for Success

- **Dedicate** the necessary **time** to review the documents
- **Consider** setting a regular meeting of your committee to discuss chapters/sections
- **Designate** a central individual to review all changes provided by staff before forwarding to E & E to alleviate conflicts

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Contact Information

County Project Lead
Don Angell
719-686-7990
angelld@co.teller.co.us

E & E Project Manager
Jessica Forbes-Guerrero
303-443-3282
JForbes-Guerrero@ene.com

Teller County 2021 HMP Update
Meeting # 2 – Mitigation Strategies Workshop
Sign In Sheet

NAME	TITLE	DEPARTMENT/AGENCY	PHONE	EMAIL
26. Steve Krebs	Sergeant/EMT/Public Information Officer	Colorado State Patrol		steven.krebs@state.co.us
27. Paul Harris	Finance Director	City of Cripple Creek		pharris@cripple-creek.co.us
28. Ron Barker		Divide Fire Protection District	(949) 390-4841	ronaldbarker@dividefire.com
29. Andy Leibbrand	Commander	Woodland Park Police Department	719-687-9262	aleibbrand@city-woodlandpark.org
30. Paul Harris	Interim City Administrator/ Finance Director	City of Cripple Creek	719 689-2502	pharris@cripple-creek.co.us
31. Chief Teague		Four Mile Fire Protection		
32. Richard Mann	Administrator	City of Victor		
33. Randy L Bruggink		Four Mile Fire Protection		
34. Robin Lindberg		Woodland Park Police Department	719-687-9262	
35. Tyler Lambert		NE Teller County Fire		tlambert@netellerfire.org
36. Lindy Luksch		Four Mile Fire Protection District	720.732.6171	lluksch3gmail.com
37. Julie Gilley		Teller County		
38. Becky Frank	Program Manager	City of Victor	719.494.9789	bfrank@cityofvictor.com
39. Jon Luksch		Four Mile Fire Protection District		jluksch33@gmail.com

Teller County 2021 Hazard Mitigation Plan Update Hazard Mitigation Committee Meeting #2

DATE: Tuesday 07 July 2020
TIME: 8:00-10:00am
LOCATION: Zoom Webinar

MATERIALS:

3. PowerPoint Presentation
4. Sign-in Sheet

Agenda

Agenda Items
Welcome and Introductions
Review of HMP Goals
Review of Risk Assessment
Review of Mitigation Action Worksheet
Mitigation Action Case Studies
Mitigation Action Workshop
Next Steps and Key Action Items

Summary

The Teller County Hazard Mitigation Committee (HMC) hosted the second of four meetings on July 7, 2020. This meeting built off the kick-off workshop for the 2021 Teller County Hazard Mitigation Plan Update. Discussions on mitigation goals and risk assessments were used to begin the process of developing mitigation actions to reduce risks to community members and their property. To engage members of the committee, there were two reviews covering changes and decisions from the kick-off workshop, an introduction to E & E's Mitigation Action Worksheet, and a workshop providing an example on filling out the worksheet. Fourteen members of the HMC and two members from Ecology & Environment participated in the workshop.

Review of HMP Goals

E & E facilitated a review discussion of the new hazard mitigation plan goals decided during the kick-off workshop. After reviewing the four goals and eight objectives, it was agreed upon by the entire HMC that no changes needed to be made.

Review of Risk Assessment

For the risk assessment, the aggregate of the HMC's hazard rankings were shown:

	Probability (1=lowest, 5=highest)	*Magnitude (1=lowest, 5=highest)*	*Onset (1=slowest, 5=fastest)*	*Duration (1=shortest, 5=longest)*	*Change in Risk since 2015)*	*Average*	*Rank*
Dam Failure	1.00	2.00	5.00	1.00	↔	2.67	10
Drought and Extreme Temperature	4.00	2.00	3.00	4.00	↑	3.00	8
Earthquake	1.00	2.00	5.00	1.00	↑	2.67	10
Flood	30	2.00	3.00	1.00	↑	2.67	10
Hazardous Materials	3.00	2.00	5.00	1.00	↑	3.33	5
Landslide	4.00	2.00	5.00	2.00	↑	3.67	3
Severe Winter Weather	5.00	2.00	3.00	2.00	↑	3.33	5
Subsidence, Sink Holes, and Soil Erosion	3.00	1.00	5.00	2.00	↑	3.00	8
Thunderstorms, High Winds, and Hail	5.00	4.00	3.00	2.00	↑	4.00	2
Tornado	3.00	3.00	5.00	1.00	↑	3.67	3
Wildfire	5.00	4.00	4.00	3.00	↑	4.33	1
Epidemic/Pandemic	3.00	5.00	2.00	5.00	↑	3.33	5

HMC participants agreed that the duration for an earthquake should be higher since a lot of buildings are not up to code. Because there is a major fault within the county, duration should be changed to a 3.

Review of Mitigation Action Worksheet

E & E presented the 12-step mitigation action development and scoring worksheet. This worksheet will help lead members of the HMC to develop new mitigation actions, tie them to FEMA lifelines and Colorado resiliency prioritization criteria, and to determine timeline and cost.

Mitigation Action Case Studies

To help the development of mitigation action ideas, example actions were reviewed. Examples presented included establishing a community outreach program with workshops to educate owners at risk from wildfires, acquiring generators, assessing burn scars to determine landslide risks, and working with high hazard dam owners.

Mitigation Action Workshop

To begin the workshop, Woodland Park, Cripple Creek, and Victor reviewed their 2013 recommended mitigation initiatives. This review helped determine whether to carry the action forward to the 2021 plan, what actions have been completed towards the initiatives, and if they are still valid.

After the review of the 2013 mitigation initiatives, the HMC reviewed a completed mitigation action worksheet given out as an example. Teller County and E & E completed a blank worksheet together with the HMC as a demonstration on how to answer the 12 questions on the worksheet.

Next Steps and Key Action Items

A tentative schedule is outlined below and will be provided via email invites:

- Draft Plan released in August 2020
- Draft Plan Workshop in September 2020
- Final Plan and Presentation in November 2020

E&E Tasks

- Develop GIS Hazard Maps
- Incorporate exposure and vulnerability data into hazard profiles

Steering Committee Member Tasks

- Provide Mitigation Action Worksheets for every new mitigation action
- Share Community Web Survey

Contact Information

County Project Lead
Don Angell
719-686-7990
angelld@co.teller.co.us

E & E Project Manager
Jessica Forbes-Guerrero
303-443-3282
JForbes-Guerrero@ene.com

Teller County Hazard Mitigation Plan

Teller County and its partners continue to work on updating the Hazard Mitigation Plan under the leadership of the County's contractor Ecology & Environment Inc. Please find attached the **"Teller County Mitigation Action Worksheet 2021"** to be completed by members of the Hazard Mitigation Committee.

Instructions:

- While completing the form please use SMART criteria (Specific, Measurable, Actionable, Realistic, and Time-related). Ideally, strategies should be able to reach significant milestones within five years, so that they can be revisited and adjusted during the next plan update.
- Identify alternatives where possible. In some cases a "no action" alternative will be the most realistic.
- For Question #5, please check off any of the plan goals that support your #4 selection.
- For Question #10, identify the State resiliency prioritization criteria that the action would support. Descriptions of the criteria are provided in the Colorado Resiliency Prioritization Criteria attachment.

Thank you in advance for your input! Please complete all pages of the form and return to Jessica Forbes-Guerrero (jforbes-guerrero@ene.com) by **Tuesday, July 14**.

Mitigation Action Worksheet

Contact Information:

Name:	**Phone:**	**Email:**

1. Identify the Problem

2. Mitigation Action and Alternatives

3. Action Status:

☐ New ☐ Existing ☐ Complete

4. Type of Action:

☐ Plans and Regulations ☐ Infrastructure/Capital Project ☐ Natural Systems Protection
☐ Education and Awareness

5. Goals Supported:

☐ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☐ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☐ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☐ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

5b. Supporting Departments/Organizations:

6a. Timeline: ☐ Immediate ☐ < 1 year ☐ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☐ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☐ Flood
☐ Severe Winter Weather
☐ Wildfire
☐ Tornado
☐ Dam Failure
☐ Hazardous Materials
☐ Landslide
☐ Subsidence, Sinkholes, and Soil Erosion
☐ Thunderstorms, High Winds, and Hail
☐ Epidemic/Pandemic

8a. Anticipated Cost (if known):

8b. Funding Available: ☐ Yes ☐ Anticipated ☐ No

8c. Funding Source: ☐ Existing Budget ☐ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☐ Safety and Security
☐ Food, Water, Shelter
☐ Health and Medical
☐ Energy (Power & Fuel)
☐ Communications
☐ Transportation
☐ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☐ High Risk and Vulnerability
☐ Social Equity
☐ Technical Soundness
☐ Adaptive Capacity

☐ Economic Benefit-Cost ☐ Innovation ☐ Harmonize with Existing Activity

☐ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	**Score**	**Evaluation Ratings**
S: Is it Socially acceptable?		Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?		
A: Does the responsible agency/department have the Administrative capacity to execute this action?		
P: Is it Politically acceptable?		
L: Is there Legal authority to implement?		
E: Is it Economically beneficial?		
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)		

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	**Score**	**Evaluation Ratings**
Will the implemented action result in lives saved?		High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?		High = 5 Medium = 3 Low = 1

Colorado Resiliency Prioritization Criteria (2015)

Co-Benefits:

Provide solutions that address problems across multiple sectors creating maximum benefit.

Cross-sector Strategy: Develop a statewide guide and online resource on how to assess, analyze, and integrate all hazards data into local government land use planning.

Project Example: Develop model codes.

High Risk and Vulnerability:

Ensure that strategies directly address the reduction of risk to human well-being, physical infrastructure, and natural systems.

Cross-sector Strategy: Encourage local governments to develop floodplain standards that prohibit future development in flood plains through a public/private partnership between state agencies and associated private or non-profit partners.

Project Example: Create a statewide risk and vulnerability assessment tool.

Economic Benefit-Cost:

Make good financial investments that have the potential for economic benefit to the investor and the broader community both through direct and indirect returns.

Cross-sector Strategy: Incorporate risk and resiliency analyses into funding decisions, including state grant programs.

Project Example: Develop resiliency design standards and incentivize their application in projects utilizing public funds.

Social Equity:

Provide solutions that are inclusive with consideration to populations that are often most fragile and vulnerable to sudden impacts due to their continual state of stress.

Cross-sector Strategy: Promote and educate decision makers and program managers about the value of and the opportunities for using the Community Inclusion mapping project.

Project Example: Integrate Community Inclusion map analysis into planning and funding decisions.

Technical Soundness:

Identify solutions that reflect best practices that have been tested and proven to work in similar regional context.

Cross-sector Strategy: Develop guidance and share best practices to help communities plan for the potential impacts of changing risks and hazards and incorporate this information into policies and actions in comprehensive and other plans.

Project Example: Develop resiliency design and policy guides and a case study database.

Innovation:

Advance new approaches and techniques that will encourage continual improvement and advancement of best practices serving as models for others in Colorado and beyond.

Cross-sector Strategy: Explore the use of captured biogas produced in the natural wastewater treatment process from wastewater treatment plants as a continual (though limited) and emergency backup energy supply.

Project Example: Conduct research, then design and build a model plant using biogas as an alternative fuel and backup.

Adaptive Capacity:

Include flexible and adaptable measures that consider future unknowns of changing climate, economic, and social conditions.

Cross-sector Strategy: Work with local planners, residents, and builders to incorporate water and energy-efficiency measures into existing and new homes.

Project Example: Adopt performance-based energy and water building codes for all new housing, and provide labeling for all existing housing for renters and buyers.

Harmonize with Existing Activity:

Expand, enhance, or leverage work being done to build on existing efforts.

Cross-sector Strategy: Continue to engage community stakeholders to determine resiliency needs and priorities in watersheds.

Project Example: Expand on the current watershed-wide collaborative focus of 75 watershed groups to include a focus on all hazards.

Long-Term and Lasting Impact:

Create long-term gains to the community with solutions that are replicable and sustainable, creating benefit for present and future generations.

Cross-sector Strategy: Establish a new resiliency funding bank to support lapses in current funding opportunities.

Project Example: Create the Colorado Community Resiliency Partnership Fund.

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email:

1. Identify the Problem

Local governments in Teller County have had limited capacity to respond to the COVID-19 epidemic.

2. Mitigation Action and Alternatives

Capture lessons learned from the COVID-19 response in an after action report and emergency plans at the County and City level, including identification of available resources for residents and business owners.

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☒ Plans and Regulations ☐ Infrastructure/Capital Project ☐ Natural Systems Protection
☒ Education and Awareness ☒ Preparedness and Response

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☐ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☐ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☒ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

County OEM

5b. Supporting Departments/Organizations:

Special districts, City of Woodland Park, City of Cripple Creek, City of Victor

6a. Timeline: ☐ Immediate ☐ < 1 year ☒ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☒ Short-Term (Interim) ☐ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☐ Flood
☐ Severe Winter Weather
☐ Wildfire
☐ Tornado
☐ Dam Failure
☐ Hazardous Materials
☐ Landslide
☐ Subsidence, Sinkholes, and Soil Erosion
☐ Thunderstorms, High Winds, and Hail
☒ Epidemic/Pandemic

8a. Anticipated Cost (if known): Staff time

8b. Funding Available: ☒ Yes ☐ Anticipated ☐ No

8c. Funding Source: ☐ Existing Budget ☐ Grant ☐ Bond/Levy ☒ No/minimal cost

Other:

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☒ Safety and Security
☐ Food, Water, Shelter
☒ Health and Medical
☐ Energy (Power & Fuel)
☐ Communications
☐ Transportation
☐ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☒ High Risk and Vulnerability
☐ Economic Benefit-Cost
☒ Social Equity
☐ Technical Soundness
☐ Innovation
☐ Adaptive Capacity
☐ Harmonize with Existing Activity
☐ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	2	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	3	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	2	
L: Is there Legal authority to implement?	3	
E: Is it Economically beneficial?	2	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	2	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	1	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	1	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name: **Richard Mann**	**Phone:** **719-689-5641**	**Email: rmann@cityofvictor.com**

1. Identify the Problem

Recapping of Landfill due to age

2. Mitigation Action and Alternatives

Alleviate erosion of landfill that may present hazards to area streams and land

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☐ Plans and Regulations ☒ Infrastructure/Capital Project ☒ Natural Systems Protection
☐ Education and Awareness

5. Goals Supported:

☐ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☐ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

City of Victor

5b. Supporting Departments/Organizations:

EPA- Brownsfield

6a. Timeline: ☐ Immediate ☐ < 1 year ☒ 1 – 3 years ☒ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☐ Flood
☐ Severe Winter Weather
☐ Wildfire
☐ Tornado
☐ Dam Failure
☒ Hazardous Materials
☐ Landslide
☒ Subsidence, Sinkholes, and Soil Erosion
☐ Thunderstorms, High Winds, and Hail
☐ Epidemic/Pandemic

8a. Anticipated Cost (if known): Estimated $200,000 dollars

8b. Funding Available: ☐ Yes ☒ Anticipated ☐ No

8c. Funding Source: ☐ Existing Budget ☒ Grant ☐ Bond/Levy ☐ No/minimal cost

Other: EPA- Brownsfield

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☐ Safety and Security
☐ Food, Water, Shelter
☒ Health and Medical
☒ Energy (Power & Fuel)
☐ Communications
☐ Transportation
☒ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☐ High Risk and Vulnerability
☐ Economic Benefit-Cost
☒ Social Equity
☐ Technical Soundness
☒ Innovation
☒ Adaptive Capacity
☒ Harmonize with Existing Activity
☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	3	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	3	
L: Is there Legal authority to implement?	3	
E: Is it Economically beneficial?	3	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	1	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name: **Richard Mann**	**Phone:** **719-689-5641**	**Email: rmann@cityofvictor.com**

1. Identify the Problem

City of Victor water valve tower in Reservoir #2 needs replacement due to environmental shifting
And age of tower which is over 100 years. This is a vital infrastructure and can lead to massive loss
of city's water and damage to others if corrections is not addressed immediately.

2. Mitigation Action and Alternatives

Short term correction is complete, long-term correction is in process

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☒ Plans and Regulations ☒ Infrastructure/Capital Project ☒ Natural Systems Protection
☐ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☒ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

City of Victor

5b. Supporting Departments/Organizations:

CC&V, DOLA, STATE

6a. Timeline: ☒ Immediate ☒ < 1 year ☐ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☒ Drought & Extreme Temperature
☐ Earthquake
☐ Flood
☒ Severe Winter Weather
☒ Wildfire
☐ Tornado
☒ Dam Failure
☐ Hazardous Materials
☐ Landslide
☒ Subsidence, Sinkholes, and Soil Erosion
☐ Thunderstorms, High Winds, and Hail
☐ Epidemic/Pandemic

8a. Anticipated Cost (if known): Estimated $500,000 dollars

8b. Funding Available: ☐ Yes ☒ Anticipated ☐ No

8c. Funding Source: ☒ Existing Budget ☒ Grant ☐ Bond/Levy ☐ No/minimal cost

Other: STATE Loan, CC&V potential

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☒ Safety and Security
☒ Food, Water, Shelter
☒ Health and Medical
☐ Energy (Power & Fuel)
☐ Communications
☐ Transportation
☐ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☒ High Risk and Vulnerability
☒ Economic Benefit-Cost
☒ Social Equity
☐ Technical Soundness
☐ Innovation
☐ Adaptive Capacity
☐ Harmonize with Existing Activity
☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	3	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	3	
L: Is there Legal authority to implement?	3	
E: Is it Economically beneficial?	3	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	3	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name: **Richard Mann**	**Phone:** **719-689-5641**	**Email: rmann@cityofvictor.com**

1. Identify the Problem

Age and life expectancy of WWTF- The WWTF is a few years form reaching life expectancy

2. Mitigation Action and Alternatives

Increase size and basin and replace aged equipment

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☒ Plans and Regulations ☒ Infrastructure/Capital Project ☒ Natural Systems Protection
☐ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☒ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

City of Victor

5b. Supporting Departments/Organizations:

DOLA, STATE

6a. Timeline: ☐ Immediate ☐ < 1 year ☒ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☐ Flood
☐ Severe Winter Weather
☐ Wildfire
☐ Tornado
☐ Dam Failure
☒ Hazardous Materials
☐ Landslide
☐ Subsidence, Sinkholes, and Soil Erosion
☐ Thunderstorms, High Winds, and Hail
☒ Epidemic/Pandemic

8a. Anticipated Cost (if known): Estimated $3 to 4 million dollars

8b. Funding Available: ☐ Yes ☒ Anticipated ☐ No

8c. Funding Source: ☒ Existing Budget ☒ Grant ☐ Bond/Levy ☐ No/minimal cost

Other: STATE Loan, DOLA, user fees increase

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☒ Safety and Security
☐ Food, Water, Shelter
☒ Health and Medical
☐ Energy (Power & Fuel)
☐ Communications
☐ Transportation
☒ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☒ High Risk and Vulnerability
☐ Economic Benefit-Cost
☐ Social Equity
☐ Technical Soundness
☒ Innovation
☐ Adaptive Capacity
☐ Harmonize with Existing Activity
☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	3	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	3	
L: Is there Legal authority to implement?	3	
E: Is it Economically beneficial?	3	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	1	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name: **Paul Harris**	**Phone:** **(719) 689-2502**	**Email: pharris@cripple-creek.co.us**

1. Identify the Problem

City's Wastewater Treatment Plant is located in a large flood plain. If flooded, waste from the facility could overflow the holding tanks and run downstream into the creek that flows down to Canon City. In addition, if the facility was forced to shut down/go off line for and extended period it would present major health, safety, and sanitation issues for the community. Visitation to the casinos industry, etc. would have to be stopped until the problem was resolved.

2. Mitigation Action and Alternatives

The city, working with an outside engineering firm, needs to develop infrastructure to redirect and or mitigate potential flooding of the facility and processing ponds.

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☐ Plans and Regulations ☒ Infrastructure/Capital Project ☐ Natural Systems Protection
☐ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☐ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

Water/Wastewater Department Director, Mickey Groves – City of Cripple Creek

5b. Supporting Departments/Organizations:

Public Works Department – City of Cripple Creek
Army Corps of Engineers

6a. Timeline: ☐ Immediate ☐ < 1 year ☒ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☒ Flood
☐ Severe Winter Weather
☐ Wildfire
☐ Tornado
☐ Dam Failure
☒ Hazardous Materials
☐ Landslide
☒ Subsidence, Sinkholes, and Soil Erosion
☒ Thunderstorms, High Winds, and Hail
☐ Epidemic/Pandemic

8a. Anticipated Cost (if known): Unknown

8b. Funding Available: ☐ Yes ☐ Anticipated ☒ No

8c. Funding Source: ☐ Existing Budget ☒ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

Possible DOLA or State Water Resources Grant

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☒ Safety and Security
☒ Food, Water, Shelter
☒ Health and Medical
☐ Energy (Power & Fuel)
☐ Communications
☐ Transportation
☒ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☒ High Risk and Vulnerability
☒ Economic Benefit-Cost
☐ Social Equity
☐ Technical Soundness
☐ Innovation
☐ Adaptive Capacity
☐ Harmonize with Existing Activity
☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	3	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	3	
L: Is there Legal authority to implement?	3	
E: Is it Economically beneficial?	3	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	3	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name: **Paul Harris**	**Phone:** **(719) 689-2502**	**Email: pharris@cripple-creek.co.us**

1. Identify the Problem

City's Water Treatment Plant is located in a potential flood plain and its storage tanks are vulnerable to human attack. If flooded, the facility could potential be shut down for an extended period, leaving the city without drinkable water. In addition, if the facility was forced to shut down/go offline for an extended period it would present major health, safety, and sanitation issues for the community. Visitation to the casinos industry, etc. would have to be stopped until the problem was resolved.

2. Mitigation Action and Alternatives

The city, working with an outside engineering firm, needs to develop infrastructure to redirect and or mitigate potential flooding of the facility and additional space around the facility should be secured and security measures added so that access to a human attack would be more difficult. The facility sits unmanned most of the time.

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☐ Plans and Regulations ☒ Infrastructure/Capital Project ☐ Natural Systems Protection
☐ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☐ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

Water/Wastewater Department Director, Mickey Groves – City of Cripple Creek

5b. Supporting Departments/Organizations:

Public Works Department – City of Cripple Creek
Army Corps of Engineers

6a. Timeline: ☐ Immediate ☐ < 1 year ☒ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☒ Flood
☐ Severe Winter Weather
☐ Wildfire
☐ Tornado
☐ Dam Failure
☒ Hazardous Materials
☐ Landslide
☒ Subsidence, Sinkholes, and Soil Erosion
☒ Thunderstorms, High Winds, and Hail
☐ Epidemic/Pandemic

8a. Anticipated Cost (if known): Unknown

8b. Funding Available: ☐ Yes ☐ Anticipated ☒ No

8c. Funding Source: ☐ Existing Budget ☒ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

Possible DOLA or State Water Resources Grant

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☒ Safety and Security
☒ Food, Water, Shelter
☒ Health and Medical
☐ Energy (Power & Fuel)
☐ Communications
☐ Transportation
☐ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☒ High Risk and Vulnerability
☒ Economic Benefit-Cost
☐ Social Equity
☐ Technical Soundness
☐ Innovation
☐ Adaptive Capacity
☐ Harmonize with Existing Activity
☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	3	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	3	
L: Is there Legal authority to implement?	3	
E: Is it Economically beneficial?	3	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	3	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Teller County 2020 Hazard Mitigation Plan Update

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email:
Tyler Lambert	719-687-1866 X4	tlambert@netellerfire.org

1. Identify the Problem

Wildfire in and around the City of Woodland Park and Teller County.
Flooding from burn scars and closing Highway 24.
Increased call volumes in EMS and longer wait times for transport.

2. Mitigation Action and Alternatives

Continue to work with partners on mitigation projects around Woodland Park, Teller County and the Ute Pass corridor. Work with Teller County to come up with a mitigation program to help homeowners mitigate on private properties within the County or Fire Protection Districts. Needed funding mechanism to be able to increase full-time staffing levels.

3. Action Status:

☐ New ☒ Existing ☐ Complete

4. Type of Action:

☒ Plans and Regulations ☒ Infrastructure/Capital Project ☐ Natural Systems Protection
☒ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☒ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

Teller County OEM and NE Teller County Fire

5b. Supporting Departments/Organizations:

All other Fire and EMS agencies to include Sheriff's office and Police departments

6a. Timeline: ☐ Immediate ☐ < 1 year ☒ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☒ Drought & Extreme Temperature
☐ Earthquake
☒ Flood
☐ Severe Winter Weather
☒ Wildfire
☐ Tornado
☐ Dam Failure
☐ Hazardous Materials
☒ Landslide
☒ Subsidence, Sinkholes, and Soil Erosion
☒ Thunderstorms, High Winds, and Hail
☐ Epidemic/Pandemic

8a. Anticipated Cost (if known):

8b. Funding Available?: ☐ Yes ☐ Anticipated ☒ No

8c. Funding Source: ☐ Existing Budget ☒ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

Teller County 2020 Hazard Mitigation Plan Update

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

- ☒ Safety and Security
- ☒ Food, Water, Shelter
- ☒ Health and Medical
- ☐ Energy (Power & Fuel)
- ☐ Communications
- ☐ Transportation
- ☐ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

- ☒ Co-Benefits
- ☒ High Risk and Vulnerability
- ☐ Economic Benefit-Cost
- ☐ Social Equity
- ☐ Technical Soundness
- ☐ Innovation
- ☐ Adaptive Capacity
- ☒ Harmonize with Existing Activity
- ☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	2	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	1	
P: Is it Politically acceptable?	2	
L: Is there Legal authority to implement?	2	
E: Is it Economically beneficial?	3	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	5	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Teller County 2020 Hazard Mitigation Plan Update

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email:
Andrew Lemmons	(719) 687-6416	lemmonsa@co.teller.co.us

1. Identify the Problem

Continuation of Novel Coronavirus Pandemic

2. Mitigation Action and Alternatives

Reduce and ultimately eliminate interpersonal Community
transmission of COVID-19 through individual case investigation
Contact tracing, testing, and Community Safety compliance education

3. Action Status:

☐ New ☒ Existing ☐ Complete

4. Type of Action:

☒ Plans and Regulations ☒ Infrastructure/Capital Project ☐ Natural Systems Protection
☒ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☒ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

Teller County Office of Emergency Management

Teller County 2020 Hazard Mitigation Plan Update

5b. Supporting Departments/Organizations:

Teller County Public Health, Administration, Sheriff's Office
Fire, EMS, Finance, Local municipalities

6a. Timeline: ☐ Immediate ☐ < 1 year ☒ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☐ Flood
☐ Severe Winter Weather
☐ Wildfire
☐ Tornado
☐ Dam Failure
☐ Hazardous Materials
☐ Landslide
☐ Subsidence, Sinkholes, and Soil Erosion
☐ Thunderstorms, High Winds, and Hail
☒ Epidemic/Pandemic

8a. Anticipated Cost (if known):

8b. Funding Available?: ☒ Yes ☐ Anticipated ☐ No

8c. Funding Source: ☒ Existing Budget ☐ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

State of Colorado Emergency Funding

Teller County 2020 Hazard Mitigation Plan Update

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

- ☒ Safety and Security
- ☐ Food, Water, Shelter
- ☒ Health and Medical
- ☐ Energy (Power & Fuel)
- ☒ Communications
- ☐ Transportation
- ☐ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

- ☒ Co-Benefits
- ☒ High Risk and Vulnerability
- ☒ Economic Benefit-Cost
- ☒ Social Equity
- ☒ Technical Soundness
- ☒ Innovation
- ☒ Adaptive Capacity
- ☒ Harmonize with Existing Activity
- ☒ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	2	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	2	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	1	
P: Is it Politically acceptable?	2	
L: Is there Legal authority to implement?	2	
E: Is it Economically beneficial?	2	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	0	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	5	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	1	High = 5 Medium = 3 Low = 1

Teller County 2020 Hazard Mitigation Plan Update

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email:
Robin Lindberg	719-838-1744	rlindberg@city-woodlandpark.org

1. Identify the Problem

Seniors sometimes have issues signing up for peak alerts due to unfamiliarity with technology

2. Mitigation Action and Alternatives

Work with E-911 to have an event at the Senior Center to aide seniors in signing up

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☐ Plans and Regulations ☐ Infrastructure/Capital Project ☐ Natural Systems Protection
☒ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☐ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☐ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☒ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

Woodland Park PD

Teller County 2020 Hazard Mitigation Plan Update

5b. Supporting Departments/Organizations:

E-911

6a. Timeline: ☐ Immediate ☒ < 1 year ☐ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☒ Temporary ☐ Short-Term (Interim) ☐ Long-Term

7. Hazards Addressed (Check all that apply):

- ☐ Drought & Extreme Temperature
- ☒ Earthquake
- ☒ Flood
- ☒ Severe Winter Weather
- ☒ Wildfire
- ☒ Tornado
- ☒ Dam Failure
- ☒ Hazardous Materials
- ☒ Landslide
- ☒ Subsidence, Sinkholes, and Soil Erosion
- ☒ Thunderstorms, High Winds, and Hail
- ☐ Epidemic/Pandemic

8a. Anticipated Cost (if known): Unknown

8b. Funding Available?: ☐ Yes ☐ Anticipated ☒ No

8c. Funding Source: ☒ Existing Budget ☐ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

Teller County 2020 Hazard Mitigation Plan Update

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

- ☒ Safety and Security
- ☐ Food, Water, Shelter
- ☐ Health and Medical
- ☐ Energy (Power & Fuel)
- ☒ Communications
- ☐ Transportation
- ☐ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

- ☐ Co-Benefits
- ☒ High Risk and Vulnerability
- ☐ Economic Benefit-Cost
- ☒ Social Equity
- ☐ Technical Soundness
- ☐ Innovation
- ☐ Adaptive Capacity
- ☐ Harmonize with Existing Activity
- ☐ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	3	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	3	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	3	
L: Is there Legal authority to implement?	2	
E: Is it Economically beneficial?	2	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	4	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	3	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name:	Phone:	Email:
Sheryl Decker	**719-689-2988**	**deckers@co.teller.co.us**

1. Identify the Problem

Wildfire
COVID-19
Snow Storm

2. Mitigation Action and Alternatives

Form TC Wildfire Council
Integrating with Partners
Established Teller County Emergency Response Team (milti-jurisdictional)

3. Action Status:

☐ New ☒ Existing ☐ Complete

4. Type of Action:

☒ Plans and Regulations ☐ Infrastructure/Capital Project ☐ Natural Systems Protection
☒ Education and Awareness

5. Goals Supported:

☒ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☒ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☒ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☒ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

Teller County OEM

5b. Supporting Departments/Organizations:

Public Works, Public Health, Information Technologies, Department of Human Services, Sheriff's Office, Finance, Community Development Services, Extension, Woodland Park, Cripple Creek,
Divide Fire, USFS, BLM, Florissant Fire, 4Mile Fire, Victor, NETCO, UPRAD, SWTC

6a. Timeline: ☐ Immediate ☐ < 1 year ☐ 1 – 3 years ☒ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☒ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☒ Flood
☒ Severe Winter Weather
☒ Wildfire
☐ Tornado
☐ Dam Failure
☒ Hazardous Materials
☐ Landslide
☐ Subsidence, Sinkholes, and Soil Erosion
☒ Thunderstorms, High Winds, and Hail
☒ Epidemic/Pandemic

8a. Anticipated Cost (if known): Unknown

8b. Funding Available: ☐ Yes ☒ Anticipated ☐ No

8c. Funding Source: ☒ Existing Budget ☐ Grant ☐ Bond/Levy ☐ No/minimal cost

Other: Use of any grants or state and federal resources

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☒ Safety and Security
☒ Food, Water, Shelter
☒ Health and Medical
☒ Energy (Power & Fuel)
☒ Communications
☒ Transportation
☒ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☒ High Risk and Vulnerability
☒ Economic Benefit-Cost
☐ Social Equity
☐ Technical Soundness
☐ Innovation
☐ Adaptive Capacity
☐ Harmonize with Existing Activity
☐ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?	1	Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?	2	
A: Does the responsible agency/department have the Administrative capacity to execute this action?	3	
P: Is it Politically acceptable?	2	
L: Is there Legal authority to implement?	3	
E: Is it Economically beneficial?	0	
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)	3	

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?	3	High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?	5	High = 5 Medium = 3 Low = 1

Mitigation Action Worksheet

Contact Information:

Name: **Don Angell**	**Phone:**	**Email:** angelld@co.teller.co.us

1. Identify the Problem

2. Mitigation Action and Alternatives

Educate the public on safely using and storing necessary flammable materials, including machine fuels. Approved safety cans should be used for storing gasoline, oily rags, and other flammable materials. (New)

3. Action Status:

☒ New ☐ Existing ☐ Complete

4. Type of Action:

☐ Plans and Regulations ☐ Infrastructure/Capital Project ☐ Natural Systems Protection
☒ Education and Awareness

5. Goals Supported:

☐ **Goal 1:** Reduce the loss of life and personal injuries from hazard events.
☐ **Goal 2:** Reduce hazard impacts on public and private property and the local economy.
☐ **Goal 3:** Reduce hazard impacts on critical facilities, infrastructure, and other community assets, including natural and historic resources.
☐ **Goal 4:** Enhance communication of risks and threats in Teller County to empower personal preparedness and responsibility.

5a. Lead Department/Organization:

County OEM and County FPDs

5b. Supporting Departments/Organizations:

6a. Timeline: ☐ Immediate ☒ < 1 year ☐ 1 – 3 years ☐ 3 – 5 years

6b. Life of Action: ☐ Temporary ☐ Short-Term (Interim) ☐ Long-Term

7. Hazards Addressed (Check all that apply):

☐ Drought & Extreme Temperature
☐ Earthquake
☐ Flood
☐ Severe Winter Weather
☐ Wildfire
☐ Tornado
☐ Dam Failure
☐ Hazardous Materials
☐ Landslide
☐ Subsidence, Sinkholes, and Soil Erosion
☐ Thunderstorms, High Winds, and Hail
☐ Epidemic/Pandemic

8a. Anticipated Cost (if known): no/minimal cost

8b. Funding Available: ☐ Yes ☐ Anticipated ☐ No

8c. Funding Source: ☐ Existing Budget ☐ Grant ☐ Bond/Levy ☐ No/minimal cost

Other:

9. What **FEMA Community Lifeline(s)** would the mitigation action support?

☐ Safety and Security
☐ Food, Water, Shelter
☐ Health and Medical
☐ Energy (Power & Fuel)
☐ Communications
☐ Transportation
☐ Hazardous Materials

10. What **State of Colorado resiliency prioritization criteria** would the mitigation action support? (See attachment.)

☐ Co-Benefits
☐ High Risk and Vulnerability
☐ Economic Benefit-Cost
☐ Social Equity
☐ Technical Soundness
☐ Innovation
☐ Adaptive Capacity
☐ Harmonize with Existing Activity
☐ Long-Term and Lasting Impact

11. Please score the action against the **STAPLEE** criteria using the evaluation ratings below.

STAPLEE Criteria	Score	Evaluation Ratings
S: Is it Socially acceptable?		Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0
T: Is it Technically feasible and potentially successful?		
A: Does the responsible agency/department have the Administrative capacity to execute this action?		
P: Is it Politically acceptable?		
L: Is there Legal authority to implement?		
E: Is it Economically beneficial?		
E: Will the project have either a neutral or positive impact on the natural Environment? (score a 3 if positive impact, 2 if neutral impact)		

12. Please score the action against the **mitigation effectiveness criteria** using the evaluation ratings below.

Mitigation Effectiveness Criteria	Score	Evaluation Ratings
Will the implemented action result in lives saved?		High = 5 Medium = 3 Low = 1
Will the implemented action result in a reduction of disaster damage?		High = 5 Medium = 3 Low = 1

Teller County 2021 Hazard Mitigation Plan

Appendix D-3: HMC Meeting 3

Teller County Hazard Mitigation Plan Update

DRAFT PLAN REVIEW WORKSHOP

DATE: Tuesday, September 22, 2020
TIME: 9:00 a.m. – 11:00 a.m.
LOCATION: Webinar (Zoom)

Thank you for participating in the Hazard Mitigation Committee Workshop #3 for the **update of the Teller County Hazard Mitigation Plan (HMP)**.

MEETING PURPOSE:

Workshop #3 provides an opportunity for the group to discuss comments on the Draft HMP and annexes. This meeting will be largely discussion based, so please come prepared with your comments.

AGENDA:

1. Welcome and Introductions (10 minutes)
2. Overview of Draft HMP (20 minutes)
3. Discussion of Data Gaps and Comments/Plan Review (60 minutes)
4. Next Steps (15 minutes)

NEXT STEPS:

Please send comments on the Draft HMP and information related to data gaps to Jessica Forbes-Guerrero by September 30, 2020.

Jessica Forbes-Guerrero, Ecology and Environment, Inc.
(o) 303-443-3282 | JForbes-Guerrero@ene.com

NOTES:

Teller County 2021 HMP Update
Meeting # 3– Draft Plan Review Workshop
Sign In Sheet

NAME	TITLE	DEPARTMENT/AGENCY	PHONE	EMAIL
1. Rich Atkins		Chaffee County Office of Emergency Management (OEM)		
2. Renee Bunting	Deputy	Teller County Sheriff's Office	719-661-5913	buntingr@co.teller.co.us
3. Jessica Flohrs	Dispatch Supervisor	Teller County	719-377-0917	flohrsj@co.teller.co.us
4. Darrell Kirby	South Central Region Emergency Preparedness and Response Coordinator	El Paso County Public Health		
5. Tyler Lambert	Fire Chief	NE Teller County F.P.D.	719-687-1866	tlambert@netellerfire.org
6. Mark J. Platten	Extension Director	Teller County		
7. Sheriff Mikesell		Teller County Sheriff's Department		
8. Marc Rucker		Teller County GIS	719-686-5428	

9. Mike Schaub		Pikes Peak Regional Office of Emergency Management (PPROEM)		
NAME	**TITLE**	**DEPARTMENT/AGENCY**	**PHONE**	**EMAIL**
10. Jay Teague	Fire Chief	Four Mile Fire Protection District		
11. Robin Lindberg		Woodland Park Police Department, Dispatch/Emergency Management		

Teller County 2021 Hazard Mitigation Plan Update

Workshop #3 – Draft Plan Review

September 22, 2020 – 9 a.m. Mountain

Welcome and Introductions



Meeting Objectives.

- Project Update
- Overview of the Draft HMP
- Discussion of Data Gaps and Comments
- Next Steps

What have we been up to?

- Plan Development
- Mitigation Strategy Development
- Process Documentation

Overview of the Draft HMP

What is included in the plan?

Chapters

Part 1: Planning Process Overview

- Plan Methodology
- Teller County Profile
- County Capability Assessment

Part 2: Risk Assessment

- Methodology
- Hazard Profiles

Part 3: Mitigation Strategy

- Plan Goals and Objectives
- Mitigation Strategy
- Implementation

Appendices

- Appendix A: Mitigation Actions
- Appendix B: Mitigation Strategy Evaluation and Mitigation Action Evaluation Forms
- Appendix C: Plan Adoption Resolutions from Planning Partners
- Appendix D: Planning Process and Public Outreach
- Appendix E: Maps and Risk Assessment Materials
- Appendix F: Acronyms
- Appendix G: Definitions
- Appendix H: References



Key Changes

Key changes in the 2021 HMP update include:

- Reorganized capabilities assessment to meet DHSEM standards
- Revised risk assessment to discuss recent hazard events and changing conditions that have resulted in increased or decreased vulnerability
- Added epidemic/pandemic as a hazard and expanded the profiles for hazardous materials and subsidence, sink holes, and soil erosion
- Revised mitigation strategies with an emphasis on actions focused on long-term risk reduction
- Expanded mitigation strategy to consider FEMA lifelines and State resiliency prioritization criteria
- Added jurisdictional annexes for the planning partners

Data Gaps and Comments

What do we still need?

Key Data Gaps

Plan	Data Gaps
Basic Plan	❑ POCs for each planning partner ❑ Other partners involved in the planning process ❑ Additional local funding sources ❑ Mitigation actions to address hazards including Subsidence, Sink Holes, and Soil Erosion; Landslide; Thunderstorms, High Winds, and Hail; Drought and Extreme Temperature
Jurisdiction Annexes	❑ Primary and secondary POCs ❑ Roles in hazard mitigation program ❑ Capabilities – are any capabilities available through the County or other partners? ❑ Other local funding sources available for hazard mitigation ❑ Mitigation actions for the Four Mile FPD

Draft HMP Review

- Features of the plan
- Data gaps
- Questions or comments?



Next Steps

Where are we going from here?

Next Steps

- Additional data incorporation
- Draft comments and edits
- Public review of Revised Draft Plan
- Public meeting
- Submittal to DHSEM and FEMA

What Can I Do?

- Review draft plan and submit comments and edits
- Review plan appendices
- Facilitate plan adoption

Upcoming Milestones

Milestone	Date
Comments on Draft Plan Due	October 2
Revised Draft Plan Submittal, including appendices	October 12
Public Review Period	October 14 – 28
Final Plan Submittal to DHSEM	November 6
Final Plan Presentation	TBD (December)
Final Plan Submittal to FEMA	TBD (December)
Plan Adoption by All Jurisdictions	February

Contacts

Teller County

Don Angell, 719-686-7990, angelld@co.teller.co.us

WSP

Jessica Forbes-Guerrero, 303-443-3282, jessica.forbes-guerrero@wsp.com



Pikes Peak. Photo by Hogs555 *(Own work) [CC BY-SA 3.0 (http://creativecommons.org/licenses/by-sa/3.0)], via Wikimedia Commons.*

Teller County 2021 Hazard Mitigation Plan Update

DRAFT PLAN REVIEW WORKSHOP

DATE: Tuesday, September 22, 2020
TIME: 9:00 a.m.-12:00 p.m.
LOCATION: Webinar (Zoom)

ATTENDEES:

Don Angell – Teller County Office of Emergency Management (OEM)

Becky Frank – Teller County OEM

Rich Atkins- Chaffee County OEM

Renee Bunting- Deputy, Teller County Sheriff's Office

Jessica Flohrs- Dispatch Supervisor, Teller County

Darrell Kirby, South Central Region Emergency Preparedness and Response Coordinator, El Paso County Public Health

Tyler Lambert – Fire Chief, NE Teller County F.P.D.

Mark J. Platten, Teller County Extension Director

Sheriff Mikesell-Teller County Sheriff's Department

Marc Rucker- Teller County GIS

Mike Schaub- Pikes Peak Regional Office of Emergency Management (PPROEM)

Jay Teague- Fire Chief, Four Mile Fire Protection District

Robin Lindberg – Woodland Park Police Department, Dispatch/Emergency Management

ATTACHMENTS:

1. PowerPoint Presentation
2. Webinar Attendee Screenshot

Summary:

The Hazard Mitigation Committee (HMC) hosted the third of four HMC workshops on September 9, 2020. This HMC workshop consisted of a project update, reviewing the draft updated HMP, discussion of data gaps and comments, and next steps. WSP facilitated stakeholders through the zoom workshop.

Project Update:

Jessica Forbes-Guerrero with WSP introduced the purpose of this workshop, reviewed updates made to the 2013 HMP, discussed data gaps for the 2021 HMP, and gathered comments on the plan and missing information.

WSP provided a status update on the project. The project team has finished the draft version of the 2021 HMP. Also, WSP has been working on finalizing the mitigation strategies for inclusion in the plan. The entire plan process is being documented as meetings and plan updates are occurring.

Overview of the Draft HMP:

WSP conducted a broad overview of the draft HMP. The plan was divided into three parts: Part 1: The Planning Process, Part 2: Risk Assessment, and Part 3: Mitigation Strategy. Key changes in the 2021 HMP update include:

- **Reorganized capabilities** assessment to meet DHSEM standards
- **Revised risk assessment** to discuss recent hazard events and changing conditions that have resulted in increased or decreased vulnerability
- Added **epidemic/pandemic** as a hazard and expanded the profiles for hazardous materials and subsidence, sink holes, and soil erosion
- Revised mitigation strategies with an emphasis on **actions focused on long-term risk reduction**
- Expanded mitigation strategy to consider **FEMA lifelines and State resiliency prioritization criteria**
- Added **jurisdictional annexes** for the planning partners

Data Gaps and Comments:

While completing the draft plan, WSP identified data gaps that need to be addressed for the final version of the plan.

Plan	Data Gaps
Basic Plan	❑ POCs for each planning partner ❑ Other partners involved in the planning process ❑ Additional local funding sources ❑ Mitigation actions to address hazards including Subsidence, Sink Holes, and Soil Erosion; Landslide; Thunderstorms, High Winds, and Hail; Drought and Extreme Temperature
Jurisdiction Annexes	❑ Primary and secondary POCs ❑ Roles in hazard mitigation program ❑ Capabilities – are any capabilities available through the County or other partners? ❑ Other local funding sources available for hazard mitigation ❑ Mitigation actions for the Four Mile FPD

During the review of the plan, HMC members were able to comment on the data gaps and the plan as a whole.

Next Steps and Key Action Items

- ✓ Additional data incorporation
- ✓ Draft comments and edits (Comments on Draft Plan due October 2, 2020)
- ✓ Revised Draft Plan Submittal, including appendices (Due October 12, 2020)
- ✓ Public review of Revised Draft Plan (October 14-28, 2020)
- ✓ Public meeting
- ✓ Submittal to DHSEM and FEMA (November 6, 2020)
- ✓ Final Plan Presentation (TBD- December 2020)
- ✓ Final Plan Submittal to FEMA (TBD-December 2020)
- ✓ Plan Adoption by All Jurisdictions (February 2021)

CONTACT INFORMATION:

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Emergency Management
Teller County, Colorado
(o) 719-686-7990
angelld@co.teller.co.us

Jessica Forbes-Guerrero, WSP Project Manager
(o) 303-443-3282,
jessica.forbes-guerrero@wsp.com

Teller County 2021 Hazard Mitigation Plan Update

Meeting Summary

DATE: Thursday, September 3, 2020
TIME: 10:30 a.m. – 11:15 a.m.
LOCATION: Webinar (Microsoft Teams)

ATTENDEES:

Susan Alexander – Colorado Springs Utilities

Don Angell – Teller County

Becky Frank – Teller County

Jessica Forbes-Guerrero – E & E

Summary:

The project team met with Susan Alexander to get information on structures and infrastructure within the dam inundation areas for dams owned by Colorado Springs Utilities (CSU) in Teller County. CSU owns seven dams in southeast Teller County on land within Pike National Forest. Susan reviewed the dam inundation maps for CSU's high hazard dams. The National Inventory of Dams (https://nid.sec.usace.army.mil/ords/f?p=105:1) is another resource for information on high hazard dams.

No towns or major roads are within the dam inundation areas for dams owned by CSU. Some of these dams are considered high hazard dams because the inundation areas overtop roads. In Teller County, the dam inundation areas for CSU dams are mostly within Pike National Forest.

McReynolds Dam – This dam is at the mouth of McReynolds Reservoir, which stores 2,049 acre-feet of water. The inundation area for the dam lies along Middle Beaver Creek. Several recreational cabins in this area would be within the inundation area. Gold Camp Road also would be overtopped by the inundation area. This road is in the national forest and is used for recreational use and as an alternate route if Highway 24 is closed. The inundation area goes through Skaguay Reservoir and into West Beaver Creek. Skaguay Reservoir is owned by Colorado Parks and Wildlife and is used for recreational fishing and boating. The inundation area passes into Fremont County and would affect the old Skaguay Power Plant, a cultural site and popular destination for hikers. While the power plant is in Fremont County, the hiking trails that lead to it are in Teller County and may be affected by a dam breach.

Mason Dam – Mason Reservoir is located just west of McReynolds Reservoir, and the inundation area for Mason Dam would affect the same areas as the inundation area for McReynolds Dam.

Wilson Dam – This is a low hazard dam. The inundation area runs along the East Fork of West Beaver Creek through Forest Service land then joins the McReynolds inundation area above the Skaguay Reservoir. No structures are within the inundation area, but a couple of County roads in Pike National Forest may be overtopped in the event of a breach. The inundation area would affect the Bison #2 Reservoir owned by the City of Victor and Pringtime Reservoir.

Pennrose/Rosemont Dam – No structures or roads are within the inundation area for this dam. The inundation area runs through forested areas in Pike National Forest along East Beaver Creek.

Stratton Dam – Stratton Reservoir is empty.

Bighorn Dam – This dam is at the mouth of a low-hazard, small reservoir. Water released during a breach would flow downstream into Wilson Reservoir.

Boehmer Dam – Water released during a breach would flow into Mason Reservoir. No structures are in the inundation area for this dam.

The EAPs for each of CSU's dams include contact information for other dam owners that would be affected in the event of a breach, and CSU conducts emergency response exercises every three years involving other dam owners.

Following the call, Becky provided location information for the old Skaguay Power Plant.

Teller County 2021 Hazard Mitigation Plan Update

Meeting Summary

DATE: Tuesday, October 13, 2020
TIME: 1:45 p.m. – 2:00 p.m.
LOCATION: Conference Call

ATTENDEES:

Chief Tyler Lambert – Northeast Teller County FPD

Jessica Forbes-Guerrero – WSP

Summary:

Currently not much is happening with the wood chipping program. Homeowners can bring debris to the slash site and pay a fee to dispose of it there. However, CUSP does not have enough time to chip all the slash that needs to be disposed of. CUSP is handling chipping for larger parcels of land (hundreds of acres in size).

Chief Lambert is hoping to start a program that would allow the County's fire districts to travel with a chipper to smaller private properties and chip slash on-site.

Under this program, the district would announce when the chipper would be in an area. Homeowners would schedule an appointment for the district to bring the chipper to their property. The program would be free to the homeowners. This change would allow property owners with smaller properties to take part in the program.

The program would be run by all of the County fire districts. Chief Lambert would write the program, and the other agencies could use those materials to reach out to their districts. Each agency would have the chipper machine for part of the year.

This program would help property owners to maintain defensible space.

The chipper could handle slash up to 6 inches in diameter. Larger logs and branches would be collected for firewood to be distributed by a charity program that operates in partnership with the Northeast Teller County FPD.

The County has funds available in wildland funding that could be used to buy the chipper this year. The program is expected to start in 2021. Ongoing costs would be for staff time. Volunteers would also help run the program. Maintenance costs for the machine would be handled by the County, and districts would be responsible for fixing damage caused by accidents or misuse.

Teller County 2021 Hazard Mitigation Plan Update

Meeting Summary

DATE: Wednesday, October 14, 2020
TIME: 9:00 a.m. – 10:00 a.m.
LOCATION: Conference Call

ATTENDEES:

Chief Jay Teague – Four Mile FPD

Becky Frank – Teller County

Jessica Forbes-Guerrero – WSP

Summary:

WSP held a separate call with Chief Teague to discuss data gaps in the Four Mile FPD annex and develop new hazard mitigation actions. Chief Teague identified primary and secondary points of contact for the FPD and provided information on dam hazards in the district, specifically that there are no high hazard dams in the district. Based on this information, a dam failure hazard analysis has not been included in the annex.

Four new mitigation actions have been developed for the district. During the call, Chief Teague identified the primary and supporting agencies for each action, expected costs and funding sources, and walked through the STAPLEE and mitigation effectiveness questions to determine the priority for each action. Chief Teague also provided information on funding sources for the district. Grant or other external funding will be needed for most mitigation actions.

Teller County 2021 Hazard Mitigation Plan Update

Meeting Summary

DATE: Thursday, October 15, 2020
TIME: 8:15 a.m. – 9:15 a.m.
LOCATION: Conference Call

ATTENDEES:

Richard Mann – City of Victor

Don Angell – Teller County

Becky Frank – Teller County

Jessica Forbes-Guerrero – WSP

Summary:

WSP held a separate call with Richard Mann (City of Victor) to review the City of Victor Jurisdiction Annex and give the city the opportunity to provide feedback and comments. Remaining data gaps were reviewed, and Richard provided primary and secondary points of contact for the annex. Richard reviewed the mitigation actions for the City, and a new action was added during the call to develop a CWPP.

Richard provided information on hazards and maintenance needs for Bison Park and Victor #2 dams. This information was added to the risk assessment for the City, and a new mitigation action was added to address these maintenance needs.

Teller County 2021 Hazard Mitigation Plan Update

Meeting Summary

DATE: Thursday, October 15, 2020
TIME: 10:00 a.m. – 11:00 a.m.
LOCATION: Conference Call

ATTENDEES:

Paul Harris – City of Cripple Creek

Becky Frank – Teller County

Jessica Forbes-Guerrero – WSP

Summary:

WSP held a separate call with Paul Harris (City of Cripple Creek) to review the City of Cripple Creek Jurisdiction Annex and give the City the opportunity to provide feedback and comments. Remaining data gaps were reviewed, and Paul provided primary and secondary points of contact for the annex. Paul reviewed and provided comments on the mitigation actions for the City, and a new action was added during the call to work with the USACE to update the City's floodplain maps.

Paul provided information on planned maintenance inspections at Cripple Creek #2 and Cripple Creek #3 dams, and a mitigation action was added to complete repairs as needed to these dams following these inspections.

Kragen, Colleen

From: Angell, Don <angelld@co.teller.co.us>
Sent: Wednesday, September 9, 2020 9:58 AM
To: Gene Stanley; Brad Golden; Richard Atkins; Kevin Madsen; Lonnie Inzer; Jim Reid
Cc: Frank, Rebecca; Forbes-Guerrero, Jessica
Subject: FW: Hazard Mitigation Meeting #3
Attachments: Teller County HMC Workshop #3_Agenda.docx

Follow Up Flag: Follow up
Flag Status: Flagged

To All,

We will be conducting a HMP workshop per the attached flyer. Please feel free to join us as any input is appreciated.

Thank you.

From: Frank, Rebecca
Sent: Wednesday, September 9, 2020 10:39 AM
To: Angell, Don <angelld@co.teller.co.us>
Subject: FW: Hazard Mitigation Meeting #3

Please share with those who may be interested.

From: JULIE A. GILLEY - Teller County [mailto:ro-teller@readyop.com]
Sent: Thursday, September 3, 2020 10:25 AM
To: Frank, Rebecca <FrankR@co.teller.co.us>
Subject: Hazard Mitigation Meeting #3

Good morning,

Please see email below from Jessica and attachment for the agenda for Hazard Mitigation Meeting #3. The zoom link information is below.

Please join us for HMC Meeting #3 for the 2020 update of the Teller County Hazard Mitigation Plan. During this meeting, we'll review the Draft HMP and discuss your comments and data gaps. The Draft HMP will be provided for review prior to the meeting. This webinar will be mostly discussion based, so please come prepared with your questions and comments.

We're looking forward to talking with you!

Jessica Forbes-Guerrero

Environmental Planner

t: 303-443-3282 m: 757-816-7762

Ecology and Environment, Inc.
Member of WSP

5665 Flatiron Pkwy., Suite 250, Boulder, CO 80301

On September 2, E&E will rebrand to WSP.

Join Zoom Meeting
https://us02web.zoom.us/j/86875008152

Meeting ID: 868 7500 8152

Dial by your location
+1 253 215 8782 US (Tacoma)
+1 346 248 7799 US (Houston)
+1 408 638 0968 US (San Jose)
+1 669 900 6833 US (San Jose)

Thanks

Julie
gilleyj@co.teller.co.us

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Teller County 2021 Hazard Mitigation Plan

Appendix D-4: Public Outreach

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

Q1 In what town or community do you live?

Answered: 85 Skipped: 1

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

#	RESPONSES	DATE
1	Divide	8/17/2020 6:41 AM
2	Divide	8/9/2020 5:35 PM
3	Woodland Park	7/30/2020 9:20 AM
4	Florissant	7/24/2020 1:02 PM
5	Divide	7/22/2020 6:22 PM
6	Florissant	7/21/2020 2:29 PM
7	cripple creek	7/17/2020 6:45 PM
8	Divide	7/7/2020 9:46 AM
9	Florissant	7/7/2020 7:45 AM
10	Divide	7/5/2020 8:17 PM
11	Indian Creek	7/5/2020 10:53 AM
12	Woodland Park	7/4/2020 12:36 AM
13	Woodland Park	7/1/2020 2:35 PM
14	Woodland Park	7/1/2020 9:19 AM
15	Divide	6/27/2020 12:45 AM
16	Woodland Park	6/22/2020 4:35 PM
17	North of Woodland Park Hwy 67	6/21/2020 8:03 PM
18	Florissant - Trout Haven	6/21/2020 12:09 PM
19	Florissant	6/20/2020 11:13 PM
20	Divide, CO	6/20/2020 6:05 PM
21	Divide	6/20/2020 10:10 AM
22	Florissant	6/20/2020 8:18 AM
23	Divide	6/20/2020 8:13 AM
24	Florissant	6/20/2020 6:50 AM
25	Florissant	6/19/2020 8:12 PM
26	Colorado Springs	6/19/2020 4:07 PM
27	Woodland Park	6/19/2020 3:15 PM
28	Florissant	6/19/2020 12:29 PM
29	near Lake George (in Teller County)	6/19/2020 8:40 AM
30	Florissant	6/19/2020 8:27 AM
31	Florissant/ Indian creek	6/19/2020 6:44 AM
32	Divide	6/18/2020 11:57 PM
33	Teller county	6/17/2020 2:29 PM
34	Florissant	6/17/2020 10:55 AM
35	Florissant	6/17/2020 9:03 AM
36	Florissant	6/16/2020 5:28 PM
37	Colorado springs	6/16/2020 3:00 PM

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

38	none	6/16/2020 2:42 PM
39	Lake George - the Teller County part	6/16/2020 2:20 PM
40	Florissant	6/16/2020 2:17 PM
41	Florissant - Indian Creek	6/16/2020 12:43 PM
42	Indian Creek Estates, Florissant	6/16/2020 12:11 PM
43	Lake George	6/16/2020 12:09 PM
44	Highland Lakes	6/16/2020 12:07 PM
45	Florissant	6/16/2020 11:36 AM
46	Indian Creek	6/16/2020 11:20 AM
47	Florissant	6/16/2020 11:10 AM
48	Indian Creek - Florissant	6/16/2020 10:50 AM
49	Florissant	6/16/2020 10:44 AM
50	FLORISSANT	6/16/2020 10:38 AM
51	Indian Creek Wilderness Estates	6/16/2020 10:36 AM
52	Twin rock subdivision	6/16/2020 9:38 AM
53	Divide	6/15/2020 3:26 PM
54	Woodland Park	6/15/2020 1:30 PM
55	Woodland Park	6/15/2020 8:17 AM
56	Twin Rock, Florissant	6/14/2020 10:15 PM
57	Florissant	6/14/2020 6:48 PM
58	Divide (Highland Lakes Subdivision)	6/14/2020 12:58 PM
59	Woodland Park	6/14/2020 7:51 AM
60	Woodland West	6/14/2020 7:27 AM
61	WOODLAND PARK	6/13/2020 4:16 PM
62	Florissant	6/12/2020 5:14 PM
63	WOODLAND PARK	6/12/2020 3:55 PM
64	Woodland West Subdivision	6/12/2020 2:07 PM
65	Woodland Park	6/12/2020 2:06 PM
66	Woodland Park	6/12/2020 2:05 PM
67	Woodland Park	6/12/2020 2:04 PM
68	Woodland West, Teller County	6/12/2020 1:59 PM
69	Ridgewood HOA Teller County	6/12/2020 12:43 PM
70	Florissant	6/12/2020 10:28 AM
71	Florissant	6/12/2020 8:20 AM
72	Divide	6/12/2020 8:03 AM
73	Florissant	6/12/2020 7:36 AM
74	Woodland Park	6/12/2020 6:09 AM
75	Divide	6/12/2020 4:01 AM

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

76	Woodland park	6/11/2020 8:29 PM
77	Woodland Park	6/11/2020 5:52 PM
78	Woodland Park	6/11/2020 5:41 PM
79	Bear Trap Ranch / Florissant	6/11/2020 3:46 PM
80	Woodland Park	6/11/2020 3:26 PM
81	Florissant	6/11/2020 3:23 PM
82	Florissant	6/11/2020 2:52 PM
83	Woodland park	6/11/2020 2:16 PM
84	FLORISSANT	6/11/2020 1:51 PM
85	Florissant Heights	6/11/2020 1:41 PM

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

Q2 In what zip code do you live?

Answered: 85 Skipped: 1

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

#	RESPONSES	DATE
1	80814	8/17/2020 6:41 AM
2	80814	8/9/2020 5:35 PM
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4	80816	7/24/2020 1:02 PM
5	80814	7/22/2020 6:22 PM
6	80816	7/21/2020 2:29 PM
7	80813	7/17/2020 6:45 PM
8	80814	7/7/2020 9:46 AM
9	80816	7/7/2020 7:45 AM
10	80814	7/5/2020 8:17 PM
11	80816	7/5/2020 10:53 AM
12	80863	7/4/2020 12:36 AM
13	80863	7/1/2020 2:35 PM
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16	80863	6/22/2020 4:35 PM
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18	80816	6/21/2020 12:09 PM
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20	80814	6/20/2020 6:05 PM
21	80814	6/20/2020 10:10 AM
22	80816	6/20/2020 8:18 AM
23	80814	6/20/2020 8:13 AM
24	80816	6/20/2020 6:50 AM
25	80816	6/19/2020 8:12 PM
26	80919	6/19/2020 4:07 PM
27	80866	6/19/2020 3:15 PM
28	80816	6/19/2020 12:29 PM
29	80827	6/19/2020 8:40 AM
30	80816	6/19/2020 8:27 AM
31	80816	6/19/2020 6:44 AM
32	80814	6/18/2020 11:57 PM
33	80863	6/17/2020 2:29 PM
34	80816-7006	6/17/2020 10:55 AM
35	80827	6/17/2020 9:03 AM
36	80816	6/16/2020 5:28 PM
37	80921	6/16/2020 3:00 PM

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

38	80827	6/16/2020 2:42 PM
39	80827	6/16/2020 2:20 PM
40	80816	6/16/2020 2:17 PM
41	80816	6/16/2020 12:43 PM
42	80816	6/16/2020 12:11 PM
43	80827	6/16/2020 12:09 PM
44	80814	6/16/2020 12:07 PM
45	80816	6/16/2020 11:36 AM
46	80816	6/16/2020 11:20 AM
47	80816	6/16/2020 11:10 AM
48	80816	6/16/2020 10:50 AM
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55	80863	6/15/2020 8:17 AM
56	80816	6/14/2020 10:15 PM
57	80816	6/14/2020 6:48 PM
58	80814	6/14/2020 12:58 PM
59	80863	6/14/2020 7:51 AM
60	80863	6/14/2020 7:27 AM
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62	80816	6/12/2020 5:14 PM
63	80863	6/12/2020 3:55 PM
64	80863	6/12/2020 2:07 PM
65	80863-8804	6/12/2020 2:06 PM
66	80863	6/12/2020 2:05 PM
67	80863	6/12/2020 2:04 PM
68	80863	6/12/2020 1:59 PM
69	80863	6/12/2020 12:43 PM
70	80816	6/12/2020 10:28 AM
71	80816	6/12/2020 8:20 AM
72	80814	6/12/2020 8:03 AM
73	80816	6/12/2020 7:36 AM
74	80863	6/12/2020 6:09 AM
75	80814	6/12/2020 4:01 AM

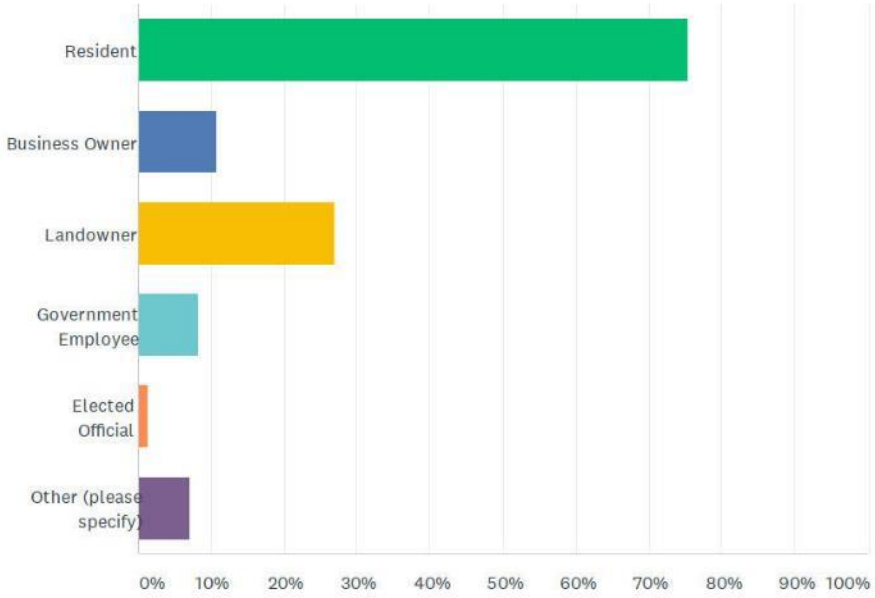
Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

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80	80863	6/11/2020 3:26 PM
81	80816	6/11/2020 3:23 PM
82	80816	6/11/2020 2:52 PM
83	80863	6/11/2020 2:16 PM
84	80816	6/11/2020 1:51 PM
85	80816	6/11/2020 1:41 PM

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

Q3 Which of the following best defines your role in the community?

Answered: 85 Skipped: 1



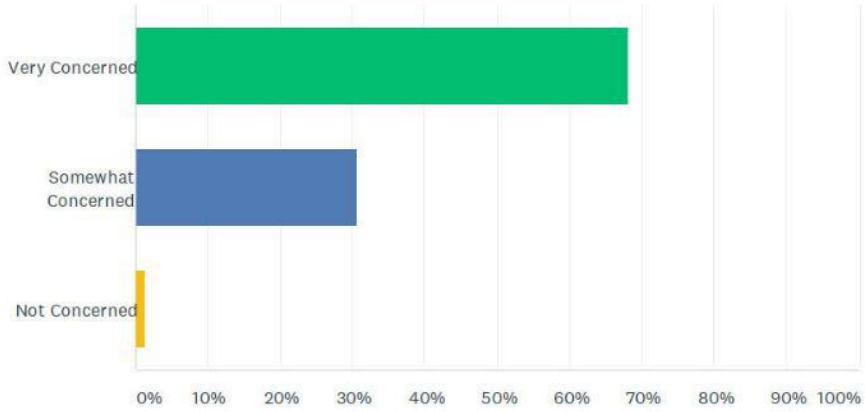
ANSWER CHOICES	RESPONSES	
Resident	75.29%	64
Business Owner	10.59%	9
Landowner	27.06%	23
Government Employee	8.24%	7
Elected Official	1.18%	1
Other (please specify)	7.06%	6
Total Respondents: 85		

#	OTHER (PLEASE SPECIFY)	DATE
1	2nd home	6/17/2020 9:03 AM
2	Part time summer resident	6/16/2020 12:11 PM
3	President, HLPOA	6/16/2020 12:07 PM
4	HLPOA Committee - Chairman Firewise Committee	6/14/2020 12:58 PM
5	Resident & Nextdoor App Leader	6/12/2020 10:28 AM
6	Four Mile Fire Volunteer	6/11/2020 1:51 PM

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

Q4 How concerned are you about the impacts of natural disasters in your community?

Answered: 85 Skipped: 1

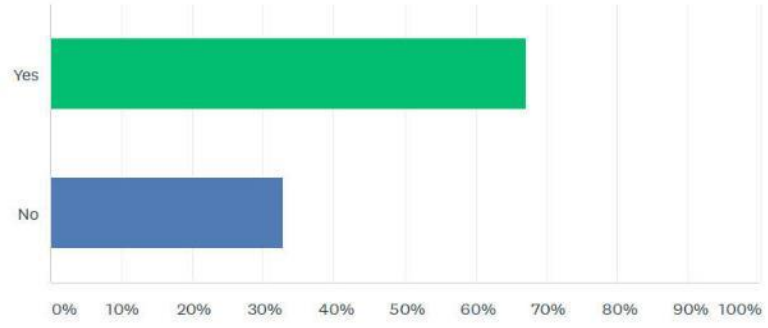


ANSWER CHOICES	RESPONSES	
Very Concerned	68.24%	58
Somewhat Concerned	30.59%	26
Not Concerned	1.18%	1
TOTAL		85

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

Q5 Have you been impacted by a natural disaster in your community?

Answered: 85 Skipped: 1

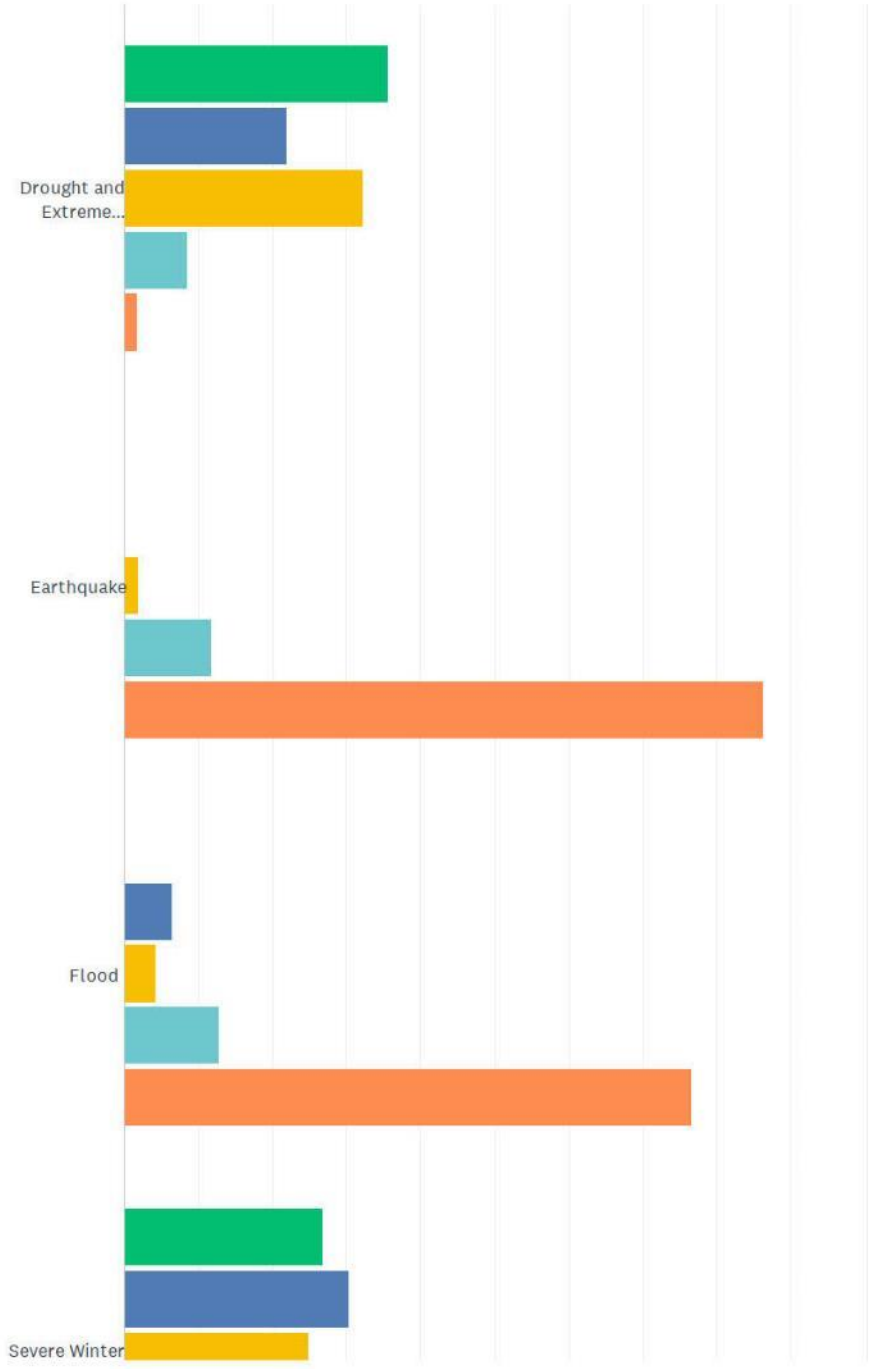


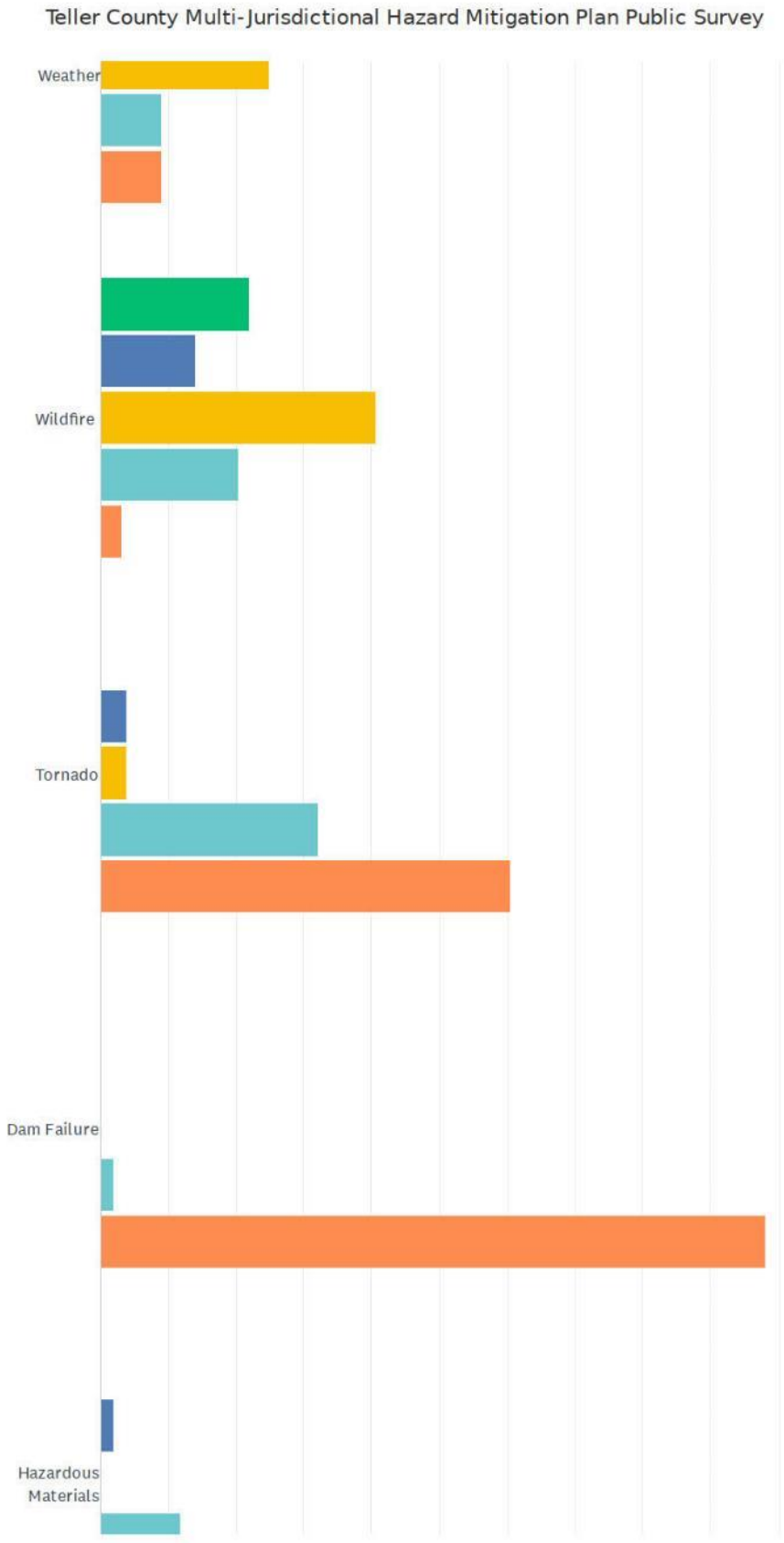
ANSWER CHOICES	RESPONSES	
Yes	67.06%	57
No	32.94%	28
TOTAL		85

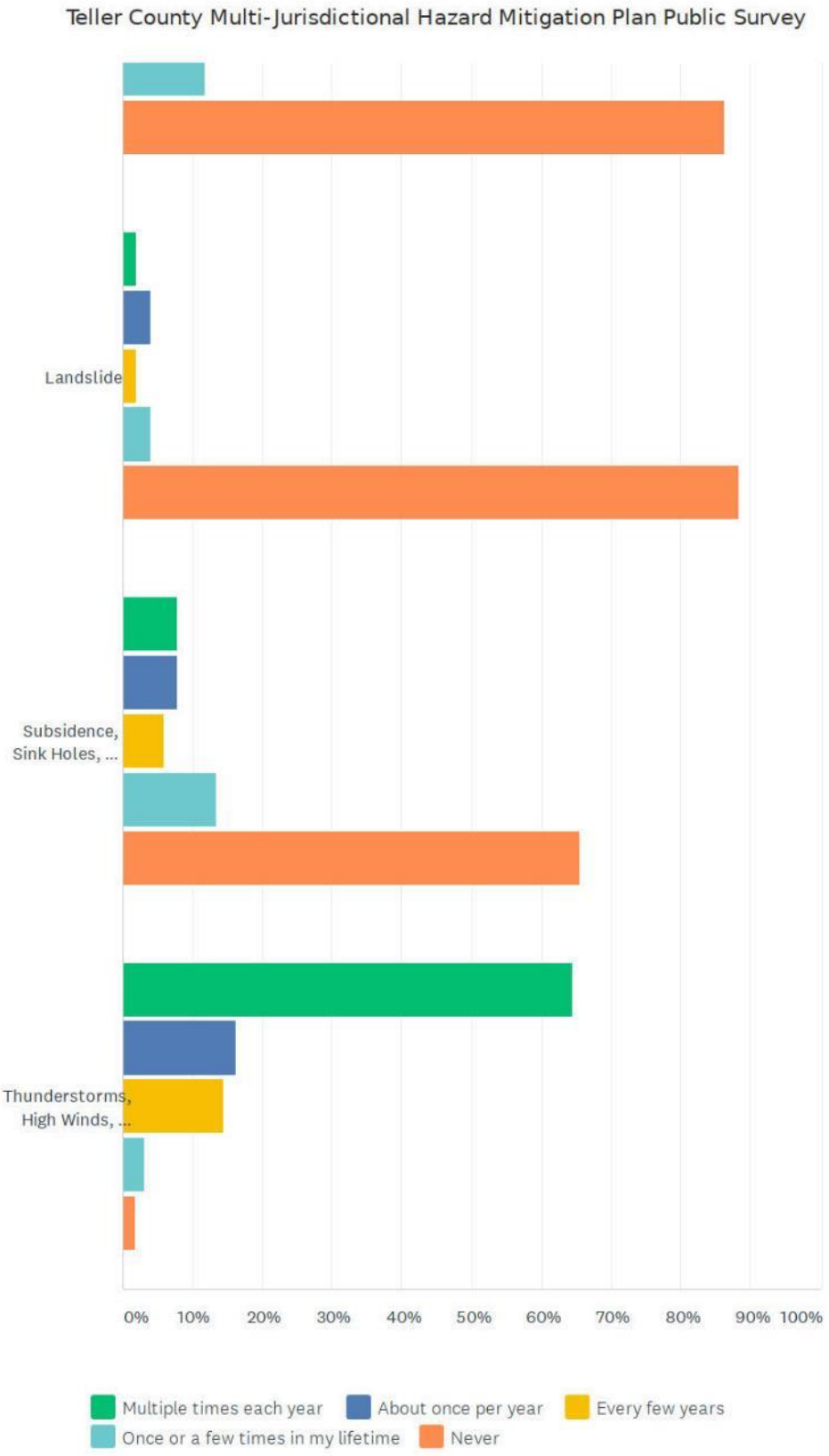
Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

If you answered 'yes' to the previous question, please indicate t
(s) of disasters and the frequency with which you have experier
them in your community.

Answered: 67 Skipped: 19




Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey
Weather
Wildfire
Tornado
Dam Failure
Hazardous Materials


Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey
Landslide
Subsidence, Sink Holes, ...
Thunderstorms, High Winds, ...
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Multiple times each year
About once per year
Every few years
Once or a few times in my lifetime
Never

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

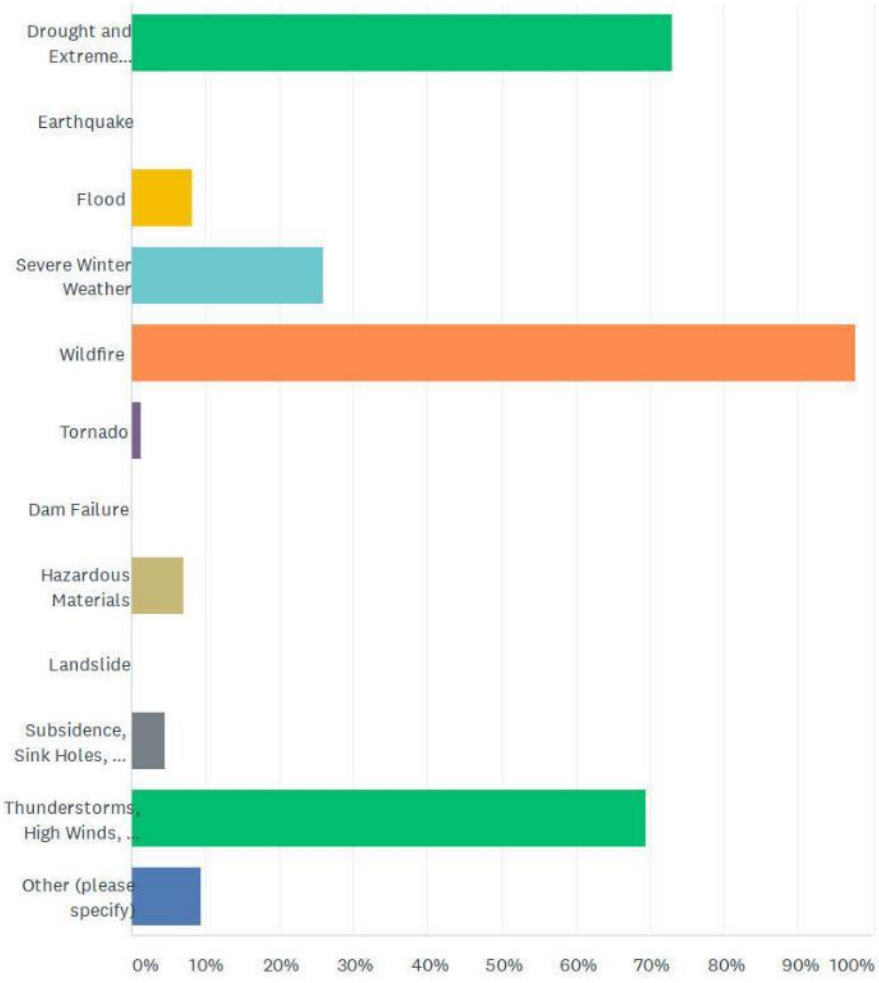
	MULTIPLE TIMES EACH YEAR	ABOUT ONCE PER YEAR	EVERY FEW YEARS	ONCE OR A FEW TIMES IN MY LIFETIME	NEVER	TOTAL
Drought and Extreme Temperature	35.59% 21	22.03% 13	32.20% 19	8.47% 5	1.69% 1	59
Earthquake	0.00% 0	0.00% 0	1.96% 1	11.76% 6	86.27% 44	51
Flood	0.00% 0	6.38% 3	4.26% 2	12.77% 6	76.60% 36	47
Severe Winter Weather	26.79% 15	30.36% 17	25.00% 14	8.93% 5	8.93% 5	56
Wildfire	21.88% 14	14.06% 9	40.63% 26	20.31% 13	3.13% 2	64
Tornado	0.00% 0	3.77% 2	3.77% 2	32.08% 17	60.38% 32	53
Dam Failure	0.00% 0	0.00% 0	0.00% 0	1.96% 1	98.04% 50	51
Hazardous Materials	0.00% 0	1.96% 1	0.00% 0	11.76% 6	86.27% 44	51
Landslide	1.96% 1	3.92% 2	1.96% 1	3.92% 2	88.24% 45	51
Subsidence, Sink Holes, and Soil Erosion	7.69% 4	7.69% 4	5.77% 3	13.46% 7	65.38% 34	52
Thunderstorms, High Winds, and Hail	64.52% 40	16.13% 10	14.52% 9	3.23% 2	1.61% 1	62

#	OTHER (PLEASE SPECIFY)	DATE
1	Liquid cyanide transports through county with no mitigation plans, no FD training.	8/17/2020 6:41 AM
2	Pandemic - Once in a lifetime, Insects - Miller Moths (every few years)	6/19/2020 4:07 PM
3	Pandemic	6/19/2020 3:15 PM
4	Severe run off and soil erosion every spring	6/16/2020 2:20 PM
5	My physical address and mailing address are different. I live in Teller County but get my mail from the Lake George post office in Park County.	6/16/2020 11:10 AM
6	Lighting	6/14/2020 12:58 PM
7	I have only lived in the community for several years	6/11/2020 1:51 PM
8	Pandemics	6/11/2020 1:41 PM

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

Q7 Please select the top THREE (3) hazards you think are the GREATEST THREAT to your community, considering both frequency of occurrence and potential for severe damage.

Answered: 85 Skipped: 1



Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

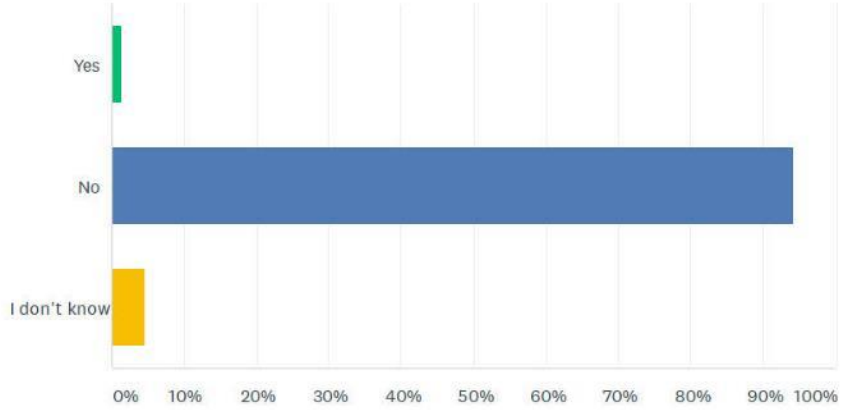
ANSWER CHOICES	RESPONSES	
Drought and Extreme Temperature	72.94%	62
Earthquake	0.00%	0
Flood	8.24%	7
Severe Winter Weather	25.88%	22
Wildfire	97.65%	83
Tornado	1.18%	1
Dam Failure	0.00%	0
Hazardous Materials	7.06%	6
Landslide	0.00%	0
Subsidence, Sink Holes, and Soil Erosion	4.71%	4
Thunderstorms, High Winds, and Hail	69.41%	59
Other (please specify)	9.41%	8
Total Respondents: 85		

#	OTHER (PLEASE SPECIFY)	DATE
1	people living on forest land has become a concern for teller county	8/17/2020 3:06 PM
2	Campfires	7/5/2020 8:17 PM
3	Pandemic	6/19/2020 3:15 PM
4	The biggest hazards are two-fold; the amount of poor for fire mitigation being performed by landowners and the amount of trash that is being built up on property.	6/16/2020 2:17 PM
5	Highway 24 wildlife disruption	6/16/2020 9:38 AM
6	Neighbors whose places could start a fire, because they could care less.	6/12/2020 10:28 AM
7	Wildfire	6/11/2020 5:41 PM
8	Pandemic	6/11/2020 1:41 PM

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

Q8 Is your home or business located in a designated floodplain or flood zone?

Answered: 85 Skipped: 1

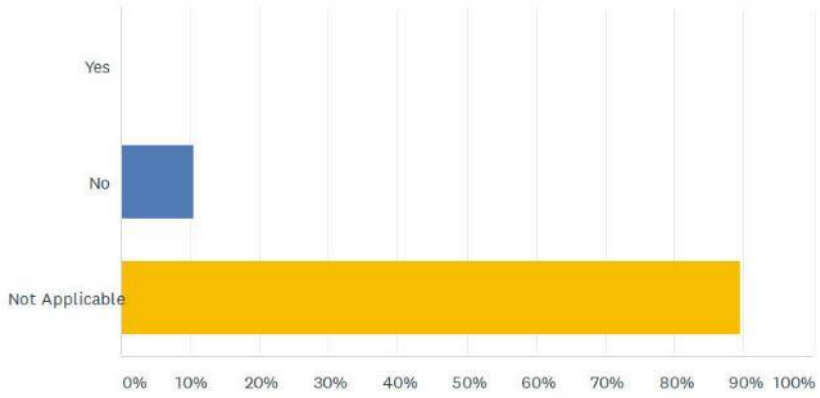


ANSWER CHOICES	RESPONSES	
Yes	1.18%	1
No	94.12%	80
I don't know	4.71%	4
TOTAL		85

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

Q9 If you responded 'Yes' to the above question, do you currently have flood insurance?

Answered: 67 Skipped: 19

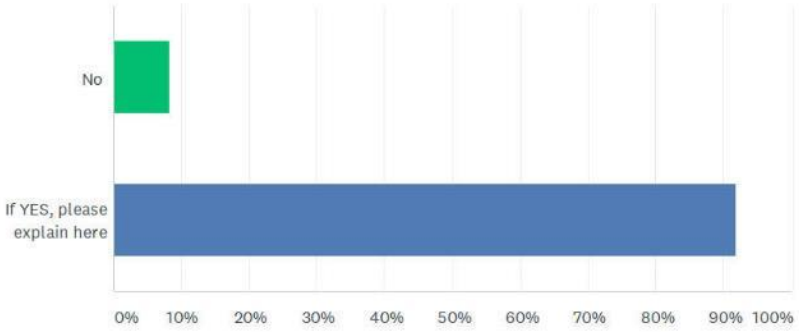


ANSWER CHOICES	RESPONSES	
Yes	0.00%	0
No	10.45%	7
Not Applicable	89.55%	60
TOTAL		67

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

Q10 Have you taken actions to protect your home and/or business from the impacts of hazards?

Answered: 85 Skipped: 1



ANSWER CHOICES	RESPONSES	
No	8.24%	7
If YES, please explain here	91.76%	78
TOTAL		85

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

#	IF YES, PLEASE EXPLAIN HERE	DATE
1	tree removal and mitigating	8/17/2020 3:06 PM
2	timber mitigation	8/17/2020 6:41 AM
3	tree mitigation in regard to fire along with regular mowing	8/9/2020 5:35 PM
4	tree & grass fire mitigation	7/30/2020 9:20 AM
5	Built with stucco, have done forest mitigation to almost 90% of our two acres, am finishing up the rest	7/22/2020 6:22 PM
6	Working on clearng the are f trees	7/21/2020 2:29 PM
7	metal roof	7/17/2020 6:45 PM
8	Extensive wildfire mitigation	7/7/2020 7:45 AM
9	14 years fire mitigation	7/5/2020 8:17 PM
10	fire mitigation, built home with materials to make it less likely to catch fire	7/5/2020 10:53 AM
11	Homeowners insurance	7/4/2020 12:36 AM
12	Fire mitigation	7/1/2020 2:35 PM
13	Fire mitigation	7/1/2020 9:19 AM
14	Fire mitigation	6/27/2020 12:45 AM
15	Have done more fire mitigation around home	6/22/2020 4:35 PM
16	tree mitigation, water flow areas	6/21/2020 8:03 PM
17	Fire mitigation	6/21/2020 12:09 PM
18	Dead tree removal	6/20/2020 11:13 PM
19	Fire mitigation of plant life around house	6/20/2020 6:05 PM
20	landscaping, fire mitigation, generator, food supplies	6/20/2020 10:10 AM
21	Major tree/fire mitigation, summer 2019	6/20/2020 8:18 AM
22	fire mitigation	6/20/2020 8:13 AM
23	Midigation	6/20/2020 6:50 AM
24	Fire Mitigation - limbing, cleaning yard, removing dead trees around house. Insurance.	6/19/2020 4:07 PM
25	Fire Mitigation around the house	6/19/2020 12:29 PM
26	fire mitigation - and we continue to clear our 10 acres especially removing limbs up to 10 feet	6/19/2020 8:40 AM
27	Fire mitigation around our house and assisted neighbors with cleaning brush, pine needles, dead and low hanging trees	6/19/2020 8:27 AM
28	Tree thinning removal	6/19/2020 6:44 AM
29	Fire mitigation	6/18/2020 11:57 PM
30	tree branch mitigation	6/17/2020 2:29 PM
31	Mitigation done & in process; Insuring all structures are built to high wind & snow standards.	6/17/2020 10:55 AM
32	Fire mitigation	6/17/2020 9:03 AM
33	Forest mitigation on property	6/16/2020 5:28 PM
34	try to keep it as clear as possible from dead trees etc.	6/16/2020 3:00 PM
35	Extensive fire mitigation; have a snowblower and an ATV with snowplow to open access	6/16/2020 2:42 PM
36	Regrading	6/16/2020 2:20 PM

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

37	For the past 15 years we have been part of the Colorado Forestry Division and have implemented an annual work plan to fire mitigate our 50 acres. We have also perform erosion management on our property.	6/16/2020 2:17 PM
38	Mitigation of trees for wildfire protection	6/16/2020 12:43 PM
39	Brush trimming close to house, trim trees	6/16/2020 12:11 PM
40	Cleaned Debris and dead wood around home	6/16/2020 12:09 PM
41	Timber/Fire Mitigation	6/16/2020 12:07 PM
42	Fire mitagation	6/16/2020 11:36 AM
43	Fire mitigating	6/16/2020 11:20 AM
44	We have done fire mitigation around our house and on our property.	6/16/2020 11:10 AM
45	Significant fire mitigation	6/16/2020 10:50 AM
46	Mitigation and what to take from our home if there is a fire.	6/16/2020 10:44 AM
47	Travel trailer is packed and ready to evacuate us and our animals	6/16/2020 10:38 AM
48	Maintain a 30' opening between house and trees all around.	6/16/2020 10:36 AM
49	Fire mitigation	6/16/2020 9:38 AM
50	Mitigation	6/15/2020 3:26 PM
51	Community Firewise	6/15/2020 1:30 PM
52	Tree branches cut high, proper drainage, space in garage for cars.	6/15/2020 8:17 AM
53	Fire mitigation	6/14/2020 10:15 PM
54	Generator	6/14/2020 6:48 PM
55	Wildfire Mitigation	6/14/2020 12:58 PM
56	Fire and ice mitigation.	6/14/2020 7:51 AM
57	Hail	6/14/2020 7:27 AM
58	Mitigation	6/13/2020 4:16 PM
59	Fire mitigation	6/12/2020 5:14 PM
60	I make sure my roof is sound and I do fire mitigation	6/12/2020 3:55 PM
61	Fire mitigation	6/12/2020 2:07 PM
62	Fire mitigation	6/12/2020 2:06 PM
63	Fire mitigation	6/12/2020 2:05 PM
64	Wildfire mitigation	6/12/2020 2:04 PM
65	Fire mitigation	6/12/2020 1:59 PM
66	Tree removal and hardening of home reducing threat of wildfire destruction	6/12/2020 12:43 PM
67	Tree Mitigation & Shrubs	6/12/2020 10:28 AM
68	Fire Mitigation, Insulation, Steel Roof	6/12/2020 8:20 AM
69	Constant and severe fire mitigation throughout entire land not just to preserve buildings.	6/12/2020 7:36 AM
70	Cut down trees near house. Thinning of trees on lot.	6/12/2020 6:09 AM
71	Fire mitigation	6/12/2020 4:01 AM
72	Madagation	6/11/2020 8:29 PM
73	Insurance, radon and fire mitigation, roof and structural maintenance, fire evac planning,wiFi temp sensors	6/11/2020 5:52 PM

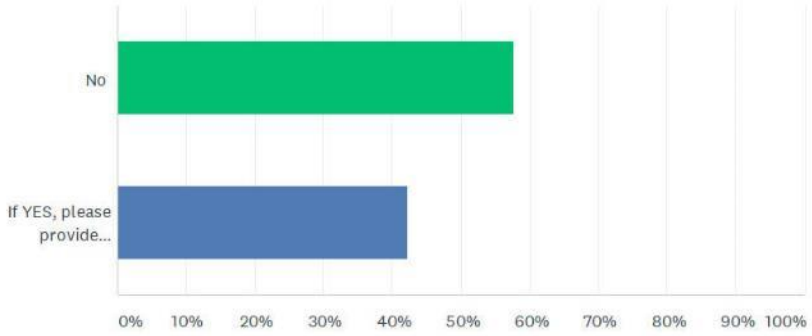
Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

74	Mitigation of wildfire hazards to home and surrounding area	6/11/2020 3:26 PM
75	Mitigated entire property.	6/11/2020 3:23 PM
76	Mitigated trees and brush around home. working on mitigation else where on property	6/11/2020 2:52 PM
77	Take trees down	6/11/2020 2:16 PM
78	Fire mitigation and erosion control	6/11/2020 1:51 PM

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

Q11 Do you have project ideas for how to protect the community from the impacts of hazards?

Answered: 85 Skipped: 1



ANSWER CHOICES	RESPONSES	
No	57.65%	49
If YES, please provide additional detail on what you would like to see	42.35%	36
TOTAL		85

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

#	IF YES, PLEASE PROVIDE ADDITIONAL DETAIL ON WHAT YOU WOULD LIKE TO SEE	DATE
1	close the forests when fire danger is high more policing of forests	8/17/2020 3:06 PM
2	large scale forest mitigation, hazmat readiness and training, evacuation planning, new resident orientation to hazards	8/17/2020 6:41 AM
3	fire danger - i believe it should be more strict. i see too many people having bonfires - within a ring, but very high, like 6' high (it just takes a spark) and/or fires in a grassy area.	8/9/2020 5:35 PM
4	Some like myself own vacant land, but live in a different State. Help with wildfire mitigation to protect not only our investment, but also our neighbors would be the top need. I know the ICPOA does help some, but there may be a greater need.	7/24/2020 1:02 PM
5	more spraying of the forest for spruce white worms to save our trees	7/22/2020 6:22 PM
6	Mandatory wildfire mitigation	7/7/2020 7:45 AM
7	Ban campfire always	7/5/2020 8:17 PM
8	need more involvement in fire mitigation	7/5/2020 10:53 AM
9	Fire mitigation, education, dry run emergency drills	7/1/2020 2:35 PM
10	Fire mitigation along property lines to slow spread and create defensible space	6/27/2020 12:45 AM
11	People need to keep pine straw off their roofs	6/21/2020 8:03 PM
12	Required minimal fire mitigation around each house/building	6/20/2020 8:18 AM
13	focus on forest health and wildfire mitigation	6/20/2020 8:13 AM
14	Wildfire mitigation around the urban interface	6/19/2020 4:07 PM
15	Implement the Greater Woodland Park Community Wildfire Protection Plan (CWPP) and continue to enforce the FEMA Floodplain Regulations.	6/19/2020 3:15 PM
16	Community cleanup days for fire mitigation	6/19/2020 12:29 PM
17	More assistance to elderly and disabled for fire mitigation efforts around their homes	6/19/2020 8:27 AM
18	Phase block areas for thinning and infrastructure immorovements	6/19/2020 6:44 AM
19	A ban on all campfires	6/18/2020 11:57 PM
20	weed mowing on properties, and highway right-of-ways, before fire season	6/17/2020 2:29 PM
21	Joined Florissant Fire & Rescue to support community	6/16/2020 5:28 PM
22	When Red Flag conditions exist, publicize that condition and prosecute violators	6/16/2020 2:42 PM
23	Provide tax incentives for landowners to develop AND implement a fire mitigation plan and program for their property. Implement a penalty phase for those properties that do not manage trash - i.e. vehicles, appliances, etc. that leach into the water system.	6/16/2020 2:17 PM
24	A chain call list for notification of emergencies or evacuations.	6/16/2020 12:43 PM
25	County awareness/notices of support and reported increase in threat etc.	6/16/2020 12:07 PM
26	Fire mitigation	6/16/2020 10:50 AM
27	Designation of wildlife Corredor Highway 24 - Twin Rock Road to Florissant Colorado	6/16/2020 9:38 AM
28	See our CWPP (Community Wildfire Protection Plan)	6/14/2020 12:58 PM
29	All Subdivisions required to have emergency egress points	6/13/2020 4:16 PM
30	Forests need thinning badly	6/12/2020 2:05 PM
31	Threat of wildfire destruction emphasized frequently with information on how to reduce the chance for a raging fire	6/12/2020 12:43 PM
32	Remove dead and diseased trees to lower the intensity of the next wildfire and reduce flying embers.	6/12/2020 7:36 AM

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

33	Wildfire plan is at top of list	6/11/2020 5:52 PM
34	Involve the entire community in wildfire mitigation of every kind with a coordinated plan of action	6/11/2020 3:26 PM
35	Set up countywide chipper so that slash piles can be shredded for a small fee	6/11/2020 2:52 PM
36	Fire escape plan READILY available	6/11/2020 1:41 PM

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

Q12 Are you interested in staying up to date with our progress? Provide your email address and we will provide you with updates and information about what you can do to help us!

Answered: 62 Skipped: 24

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

#	RESPONSES	DATE
1	s_storrs@msn.com	8/17/2020 6:41 AM
2	kcasey@city-woodlandpark.org	7/30/2020 9:20 AM
3	kabuchitama@yahoo.com	7/24/2020 1:02 PM
4	lance.mcmahon@yahoo.com	7/22/2020 6:22 PM
5	Jbpreisinger@gmail.com	7/7/2020 7:45 AM
6	mtnbilly369@gmail.com	7/5/2020 8:17 PM
7	serendipityme13@gmail.com	7/4/2020 12:36 AM
8	502KylieHeights@att.net	7/1/2020 2:35 PM
9	tmhanes@gmail.com	7/1/2020 9:19 AM
10	juliebear826@hotmail.com	6/22/2020 4:35 PM
11	betsy.anderson@earthlink.net	6/21/2020 8:03 PM
12	roger@rogercoker.com	6/20/2020 6:05 PM
13	ancestralarts@juno.com	6/20/2020 10:10 AM
14	cms1753@q.com	6/20/2020 8:18 AM
15	jmmdivide@yahoo.com	6/20/2020 8:13 AM
16	Yes	6/20/2020 6:50 AM
17	sriley@city-woodlandpark.org	6/19/2020 3:15 PM
18	richard@savingtheforest.com	6/19/2020 12:29 PM
19	jimsharp62@gmail.com	6/19/2020 8:40 AM
20	jspg@live.com	6/19/2020 8:27 AM
21	Mtnbilly369@gmail.com	6/18/2020 11:57 PM
22	galvintim5@gmail.com	6/17/2020 2:29 PM
23	cyndiroether@yahoo.com	6/17/2020 10:55 AM
24	tsleblanc@sbcglobal.net	6/16/2020 5:28 PM
25	bnichols7@gmail.com	6/16/2020 3:00 PM
26	rakgeologist@yahoo.com	6/16/2020 2:42 PM
27	moonkisses3@yahoo.com	6/16/2020 2:20 PM
28	runningman2626@yahoo.com	6/16/2020 2:17 PM
29	Jizupp@yahoo.com	6/16/2020 12:43 PM
30	Battleshipguy@gmail.com	6/16/2020 12:11 PM
31	Rachelanne2831@gmail.com	6/16/2020 12:09 PM
32	epstecklein@aol.com	6/16/2020 12:07 PM
33	Dmaze41951@aol.com	6/16/2020 11:36 AM
34	rfrichtel@me.com	6/16/2020 10:50 AM
35	Abesmom95@aol.com	6/16/2020 10:38 AM
36	rockymountainrenegade@gmail.com	6/16/2020 9:38 AM
37	Misterburley@yahoo.com	6/14/2020 10:15 PM

Teller County Multi-Jurisdictional Hazard Mitigation Plan Public Survey

38	pattiboo21@yahoo.com	6/14/2020 6:48 PM
39	sgcote@aol.com	6/14/2020 12:58 PM
40	Dschmurrstewart@gmail.com	6/14/2020 7:51 AM
41	Flyfishsm@gmail.com	6/14/2020 7:27 AM
42	jondeb96@netscape.com	6/13/2020 4:16 PM
43	ROJON@PCISYS.NET	6/12/2020 3:55 PM
44	tmhanes@gmail.com	6/12/2020 2:06 PM
45	mwindaji@aol.com	6/12/2020 2:05 PM
46	Klyons100@aol.com	6/12/2020 2:04 PM
47	dolphin934@hotmail.com	6/12/2020 1:59 PM
48	jeanblaisdell@gmail.com	6/12/2020 12:43 PM
49	howlingcoyotte@gmail.com	6/12/2020 10:28 AM
50	heardpat@gmail.com	6/12/2020 8:20 AM
51	cmshoem2@gmail.com	6/12/2020 8:03 AM
52	mhb3@yahoo.com	6/12/2020 7:36 AM
53	jwoodard33@gmail.com	6/12/2020 6:09 AM
54	Loulou58a@gmail	6/11/2020 8:29 PM
55	Jim@BlueSkyBaseball.com	6/11/2020 5:52 PM
56	Lglauth@aol.com	6/11/2020 5:41 PM
57	cjlekan@aol.com	6/11/2020 3:46 PM
58	bonch1545@aol.com	6/11/2020 3:26 PM
59	progunone45@gmail.com	6/11/2020 3:23 PM
60	jluksch33@gmail.com	6/11/2020 2:52 PM
61	lluksch3@gmail.com	6/11/2020 1:51 PM
62	Jway@flash.net	6/11/2020 1:41 PM

TELLER COUNTY COLORADO

Protect the Past....Embrace the Future

NEWS AND INFORMATION GOVERNMENT OFFICES

Stage 2 Fire Ban In Effect click for more...
(http://www.co.teller.co.us/OEM/Teller County Fire Ban Stage II.pdf)

Teller County News and Information

****PRESS RELEASE** Teller County Increase in COVID Rates. These incident rates move Teller County into the COVID-19 Dial Level Yellow. Click here for details.** (https://www.co.teller.co.us/PublicHealth/News/PressReleaseTellerCountyCOVIDLevelYellow11-6-2020.pdf)

******DISTRICT COURT ORDERS INJUNCTION - November 3, 2020****** Teller County was granted an injunction for Andrew Wommack Ministries, Inc. To view the Court Order, please click here. (https://www.co.teller.co.us/bocc/notices/Temporary Injuction Against Andrew Womack Ministries IncCourt Order 11-3-2020.pdf)

*****FOR IMMEDIATE RELEASE***** TCDPHE Press Release: Teller County Prevails on Preliminary Injunction. Click Here to View Press Release (https://www.co.teller.co.us/PublicHealth/News/TCDPHE Press Release Re AWMI Court Order 11-4-2020.pdf)

******2020 General Election Results for Teller County****** Results will not be posted until after 7:00 pm. (https://results.enr.clarityelections.com/CO/Teller/106036/)

The 2020 Tax Lien Sale will be held on-line, November 6-9, 2020. The rules for the 2020 sale are here. (https://www.co.teller.co.us/Treasurer/2020TaxSale/2020TellerCoTaxSaleRules.pdf)

List of Available Parcels for the 2020 Tax Lien Sale (https://www.co.teller.co.us/Treasurer/2020TaxSale/TaxSale2020.pdf)

PRESS RELEASE
Grant Opportunity for Teller County Businesses for COVID-19 Relief Funds
Click to View Press Release (https://www.co.teller.co.us/PublicHealth/News/PRESS RELEASE Teller Covid-19 Grant 8-27-20.pdf)

Teller County COVID-19 Relief Grants click for info ...



Teller County COVID-19 Relief Grants click for info ...

(https://www.tellercountygrant.com)

****COVID-19 Community Testing** locations from Nov. 2 to Nov. 30 Click for schedule** (https://www.co.teller.co.us/PublicHealth/News/Public Testing Sites Open - 11-2 thru 11-30-2020.pdf)

**** Teller County COVID-19 Community Data as of 11-5-2020 **** (https://www.co.teller.co.us/PublicHealth/News/Community COVID Stats - 11-5-2020.pdf)

Teller County Board of County Commissioners Work Session Agenda for 11-10-2020 at 8:30 a.m. Click Here to View (https://www.co.teller.co.us/BOCC/BOCC Agenda/2020 Agendas/WS agenda 11-10-2020.pdf)

Draft Teller County 2020 Hazard Mitigation Plan is open for comments. A Public Meeting is being held virtually on Tuesday, November 10th from 6 pm to 7 pm via Zoom. To view the Draft Teller County 2020 Hazard Mitigation Plan and for more information on how to join the Public Meeting and/or submit comments, please click here. (https://www.co.teller.co.us/OEM/HMP2020.aspx)

Teller County 2020 Proposed Growth Management Plan. Please **CLICK HERE** to view the Teller County 2020 Proposed Growth Management Plan. Planning Commission will be considering the Teller County 2020 Proposed Growth Management Plan on Tuesday, November 10th during their normal Planning Commission Meeting. The meeting will occur at 7:00 pm and is being held via Zoom. Zoom Meeting ID: 844 5463 1447 and meeting passcode: 938199 (https://www.co.teller.co.us/CDSD/Planning/TCGrowthMgmtPlan/9-25-20 Proposed GMP.pdf)

Transparency

Teller County is committed to operating an open and transparent government. By providing information below, Teller County Government makes a commitment of accountability for its residents. This insures they can be fully informed about the operations of their county government.

Teller County Government Offices

Local, County, Surrounding Counties and State

Community Links

(https://achecker.ca/checker/index.php?uri=referer&gid=WCAG2-AA) *This webpage conforms with accessibility standards to ensure the content can be accessed by everyone.*
For more information about Website Accessibility, ***click here (https://www.w3.org/TR/WCAG20/#a)***

Links to external web sites are provided as a courtesy and do not necessarily reflect the position or policies of Teller County Government

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Teller County Office of Emergency Management

Draft 2020 Hazard Mitigation Plan

This page displays links to Teller County's 2020 Hazard Mitigation Plan. Please click on a component below to view the file.

Teller County Hazard Mitigation Public Meeting

A Public Meeting for the Draft Teller County Hazard Mitigation Plan is being held on Tuesday, November 10, 2020 from 6 pm to 7 pm MST. The meeting will be held virtually via Zoom. To join the zoom meeting, please click https://us02web.zoom.us/j/89444270414 (https://us02web.zoom.us/j/89444270414)

The Public can provide comments regarding the Draft Hazard Mitigation Plan to the Office of Emergency Management by emailing them at oem@co.teller.co.us (mailto:OEM@co.teller.co.us).

- Teller Draft Hazard Mitigation Plan (TCHazardMitigationPlan-RFP2020/DraftHMGPlan11-20/Teller%20Co%20HMP%20Draft_110320.pdf)
- TCHMP Appendix A - Mitigation Actions (TCHazardMitigationPlan-RFP2020/DraftHMGPlan11-20/Appendix%20A_Mitigation%20Actions.pdf)
- TCHMP Appendix B - Evaluation Forms (TCHazardMitigationPlan-RFP2020/DraftHMGPlan11-20/Appendix%20B_Evaluation%20Forms.pdf)
- TCHMP Appendix D - PlanningProcess (TCHazardMitigationPlan-RFP2020/DraftHMGPlan11-20/Appendix%20D_PlanningProcess.pdf)

- TCHMP Appendix E - Maps and Risk Assessment (TCHazardMitigationPlan-RFP2020/DraftHMGPlan11-20/Appendix%20E_Maps%20and%20Risk%20Assessment.pdf)
- TCHMP Appendix F - Acronyms (TCHazardMitigationPlan-RFP2020/DraftHMGPlan11-20/Appendix%20F_Acronyms.pdf)
- TCHMP Appendix G - Definitions (TCHazardMitigationPlan-RFP2020/DraftHMGPlan11-20/Appendix%20G_Definitions.pdf)
- TCHMP Appendix H - References (TCHazardMitigationPlan-RFP2020/DraftHMGPlan11-20/Appendix%20H_References.pdf)
- Draft Cripple Creek Jurisdictional Annex - 11/03/20 (TCHazardMitigationPlan-RFP2020/DraftHMGPlan11-20/Draft%20Cripple%20Creek%20Jurisdiction%20Annex_110320.pdf)
- Draft Four Mile FPD Jurisdictional Annex - 11/03/20 (TCHazardMitigationPlan-RFP2020/DraftHMGPlan11-20/Draft%20Four%20Mile%20FPD%20Jurisdictional%20Annex_110320.pdf)
- Draft Victor Jurisdictional Annex - 11/03/20 (TCHazardMitigationPlan-RFP2020/DraftHMGPlan11-20/Draft%20Victor%20Jurisdiction%20Annex_110320.pdf)
- Draft Woodland Park Jurisdictional Annex - 11/03/20 (TCHazardMitigationPlan-RFP2020/DraftHMGPlan11-20/Draft%20Woodland%20Park%20Jurisdiction%20Annex_110320.pdf)

AChecker WCAG 2-AA (https://achecker.ca/checker/index.php?uri=referer&gid=WCAG2-AA) *This webpage conforms with accessibility standards to ensure the content can be accessed by everyone.*
For more information about Website Accessibility, ***click here (https://www.w3.org/TR/WCAG20/#a)***

Teller County 2021 Hazard Mitigation Plan Update

Community Presentation

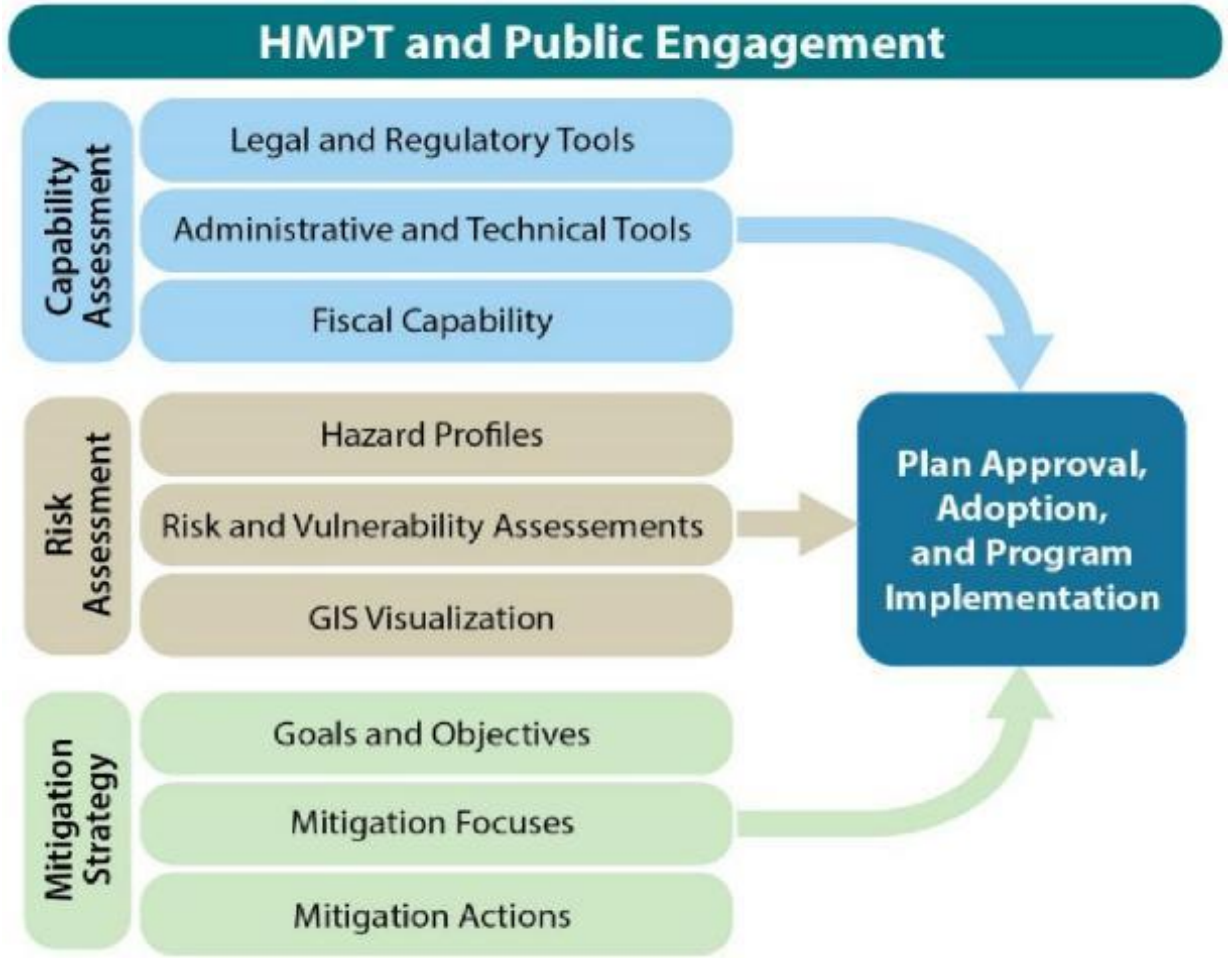
November 10, 2020 – 6 p.m. Mountain

Welcome and Introductions



What is hazard mitigation?

- A commitment to reduce risks posed by hazards
- A comprehensive and inclusive planning process
- Development of a mitigation strategy with clear and concrete actions



What has changed in the plan?

Key changes in the 2021 HMP update include:

- Reorganized capabilities assessment to meet DHSEM standards
- Revised risk assessment to discuss recent hazard events and changing conditions that have resulted in increased or decreased vulnerability
- Added epidemic/pandemic as a hazard and expanded the profiles for hazardous materials and subsidence, sink holes, and soil erosion
- Revised mitigation strategies with an emphasis on actions focused on long-term risk reduction
- Expanded mitigation strategy to consider FEMA lifelines and State resiliency prioritization criteria
- Added jurisdictional annexes for the planning partners

What is included in the plan?

Part 1: Planning Process Overview
- Plan Methodology
- Teller County Profile
- County Capability Assessment

Part 2: Risk Assessment
- Methodology
- Hazard Profiles

Part 3: Mitigation Strategy
- Plan Goals and Objectives
- Mitigation Strategy
- Implementation

Jurisdictional Annexes
- Woodland Park
- Victor
- Cripple Creek
- Four Mile FPD

What hazards are we concerned about?

- Wildfire
- Thunderstorms, High Winds, and Hail
- Landslide
- Tornado
- Hazardous Materials
- Severe Winter Weather
- Epidemic/Pandemic
- Drought and Extreme Temperature
- Subsidence, Sink Holes, and Soil Erosion
- Dam Failure
- Earthquake
- Flood



High Chateau Fire, *Helen H. Richardson for The Denver Post*

How are hazards ranked?

Teller County - Local Hazards							
	Probability	Magnitude	Onset	Duration		Average	Rank
Wildfire	5.00	4.00	4.00	3.00		4.33	1
Thunderstorms, High Winds, and Hail	5.00	4.00	3.00	2.00		4.00	2
Landslide	4.00	2.00	5.00	2.00		3.67	3
Tornado	3.00	3.00	5.00	1.00		3.67	3
Hazardous Materials	3.00	2.00	5.00	1.00		3.33	5
Severe Winter Weather	5.00	2.00	3.00	2.00		3.33	5
Epidemic/Pandemic	3.00	5.00	2.00	5.00		3.33	5
Drought and Extreme Temperature	4.00	2.00	3.00	4.00		3.00	8
Subsidence, Sink Holes, and Soil Erosion	3.00	1.00	5.00	2.00		3.00	8
Dam Failure	1.00	2.00	5.00	1.00		2.67	10
Earthquake	1.00	2.00	5.00	3.00		2.67	10
Flood	3.00	2.00	3.00	1.00		2.67	10



How do we mitigate hazards?

- Local Plans and Regulations (ex. update land use code)
- Structure and Infrastructure Projects (ex. seismic retrofit)
- Natural Systems Protection (ex. wildfire fuels management, burn scar revegetation)
- Education and Awareness Programs (ex. public outreach campaign)



What mitigation strategies are being considered?

- Future updates of the Growth Management Plan will include data from the current HMP and incorporate risk reduction principles (Multiple Hazards)
- Update Teller County codes and policies as necessary and warranted by changing current conditions and potential effects of natural hazards (Multiple Hazards)
- Form a Teller County Wildfire Council to mitigate fire risk (Wildfire)
- Establish a wood-chipping program that will assist residents in chipping woody debris and maintaining defensible space on their properties (Wildfire)
- Adopt current versions of building codes as appropriate to ensure minimum safety standards (particularly related to wind loads and roof construction) for homes and other buildings in the County (Thunderstorms, High Winds, and Hail/ Tornado)
- Continue to identify and mark areas of high landslide risk. Compile this information to include in the next HMP update (Landslide)

What mitigation strategies are being considered?

- Establish a Teller County Emergency Response Team (multijurisdictional) for severe winter weather (e.g., snowstorms) to identify mitigation needs (Severe Winter Weather)
- Integrate with partners to slow the spread of COVID-19 (Epidemic/Pandemic)
- Increase contact tracing, improve testing, and community compliance related to COVID-19 (Epidemic/Pandemic)
- Identify new well sites for communities affected by dropping water tables and redundant sources of water, potentially through a service agreement with a regional supplier (Drought and Extreme Temperature)

Actions included by participating jurisdictions focus on wildfire, dam failure, earthquake, and flood hazards.

How can I get involved?

- Read the draft plan on the County's website: https://www.co.teller.co.us/OEM/HMP2020.aspx
- Send any comments to oem@co.teller.co.us by November 20, 2020
- Learn more at: https://www.co.teller.co.us/OEM/default.aspx

Survey Quick Facts

- More than 85 responses, mostly from county residents and landowners
- Almost 70 percent of respondents are very concerned about the impacts of natural disasters in their communities
- Wildfires; drought and extreme temperatures; and severe t-storms, high winds, and hail are main hazards of concern

Teller County 2021 Hazard Mitigation Plan

Appendix E-1: Maps

L:\Buffalo\Hazard_Mitigation\Maps\MXDs\Teller_County\FigD-1_Overview.mxd

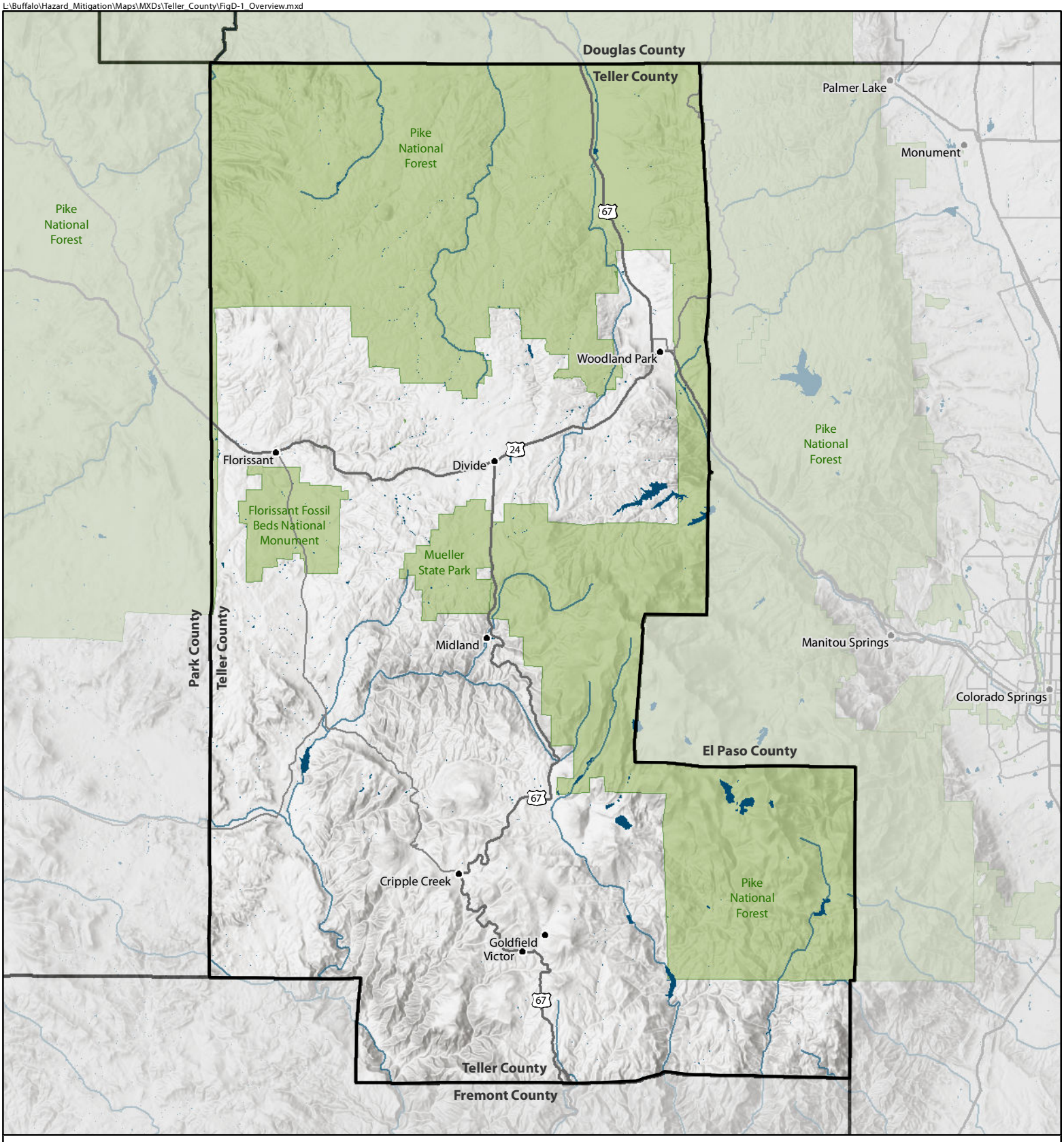


Figure E-1

Overview

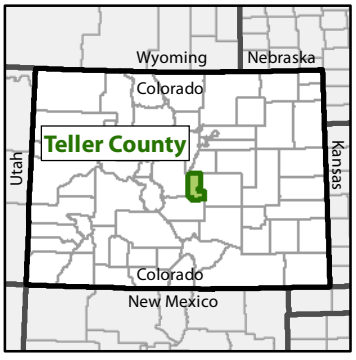
Teller County
Hazard Mitigation Plan

- Town
- Stream
- Highway
- Road
- Waterbody
- Park
- County Boundary

0 3.5 7
Miles

N
W E
S

September 2020



Source: CO 2020, ESRI 2019

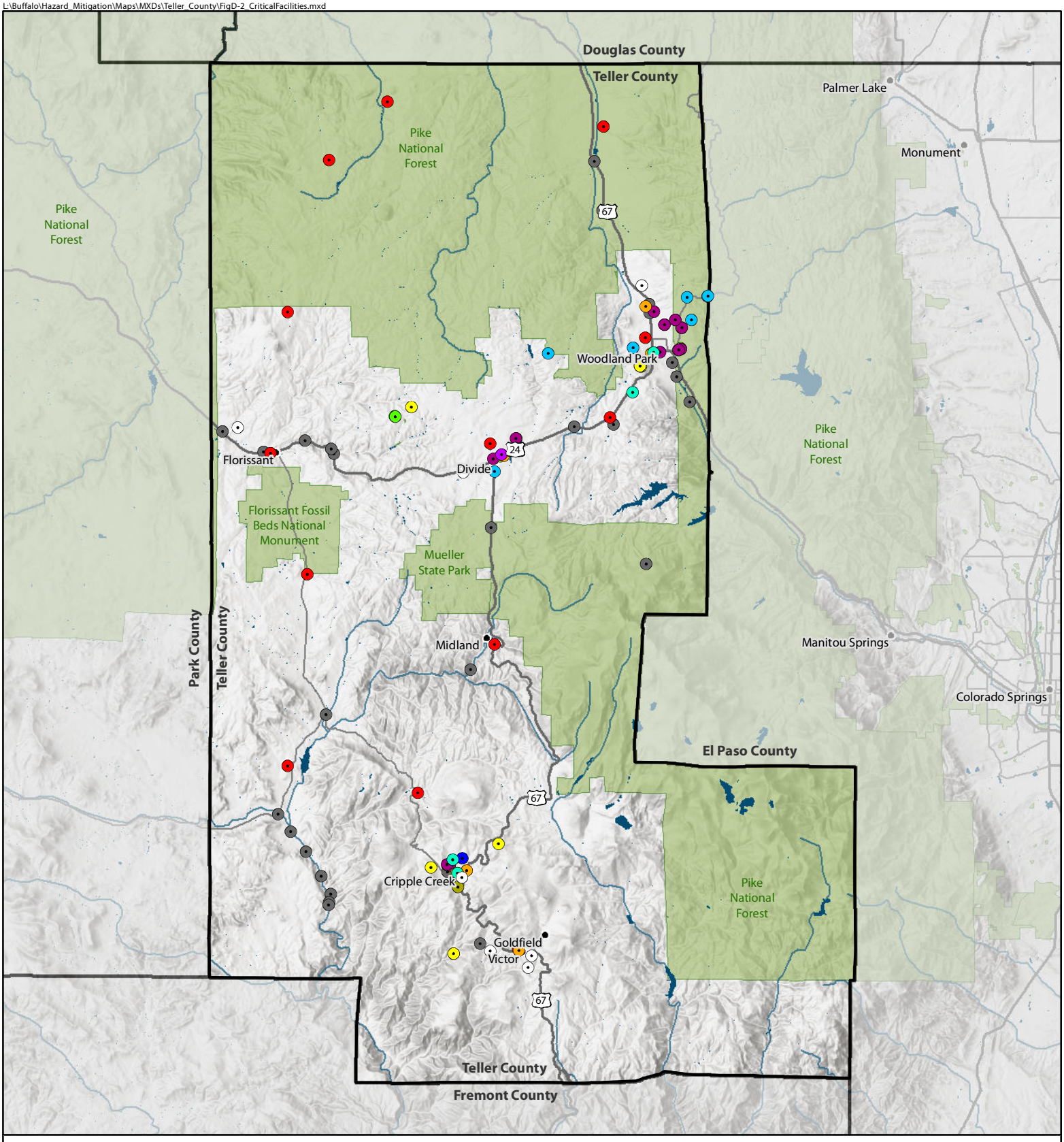


Figure E-2

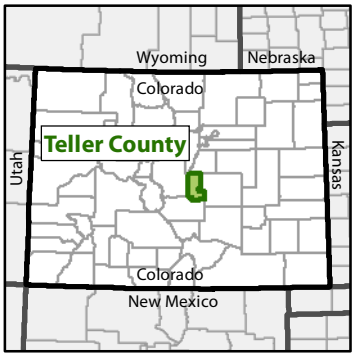
Critical Facilities

Teller County
Hazard Mitigation Plan

Town
Stream
Highway
Road
Waterbody
Park
County Boundary

Bridge
Communication
Electric Substation
Emergency Operations Center
Fire Station
Hospital
Law Enforcement

National Shelter System
School
Wastewater Treatment Plant
Water
Water Treatment



0 2.5 5
Miles

Source: CO 2020; Teller Co. 2020; ESRI 2019; HIFLD 2018, 2019; DOJ 2019; USGS 2019, 2020; FEMA 2020; FCC 2018; NTAD 2016

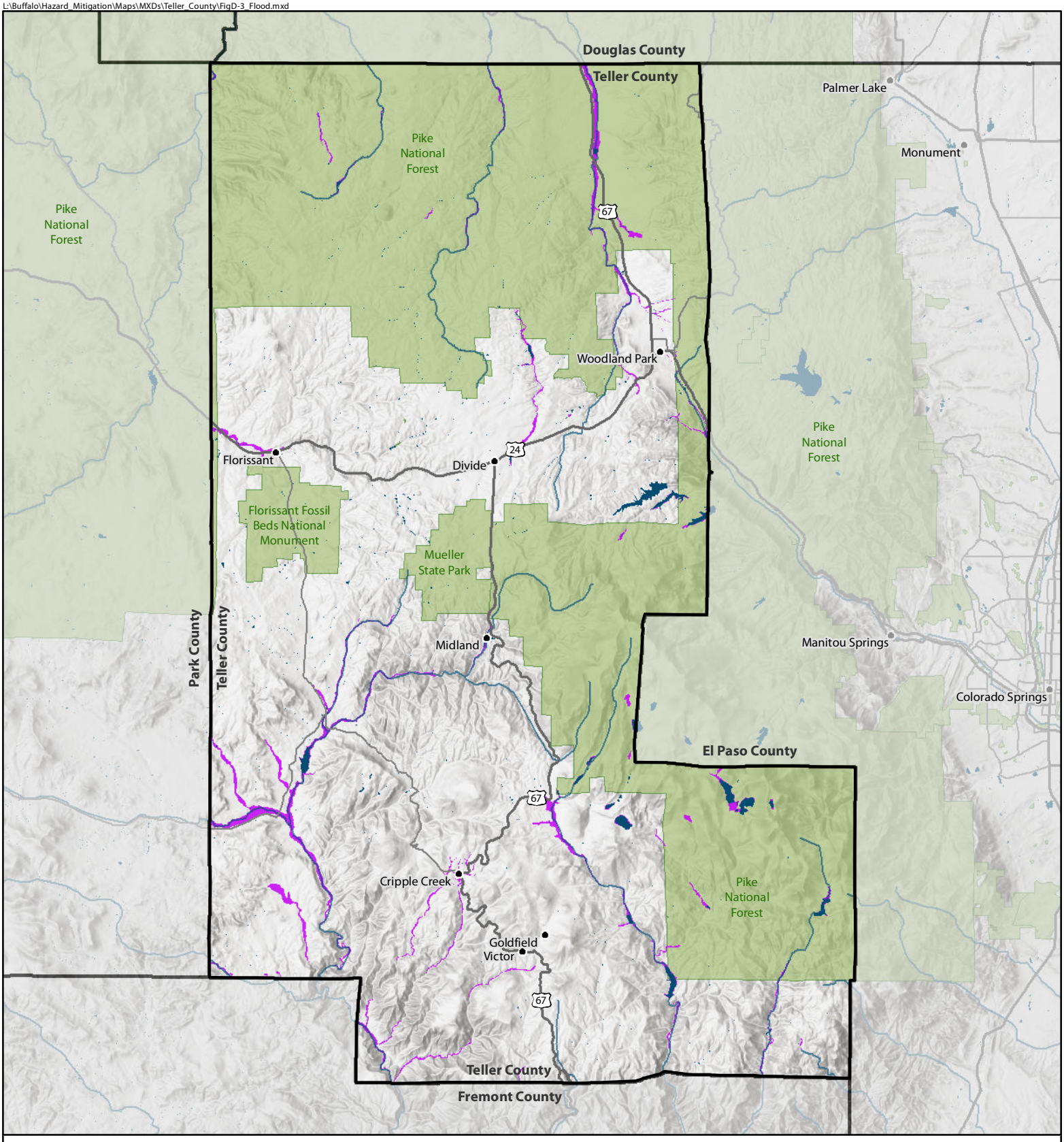


Figure E-3A

Flood Hazard

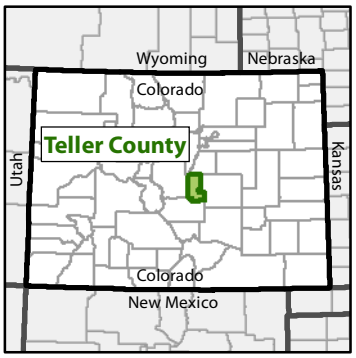
Teller County
Hazard Mitigation Plan

- Town
- Stream
- Highway
- Road
- Waterbody
- Park
- County Boundary
- 100-yr Floodplain

0 3.5 7
Miles

N
W E
S

September 2020



Source: CO 2020, ESRI 2019, FEMA 2018

L:\Buffalo\Hazard_Mitigation\Maps\MXDs\Teller_County\FigD-3_Flood_DDP_v2.mxd

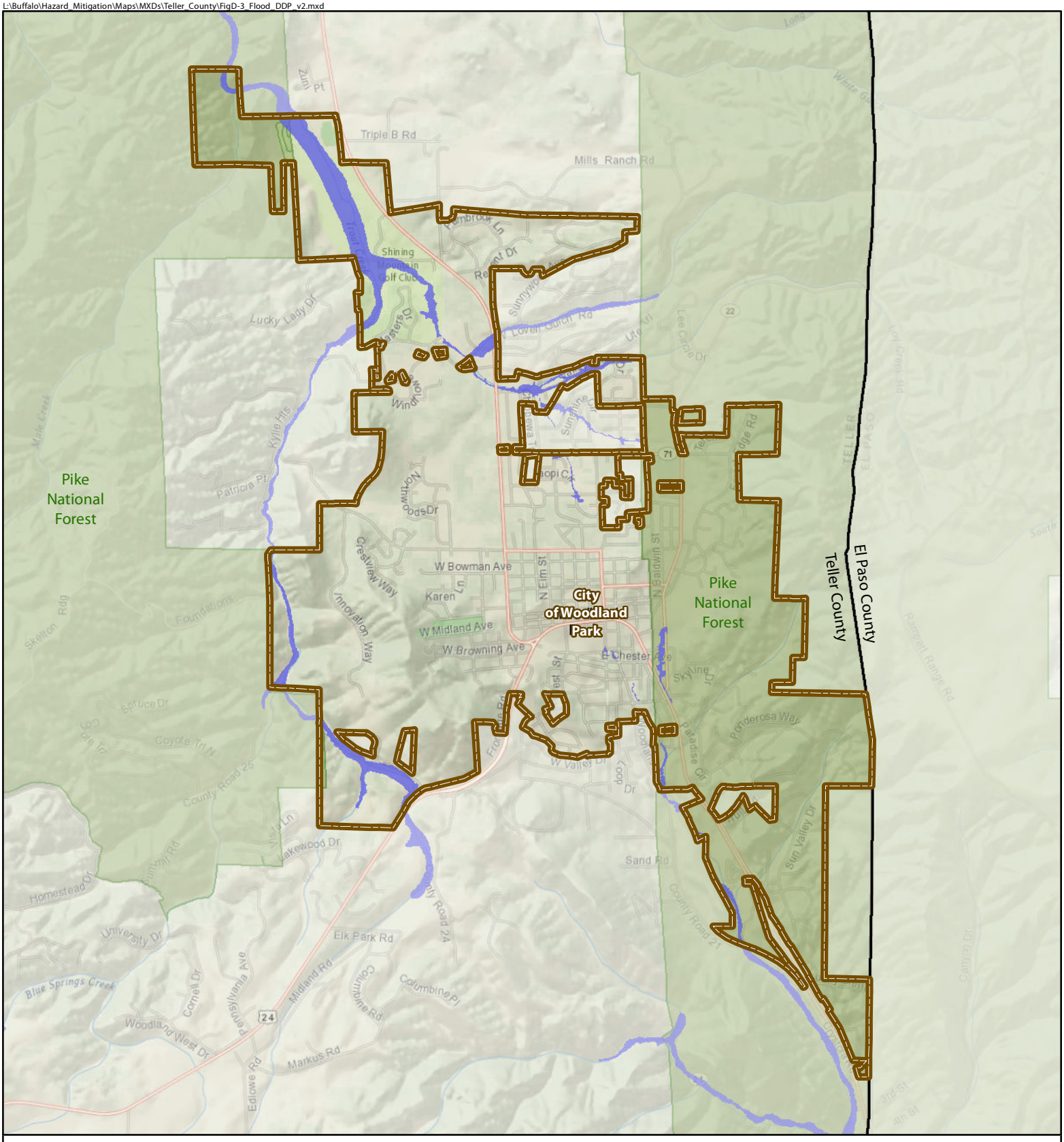


Figure E-3B

Flood Hazard
City of Woodland Park

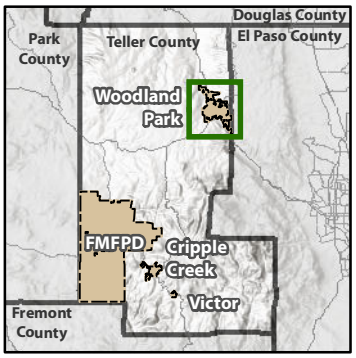
Teller County
Hazard Mitigation Plan

- 100-yr Floodplain
- Jurisdiction Boundary
- County Boundary
- Pike National Forest

0 0.25 0.5 0.75 1
Miles

N
W E
S

September 2020



Source: CO 2020, ESRI 2019, FEMA 2018

L:\Buffalo\Hazard_Mitigation\Maps\MXDs\Teller_County\FigD-3_Flood_DDP_v2.mxd

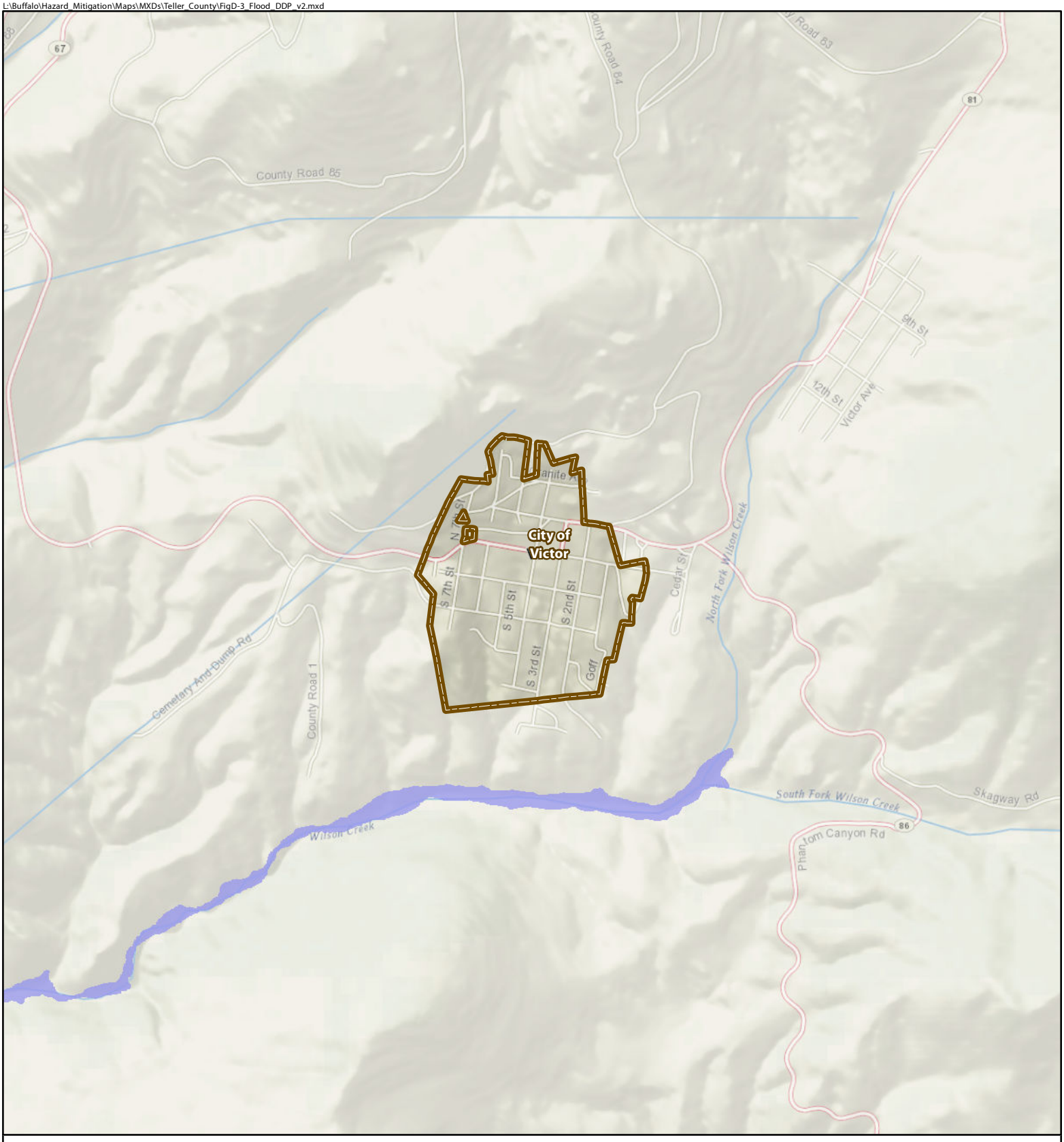


Figure E-3C

Flood Hazard
City of Victor

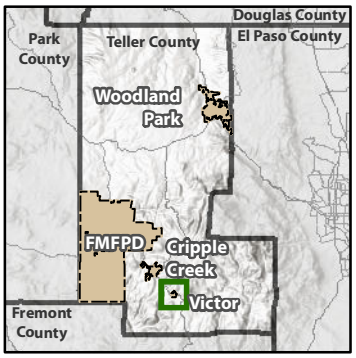
Teller County
Hazard Mitigation Plan

100-yr Floodplain
Jurisdiction Boundary

0 0.25 0.5
Miles

N
W E
S

September 2020



Source: CO 2020, ESRI 2019, FEMA 2018

L:\Buffalo\Hazard_Mitigation\Maps\MXDs\Teller_County\FigD-3_Flood_DDP_v2.mxd

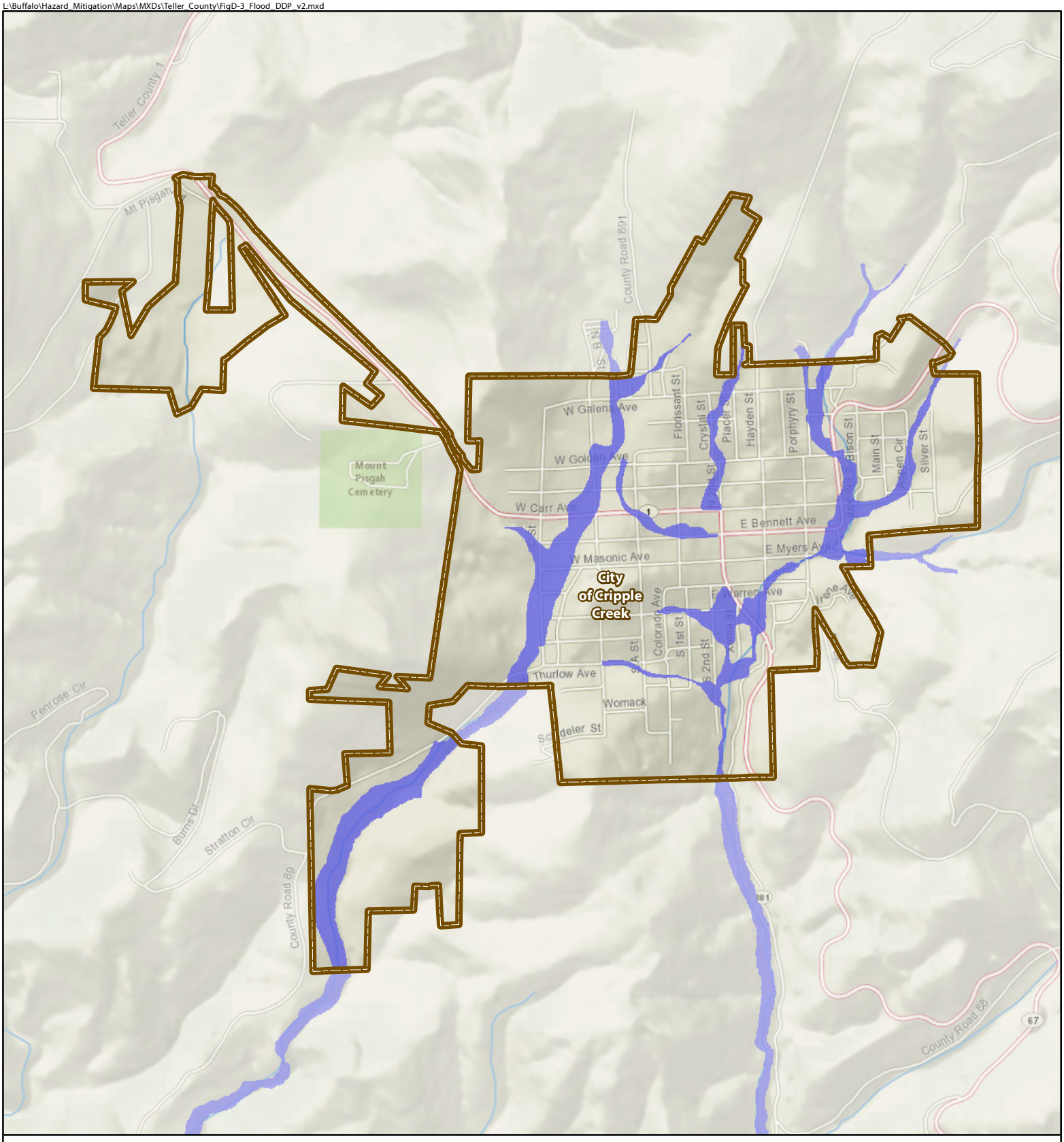


Figure E-3D

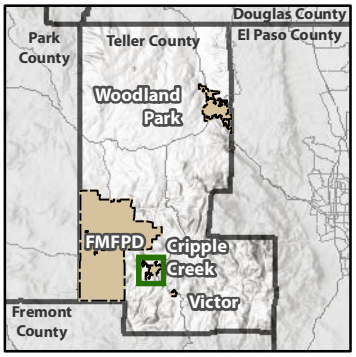
Flood Hazard
City of Cripple Creek

Teller County
Hazard Mitigation Plan

100-yr Floodplain
Jurisdiction Boundary

N
W E
S

September 2020



0 0.25 0.5
Miles

Source: CO 2020, ESRI 2019, FEMA 2018

L:\Buffalo\Hazard_Mitigation\Maps\MXDs\Teller_County\FigD-3_Flood_DDP_v2.mxd

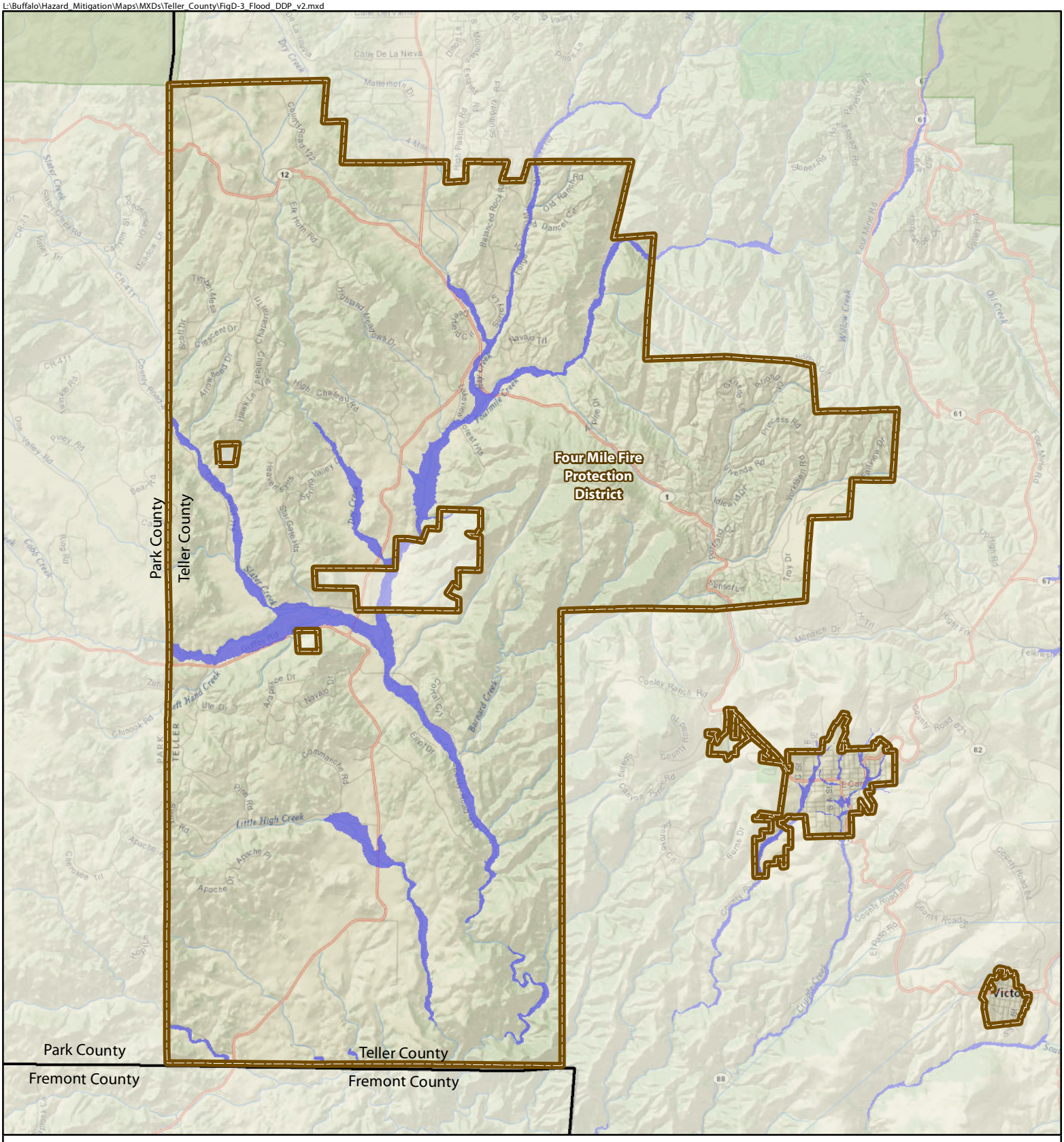


Figure E-3E

Flood Hazard
Four Mile Fire Protection District

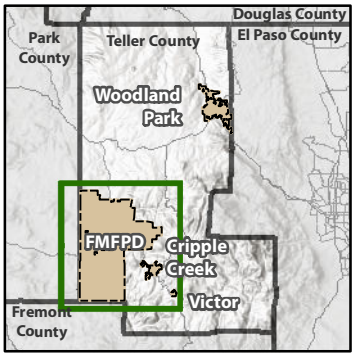
Teller County

100-yr Floodplain
Jurisdiction Boundary
County Boundary
Pike National Forest

0 0.5 1 1.5 2
Miles

N
W E
S

September 2020



Source: CO 2020, ESRI 2019, FEMA 2018

L:\Buffalo\Hazard_Mitigation\Maps\MXDs\Teller_County\FigD-4_Wildfire.mxd

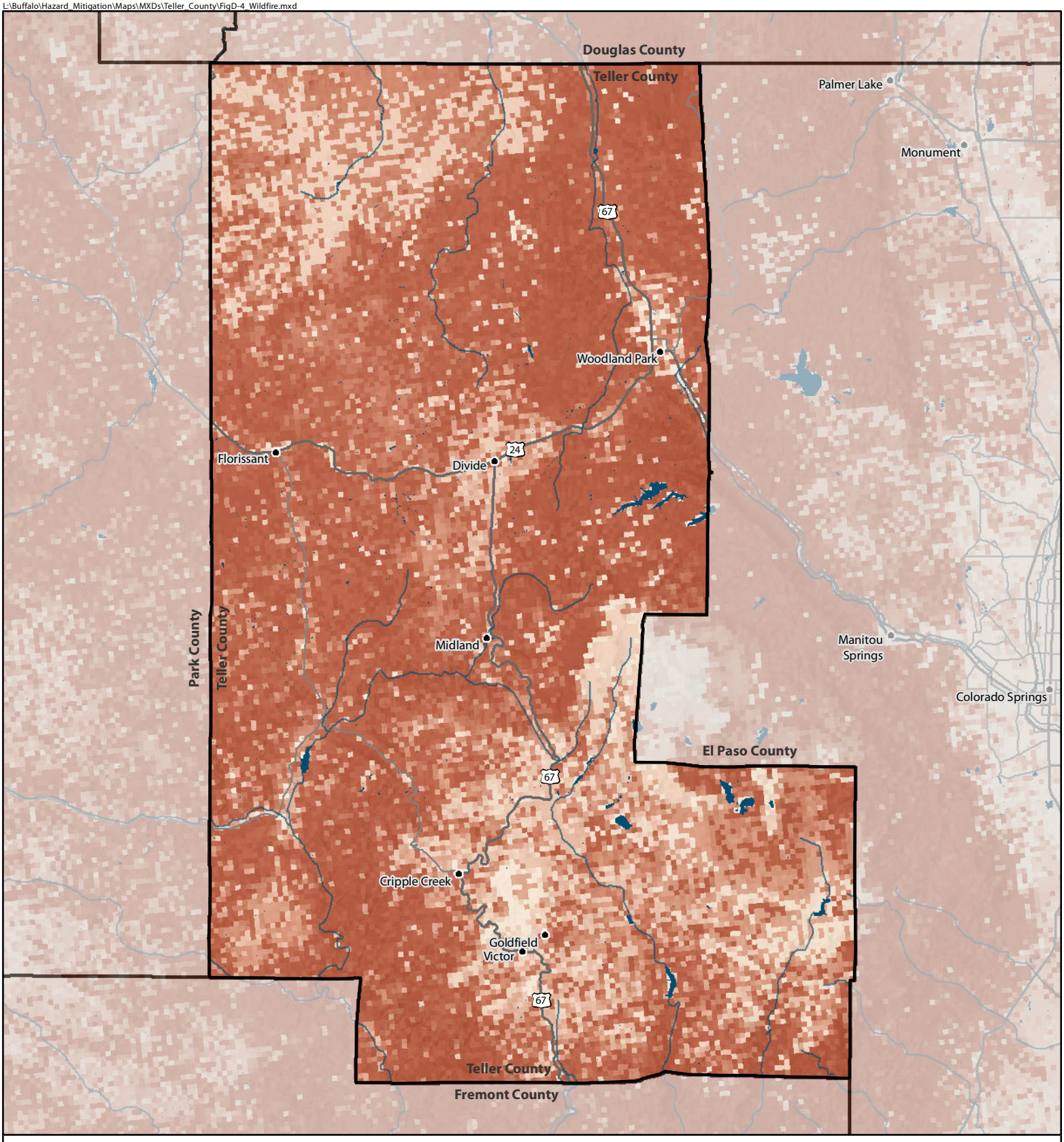


Figure E-4

Wildfire Hazard

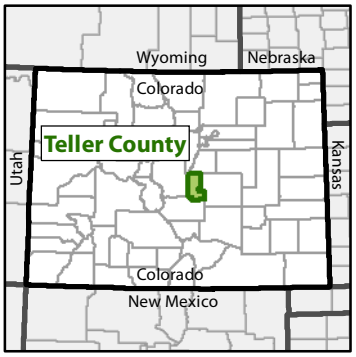
Teller County
Hazard Mitigation Plan

Town
Stream
Highway
Road
Waterbody
County Boundary

Wildland Fire Potential
High
Low

N
W E
S

September 2020



0 3.5 7
Miles

Source: CO 2020, ESRI 2019, USGS 2018

L:\Buffalo\Hazard_Mitigation\Maps\MXDs\Teller_County\FigD-5_Landslide.mxd

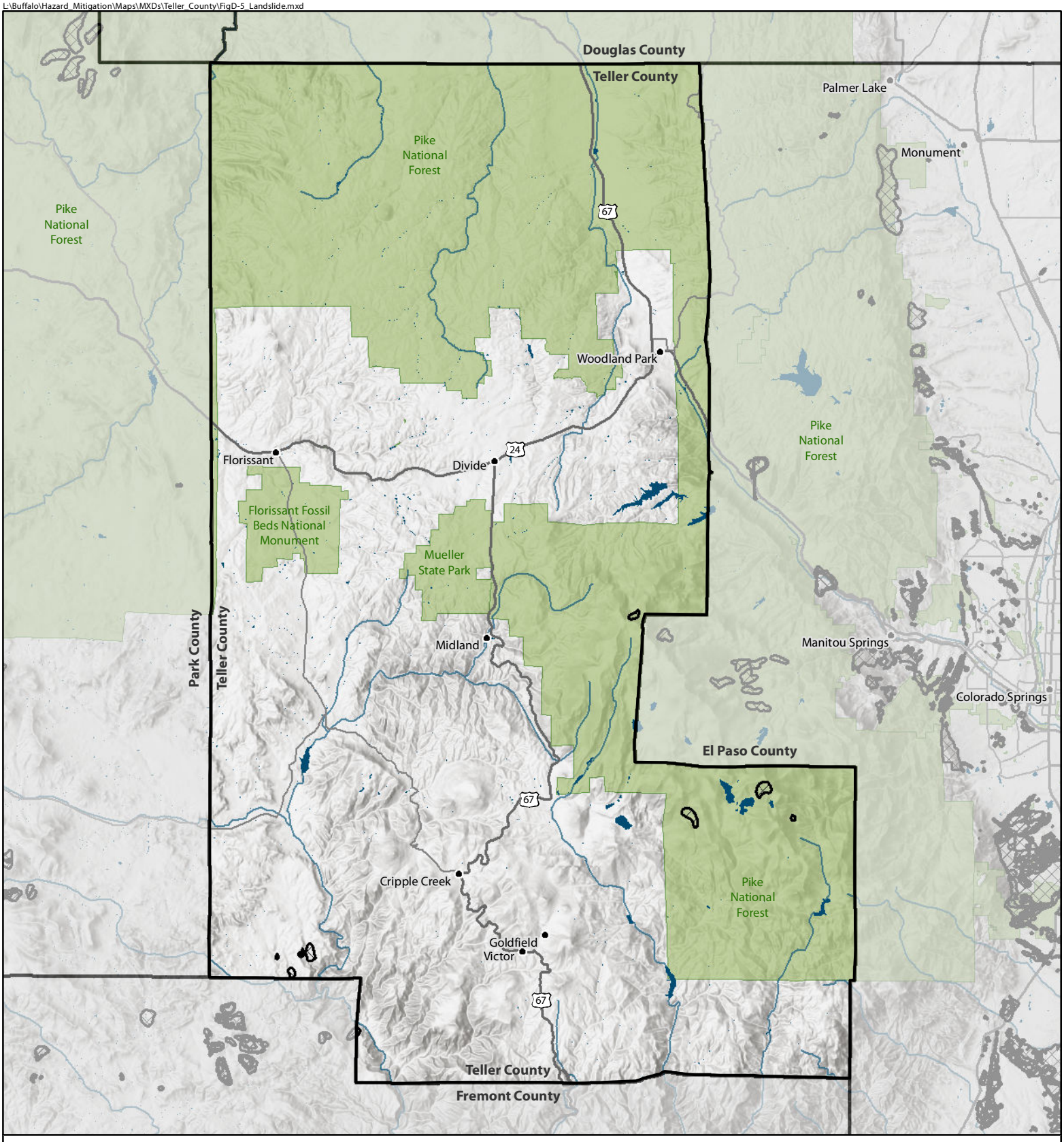


Figure E-5

Landslide Hazard

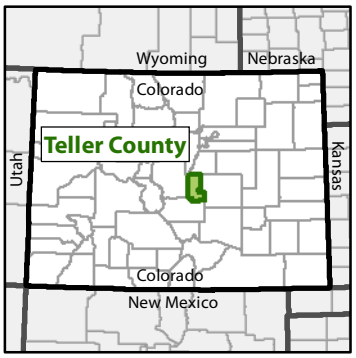
Teller County
Hazard Mitigation Plan

- Town
- Stream
- Highway
- Road
- Waterbody
- Park
- County Boundary
- Landslide Debris

0 3.5 7
Miles

N
W E
S

September 2020



Source: CO 2020, ESRI 2019

L:\Buffalo\Hazard_Mitigation\Maps\MXDs\Teller_County\FigD-6_HazMat.mxd

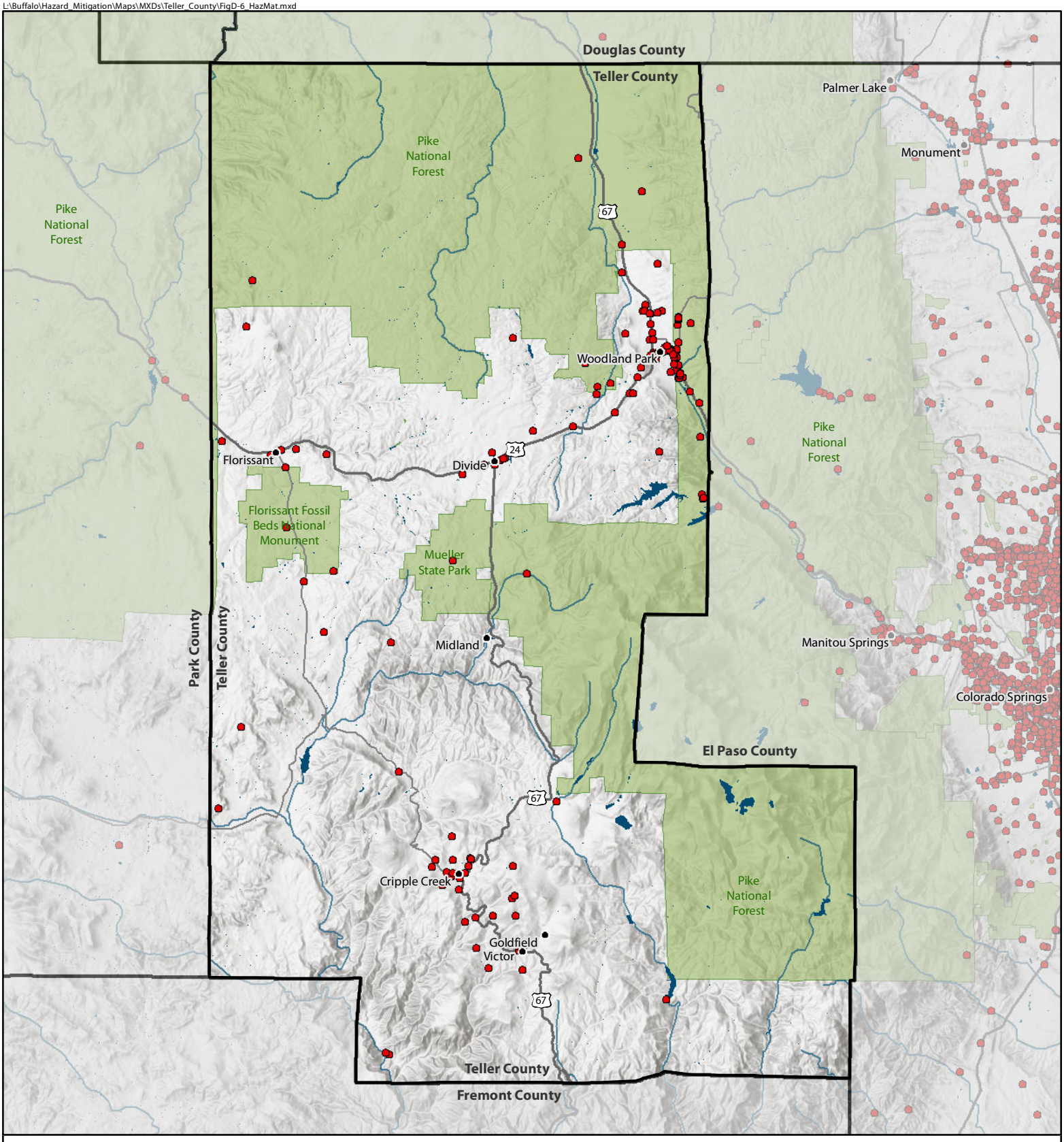


Figure E-6

Hazardous Materials

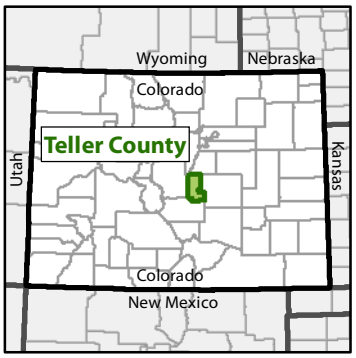
Teller County
Hazard Mitigation Plan

- Hazardous Materials Facility
- Town
- Stream
- Highway
- Road
- Waterbody
- Park
- County Boundary

0 3.5 7
Miles

N
W E
S

September 2020



Source: CO 2020, EPA FRS 2020, ESRI 2019

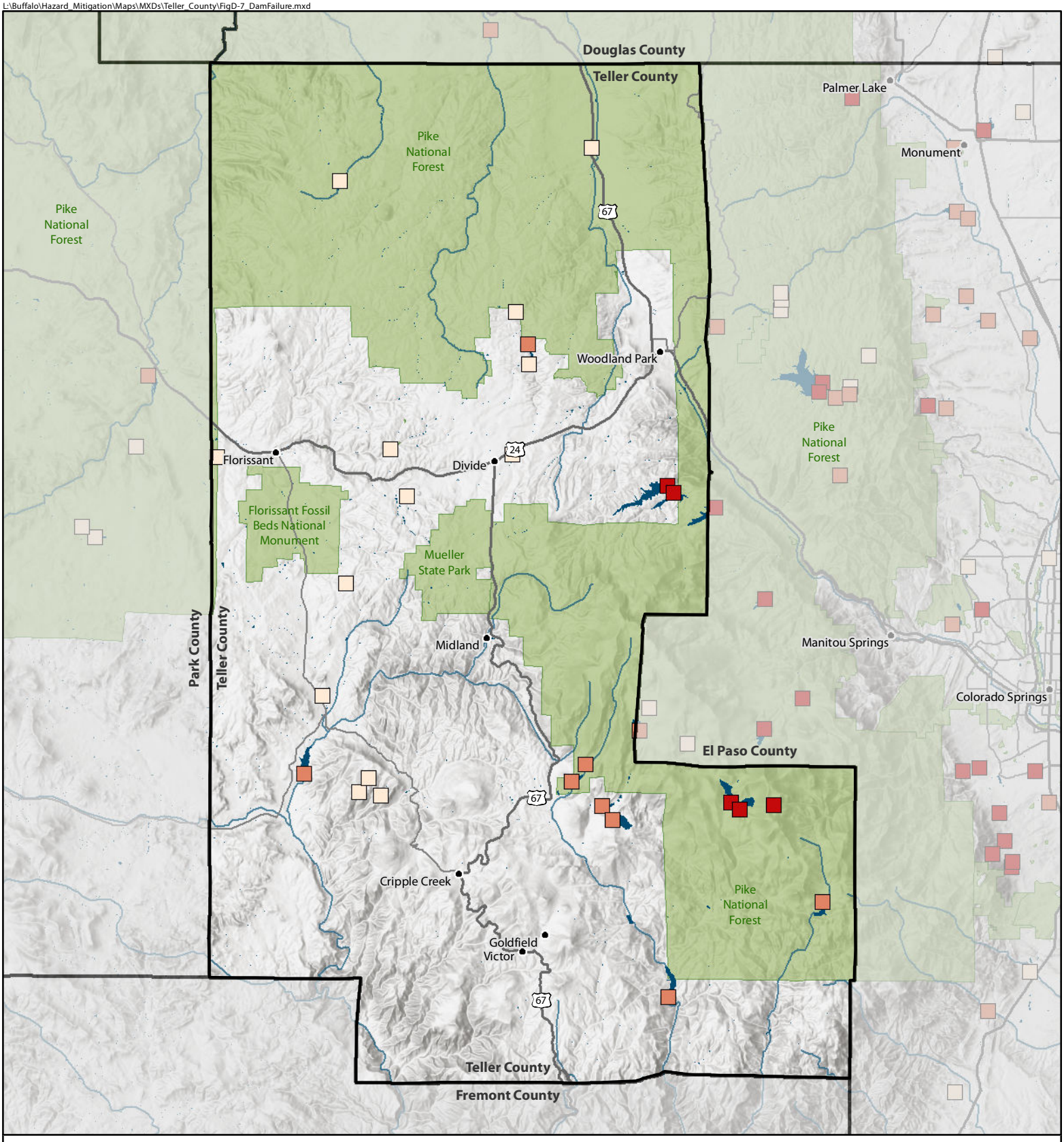


Figure E-7

Dam Failure Hazard

Teller County
Hazard Mitigation Plan

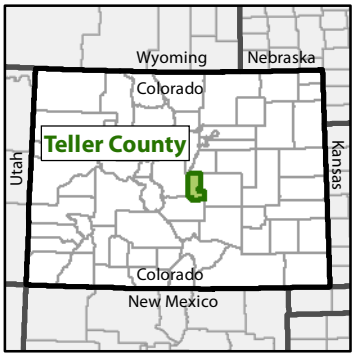
Town
Stream
Highway
Road
Waterbody
Park
County Boundary

Dam Failure Hazard
High
Significant
Low

0 3.5 7
Miles

N
W E
S

September 2020



Source: CO 2020, ESRI 2019

L:\Buffalo\Hazard_Mitigation\Maps\MXDs\Teller_County\FigD-8_Earthquakes.mxd

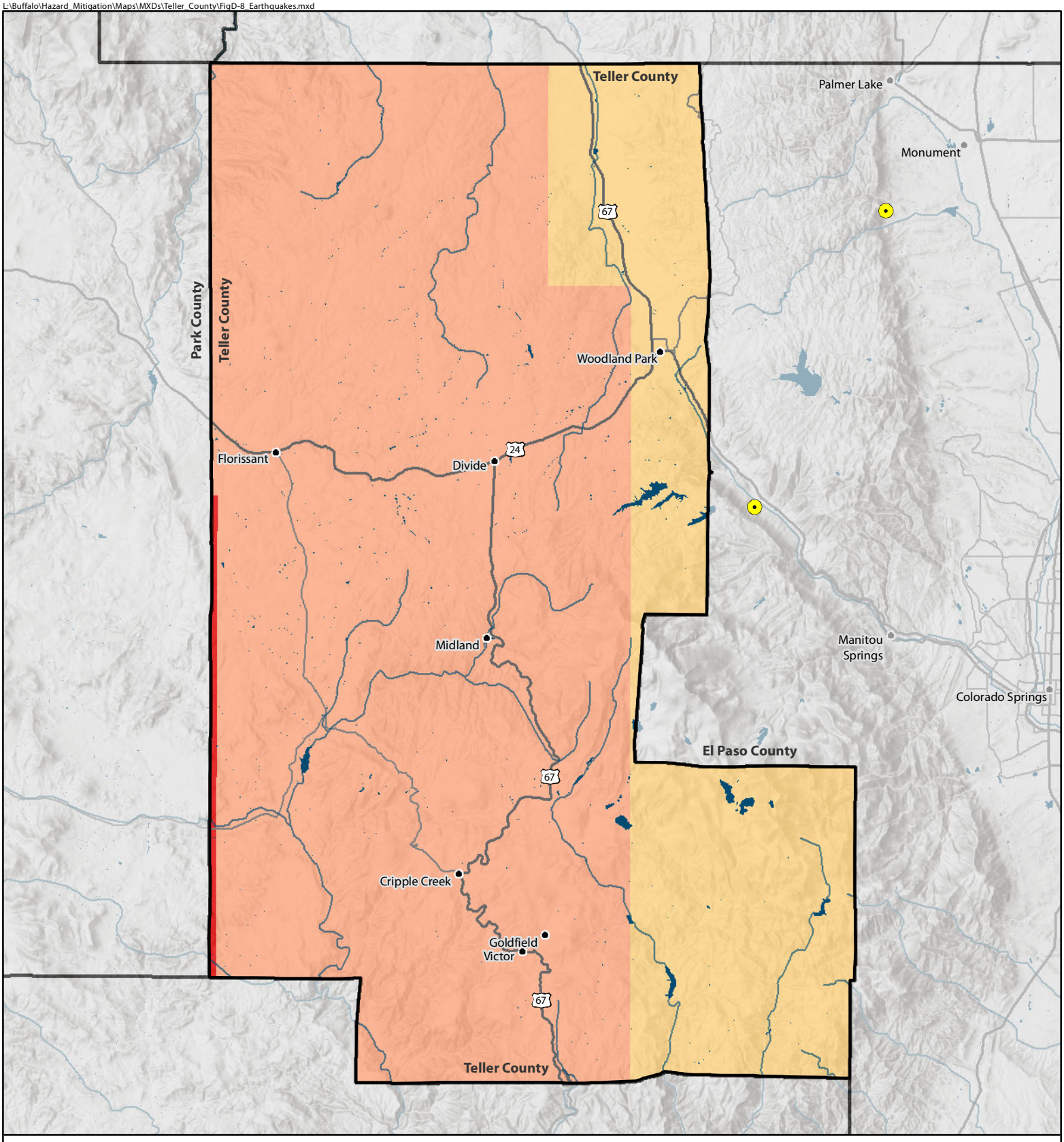


Figure E-8

Earthquake Hazard

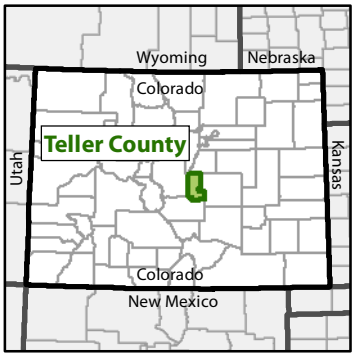
Teller County
Hazard Mitigation Plan

Earthquake Epicenter
Town
Stream
Highway
Road
Waterbody
County Boundary

Peak Ground Acceleration 2500-yr
0.100-0.109
0.110-0.119
0.120-0.121

N
W E
S

September 2020



0 3.5 7
Miles

Source: CO 2020, ESRI 2019

Teller County 2021 Hazard Mitigation Plan

Appendix E-2: Risk Assessment Materials

Teller County - Local Hazards

	Probability (1=lowest, 5=highest)	*Magnitude (1=lowest, 5=highest)*	*Onset (1=slowest, 5=fastest)*	*Duration (1=shortest, 5=longest)*	*Average*	*Rank*
Wildfire	5.00	4.00	4.00	3.00	4.33	1
Thunderstorms, High Winds, and Hail	5.00	4.00	3.00	2.00	4.00	2
Landslide	4.00	2.00	5.00	2.00	3.67	3
Tornado	3.00	3.00	5.00	1.00	3.67	3
Hazardous Materials	3.00	2.00	5.00	1.00	3.33	5
Severe Winter Weather	5.00	2.00	3.00	2.00	3.33	5
Epidemic/Pandemic	3.00	5.00	2.00	5.00	3.33	5
Drought and Extreme Temperature	4.00	2.00	3.00	4.00	3.00	8
Subsidence, Sink Holes, and Soil Erosion	3.00	1.00	5.00	2.00	3.00	8
Dam Failure	1.00	2.00	5.00	1.00	2.67	10
Earthquake	1.00	2.00	5.00	3.00	2.67	10
Flood	3.00	2.00	3.00	1.00	2.67	10

Teller County - 2020 Hazard Rankings

Agency/Organization: Woodland Park Police Department **Name:** Robin Lindberg

	Probability/ Frequency (1=lowest, 5=highest)	Magnitude (1=lowest, 5=highest)	Onset (1=slowest, 5=fastest)	Duration (1=shortest, 5=longest)	Change in Risk (↑, ↓, ↔ since 2015)	Notes
Dam Failure	1	3	5	2	↔	
Drought and Extreme Temperature	1	2	2	5	↑	
Earthquake	1	5	5	4	↔	
Flood	2	2	4	2	↔	
Hazardous Materials	3	4	5	1	↑	Change in product for more ↑ risk
Landslide	2	3	5	3	↔	
Severe Winter Weather	4	3	4	3	↔	
Subsidence, Sink Holes, and Soil Erosion	2	2	3	2	↔	
Thunderstorms, High Winds, and Hail	5	2	4	1	↔	
Tornado	2	2	5	1	↔	
Wildfire	4	3	5	3	↑	

Teller County - 2021 Hazard Rank-ings						
Agency/Organization: **Four Mile Fire Protection District**						Name:
	Probability/ Frequency (1=lowest, 5=highest)	*Magnitude (1=lowest, 5=highest)*	*Onset (1=slowest, 5=fastest)*	*Duration (1=shortest, 5=longest)*	*Change in Risk (↑, ↓, ↔ since 2015)*	*Notes*
Dam Failure	1	1	3	2	same	
Drought and Extreme Temperature	3	3	1	5	same	
Earthquake	1	1	1	1	same	
Flood	1	3	4	3	same	
Hazardous Materials	1	1	1	1	same	
Landslide	1	3	4	1	same	
Severe Winter Weather	3	3	3	3	same	
Subsidence, Sink Holes, and Soil Erosion	1	3	4	1	same	
Thunderstorms, High Winds, and Hail	4	3	5	1	same	
Tornado	2	2	2	1	same	
Wildfire	5	5	5	5	same	

NAME	Facility Type	Earthquake Hazard, Peak Ground Acceleration, 2500yr	Flood Hazard	Landslide Debris Area	Wildfire Hazard	Distance to Dam in Miles	Distance to Hazardous Materials Facility in Miles	Fire District #	Fire District Name	City/ Muni
CRIPPLE CK-1	Bridge	0.116	Within 100-yr Floodplain	Not within Landslide	Very Low	3.30	0.05	7	NONE	CRIPPLE CREEK
CSG-PIKES PEAKA	Bridge	0.107	Not within 100-yr Floodplain	Not within Landslide	High	2.48	2.81	7	NONE	TELLER COUNTY
H-16-I	Bridge	0.109	Within 100-yr Floodplain	Not within Landslide	Very Low	0.46	0.55	2	NETFPD	TELLER COUNTY
H-16-L	Bridge	0.107	Within 100-yr Floodplain	Not within Landslide	Very Low	4.16	0.15	2	NETFPD	WOODLAND PARK
H-16-M	Bridge	0.109	Within 100-yr Floodplain	Not within Landslide	Very Low	2.09	1.24	2	NETFPD	TELLER COUNTY
I-15-AM	Bridge	0.118	Within 100-yr Floodplain	Not within Landslide	Very Low	0.85	0.30	5	FFPD	TELLER COUNTY
I-15-AO	Bridge	0.117	Not within 100-yr Floodplain	Not within Landslide	Very Low	1.85	0.26	5	FFPD	TELLER COUNTY
I-15-T	Bridge	0.117	Not within 100-yr Floodplain	Not within Landslide	Very Low	1.92	0.24	5	FFPD	TELLER COUNTY
I-15-Y	Bridge	0.117	Not within 100-yr Floodplain	Not within Landslide	Very Low	2.80	0.40	5	FFPD	TELLER COUNTY
I-15-Z	Bridge	0.118	Within 100-yr Floodplain	Not within Landslide	Very Low	1.52	0.25	5	FFPD	TELLER COUNTY
I-16-AA	Bridge	0.113	Not within 100-yr Floodplain	Not within Landslide	Very Low	2.50	1.64	4	DFPD	TELLER COUNTY
TELL-02-0.20-1A	Bridge	0.119	Within 100-yr Floodplain	Not within Landslide	Very Low	1.56	1.96	8	FMFPD	TELLER COUNTY
TELL-03-0.03-01	Bridge	0.117	Within 100-yr Floodplain	Not within Landslide	Very High	0.62	2.71	8	FMFPD	TELLER COUNTY
TELL-04-3.00-01	Bridge	0.113	Not within 100-yr Floodplain	Not within Landslide	High	4.84	2.77	4	DFPD	TELLER COUNTY
TELL-06-1.15-1A	Bridge	0.107	Within 100-yr Floodplain	Not within Landslide	Very Low	2.84	0.31	2	NETFPD	WOODLAND PARK
TELL-09-113-0.2	Bridge	0.119	Within 100-yr Floodplain	Not within Landslide	Very Low	1.93	2.48	8	FMFPD	TELLER COUNTY

NAME	Facility Type	Earthquake Hazard, Peak Ground Acceleration, 2500yr	Flood Hazard	Landslide Debris Area	Wildfire Hazard	Distance to Dam in Miles	Distance to Hazardous Materials Facility in Miles	Fire District #	Fire District Name	City/ Muni
TELL-10-113-1.0	Bridge	0.117	Within 100-yr Floodplain	Not within Landslide	Low	2.53	3.19	8	FMFPD	TELLER COUNTY
TELL-11-113-2.0	Bridge	0.117	Within 100-yr Floodplain	Not within Landslide	Low	3.01	3.60	8	FMFPD	TELLER COUNTY
TELL-12-113-2.7	Bridge	0.117	Within 100-yr Floodplain	Not within Landslide	Medium	3.45	3.40	8	FMFPD	TELLER COUNTY
TELL-13-113-3.0	Bridge	0.117	Within 100-yr Floodplain	Not within Landslide	Low	3.73	3.52	8	FMFPD	TELLER COUNTY
TELL-14-113-3.2	Bridge	0.117	Within 100-yr Floodplain	Not within Landslide	High	3.81	3.57	8	FMFPD	TELLER COUNTY
WOODLAND PARK-1	Bridge	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	3.58	0.03	2	NETFPD	WOODLAND PARK
H-16-N	Bridge	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.09	0.03	2	NETFPD	WOODLAND PARK
I-16-A	Bridge	0.11	Not within 100-yr Floodplain	Not within Landslide	Very Low	2.21	0.08	2	NETFPD	TELLER COUNTY
I-16-AE	Bridge	0.112	Within 100-yr Floodplain	Not within Landslide	Very Low	0.28	0.07	4	DFPD	TELLER COUNTY
J-16-C	Bridge	0.113	Not within 100-yr Floodplain	Not within Landslide	Very Low	5.81	0.18	7	NONE	TELLER COUNTY
NWP-05.68A	Bridge	0.11	Not within 100-yr Floodplain	Not within Landslide	Very Low	2.67	0.40	2	NETFPD	TELLER COUNTY
WOODLAND PARK-2	Bridge	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.02	0.04	2	NETFPD	WOODLAND PARK
LOUISIANA CALLCOMM, LLC	Com Tower	0.116	Not within 100-yr Floodplain	Not within Landslide	Very Low	5.67	0.77	7	NONE	TELLER COUNTY
SKYTEL SPECTRUM LLC	Com Tower	0.107	Not within 100-yr Floodplain	Not within Landslide	High	3.65	0.02	2	NETFPD	WOODLAND PARK
FONES WEST DIGITAL SYSTEMS, INC	Com Tower	0.116	Not within 100-yr Floodplain	Not within Landslide	Very Low	5.67	0.77	7	NONE	TELLER COUNTY
AMS SPECTRUM HOLDINGS, LLC	Com Tower	0.107	Not within 100-yr Floodplain	Not within Landslide	High	3.63	0.01	2	NETFPD	WOODLAND PARK

NAME	Facility Type	Earthquake Hazard, Peak Ground Acceleration, 2500yr	Flood Hazard	Landslide Debris Area	Wildfire Hazard	Distance to Dam in Miles	Distance to Hazardous Materials Facility in Miles	Fire District #	Fire District Name	City/ Muni
USA MOBILITY WIRELESS, INC	Com Tower	0.107	Not within 100-yr Floodplain	Not within Landslide	High	3.62	0.03	2	NETFPD	WOODLAND PARK
USA MOBILITY WIRELESS, INC	Com Tower	0.113	Not within 100-yr Floodplain	Not within Landslide	Medium	3.13	0.83	7	NONE	TELLER COUNTY
USA MOBILITY WIRELESS, INC	Com Tower	0.115	Not within 100-yr Floodplain	Not within Landslide	Low	1.54	2.73	4	DFPD	TELLER COUNTY
USA MOBILITY WIRELESS, INC	Com Tower	0.116	Not within 100-yr Floodplain	Not within Landslide	Very Low	2.85	0.02	7	NONE	CRIPPLE CREEK
USA MOBILITY WIRELESS, INC	Com Tower	0.107	Not within 100-yr Floodplain	Not within Landslide	High	3.63	0.01	2	NETFPD	WOODLAND PARK
UNKNOWN201802	Electric Substation	0.113	Not within 100-yr Floodplain	Not within Landslide	Very Low	5.85	0.48	7	NONE	TELLER COUNTY
UNKNOWN201803	Electric Substation	0.113	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.64	0.34	7	NONE	TELLER COUNTY
DIVIDE	Electric Substation	0.115	Not within 100-yr Floodplain	Not within Landslide	Very Low	1.71	0.04	4	DFPD	TELLER COUNTY
WOODLAND PARK	Electric Substation	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.17	0.59	2	NETFPD	TELLER COUNTY
UNKNOWN203961	Electric Substation	0.118	Not within 100-yr Floodplain	Not within Landslide	Very Low	1.17	0.68	5	FFPD	TELLER COUNTY
CRIPPLE CREEK	Electric Substation	0.116	Not within 100-yr Floodplain	Not within Landslide	Very Low	3.75	0.08	7	NONE	CRIPPLE CREEK
TAP208122	Electric Substation	0.113	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.66	0.22	7	NONE	TELLER COUNTY
TELLER COUNTY OFFICE OF EMERGENCY MANAGEMENT	Emergency Operations Center	0.112	Not within 100-yr Floodplain	Not within Landslide	Very Low	0.35	0.10	4	DFPD	TELLER COUNTY
Northeast Teller County Fire Protection District Station 3	Fire Station	0.11	Not within 100-yr Floodplain	Not within Landslide	Low	2.91	0.22	2	NETFPD	TELLER COUNTY

NAME	Facility Type	Earthquake Hazard, Peak Ground Acceleration, 2500yr	Flood Hazard	Landslide Debris Area	Wildfire Hazard	Distance to Dam in Miles	Distance to Hazardous Materials Facility in Miles	Fire District #	Fire District Name	City/ Muni
Northeast Teller County Fire Protection District Station 1	Fire Station	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	3.82	0.15	2	NETFPD	WOODLAND PARK
Four Mile Fire Protection District Station 1	Fire Station	0.119	Not within 100-yr Floodplain	Not within Landslide	Very Low	0.60	2.00	8	FMFPD	TELLER COUNTY
Florissant Fire and Rescue Station 1	Fire Station	0.118	Not within 100-yr Floodplain	Not within Landslide	Low	1.75	0.02	5	FFPD	TELLER COUNTY
Divide Fire Protection District Shoemaker Station	Fire Station	0.112	Not within 100-yr Floodplain	Not within Landslide	Very Low	0.79	0.26	4	DFPD	TELLER COUNTY
Four Mile Fire Protection District Station 2	Fire Station	0.115	Not within 100-yr Floodplain	Not within Landslide	Low	1.20	0.96	8	FMFPD	TELLER COUNTY
Victor Fire Department	Fire Station	0.113	Not within 100-yr Floodplain	Not within Landslide	Very Low	5.13	0.02	7	NONE	VICTOR
Divide Fire Protection District Station 2 - Rainbow Valley	Fire Station	0.113	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.91	2.55	4	DFPD	TELLER COUNTY
Mountain Communities Fire Protection District Station 1 Turkey Rock	Fire Station	0.114	Not within 100-yr Floodplain	Not within Landslide	Very Low	2.99	6.47	3	MCFPD	TELLER COUNTY
Cripple Creek City Fire and Emergency Services	Fire Station	0.116	Within 100-yr Floodplain	Not within Landslide	Very Low	3.55	0.16	7	NONE	CRIPPLE CREEK
Florissant Fire and Rescue Station 2 - Colorado Mountain Estates	Fire Station	0.117	Not within 100-yr Floodplain	Not within Landslide	Low	1.30	0.25	5	FFPD	TELLER COUNTY

NAME	Facility Type	Earthquake Hazard, Peak Ground Acceleration, 2500yr	Flood Hazard	Landslide Debris Area	Wildfire Hazard	Distance to Dam in Miles	Distance to Hazardous Materials Facility in Miles	Fire District #	Fire District Name	City/ Muni
Florissant Fire and Rescue Station 3	Fire Station	0.118	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.62	1.43	5	FFPD	TELLER COUNTY
Mountain Communities Fire Protection District Station 3 Lutheran Valley	Fire Station	0.116	Not within 100-yr Floodplain	Not within Landslide	Very Low	0.76	4.63	3	MCFPD	TELLER COUNTY
Northeast Teller County Fire Protection District Station 2 - Manitou Experimental Forest	Fire Station	0.109	Not within 100-yr Floodplain	Not within Landslide	Medium	0.78	1.29	2	NETFPD	TELLER COUNTY
PIKES PEAK REGIONAL HOSPITAL	Hospital	0.107	Not within 100-yr Floodplain	Not within Landslide	Low	3.26	0.03	2	NETFPD	TELLER COUNTY
Teller County Hospital - Cripple Creek Rehabilitation and Wellness Center	Hospital	0.116	Not within 100-yr Floodplain	Not within Landslide	Very Low	3.14	0.03	7	NONE	CRIPPLE CREEK
Southwest Teller County Emergency Medical Services	Hospital	0.116	Within 100-yr Floodplain	Not within Landslide	Very Low	3.55	0.16	7	NONE	CRIPPLE CREEK
Penrose Mountain Urgent Care Woodland Park	Hospital	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.09	0.03	2	NETFPD	WOODLAND PARK
Southwest Teller County Emergency Medical Services	Hospital	0.116	Within 100-yr Floodplain	Not within Landslide	Very Low	3.55	0.16	7	NONE	CRIPPLE CREEK
COLORADO STATE PATROL - TROOP 2B GAMING	Law Enforcement	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.02	0.03	2	NETFPD	WOODLAND PARK
CRIPPLE CREEK POLICE DEPARTMENT	Law Enforcement	0.116	Within 100-yr Floodplain	Not within Landslide	Very Low	3.52	0.12	7	NONE	CRIPPLE CREEK

NAME	Facility Type	Earthquake Hazard, Peak Ground Acceleration, 2500yr	Flood Hazard	Landslide Debris Area	Wildfire Hazard	Distance to Dam in Miles	Distance to Hazardous Materials Facility in Miles	Fire District #	Fire District Name	City/ Muni
VICTOR POLICE DEPARTMENT	Law Enforcement	0.113	Not within 100-yr Floodplain	Not within Landslide	Very Low	5.09	0.03	7	NONE	VICTOR
WOODLAND PARK POLICE DEPARTMENT	Law Enforcement	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.02	0.10	2	NETFPD	WOODLAND PARK
TELLER COUNTY SHERIFFS OFFICE	Law Enforcement	0.112	Not within 100-yr Floodplain	Not within Landslide	Very Low	0.28	0.04	4	DFPD	TELLER COUNTY
COLORADO DIVISION OF GAMING - CRIPPLE CREEK STATION	Law Enforcement	0.113	Not within 100-yr Floodplain	Not within Landslide	Very Low	3.71	0.11	7	NONE	CRIPPLE CREEK
WOODLAND PARK HIGH SCHOOL	National Shelter System	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.49	0.15	2	NETFPD	WOODLAND PARK
HIGH VIEW BAPTIST CHURCH	National Shelter System	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	5.05	0.21	2	NETFPD	WOODLAND PARK
WOODLAND PARK COMMUNITY CHURCH	National Shelter System	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.24	0.08	2	NETFPD	WOODLAND PARK
CRIPPLE CREEK HENRY HACK COMMUNITY CENTER	National Shelter System	0.116	Not within 100-yr Floodplain	Not within Landslide	Very Low	3.57	0.14	7	NONE	CRIPPLE CREEK
GATEWAY ELEMENTARY SCHOOL	National Shelter System	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.45	0.08	2	NETFPD	WOODLAND PARK
LITTLE CHAPEL OF THE HILLS	National Shelter System	0.112	Not within 100-yr Floodplain	Not within Landslide	Very Low	0.63	0.04	4	DFPD	TELLER COUNTY
CRIPPLE CREEK-VICTOR JUNIOR/SR HIGH SCHOOL	National Shelter System	0.116	Not within 100-yr Floodplain	Not within Landslide	Very Low	3.19	0.20	7	NONE	CRIPPLE CREEK

NAME	Facility Type	Earthquake Hazard, Peak Ground Acceleration, 2500yr	Flood Hazard	Landslide Debris Area	Wildfire Hazard	Distance to Dam in Miles	Distance to Hazardous Materials Facility in Miles	Fire District #	Fire District Name	City/ Muni
COLUMBINE ELEMENTARY SCHOOL	National Shelter System	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.49	0.43	2	NETFPD	WOODLAND PARK
WOODLAND PARK MIDDLE SCHOOL	National Shelter System	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.87	0.10	2	NETFPD	WOODLAND PARK
OUR LADY OF THE WOODS PARISH	National Shelter System	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.30	0.04	2	NETFPD	WOODLAND PARK
SUMMIT ELEMENTARY SCHOOL	National Shelter System	0.112	Not within 100-yr Floodplain	Not within Landslide	Very Low	0.52	0.30	4	DFPD	TELLER COUNTY
CRESSON ELEMENTARY SCHOOL	National Shelter System	0.116	Not within 100-yr Floodplain	Not within Landslide	Very Low	3.11	0.23	7	NONE	CRIPPLE CREEK
Private	School	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	5.03	0.20	2	NETFPD	WOODLAND PARK
Private	School	0.112	Not within 100-yr Floodplain	Not within Landslide	Very Low	0.39	0.10	4	DFPD	TELLER COUNTY
Cresson Elementary School	School	0.116	Not within 100-yr Floodplain	Not within Landslide	Very Low	3.14	0.23	7	NONE	CRIPPLE CREEK
Cripple Creek Victor Junior - Senior High School	School	0.116	Not within 100-yr Floodplain	Not within Landslide	Very Low	3.19	0.20	7	NONE	CRIPPLE CREEK
Bethel School (historical)	School	0.115	Not within 100-yr Floodplain	Not within Landslide	Very Low	1.08	2.56	4	DFPD	TELLER COUNTY
Bethel School	School	0.115	Not within 100-yr Floodplain	Not within Landslide	Very Low	1.07	2.57	4	DFPD	TELLER COUNTY
Columbine Elementary School	School	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.49	0.43	2	NETFPD	WOODLAND PARK
Woodland Park Middle School	School	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.87	0.10	2	NETFPD	WOODLAND PARK

NAME	Facility Type	Earthquake Hazard, Peak Ground Acceleration, 2500yr	Flood Hazard	Landslide Debris Area	Wildfire Hazard	Distance to Dam in Miles	Distance to Hazardous Materials Facility in Miles	Fire District #	Fire District Name	City/ Muni
Summit Elementary School	School	0.112	Not within 100-yr Floodplain	Not within Landslide	Very Low	0.52	0.30	4	DFPD	TELLER COUNTY
Woodland Park High School	School	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.51	0.14	2	NETFPD	WOODLAND PARK
Gateway Elementary School	School	0.107	Not within 100-yr Floodplain	Not within Landslide	Very Low	4.45	0.08	2	NETFPD	WOODLAND PARK
Tranquil Acres	Water Tank	0.11	Not within 100-yr Floodplain	Not within Landslide	High	0.72	1.22	2	NETFPD	TELLER COUNTY
Divide	Water Tank	0.112	Not within 100-yr Floodplain	Not within Landslide	Very Low	0.81	0.25	4	DFPD	TELLER COUNTY
WP	Water Tank	0.107	Not within 100-yr Floodplain	Not within Landslide	High	3.43	0.58	2	NETFPD	TELLER COUNTY
WP	Water Tank	0.107	Not within 100-yr Floodplain	Not within Landslide	Low	5.40	0.68	2	NETFPD	TELLER COUNTY
WP	Water Tank	0.107	Not within 100-yr Floodplain	Not within Landslide	Medium	5.38	0.07	2	NETFPD	WOODLAND PARK
WP	Water Tank	0.107	Not within 100-yr Floodplain	Not within Landslide	High	6.05	1.01	2	NETFPD	TELLER COUNTY
WP	Water Tank	0.107	Not within 100-yr Floodplain	Not within Landslide	High	6.08	1.03	2	NETFPD	TELLER COUNTY

Flood **Total Acres**

Sum of Acres	Column Labels		
Row Labels	100-yr Floodplain	Not within Flood Zone	Grand Total
CRIPPLE CREEK	109	868	976
GREEN MTN FALLS		190	190
UNINCORPORATED	5,542	346,201	351,743
VICTOR		182	182
WOODLAND PARK	167	4,067	4,234
Grand Total	**5,818**	**351,507**	**357,325**

Wildfire **Total Acres**

Sum of Acres	Column Labels					
Row Labels	High	Low	Medium	Very High	Very Low	Grand Total
CRIPPLE CREEK		63			914	976
GREEN MTN FALLS	62	21	18	88		190
UNINCORPORATED	32,265	75,951	34,110	10,053	199,363	351,743
VICTOR					182	182
WOODLAND PARK	323	718	511	18	2,664	4,234
Grand Total	**32,650**	**76,753**	**34,639**	**10,159**	**203,123**	**357,325**

Landslide **Total Acres**

Sum of Acres	Column Labels		
Row Labels	Landslide Debris	Not within Landslide	Grand Total
CRIPPLE CREEK		976	976
GREEN MTN FALLS		190	190
UNINCORPORATED	396	351,347	351,743
VICTOR		182	182
WOODLAND PARK		4,234	4,234
Grand Total	**396**	**356,929**	**357,325**

Eathquake (PGA)		Total Acres		
Row Labels	**PGA: 0.100-0.109**	**PGA: 0.110-0.119**	**PGA: 0.120-0.121**	**Grand Total**
CRIPPLE CREEK		976		976
GREEN MTN FALLS	190			190
UNINCORPORATED	84,919	264,586	2,237	351,743
VICTOR		182		182
WOODLAND PARK	3,624	611		4,234
Grand Total	**88,732**	**266,356**	**2,237**	**357,325**

Wildfire

Jurisdiction	CRIPPLE CREEK

Count of TYPE	Column Labels		
Row Labels	Low	Very Low	Grand Total
Agricultural	1	10	11
Comm Vacant	5	196	201
Commercial		59	59
Exempt	8	88	96
Mineral		1	1
Mixed Use Comm		12	12
Mixed Use Res		2	2
Mobile Home		24	24
NONE	1	1	2
Residential	9	593	602
State	17	6	23
Vacant Land	31	622	653
Grand Total	**72**	**1,614**	**1,686**

Jurisdiction	CRIPPLE CREEK

Sum of Total Assessed	Column Labels		
Row Labels	Low	Very Low	Grand Total
Agricultural	$90	$110	$200
Comm Vacant	$116,620	$11,054,360	$11,170,980
Commercial		$29,372,280	$29,372,280
Exempt	$778,610	$4,487,320	$5,265,930
Mineral		$3,910	$3,910
Mixed Use Comm		$2,496,360	$2,496,360
Mixed Use Res		$70,590	$70,590
Mobile Home		$24,620	$24,620
NONE	$0	$0	$0
Residential	$71,500	$4,986,420	$5,057,920
State	$160	$4,320	$4,480
Vacant Land	$142,100	$2,034,400	$2,176,500
Grand Total	**$1,109,080**	**$54,534,690**	**$55,643,770**

Landslide

Jurisdiction	CRIPPLE CREEK

Count of TYPE	Column Labels Not within Landslide Debris Area	Grand Total
Row Labels		
Agricultural	11	11
Comm Vacant	201	201
Commercial	59	59
Exempt	96	96
Mineral	1	1
Mixed Use Comm	12	12
Mixed Use Res	2	2
Mobile Home	24	24
NONE	2	2
Residential	602	602
State	23	23
Vacant Land	653	653
Grand Total	**1,686**	**1,686**

Jurisdiction	CRIPPLE CREEK

Sum of Total Assessed	Column Labels Not within Landslide Debris Area	Grand Total
Row Labels		
Agricultural	$200	$200
Comm Vacant	$11,170,980	$11,170,980
Commercial	$29,372,280	$29,372,280
Exempt	$5,265,930	$5,265,930
Mineral	$3,910	$3,910
Mixed Use Comm	$2,496,360	$2,496,360
Mixed Use Res	$70,590	$70,590
Mobile Home	$24,620	$24,620
NONE	$0	$0
Residential	$5,057,920	$5,057,920
State	$4,480	$4,480
Vacant Land	$2,176,500	$2,176,500
Grand Total	**$55,643,770**	**$55,643,770**

Flood

Jurisdiction	CRIPPLE CREEK

Count of TYPE	Column Labels		
Row Labels	100yr Floodplain	Not within Floodplain	Grand Total
Agricultural	7	4	11
Comm Vacant	72	129	201
Commercial	9	50	59
Exempt	27	69	96
Mineral		1	1
Mixed Use Comm	3	9	12
Mixed Use Res	1	1	2
Mobile Home	3	21	24
NONE	1	1	2
Residential	77	525	602
State	19	4	23
Vacant Land	118	535	653
Grand Total	**337**	**1,349**	**1,686**

Jurisdiction	CRIPPLE CREEK

Sum of Total Assessed	Column Labels		
Row Labels	100yr Floodplain	Not within Floodplain	Grand Total
Agricultural	$150	$50	$200
Comm Vacant	$2,654,580	$8,516,400	$11,170,980
Commercial	$7,546,450	$21,825,830	$29,372,280
Exempt	$3,101,820	$2,164,110	$5,265,930
Mineral		$3,910	$3,910
Mixed Use Comm	$340,950	$2,155,410	$2,496,360
Mixed Use Res	$14,770	$55,820	$70,590
Mobile Home	$4,430	$20,190	$24,620
NONE	$0	$0	$0
Residential	$712,030	$4,345,890	$5,057,920
State	$160	$4,320	$4,480
Vacant Land	$484,370	$1,692,130	$2,176,500
Grand Total	**$14,859,710**	**$40,784,060**	**$55,643,770**

Earthquake

Jurisdiction	CRIPPLE CREEK

Count of TYPE	Column Labels	
Row Labels	**0.110-0.119**	**Grand Total**
Agricultural	11	11
Comm Vacant	201	201
Commercial	59	59
Exempt	96	96
Mineral	1	1
Mixed Use Comm	12	12
Mixed Use Res	2	2
Mobile Home	24	24
NONE	2	2
Residential	602	602
State	23	23
Vacant Land	653	653
Grand Total	**1,686**	**1,686**

Jurisdiction	CRIPPLE CREEK

Sum of Total Assessed	Column Labels	
Row Labels	**0.110-0.119**	**Grand Total**
Agricultural	$200	$200
Comm Vacant	$11,170,980	$11,170,980
Commercial	$29,372,280	$29,372,280
Exempt	$5,265,930	$5,265,930
Mineral	$3,910	$3,910
Mixed Use Comm	$2,496,360	$2,496,360
Mixed Use Res	$70,590	$70,590
Mobile Home	$24,620	$24,620
NONE	$0	$0
Residential	$5,057,920	$5,057,920
State	$4,480	$4,480
Vacant Land	$2,176,500	$2,176,500
Grand Total	**$55,643,770**	**$55,643,770**

Wildfire

FMFPD	Four Mile Fire Protection District

Count of TYPE	Column Labels					
Row Labels	High	Low	Medium	Very High	Very Low	Grand Total
Ag Residential	27	13	10	24	6	80
Agricultural	73	39	21	30	22	185
Commercial		3		1		4
Exempt	11	8	2	4	7	32
Mixed Use Comm	1			2		3
Mobile Home	15	13	4		12	44
NONE	1			3		4
Residential	233	290	60	58	250	891
Vacant Land	321	778	119	109	674	2,001
Grand Total	**682**	**1,144**	**216**	**231**	**971**	**3,244**

FMFPD	Four Mile Fire Protection District

Sum of Total Assessed	Column Labels					
Row Labels	High	Low	Medium	Very High	Very Low	Grand Total
Ag Residential	$756,130	$409,160	$343,950	$754,700	$131,050	$2,394,990
Agricultural	$60,640	$39,720	$21,040	$113,080	$3,040	$237,520
Commercial		$201,590		$960		$202,550
Exempt	$478,200	$182,770	$30,630	$322,710	$361,250	$1,375,560
Mixed Use Comm	$39,210			$157,240		$196,450
Mobile Home	$43,530	$33,180	$13,540		$16,870	$107,120
NONE	$0			$0		$0
Residential	$5,159,650	$5,646,730	$1,188,190	$1,616,480	$4,636,470	$18,247,520
Vacant Land	$3,561,430	$3,714,150	$1,096,820	$1,442,340	$2,695,510	$12,510,250
Grand Total	**$10,098,790**	**$10,227,300**	**$2,694,170**	**$4,407,510**	**$7,844,190**	**$35,271,960**

Landslide

FMFPD	Four Mile Fire Protection District

Count of TYPE	Column Labels		
Row Labels	Landslide Debris	Not within Landslide Debris Area	Grand Total
Ag Residential		80	80
Agricultural		185	185
Commercial		4	4
Exempt	2	30	32
Mixed Use Comm		3	3
Mobile Home		44	44
NONE	2	2	4
Residential		891	891
Vacant Land		2,001	2,001
Grand Total	**4**	**3,240**	**3,244**

FMFPD	Four Mile Fire Protection District

Sum of Total Assessed	Column Labels		
Row Labels	Landslide Debris	Not within Landslide Debris Area	Grand Total
Ag Residential		$2,394,990	$2,394,990
Agricultural		$237,520	$237,520
Commercial		$202,550	$202,550
Exempt	$110,830	$1,264,730	$1,375,560
Mixed Use Comm		$196,450	$196,450
Mobile Home		$107,120	$107,120
NONE	$0	$0	$0
Residential		$18,247,520	$18,247,520
Vacant Land		$12,510,250	$12,510,250
Grand Total	**$110,830**	**$35,161,130**	**$35,271,960**

Flood

FMFPD	Four Mile Fire Protection District

FMFPD	Four Mile Fire Protection District

Count of TYPE	Column Labels		
Row Labels	100yr Floodplain	Not within Floodplain	Grand Total
Ag Residential	29	51	80
Agricultural	41	144	185
Commercial	1	3	4
Exempt	4	28	32
Mixed Use Comm	1	2	3
Mobile Home		44	44
NONE	4		4
Residential	39	852	891
Vacant Land	30	1,971	2,001
Grand Total	**149**	**3,095**	**3,244**

Sum of Total Assessed	Column Labels		
Row Labels	100yr Floodplain	Not within Floodplain	Grand Total
Ag Residential	$838,590	$1,556,400	$2,394,990
Agricultural	$51,370	$186,150	$237,520
Commercial	$960	$201,590	$202,550
Exempt	$249,250	$1,126,310	$1,375,560
Mixed Use Comm	$46,460	$149,990	$196,450
Mobile Home		$107,120	$107,120
NONE	$0		$0
Residential	$1,027,430	$17,220,090	$18,247,520
Vacant Land	$492,470	$12,017,780	$12,510,250
Grand Total	**$2,706,530**	**$32,565,430**	**$35,271,960**

Earthquake

FMFPD	Four Mile Fire Protection District

Count of TYPE	Column Labels		
Row Labels	0.110-0.119	0.120-0.121	Grand Total
Ag Residential	73	7	80
Agricultural	168	17	185
Commercial	4		4
Exempt	30	2	32
Mixed Use Comm	2	1	3
Mobile Home	39	5	44
NONE	2	2	4
Residential	862	29	891
Vacant Land	1,959	42	2,001
Grand Total	**3,139**	**105**	**3,244**

FMFPD	Four Mile Fire Protection District

Sum of Total Assessed	Column Labels		
Row Labels	0.110-0.119	0.120-0.121	Grand Total
Ag Residential	$2,136,160	$258,830	$2,394,990
Agricultural	$226,320	$11,200	$237,520
Commercial	$202,550		$202,550
Exempt	$1,356,590	$18,970	$1,375,560
Mixed Use Comm	$85,670	$110,780	$196,450
Mobile Home	$83,880	$23,240	$107,120
NONE	$0	$0	$0
Residential	$17,676,200	$571,320	$18,247,520
Vacant Land	$11,883,670	$626,580	$12,510,250
Grand Total	**$33,651,040**	**$1,620,920**	**$35,271,960**

Wildfire

Jurisdiction	VICTOR

Count of TYPE	Column Labels	
Row Labels	Very Low	Grand Total
Comm Vacant	14	14
Commercial	27	27
Exempt	43	43
Mineral	3	3
Mixed Use Comm	17	17
Mixed Use Res	1	1
Mobile Home	16	16
NONE	2	2
Residential	321	321
State	3	3
Vacant Land	319	319
Grand Total	**766**	**766**

Jurisdiction	VICTOR

Sum of Total Assessed	Column Labels	
Row Labels	Very Low	Grand Total
Comm Vacant	$49,340	$49,340
Commercial	$1,189,590	$1,189,590
Exempt	$729,870	$729,870
Mineral	$10,010	$10,010
Mixed Use Comm	$435,810	$435,810
Mixed Use Res	$8,840	$8,840
Mobile Home	$16,740	$16,740
NONE	$0	$0
Residential	$1,980,130	$1,980,130
State	$0	$0
Vacant Land	$448,590	$448,590
Grand Total	**$4,868,920**	**$4,868,920**

Landslide

Jurisdiction	VICTOR

Count of TYPE	Column Labels Not within Landslide Debris	
Row Labels	Area	Grand Total
Comm Vacant	14	14
Commercial	27	27
Exempt	43	43
Mineral	3	3
Mixed Use Comm	17	17
Mixed Use Res	1	1
Mobile Home	16	16
NONE	2	2
Residential	321	321
State	3	3
Vacant Land	319	319
Grand Total	**766**	**766**

Jurisdiction	VICTOR

Sum of Total Assessed	Column Labels Not within Landslide Debris	
Row Labels	Area	Grand Total
Comm Vacant	$49,340	$49,340
Commercial	$1,189,590	$1,189,590
Exempt	$729,870	$729,870
Mineral	$10,010	$10,010
Mixed Use Comm	$435,810	$435,810
Mixed Use Res	$8,840	$8,840
Mobile Home	$16,740	$16,740
NONE	$0	$0
Residential	$1,980,130	$1,980,130
State	$0	$0
Vacant Land	$448,590	$448,590
Grand Total	**$4,868,920**	**$4,868,920**

Flood

Jurisdiction	VICTOR

Count of TYPE	Column Labels	
	Not within	
Row Labels	Floodplain	Grand Total
Comm Vacant	14	14
Commercial	27	27
Exempt	43	43
Mineral	3	3
Mixed Use Comm	17	17
Mixed Use Res	1	1
Mobile Home	16	16
NONE	2	2
Residential	321	321
State	3	3
Vacant Land	319	319
Grand Total	**766**	**766**

Jurisdiction	VICTOR

Sum of Total Assessed	Column Labels	
	Not within	
Row Labels	Floodplain	Grand Total
Comm Vacant	$49,340	$49,340
Commercial	$1,189,590	$1,189,590
Exempt	$729,870	$729,870
Mineral	$10,010	$10,010
Mixed Use Comm	$435,810	$435,810
Mixed Use Res	$8,840	$8,840
Mobile Home	$16,740	$16,740
NONE	$0	$0
Residential	$1,980,130	$1,980,130
State	$0	$0
Vacant Land	$448,590	$448,590
Grand Total	**$4,868,920**	**$4,868,920**

Earthquake

Jurisdiction	VICTOR

Count of TYPE	Column Labels	
Row Labels	0.110-0.119	Grand Total
Comm Vacant	14	14
Commercial	27	27
Exempt	43	43
Mineral	3	3
Mixed Use Comm	17	17
Mixed Use Res	1	1
Mobile Home	16	16
NONE	2	2
Residential	321	321
State	3	3
Vacant Land	319	319
Grand Total	**766**	**766**

Jurisdiction	VICTOR

Sum of Total Assessed	Column Labels	
Row Labels	0.110-0.119	Grand Total
Comm Vacant	$49,340	$49,340
Commercial	$1,189,590	$1,189,590
Exempt	$729,870	$729,870
Mineral	$10,010	$10,010
Mixed Use Comm	$435,810	$435,810
Mixed Use Res	$8,840	$8,840
Mobile Home	$16,740	$16,740
NONE	$0	$0
Residential	$1,980,130	$1,980,130
State	$0	$0
Vacant Land	$448,590	$448,590
Grand Total	**$4,868,920**	**$4,868,920**

Wildfire

Jurisdiction	WOODLAND PARK

Count of TYPE	Column Labels					
Row Labels	High	Low	Medium	Very High	Very Low	Grand Total
Ag Residential	1					1
Agricultural	2		2	1		5
Comm Vacant	5	11	7		61	84
Commercial	9	8	4		190	211
Exempt	11	11	23		133	178
Industrial					4	4
Mixed Use Comm		1	2	2	8	13
Mobile Home			1		1	2
NONE	4				4	8
Residential	165	274	414		2,273	3,126
State		1	1		3	5
Vacant Land	44	25	56	2	206	333
Grand Total	**241**	**331**	**510**	**5**	**2,883**	**3,970**

Jurisdiction	WOODLAND PARK

Sum of Total Assessed	Column Labels					
Row Labels	High	Low	Medium	Very High	Very Low	Grand Total
Ag Residential	$95,020					$95,020
Agricultural	$230		$250	$140		$620
Comm Vacant	$182,240	$264,700	$180,440		$1,883,640	$2,511,020
Commercial	$1,401,710	$1,545,920	$513,380		$34,684,820	$38,145,830
Exempt	$6,002,100	$134,340	$3,088,590		$8,252,060	$17,477,090
Industrial					$1,340,320	$1,340,320
Mixed Use Comm		$109,430	$267,710	$1,712,030	$655,830	$2,745,000
Mobile Home			$8,540		$18,110	$26,650
NONE	$0				$0	$0
Residential	$4,948,240	$7,713,090	$11,458,000		$50,677,710	$74,797,040
State		$117,250	$8,920		$50,420	$176,590
Vacant Land	$644,190	$363,150	$955,580	$5,710	$2,081,560	$4,050,190
Grand Total	**$13,273,730**	**$10,247,880**	**$16,481,410**	**$1,717,880**	**$99,644,470**	**$141,365,370**

Landslide

Jurisdiction	WOODLAND PARK

Count of TYPE	Column Labels Not within Landslide Debris Area	Grand Total
Row Labels		
Ag Residential	1	1
Agricultural	5	5
Comm Vacant	84	84
Commercial	211	211
Exempt	178	178
Industrial	4	4
Mixed Use Comm	13	13
Mobile Home	2	2
NONE	8	8
Residential	3,126	3,126
State	5	5
Vacant Land	333	333
Grand Total	**3,970**	**3,970**

Jurisdiction	WOODLAND PARK

Sum of Total Assessed	Column Labels Not within Landslide Debris Area	Grand Total
Row Labels		
Ag Residential	$95,020	$95,020
Agricultural	$620	$620
Comm Vacant	$2,511,020	$2,511,020
Commercial	$38,145,830	$38,145,830
Exempt	$17,477,090	$17,477,090
Industrial	$1,340,320	$1,340,320
Mixed Use Comm	$2,745,000	$2,745,000
Mobile Home	$26,650	$26,650
NONE	$0	$0
Residential	$74,797,040	$74,797,040
State	$176,590	$176,590
Vacant Land	$4,050,190	$4,050,190
Grand Total	**$141,365,370**	**$141,365,370**

Flood

Jurisdiction	WOODLAND PARK

Count of TYPE	Column Labels		
Row Labels	100yr Floodplain	Not within Floodplain	Grand Total
Ag Residential	1		1
Agricultural	1	4	5
Comm Vacant	14	70	84
Commercial	19	192	211
Exempt	36	142	178
Industrial	2	2	4
Mixed Use Comm	1	12	13
Mobile Home	1	1	2
NONE	4	4	8
Residential	75	3,051	3,126
State		5	5
Vacant Land	9	324	333
Grand Total	**163**	**3,807**	**3,970**

Jurisdiction	WOODLAND PARK

Sum of Total Assessed	Column Labels		
Row Labels	100yr Floodplain	Not within Floodplain	Grand Total
Ag Residential	$95,020		$95,020
Agricultural	$150	$470	$620
Comm Vacant	$416,270	$2,094,750	$2,511,020
Commercial	$7,500,260	$30,645,570	$38,145,830
Exempt	$9,049,900	$8,427,190	$17,477,090
Industrial	$1,202,340	$137,980	$1,340,320
Mixed Use Comm	$1,665,990	$1,079,010	$2,745,000
Mobile Home	$18,110	$8,540	$26,650
NONE	$0	$0	$0
Residential	$1,541,200	$73,255,840	$74,797,040
State		$176,590	$176,590
Vacant Land	$114,890	$3,935,300	$4,050,190
Grand Total	**$21,604,130**	**$119,761,240**	**$141,365,370**

Earthquake

Jurisdiction	WOODLAND PARK

Count of TYPE	Column Labels		
Row Labels	0.100-0.109	0.110-0.119	Grand Total
Ag Residential		1	1
Agricultural	1	4	5
Comm Vacant	75	9	84
Commercial	209	2	211
Exempt	172	6	178
Industrial	4		4
Mixed Use Comm	12	1	13
Mobile Home	2		2
NONE	6	2	8
Residential	3,079	47	3,126
State	5		5
Vacant Land	305	28	333
Grand Total	**3,870**	**100**	**3,970**

Jurisdiction	WOODLAND PARK

Sum of Total Assessed	Column Labels		
Row Labels	0.100-0.109	0.110-0.119	Grand Total
Ag Residential		$95,020	$95,020
Agricultural	$210	$410	$620
Comm Vacant	$2,327,630	$183,390	$2,511,020
Commercial	$37,873,770	$272,060	$38,145,830
Exempt	$11,648,370	$5,828,720	$17,477,090
Industrial	$1,340,320		$1,340,320
Mixed Use Comm	$1,079,010	$1,665,990	$2,745,000
Mobile Home	$26,650		$26,650
NONE	$0	$0	$0
Residential	$73,316,190	$1,480,850	$74,797,040
State	$176,590		$176,590
Vacant Land	$3,782,970	$267,220	$4,050,190
Grand Total	**$131,571,710**	**$9,793,660**	**$141,365,370**

Wildfire

Jurisdiction	GREEN MTN FALLS

Count of TYPE	Column Labels				
Row Labels	High	Low	Medium	Very High	Grand Total
Exempt		1		1	2
NONE	1				1
Residential	3	15	15		33
Vacant Land	3	4	2		9
Grand Total	**7**	**20**	**17**	**1**	**45**

Jurisdiction	GREEN MTN FALLS

Sum of Total Assessed	Column Labels				
Row Labels	High	Low	Medium	Very High	Grand Total
Exempt		$1,090		$226,420	$227,510
NONE	$0				$0
Residential	$87,040	$221,540	$200,860		$509,440
Vacant Land	$45,180	$28,780	$10,710		$84,670
Grand Total	**$132,220**	**$251,410**	**$211,570**	**$226,420**	**$821,620**

Landslide

Jurisdiction	GREEN MTN FALLS

Count of TYPE	Column Labels	
Row Labels	Not within Landslide Debris Area	Grand Total
Exempt	2	2
NONE	1	1
Residential	33	33
Vacant Land	9	9
Grand Total	**45**	**45**

Jurisdiction	GREEN MTN FALLS

Sum of Total Assessed	Column Labels	
Row Labels	Not within Landslide Debris Area	Grand Total
Exempt	$227,510	$227,510
NONE	$0	$0
Residential	$509,440	$509,440
Vacant Land	$84,670	$84,670
Grand Total	**$821,620**	**$821,620**

Flood

Jurisdiction	GREEN MTN FALLS

Count of TYPE	Column Labels	
Row Labels	Not within Floodplain	Grand Total
Exempt	2	2
NONE	1	1
Residential	33	33
Vacant Land	9	9
Grand Total	**45**	**45**

Jurisdiction	GREEN MTN FALLS

Sum of Total Assessed	Column Labels	
Row Labels	Not within Floodplain	Grand Total
Exempt	$227,510	$227,510
NONE	$0	$0
Residential	$509,440	$509,440
Vacant Land	$84,670	$84,670
Grand Total	**$821,620**	**$821,620**

Earthquake

Jurisdiction	GREEN MTN FALLS

Count of TYPE	Column Labels	
Row Labels	0.100-0.109	Grand Total
Exempt	2	2
NONE	1	1
Residential	33	33
Vacant Land	9	9
Grand Total	**45**	**45**

Jurisdiction	GREEN MTN FALLS

Sum of Total Assessed	Column Labels	
Row Labels	0.100-0.109	Grand Total
Exempt	$227,510	$227,510
NONE	$0	$0
Residential	$509,440	$509,440
Vacant Land	$84,670	$84,670
Grand Total	**$821,620**	**$821,620**

Wildfire

Jurisdiction	UNINCORPORATED

Count of TYPE	Column Labels					
Row Labels	High	Low	Medium	Very High	Very Low	Grand Total
Ag Residential	90	80	58	53	78	359
Agricultural	294	395	215	187	919	2,010
Comm Vacant	2	11	3		62	78
Commercial	5	13	2	1	74	95
Exempt	77	97	43	59	193	469
Industrial					6	6
Mineral	11	61	34	2	700	808
Mixed Use Comm	3	5	7	3	16	34
Mixed Use Res			2	1	2	5
Mobile Home	43	122	56	3	110	334
NONE	14	2	9	27	4	56
Producing Mine	3	10	4		267	284
Residential	1,228	2,144	1,098	364	2,828	7,662
Severed Mineral					1	1
State		9	1		12	22
State Assessed			1		1	2
Vacant Land	965	2,281	685	457	3,380	7,768
Grand Total	**2,735**	**5,230**	**2,218**	**1,157**	**8,653**	**19,993**

Jurisdiction	UNINCORPORATED

Sum of Total Assessed	Column Labels					
Row Labels	High	Low	Medium	Very High	Very Low	Grand Total
Ag Residential	$3,025,880	$2,299,780	$1,584,430	$1,457,310	$1,820,230	$10,187,630
Agricultural	$215,190	$144,420	$97,930	$244,910	$128,080	$830,530
Comm Vacant	$39,170	$290,230	$176,060		$798,160	$1,303,620
Commercial	$954,760	$2,237,160	$87,070	$960	$4,929,620	$8,209,570
Exempt	$7,903,720	$6,715,690	$3,654,570	$8,881,710	$6,065,980	$33,221,670
Industrial					$268,040	$268,040
Mineral	$9,190	$186,340	$163,680	$0	$974,550	$1,333,760
Mixed Use Comm	$1,168,540	$356,490	$689,000	$430,490	$1,136,890	$3,781,410
Mixed Use Res			$133,210	$8,290	$67,360	$208,860
Mobile Home	$172,340	$330,280	$144,880	$17,260	$287,050	$951,810
NONE	$0	$0	$0	$0	$0	$0
Producing Mine	$0	$0	$0		$33,680	$33,680
Residential	$28,628,040	$43,294,190	$23,222,410	$9,119,600	$53,485,950	$157,750,190
Severed Mineral					$10	$10
State		$0	$0		$0	$0
State Assessed			$9,030		$0	$9,030
Vacant Land	$8,962,140	$14,755,250	$6,619,680	$4,135,790	$18,231,610	$52,704,470
Grand Total	**$51,078,970**	**$70,609,830**	**$36,581,950**	**$24,296,320**	**$88,227,210**	**$270,794,280**

Landslide

Jurisdiction	UNINCORPORATED

Count of TYPE	Column Labels		
Row Labels	Landslide Debris	Not within Landslide Debris Area	Grand Total
Ag Residential	1	358	359
Agricultural		2,010	2,010
Comm Vacant		78	78
Commercial		95	95
Exempt	4	465	469
Industrial		6	6
Mineral		808	808
Mixed Use Comm		34	34
Mixed Use Res		5	5
Mobile Home		334	334
NONE	5	51	56
Producing Mine		284	284
Residential		7,662	7,662
Severed Mineral		1	1
State		22	22
State Assessed		2	2
Vacant Land		7,768	7,768
Grand Total	**10**	**19,983**	**19,993**

Jurisdiction	UNINCORPORATED

Sum of Total Assessed	Column Labels		
Row Labels	Landslide Debris	Not within Landslide Debris Area	Grand Total
Ag Residential	$22,230	$10,165,400	$10,187,630
Agricultural		$830,530	$830,530
Comm Vacant		$1,303,620	$1,303,620
Commercial		$8,209,570	$8,209,570
Exempt	$1,025,130	$32,196,540	$33,221,670
Industrial		$268,040	$268,040
Mineral		$1,333,760	$1,333,760
Mixed Use Comm		$3,781,410	$3,781,410
Mixed Use Res		$208,860	$208,860
Mobile Home		$951,810	$951,810
NONE	$0	$0	$0
Producing Mine		$33,680	$33,680
Residential		$157,750,190	$157,750,190
Severed Mineral		$10	$10
State		$0	$0
State Assessed		$9,030	$9,030
Vacant Land		$52,704,470	$52,704,470
Grand Total	**$1,047,360**	**$269,746,920**	**$270,794,280**

Flood

Jurisdiction	UNINCORPORATED

Count of TYPE	Column Labels		
Row Labels	100yr Floodplain	Not within Floodplain	Grand Total
Ag Residential	64	295	359
Agricultural	197	1,813	2,010
Comm Vacant	15	63	78
Commercial	5	90	95
Exempt	63	406	469
Industrial		6	6
Mineral	18	790	808
Mixed Use Comm	6	28	34
Mixed Use Res		5	5
Mobile Home	4	330	334
NONE	27	29	56
Producing Mine		284	284
Residential	213	7,449	7,662
Severed Mineral		1	1
State	1	21	22
State Assessed		2	2
Vacant Land	226	7,542	7,768
Grand Total	**839**	**19,154**	**19,993**

Jurisdiction	UNINCORPORATED

Sum of Total Assessed	Column Labels		
Row Labels	100yr Floodplain	Not within Floodplain	Grand Total
Ag Residential	$2,017,520	$8,170,110	$10,187,630
Agricultural	$152,420	$678,110	$830,530
Comm Vacant	$198,400	$1,105,220	$1,303,620
Commercial	$581,510	$7,628,060	$8,209,570
Exempt	$6,858,420	$26,363,250	$33,221,670
Industrial		$268,040	$268,040
Mineral	$83,670	$1,250,090	$1,333,760
Mixed Use Comm	$427,510	$3,353,900	$3,781,410
Mixed Use Res		$208,860	$208,860
Mobile Home	$18,070	$933,740	$951,810
NONE	$0	$0	$0
Producing Mine		$33,680	$33,680
Residential	$5,233,060	$152,517,130	$157,750,190
Severed Mineral		$10	$10
State	$0	$0	$0
State Assessed		$9,030	$9,030
Vacant Land	$2,501,160	$50,203,310	$52,704,470
Grand Total	**$18,071,740**	**$252,722,540**	**$270,794,280**

Earthquake

Jurisdiction	UNINCORPORATED

Count of TYPE	Column Labels			
Row Labels	0.100-0.109	0.110-0.119	0.120-0.121	Grand Total
Ag Residential	56	296	7	359
Agricultural	125	1,865	20	2,010
Comm Vacant	6	72		78
Commercial	8	87		95
Exempt	77	390	2	469
Industrial	2	4		6
Mineral		808		808
Mixed Use Comm	5	27	2	34
Mixed Use Res	2	3		5
Mobile Home	19	309	6	334
NONE	10	40	6	56
Producing Mine		284		284
Residential	1,138	6,493	31	7,662
Severed Mineral		1		1
State	1	21		22
State Assessed		2		2
Vacant Land	407	7,319	42	7,768
Grand Total	**1,856**	**18,021**	**116**	**19,993**

Jurisdiction	UNINCORPORATED

Sum of Total Assessed	Column Labels			
Row Labels	0.100-0.109	0.110-0.119	0.120-0.121	Grand Total
Ag Residential	$1,632,350	$8,296,450	$258,830	$10,187,630
Agricultural	$96,610	$702,860	$31,060	$830,530
Comm Vacant	$115,300	$1,188,320		$1,303,620
Commercial	$2,138,100	$6,071,470		$8,209,570
Exempt	$10,686,870	$22,515,830	$18,970	$33,221,670
Industrial	$208,790	$59,250		$268,040
Mineral		$1,333,760		$1,333,760
Mixed Use Comm	$611,860	$1,948,770	$1,220,780	$3,781,410
Mixed Use Res	$91,600	$117,260		$208,860
Mobile Home	$101,160	$826,120	$24,530	$951,810
NONE	$0	$0	$0	$0
Producing Mine		$33,680		$33,680
Residential	$26,997,810	$130,134,300	$618,080	$157,750,190
Severed Mineral		$10		$10
State	$0	$0		$0
State Assessed		$9,030		$9,030
Vacant Land	$2,914,440	$49,163,450	$626,580	$52,704,470
Grand Total	**$45,594,890**	**$222,400,560**	**$2,798,830**	**$270,794,280**

Appendix F

Acronyms

Acronym	Definition	Acronym	Definition
ACS	American Community Survey	**FIS**	Flood Insurance Study
BCEGS	Building Code Effectiveness Grading Schedule	**FMA**	Flood Mitigation Assistance
BFE	Base Flood Elevation	**FMAG**	Fire Mitigation Assistance Grant
BLM	Bureau of Land Management	**GIS**	Geographic Information System
BRIC	Building Resilient Infrastructure and Communities	**HAZUS-MH**	Hazards, United States-Multi Hazard
CDC	Center for Disease Control	**HMC**	Hazard Mitigation Committee
CDOT	Colorado Department of Transportation	**HMP**	Hazard Mitigation Plan
CFR	Code of Federal Regulations	**HMGP**	Hazard Mitigation Grant Program
CGS	Colorado Geological Survey	**HSAP**	Teller County Heavy Services Action Plan
COVID-19	Novel Coronavirus 2019	**IBC**	International Building Code
CO-WRA	Colorado State Wildfire Risk Assessment	**IA**	Individual Assistance
CRS	Community Rating System	**IREA**	Intermountain Rural Electric Association
CSFS	Colorado State Forest Service	**MCE**	Maximum Credible Earthquakes
CUSP	Coalition for the Upper South Platte	**NEHRP**	National Earthquake Hazards Reduction Program
CWCB	Colorado Water Conservation Board	**NFIP**	National Flood Insurance Program
CWPP	Community Wildfire Protection Plan	**NOAA**	National Oceanic and Atmospheric Administration
DFPC	Division of Fire Prevention & Control	**NRC**	National Response Center
DHSEM	Colorado Division of Homeland Security and Emergency Management	**NWS**	National Weather Service
DMA	Disaster Mitigation Act	**OEM**	Office of Emergency Management
DSO	Dam Safety Office	**PA**	Public Assistance
DWR	Division of Water Resources	**PDM**	Pre-Disaster Mitigation Grant Program
EF / F	Enhanced Fujita Scale and Fujita Scale	**PGA**	Peak Ground Acceleration
EH	Environmental Health	**SARS**	Severe Acute Respiratory Syndrome
EOP	Emergency Operations Plan	**TBD**	To Be Determined
EPCRA	Emergency Planning and Community Right-to-know Act	**US**	United States
FEMA	Federal Emergency Management Agency	**USFS**	United States Forest Service
FERC	Federal Energy Regulatory Commission	**USGS**	United States Geological Survey
FIRM	Flood Insurance Rate Map	**WHO**	World Health Organization
FPD	Fire Protection District	**WUI**	Wildland Urban Interface

Appendix G

Definitions

100-Year Floodplain – The area flooded by the flood that has a 1-percent chance of being equaled or exceeded each year. This is a statistical average only; in fact, a 100-year flood can occur more than once in a short period of time. The 1-percent annual chance flood is the standard used by most federal and state agencies.

500-year Floodplain – Also known as the 0.2-percent annual chance flood. The area inundated by floodwaters that has a 0.2-percent chance of being equaled or exceeded each year.

Asset – Any man-made or natural feature that has value, including, but not limited to, people; buildings; infrastructure, such as bridges, roads, sewers, and water systems; lifelines, such as electricity and communication resources; and environmental, cultural, or recreational features such as parks, wetlands, and landmarks.

Benefit – A net project outcome and is usually defined in monetary terms. Benefits may include direct and indirect effects. For the purposes of benefit-cost analysis of proposed mitigation measures, benefits are limited to specific, measurable, risk reduction factors, including reduction in expected property losses (buildings, contents, and functions) and protection of human life.

Building – A structure that is walled and roofed, principally aboveground, and permanently fixed to a site. The term includes manufactured homes on permanent foundations on which the wheels and axles carry no weight.

Building Resilient Infrastructure and Communities (BRIC) Program – Authorized by the Disaster Relief and Recovery Act of 2018, the BRIC program is replacing FEMA's Pre-Disaster Mitigation Program. BRIC will support states, local communities, tribes and territories as they undertake projects that mitigate hazard risks and increase community resiliency. Grant awards will prioritize infrastructure projects and projects that support community lifelines: safety and security; food, water, shelter; health and medical; energy; communications; transportation; and hazardous material.

Capability Assessment – Provides a description and analysis of a community's current capacity to address threats associated with hazards. The assessment includes two components: an inventory of an agency's mission, programs, and policies, and an analysis of its capacity to carry them out. A capability assessment is an integral part of the planning process in which a community's actions to reduce losses are identified, reviewed, and analyzed, and the framework for implementation is identified. The following capabilities were reviewed under this assessment: • Legal and regulatory capability • Administrative and technical capability • Fiscal capability

Cluster – An aggregation of cases grouped in place and time that are suspected to be greater than the number expected.

Community Rating System (CRS) – A voluntary program under the NFIP that rewards participating communities (provides incentives) for exceeding the minimum requirements of the NFIP and completing activities that reduce flood hazard risk by providing flood insurance premium discounts.

Conflagration – A fire that grows beyond its original source area to engulf adjoining regions. Wind, extremely dry or hazardous weather conditions, excessive fuel buildup, and explosions are usually the elements behind a wildfire conflagration.

Critical Area – An area defined by state or local regulations as deserving special protection because of unique natural features or its value as habitat for a wide range of species of flora and fauna. A sensitive/critical area is usually subject to more restrictive development regulations.

Critical Facility – Buildings and infrastructure that are significant to the health and welfare of the population. These become especially important after any hazard event occurs.

Dam – Any artificial barrier and/or any controlling works, together with appurtenant works that can or do impound or divert water.

Dam Failure – An uncontrolled release of impounded water due to structural deficiencies in the water barrier.

Debris Flow – A moving mass of loose mud, sand, soil, rock, water, and air moving down a slope under the influence of gravity.

Disaster Mitigation Act of 2000 (DMA) – Public Law 106-390 and is the latest federal legislation enacted to encourage and promote proactive, pre-disaster planning as a condition of receiving financial assistance under the Robert T. Stafford Act. The DMA emphasizes planning for disasters before they occur. Under the DMA, a pre-disaster hazard mitigation program and new requirements for the national post-disaster hazard mitigation grant program (HMGP) were established.

Drainage Basin – The area within which all surface water (whether from rainfall, snowmelt, springs or other sources) flows to a single water body or watercourse. The boundary of a river basin is defined by natural topography, such as hills, mountains and ridges. Drainage basins are also referred to as watersheds or basins.

Earthquake – The shaking of the ground caused by an abrupt shift of rock along a fracture in the earth or a contact zone between tectonic plates. Earthquakes are typically measured in both magnitude and intensity.

Ecosystem Services – The benefits people obtain from the ecosystem. They are grouped in four broad categories: provisioning, such as the production of food and water; regulating, such as control of the climate and disease; supporting, such as the nutrient cycles and crop pollination; and cultural, such as spiritual and recreational benefits. Ecosystem services associated with natural hazard mitigation include but are not limited to the following. Vegetated land cover intercepts and absorbs water, retaining it and slowing its movement, helping to reduce flooding and its subsequent effects. Vegetated stream buffers help absorb water along streams and rivers, which also reduces flooding by holding

excess water. Vegetated stream buffers reduce bank erosion. Floodplains spread high volume flows, reducing stream velocity and flood levels. Wetlands, such as coral reefs and coastal marshes, offer shoreline protection in coastal regions and help reduce the impacts of storms, including erosion, by acting as a physical barrier and reducing wind and wave energy. Tree and forest cover can reduce surface wind velocities. Vegetative cover is also important for reducing temperatures on micro- and macro-scales. Vegetation helps to shade areas and reduce surface temperatures, mitigating the potential public health effects of extreme heat.

Emergency Action Plan (EAP) – A formal document that identifies potential emergency conditions at a dam and specifies preplanned actions to be followed to minimize property damage and loss of life. The plan contains specifies actions the dam owner should take to moderate or alleviate the problems at the dam, procedures on issuing early warning and notification messages to responsible downstream emergency management authorities, and inundation maps to show the emergency management authorities the critical areas for action in case of an emergency.

Endemic – Refers to the constant presence and/or usual prevalence of a disease or infectious agent in a population within a geographic area. An increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area.

Epicenter – The point on the earth's surface directly above the hypocenter of an earthquake. The location of an earthquake is commonly described by the geographic position of its epicenter and by its focal depth.

Fault – A fracture in the earth's crust along which two blocks of the crust have slipped with respect to each other. Most common is a strike-slip, normal, or thrust fault.

Firestorm – A fire that expands to cover a large area, often more than a square mile. A firestorm usually occurs when many individual fires grow together into one. The area involved becomes so hot that all combustible materials ignite, even if they are not exposed to direct flame. Temperatures may exceed 1,000°C. Superheated air and hot gases of combustion rise over the fire zone, drawing surface winds in from all sides, often at velocities approaching 50 miles per hour. Although firestorms seldom spread because of the inward direction of the winds, once started, there is no known way of stopping them.

Flood Insurance Rate Map (FIRM) – The official maps on which the Federal Emergency Management Agency (FEMA) has delineated the Special Flood Hazard Area (SFHA).

Flood Insurance Study – A report published by the Federal Insurance and Mitigation Administration for a community in conjunction with the community's Flood Insurance rate Map. The study contains such background data as the base flood discharges and water surface elevations that were used to prepare the FIRM. In most cases, a community FIRM with detailed mapping will have a corresponding flood insurance study.

Flood – Inundation of normally dry land resulting from rising and overflowing of a body of water.

Flood Mitigation Assistance (FMA) Program – FEMA's FMA grant program provides funding to states, local communities, federally-recognized tribes, and territories for projects that reduce or eliminate the risk of repetitive flood damage to buildings insured by the National Flood Insurance Program.

Floodplain – Land area along the sides of a river that becomes inundated with water during a flood

Focal Depth – The depth from the earth's surface to the hypocenter.

Hazard Mitigation Grant Program (HMGP) – Authorized under Section 202 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, the HMGP is administered by FEMA and provides grants to states, tribes, and local governments to implement hazard mitigation actions after a major disaster declaration. The purpose of the program is to reduce the loss of life and property due to disasters and to enable mitigation activities to be implemented as a community recovers from a disaster

Hazardous Substance – Those substances listed in Appendix A of 49 CFR §172.101; does not include petroleum, natural gas, liquefied natural gas, or fuel.

Hazardous Waste – Materials subject to 40 CFR §262.

US Multi-Hazard (HAZUS-MH) Loss Estimation Program – A GIS-based program used to support the development of risk assessments as required under the DMA. The HAZUS-MH software program assesses risk in a quantitative manner to estimate damages and losses associated with natural hazards. HAZUS-MH is FEMA's nationally applicable, standardized methodology and software program and contains modules for estimating potential losses from earthquakes, floods, and wind hazards. HAZUS-MH has also been used to assess vulnerability (exposure) for other hazards.

High Hazard Dam – Dams assigned the high hazard potential classification are those where failure or operational issues will probably cause loss of human life.

Hyperendemic – Persistent, high levels of disease occurrence.

Hypocenter – The region underground where an earthquake's energy originates.

Interface Area – An area susceptible to wildfires and where wildland vegetation and urban or suburban development occur together. An example would be smaller urban areas and dispersed rural housing in forested areas.

Inundation Area – The area of land that would be flooded following a dam failure

Landslide – The sliding movement of masses of loosened rock and soil down a hillside or slope. Slope failures occur when the strength of the soils forming the slope is exceeded by the pressure, such as weight or saturation, acting upon them.

Local Government – Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate

government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity.

Mass Movement – A collective term for landslides, debris flows, falls and sinkholes.

Medical Countermeasures – Life-saving medicines and medical supplies that can be used to diagnose, prevent, protect from, or treat conditions associated with chemical, biological, radiological, or nuclear threats, emerging infectious disease, or natural disaster.

Mitigation – A preventive action that can be taken in advance of an event that will reduce or eliminate the risk to life or property.

Mitigation Actions – Specific processes or projects designed to achieve goals and objectives that minimize the effects from a disaster and reduce the loss of life and property.

Mudslide (or Mudflow) – A river of rock, earth, organic matter and other materials saturated with water.

Objective – Specific and measurable actions. For the purposes of this plan, defined as a short-term aim that, when combined with other objectives, forms a strategy or course of action to meet a goal.

Outbreak – The same definition of epidemic but is often used for a more limited geographic area, jurisdiction, or group of people.

Pandemic – An epidemic that has spread over several countries or continents, usually affecting many people.

Peak Ground Acceleration (PGA) – A measure of the highest amplitude of ground shaking that accompanies an earthquake, based on a percentage of the force of gravity.

Planning Committee – The group that oversaw all phases of the hazard mitigation plan's development. The members of this committee included key city and tribal personnel, residents, and other stakeholders from within the planning area.

Preparedness – Refers to actions that strengthen the capability of government, residents, and communities to respond to disasters.

Presidential Disaster Declaration – Typically made for events that cause more damage than state and local governments and resources can handle without federal government assistance. Generally, no specific dollar loss threshold has been established for such declarations. A Presidential disaster declaration puts into motion long-term federal recovery programs, some of which are matched by state programs, designed to help disaster victims, businesses, and public entities.

Probability of Occurrence – A statistical measure or estimate of the likelihood that a hazard will occur. This probability is generally based on past hazard events in the area and a forecast of events that could

occur in the future. A probability factor based on yearly values of occurrence is used to estimate probability of occurrence.

Return Period – The average period of time in years between occurrences of a particular hazard (equal to the inverse of the annual frequency of occurrence).

Risk – The estimated impact that a hazard would have on people, services, facilities, and structures in a community. Risk measures the likelihood of a hazard occurring and resulting in an adverse condition that causes injury or damage. Risk is often expressed in relative terms such as a high, moderate, or low likelihood of sustaining damage above a particular threshold due to occurrence of a specific type of hazard. Risk also can be expressed in terms of potential monetary losses associated with the intensity of the hazard.

Seiche – A standing wave in an enclosed or partly enclosed body of water, normally caused by earthquake activity; can affect harbors, bays, lakes, rivers, and canals.

Severe Local Storm – Small atmospheric systems including tornadoes, thunderstorms, and windstorms. Typically, major impacts from a severe storm are on transportation infrastructure and utilities. These storms may cause a great deal of destruction and even death, but their impact is generally confined to a small area.

Significant Hazard Dam – A dams where failure or operational issues result in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns.

Sinkhole – A collapse depression in the ground with no visible outlet. Its drainage is subterranean. It is commonly vertical-sided or funnel-shaped.

Slab – Refers to one or more layers of snow in which the grains are bonded together. A slab initially fails over a large area instead of at a single point.

Sporadic – Refers to a disease that occurs infrequently or irregularly.

Robert T. Stafford Disaster Relief and Emergency Assistance Act – Referred to as the Stafford Act, it is a Public Law 100-107, was signed into law on November 23, 1988. This law amended the Disaster Relief Act of 1974, Public Law 93-288. The Stafford Act is the statutory authority for most federal disaster response activities, especially as they pertain to FEMA and its programs.

Stakeholder – Business leaders, civic groups, academia, non-profit organizations, major employers, managers of critical facilities, farmers, developers, special purpose districts, and others whose actions could impact hazard mitigation.

Stream Bank Erosion – Common along rivers, streams, and drains where banks have been eroded, sloughed or undercut. However, it is important to remember that a stream is a dynamic and constantly changing system. It is natural for a stream to want to meander, so not all eroding banks are “bad” and in need of repair. Generally, stream bank erosion becomes a problem where development has limited

the meandering nature of streams, where streams have been channelized, or where stream bank structures (like bridges, culverts, etc.) are located in places where they can actually cause damage to downstream areas. Stabilizing these areas can help protect watercourses from continued sedimentation, damage to adjacent land uses, control unwanted meander, and improvement of habitat for fish and wildlife.

Sustainable Hazard Mitigation – This concept includes the sound management of natural resources, local economic and social resiliency, and the recognition that hazards, and mitigation must be understood in the largest possible social and economic context.

Thunderstorm – Typically 15 miles in diameter and lasting about 30 minutes, thunderstorms are underrated hazards. Lightning, which occurs with all thunderstorms, is a serious threat to human life. Heavy rains over a small area in a short time can lead to flash flooding. Strong winds, hail, and tornadoes are also dangers associated with thunderstorms.

Tornado – Funnel clouds of varying sizes that generate winds more than 300 miles per hour, affecting an area up to ¾ of a mile wide. They are measured using the Enhanced Fujita Scale ranging from EF0 to EF5.

Vulnerability – Describes how exposed or susceptible an asset is to damage. The level of risk depends on an asset's construction, contents, and the economic value of its functions. Like indirect damages, the risk of one element of the community is often related to the risk of another. For example, many businesses depend on uninterrupted electrical power. Flooding of an electric substation would affect not only the substation itself but businesses as well. Often, indirect effects can be much more widespread and damaging than direct effects.

Watershed – A n area that drains downgradient from areas of higher land to areas of lower land to the lowest point, a common drainage basin.

Wildfire – Fires that result in uncontrolled destruction of forests, brush, field crops, grasslands, and real and personal property in non-urban areas. Because of their distance from firefighting resources, they can be difficult to contain and cause a great deal of destruction.

Windstorm – A storm featuring violent winds. Southwesterly winds are associated with strong storms moving onto the coast from the Pacific Ocean. Southern winds parallel to the coastal mountains are the strongest and most destructive winds. Windstorms tend to damage ridgelines that face into the winds.

Winter Storm – A storm having significant snowfall, ice, and/or freezing rain; the quantity of precipitation varies by elevation.

Zoning Ordinance – Designates allowable land use and intensities for a local jurisdiction. Zoning ordinances consist of two components: a zoning text and a zoning map.

Appendix H

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