
Southern Ute Indian Tribe Hazard Mitigation Plan 2025

Plan developed for the Southern Ute Indian Tribe by JEO Consulting Group
in partnership with FEMA



FEMA

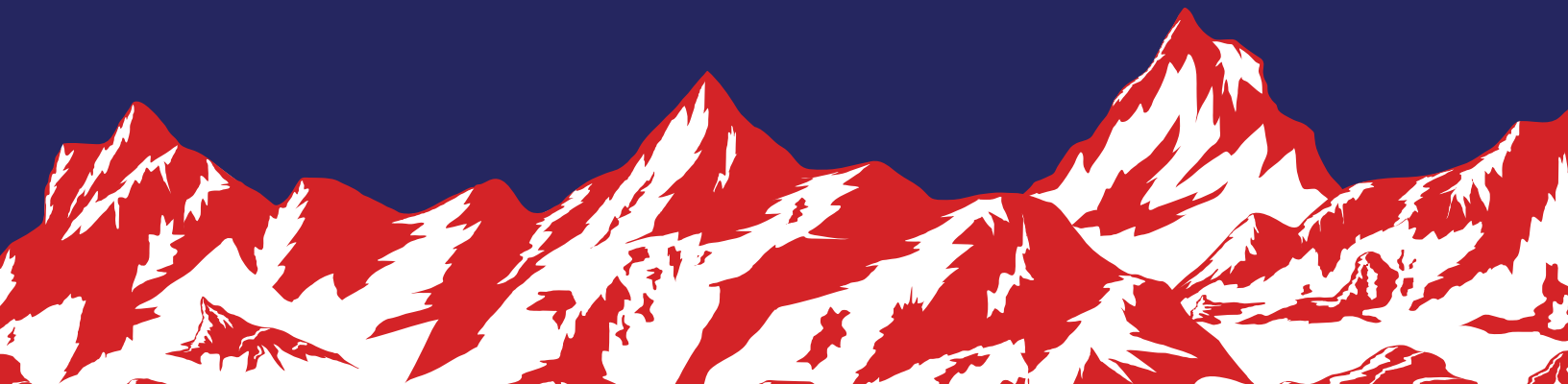


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CHAPTER 1: INTRODUCTION

Introduction

Hazard mitigation planning is a process in which hazards are identified and profiled; people and facilities at-risk are identified and assessed for threats and potential vulnerabilities; and strategies and mitigation measures are identified. Hazard mitigation planning increases the ability of communities to effectively function in the face of natural and human-caused disasters. The goal of the process is to reduce risk and vulnerability, in order to lessen impacts to life, the economy, and infrastructure.

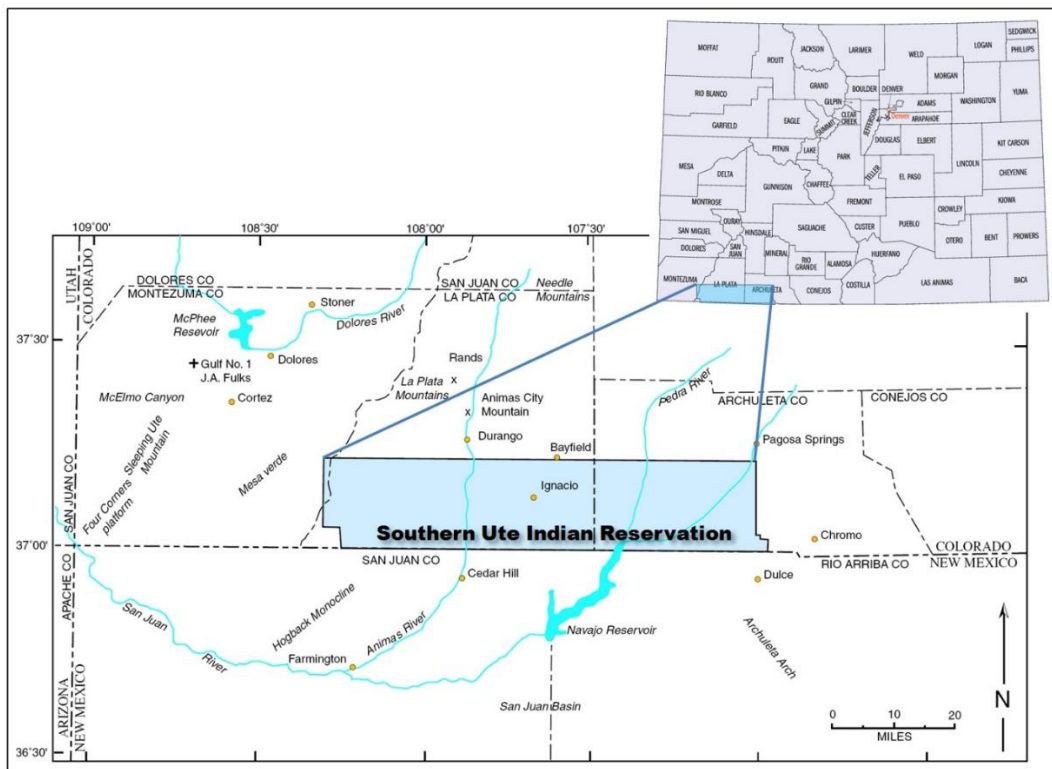
This plan serves the entire Southern Ute Indian Tribe Reservation. For the purpose of this plan, hazard events and regional data are included for Archuleta and La Plata Counties in southwestern Colorado. The vast majority of the Southern Ute Indian Reservation includes large portions of these two counties. Although a sliver of Reservation land resides in Montezuma County, hazard data for the county is not included in the plan’s data analysis to avoid skewing the Tribe’s risk and vulnerability. While county representatives or Emergency Managers for Archuleta and La Plata Counties attended meetings and provided local feedback, neither county acted as active participants in this plan update, and each maintain their own mitigation plans.



FEMA definition of Hazard Mitigation

“Any sustained action taken to reduce or eliminate the long-term risk to human life and property from [natural] hazards.”

Figure 1: Southern Ute Indian Reservation



Hazard Mitigation Planning

Hazard events are inevitable; it is just a matter of when they occur and what steps jurisdictions have taken to mitigate the potential impacts. Mitigation reduces risk and is a socially and economically responsible action to prevent long term risks from natural and human-caused hazard events.

Natural hazards as evaluated in this plan, such as drought, extreme temperatures, flooding, thunderstorms, tornadoes and high winds, wildfire, and winter storms are part of the world around us. Their occurrence is natural and inevitable, and there is little that can be done to control their force and intensity. Human-caused hazards are a product of human intent, error, or failed human-built systems and can cause significant impacts to the community. Human-caused hazards in this plan include hazardous material spills, terrorism, and dam failure. These hazard events can occur as a part of normal operation or as a result of human error. All areas in the planning area are vulnerable to a wide range of natural and human-caused hazards that threaten the safety of residents and have the potential to damage or destroy both tribal and private property, cause environmental degradation, and disrupt the local economy and overall quality of life.

Mitigation is the cornerstone of emergency management. Mitigation focuses on breaking the cycle of disaster damage, reconstruction, and repeated damage. Mitigation lessens the impact disasters have on people's lives and property through damage prevention, appropriate development standards, and affordable flood insurance. Through measures such as avoiding building in damage-prone areas, stringent building codes, and floodplain management regulations, the impact on lives and communities is lessened.

- FEMA Mitigation Directorate

The Southern Ute Indian Tribe prepared this tribal hazard mitigation plan in an effort to reduce impacts from natural and human-caused hazards and to better protect the people and property of the region from the effects of hazards. This plan demonstrates the Tribe's commitment to reducing risks from hazards and serves as a tool to help decision makers establish mitigation activities and resources. Furthermore, this plan was developed to make the Southern Ute Indian Tribe eligible for various federal mitigation funding programs that address natural hazard events and to accomplish the following objectives:

- Minimize the disruption to tribal residents and departments following a disaster.
- Establish actions to reduce or eliminate future damages in order to efficiently recover from disasters.
- Investigate, review, and implement activities or actions to ensure disaster related hazards are addressed by the most efficient and appropriate solution.
- Educate residents about potential hazards.
- Facilitate development and implementation of hazard mitigation management activities to ensure a sustainable tribal reservation.

Authority

The Southern Ute Indian Tribe operates under a constitution consistent with the Indian Reorganization Act. The Southern Ute Indian Reservation boundaries, in their present form, were established by Executive Order around 1895. Tribal government consists of a Tribal Council, headed by the Tribal Chair and six council members. The Executive Office ensures that all departments within the Tribe operate within the policies, procedures, and guidelines established by the Tribal Council.

Tribal Assurance

The Southern Ute Indian Tribe will comply with all applicable Federal statutes and regulations in effect for those periods when the Tribe receives federal grant funding through the Hazard Mitigation Assistance programs as administered by FEMA. The tribal council provides assurance that amendments will be made to the Tribe's currently adopted Hazard Mitigation Plan whenever necessary to reflect changes in local, state, tribal, or federal policies and/or identified updates after a disaster event occurs.

E1 Element and Requirements §201.7(c)(6): Does the plan include assurances that the tribal government will comply with all applicable Federal statutes and regulations in effect with respect to the periods for which it receives grant funding, including 2 CFR Parts 200 and 3002, and will amend its plan whenever necessary to reflect changes in tribal or Federal laws and statutes?

- a. The plan shall include assurances which state that the tribal government will comply with all applicable federal statutes and regulations in effect with respect to the periods for which it receives grant funding including 2 CFR Parts 200 and 3002. The tribal government will amend its mitigation plan whenever necessary to reflect changes in tribal or federal laws and statutes.

Disaster Mitigation Act of 2000

The U.S. Congress passed the Disaster Mitigation Act of 2000 to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act¹. Section 322 of the DMA 2000 requires that state, tribal, and local governments develop, adopt, and routinely update a hazard mitigation plan to remain eligible for pre- and post-disaster mitigation funding.² These funds include the Hazard Mitigation Grant Program (HMGP)³, Building Resilient Infrastructure and Communities (BRIC)⁴, and the Flood Mitigation Assistance Program (FMA)⁵. The Federal Emergency Management Agency (FEMA) administers these programs under the Department of Homeland Security (DHS).⁶

This Southern Ute Indian Tribe Hazard Mitigation Plan was developed in compliance with the requirements of the DMA 2000. This plan was developed in accordance with current state and federal rules and regulations governing tribal hazard mitigation plans. The plan shall be monitored and updated on a routine basis to maintain compliance with the legislation – Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the DMA 2000 (P.L. 106-390)⁷ and by FEMA's Final Rule (FR)⁸ published in the Federal Register on November 30, 2007, at 44 Code of Federal Regulations (CFR) Part 201.7.

For the purpose of this plan, a tribal government is identified according to the 44 Code of Federal Regulations (CFR) 201.2-7. Indian Tribal government means any federally recognized governing body of

1 Federal Emergency Management Agency, Public Law 106-390. 2000. "Disaster Mitigation Act of 2000." Last modified September 26, 2013. <https://www.fema.gov/media-library/assets/documents/4596>.

2 Federal Emergency Management Agency. June 2007. "Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, and Related Authorities." Federal Emergency Management Agency 592: 22. Sec. 322. Mitigation Planning (42 U.S.C. 5165). https://www.fema.gov/pdf/about/stafford_act.pdf.

3 Federal Emergency Management Agency. "Hazard Mitigation Grant Program." Last modified July 8, 2017. <https://www.fema.gov/hazard-mitigation-grant-program>.

4 Federal Emergency Management Agency. "Pre-Disaster Mitigation Grant Program." Last modified July 11, 2017. <https://www.fema.gov/pre-disaster-mitigation-grant-program>.

5 Federal Emergency Management Agency. "Flood Mitigation Assistance Grant Program." Last modified July 11, 2017. <https://www.fema.gov/flood-mitigation-assistance-grant-program>.

6 Federal Emergency Management Agency. "Hazard Mitigation Assistance." Last modified March 29, 2017. <https://www.fema.gov/hazard-mitigation-assistance>.

7 Federal Emergency Management Agency: Federal Register. 2002. "Section 104 of Disaster Mitigation Act 2000: 44 CFR Parts 201 and 206: Hazard Mitigation Planning and Hazard Mitigation Grant Programs; Interim Final Rule." <https://www.fema.gov/pdf/help/fr02-4321.pdf>.

8 Federal Emergency Management Agency: Federal Register. 2002. "44 CFR Parts 201 and 206: Hazard Mitigation Planning and Hazard Mitigation Grant Programs; Interim Final Rule." <https://www.fema.gov/pdf/help/fr02-4321.pdf>.

an Indian or Alaska Native Tribe, band, nation, pueblo, village or community that the Secretary of Interior acknowledges to exist as an Indian Tribe under the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. 479a.

Hazard Mitigation Assistance

On June 1, 2009, FEMA initiated the Hazard Mitigation Assistance (HMA) program integration, which aligned certain policies and timelines of the various mitigation programs. These HMA programs present a critical opportunity to minimize the risk to individuals and property from hazards while simultaneously reducing the reliance on federal disaster funds.ⁱ

Each HMA program was authorized by separate legislative actions, and as such, each program differs slightly in scope and intent. To qualify for post-disaster mitigation funds, tribal jurisdictions must have adopted a mitigation plan that is approved by FEMA.

- **HMGP:** HMGP provides funds to states, territories, Indian tribal governments, local governments, and eligible private non-profits following a presidential disaster declaration. The DMA 2000 authorizes up to seven percent of HMGP funds available to a state after a disaster to be used for the development of state, tribal, and local mitigation plans. HMGP funds are available to any jurisdiction until disaster funds are exhausted.
- **FMA:** This annual grant funds are designated for the reduction of flood risk by implementing projects such as acquisition or elevation of flood-prone homes, or other flood hazard specific mitigation activities. Furthermore, local jurisdictions must be participating entities in the National Flood Insurance Program (NFIP). The goal of FMA is to reduce or eliminate claims under the NFIP.
- **BRIC:** This program replaces the Pre-Disaster Mitigation Program and provides funds on an annual allocation to tribal and state jurisdictions for implementing programs and projects to improve resiliency and local capacity before disaster events. BRIC funds are available to apply for from October through January annually and includes a tribal and state set-aside amount, as well as a nationally competitive program. A specific amount of funding is set aside for each tribe.

Plan Financing and Preparation

Regarding plan financing and preparation, the Southern Ute Indian Tribe, as a federally recognized Tribe, is an eligible entity which may submit an application for FEMA assistance as either a “sub-applicant” or as an “applicant”. If the tribe applies directly to FEMA for funding, they will be classified as an applicant for HMA funding, but if they go through a State as a pass-through agent, the Tribe will be a sub-applicant. If HMA funding is awarded, the Applicant becomes the “Grantee” and is responsible for managing the grant and complying with program requirements and other applicable federal, state, territorial, tribal, and local laws and regulations. The applicant is responsible for managing the grant and complying with program requirements and other applicable federal, state, territorial, tribal, and local laws and regulation.

The Southern Ute Indian Tribe received a Building Resilient Infrastructure and Communities (BRIC) Grant in 2020 to fund the development of a Tribal Hazard Mitigation Plan. The grant provides up to 75% cost share from FEMA while the Tribe is responsible for 25% of project cost which was provided through cash match. FEMA is also providing BRIC Direct Technical Assistance (DTA) to fulfill capacity gaps due to lack of staff and is working to enhance the Tribe’s capacity to manage the planning process. Once the plan is completed, BRIC DTA will support the identification of projects from the Tribal Hazard Mitigation Plan that can be pursued through project scoping or project grants.

Goals

The planning team identified initial goals at the Kick-off meeting which were then reviewed, discussed, and revised at follow up meetings with Tribal Departments. Goals were developed to help guide and facilitate the update of this Hazard Mitigation Plan. These goals were developed to correspond with the local priorities of the Tribe.

C3 Element and Requirements §201.7(c)(3)(i): Does the Mitigation Strategy include goals to reduce or avoid long-term vulnerabilities to the identified hazards?

- a. The plan shall include hazard mitigation goals that represent what the tribal government seeks to accomplish to reduce or avoid the vulnerabilities identified in the risk assessment.
- b. The goals shall be consistent with the risk assessment.

Goal 1: Protect and preserve traditional and cultural resources

- Objective 1.1: Minimize impacts to traditional and cultural resources from all hazards.
- Objective 1.2: Integrate traditional knowledge and practices into hazard mitigation strategies to protect cultural heritage.
- Objective 1.3: Create a comprehensive inventory and mapping of traditional and cultural resources to identify those most vulnerable to hazards.

Goal 2: Strengthen Tribal sovereignty by improving Tribal capabilities and relationships

- Objective 2.1: Foster local and regional relationships and partnerships
- Objective 2.2: Improve warning systems and ability to communicate to residents and businesses during and following a disaster or emergency.
- Objective 2.3: Develop or improve Emergency Response Plan, Evacuation Plan, or other planning mechanisms, procedures, and abilities.
- Objective 2.4: Develop or improve Continuity of Operations Plan and improve sustainability of Tribal government operations.
- Objective 2.5: Enhance the capacity of the Tribe to independently plan, respond to, and recover from hazards through targeted training and resource allocation.

Goal 3: Promote awareness of and education about vulnerability to current and changing hazards

- Objective 3.1: Develop and implement community-wide education programs to raise awareness of hazard risks and promote preparedness.
- Objective 3.2: Incorporate climate change education into existing outreach programs to highlight emerging risks and adaptive strategies.
- Objective 3.3: Engage Tribal youth in educational initiatives to foster a culture of preparedness and resilience within the community.

Goal 4: Reduce impacts to life, the environment, and economy

- Objective 4.1: Develop hazard-specific plans and conduct studies or assessments to identify mitigation measures.
- Objective 4.2: Implement and enforce land use policies, building codes, and ordinances that reduce exposure to hazards.
- Objective 4.3: Enhance natural resource management practices to mitigate environmental impacts from hazards.
- Objective 4.4: Promote economic resilience by supporting local businesses in developing continuity plans and hazard mitigation strategies.

Goal 5: Protect property, community lifelines, energy industry, and infrastructure

- Objective 5.1: Provide protection for existing structures, future development, community lifelines, services, utilities, and trees to the greatest extent possible.
- Objective 5.2: Conduct vulnerability assessments of critical infrastructure and community lifelines to identify and prioritize areas for improvement.
- Objective 5.3: Implement infrastructure upgrades that enhance resilience to both current and future hazards.
- Objective 5.4: Develop contingency plans to ensure the continuity of essential services, such as power, water, and communications, during hazard events.
- Objective 5.5: Foster collaboration with stakeholders to safeguard the energy industry and critical infrastructure from hazards.

Hazard Profiles

The hazard mitigation plan includes a description of the hazards considered, including a risk and vulnerability assessment. Data considered during the risk assessment process includes historic occurrences and recurrence intervals; historic losses (physical and monetary); impacts to the built environment (including privately-owned structures as well as critical facilities); and the local risk assessment. The following tables provide an overview of the risk assessment for each hazard and the losses associated with each hazard for the entire planning area.

Table 1: Hazard Risk Occurrence for Southern Ute Indian Tribe

HAZARD		PREVIOUS OCCURRENCE EVENTS	APPROXIMATE ANNUAL PROBABILITY	LIKELY EXTENT
ANIMAL AND PLANT DISEASE	Animal Disease	3	Unknown	Unknown
	Plant Disease	0		
DAM FAILURE		0	Unlikely	Flooding greater than the 1% Annual Flood Risk Area.
DROUGHT		661 out of 1,552 months	Possible	Mild Drought
EARTHQUAKE		0	Unlikely	Less than 5.0 on the Richter Scale
EXPANSIVE SOILS		Unknown	Unknown	Minimal Impacts
EXTREME TEMPERATURES	Extreme Cold	Avg 0 days per year $\geq 100^{\circ}\text{F}$	Unlikely	Max Temp $\leq 10^{\circ}\text{F}$
	Extreme Heat	Avg 0 days per year with high of $\leq 10^{\circ}\text{F}$		Max Temp $\geq 100^{\circ}\text{F}$
FLOOD/ EROSION/ WASHOUT	Flash Flood	70	Likely	Some inundation/erosion of structures and roads near streams and rivers. Some evacuations of people may be necessary.
	Flood	15		

HAZARD		PREVIOUS OCCURRENCE EVENTS	APPROXIMATE ANNUAL PROBABILITY	LIKELY EXTENT
HAZARDOUS MATERIALS RELEASE	Fixed Site	12	Possible	1-8,000 gallons May affect an area <1/4 mile.
	Transportation	57		
	Oil/Gas Explosion	Unknown	Unknown	Varies by event
LANDSLIDE/ROCKFALL		17	Unknown	Minimal to no damage to property.
SEVERE THUNDERSTORMS/ LIGHTNING/ HAIL	Hail	40	Highly Likely	Avg 1.2" hail >1" rainfall Avg 68 mph winds
	Heavy Rain	72		
	Lightning	26		
	Thunderstorm Wind	33		
SEVERE WINTER STORMS	Blizzards	0	Highly Likely	1-31" snow 14-68 mph winds
	Heavy Snow	63		
	Ice Storm	1		
	Winter Storms	76		
	Winter Weather	215		
TERRORISM/CYBER ATTACK/ACTIVE SHOOTER		0	Unknown	Varies by event
TORNADO/ WINDSTORM	Windstorm	2	Likely	54-119 mph
	Tornado	5		EF0-EF1
WILDFIRE		1,268	Highly Likely	Avg: 53 acres Range: <1-54,129 acres

Table 2: Hazard Loss Estimates

HAZARD		COUNT	PROPERTY	CROP ¹
ANIMAL AND PLANT DISEASE	Animal Disease ²	3	86 animals	N/A
	Plant Disease ¹	0		
DAM FAILURE ⁵		0	\$0	\$0
DROUGHT ⁶		661 out of 1,552 months	N/A	\$395,047
EARTHQUAKE ¹¹		0	\$0	\$0
EXPANSIVE SOILS		Unknown	N/A	N/A
EXTREME TEMPERATURES ⁷	Extreme Cold	Avg 0 days per year $\geq 100^{\circ}\text{F}$	N/A	\$16,835
	Extreme Heat	Avg 0 days per year with high of $\leq 10^{\circ}\text{F}$		\$2,528
FLOOD/EROSION/ WASHOUT ⁸	Flash Flood	70	\$7,133,000	\$174,414 ¹²
	Flood	15	\$134,500	
	Erosion/Washout	Unknown	N/A	N/A
	Fixed Site ³	12	\$0	N/A

HAZARD		COUNT	PROPERTY	CROP ¹
HAZARDOUS MATERIALS RELEASE	Transportation ⁴	57	\$473,242	N/A
	Oil/Gas Explosion	Unknown	N/A	N/A
LANDSLIDE/ROCKFALL¹²		17	\$195,305	\$0 ¹²
SEVERE THUNDERSTORMS/ LIGHTNING/ HAIL⁸	Hail	40	\$87,500	\$21,028
	Heavy Rain	72	\$36,000	
	Lightning	26	\$259,250	
	Thunderstorm Wind	33	\$1,213,728	
SEVERE WINTER STORMS⁸	Blizzards	0	\$0	\$124,483
	Heavy Snow	63	\$0	
	Ice Storm	1	\$0	
	Winter Storms	76	\$315,000	
	Winter Weather	215	\$15,000	
TERRORISM/CYBER ATTACK/ ACTIVE SHOOTER¹⁰		0	\$0	\$0
TORNADO/ WINDSTORM⁸	Windstorm	2	\$1,518,000	\$31,323
	Tornado	5	\$86,000	\$2,000
WILDFIRE⁹		1,268	\$20,230,000	\$0 ¹²

1 - USDA RMA, 2000 - 2023

2 - CO Department of Ag 2022 - July 2024

3 - NRC, 1990 - 2022

4 - PHSMA, 1971 - 2023

5 - CO Dam Safety Officials, 1978 - February 2024

6 - NCEI, 1996-2023

7 - High Plains Regional Climate Center. 2024

8 - NCEI, 1996 - 2023

9 - National Interagency Fire Center, 2014-July 2024

10 - University of Maryland, 1970 - 2020

11 - USGS, 1900 - June 2024

12 - SHELDUS, 1960-2022

CHAPTER 2: PLANNING PROCESS

Introduction

The process utilized to develop a hazard mitigation plan is as important as the final planning document. For this planning process, the Southern Ute Indian Tribe adapted the four-step hazard mitigation planning process outlined by FEMA to fit the needs of the tribe. The following pages will outline how the planning process was established; who was involved; critical project meetings and community representatives; outreach efforts to the general public; key stakeholders and neighboring jurisdictions; general information relative to the risk assessment process; general information relative to local/regional capabilities; plan review and adoption; and ongoing plan maintenance.

A1 Element and Requirements §201.7(c)(1): Does the plan document the planning process, including how it was prepared and who was involved in the process?

- a. The plan shall document how the plan was prepared, including the schedule or timeframe and the activities that made up the plan's development.
- b. The plan shall document who was involved on the planning team, including each person's position or title and department/agency.

Hazard Mitigation Plan Single-Jurisdictional Approach

The hazard mitigation planning process as outlined by FEMA has four general steps, which include: organization of resources; assessment of risks; development of mitigation strategies; and implementation and annual monitoring of the plan's progress. In many cases, a multi-jurisdictional approach through the cooperation of counties, communities, and regional emergency management can be used to develop and produce a Hazard Mitigation Plan. However, the Southern Ute Indian Tribe maintains its own individual and autonomous Hazard Mitigation Plan. By acting as the sole participant in their plan, the Tribe has provided an opportunity for a more in-depth review of tribal specific hazards of concern and current capabilities. Furthermore, a single jurisdictional plan allows for sole discretion and autonomy in how the tribal nation will conduct its planning process.

Single tribal jurisdictional plans must still meet the requirements of Title 44 Part 201.7, Mitigation Planning in the CFR. The term "jurisdiction" means local government and the CFR defines a 'local government' as "any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments, regional or interstate government entity, or agency or instrumentality of a local government; **any Indian tribe or authorized tribal organization**, any rural community, unincorporated town or village, or other public entity."

The mitigation planning process is rarely a linear process. It is characteristic of the process that ideas developed during the initial assessment of risks may need revision later in the process, or that additional information may be identified while developing the mitigation plan or during the implementation of the plan that results in new goals or additional risk assessments. This planning process was guided by multiple resources available including, but not limited to, the Local Mitigation Plan Review Guide⁹, Local Mitigation

⁹ Federal Emergency Management Agency. 2022. "Local Mitigation Planning Policy Guide." https://www.fema.gov/sites/default/files/documents/fema_local-mitigation-planning-policy-guide_042022.pdf.

Planning Handbook¹⁰, Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards¹¹, Tribal Mitigation Planning Handbook¹², and the Mitigation Action Plan Portfolio¹³ to develop this plan.

As a Tribal entity, this plan was developed to meet the requirements of Title 44 CFR 201.7, Tribal Mitigation Planning for a Standard Tribal Mitigation Plan. Throughout the development of this plan, the Tribal Mitigation Plan Review Guide¹⁴ was reviewed to ensure consistency with FEMA requirements. These tribal planning requirements included, but are not limited to:

- Planning Process
 - An inclusive planning process which brings together tribal leaders, tribal elders, and other partners including the public to discuss and share knowledge and their perception of risk.
 - A discussion of how existing data resources (plans, studies, reports, data, etc.) and other ongoing tribal and federal planning efforts are integrated into the HMP.
- Hazard Identification and Risk Assessment
 - A discussion of natural hazards which impact the planning area and their subsequent effects on the region, which includes previous occurrences and probability for future events.
- Mitigation Strategies
 - A discussion of the tribal government’s pre- and post-disaster hazard mitigation policies as well as tribal funding sources for mitigation actions identified in the HMP.
 - Clearly identified goals and an action plan to implement and administer actions identified to reduce long-term vulnerabilities.
- Plan Updates
 - As an update to a previous HMP, revisions must be made to reflect changes in development, progress on mitigation actions, and any changes to priorities for the planning area.
- Assurances and Adoption
 - The tribal government must include assurances to comply with all applicable federal statutes and regulations and provide documentation that the HMP has been adopted by the tribal governing body.

A general project schedule for the planning process is provided.

10 Federal Emergency Management Agency. 2023. "Local Mitigation Planning Handbook." https://www.fema.gov/sites/default/files/documents/fema_local-mitigation-planning-handbook_052023.pdf.

11 Federal Emergency Management Agency. 2013. "Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards." https://www.fema.gov/sites/default/files/2020-06/fema-mitigation-ideas_02-13-2013.pdf.

12 Federal Emergency Management Agency. 2019. "Tribal Mitigation Planning Handbook." https://www.fema.gov/sites/default/files/2020-06/fema-tribal-planning-handbook_05-2019.pdf.

13 Federal Emergency Management Agency. 2020. "Hazard Mitigation Assistance Mitigation Action Portfolio." https://www.fema.gov/sites/default/files/documents/feam_fy21-bric-mitigation-action-portfolio.pdf.

14 Federal Emergency Management Agency. 2017. "FEMA Policy: Tribal Mitigation Plan Review Guide." https://www.fema.gov/sites/default/files/2020-05/FEMA_Policy_Tribal_Mitigation_Plan_Review_Guide.pdf.

Figure 2: Project Schedule



Tribal Planning Committee

The Tribal Planning Committee (TPC) was comprised of tribal members from a broad range of departments and organizations. TPC members were invited to and attended various planning meetings and contributed to the development of the plan by reviewing goals and objectives; identifying key contacts to include in the planning process; identifying and discussing hazards of top concern, including past events and their impacts to the reservation; identifying and prioritizing mitigation actions or projects; providing new data; and by serving as a liaison for the plan to their departments or the general public.

In order to be a member of the Tribal Planning Committee, individuals had to attend at least one meeting throughout the planning process and/or provide comments or technical reviews to the plan. A list of TPC members can be found in the table below.

Table 3: Southern Ute Indian Tribe HMP Planning Committee Members

NAME	TITLE / DEPARTMENT	AFFILIATION
Amy Barry	Tribal Information Services Director	SUIT
Andrew Frost	Natural Resources Lands Director	SUIT
Andy Wetherell	Department of Energy (DOE) Manager	SUIT
*Anthony Kohel	Hazard Mitigation Planner	JEO Consulting Group
*Becky Appleford	Planning Project Manager	JEO Consulting Group
Brad Egger	Fire Marshal	Los Pinos Fire Protection District
Brian Sheffield	Permanent Fund Director of Human Resources	SUIT
Cassandra Atencio	Tribal Historic Preservation Officer	SUIT
Chris Mimmack	Dept. of Justice and Regulatory Director	SUIT
Crystal Rizzo	Cultural Preservation Department Director	SUIT
*Donald Brockus	Risk and Emergency Manager	SUIT
Doug Krueger	Sr. Environmental Compliance Specialist, DOE	SUIT
Edward Box III	Assistant General Manager	Sky Ute Casino
Elizabeth Edwards	Growth Fund Risk Manager	SUIT
Ember Michel	Director of Environmental, Health and Safety	Red Willow Production
^Felicity Selvoski	Community Planner (Tribal)	FEMA Region 8
Hayes Briskey	Utilities Manager	SUIT

NAME	TITLE / DEPARTMENT	AFFILIATION
Jim Owens	Deputy Fire Chief	Los Pinos Fire Protection District
Joshua Lorenzen	Fire Chief	Los Pinos Fire Protection District
^Katie Baum	BRIC Technical Assistance Section Chief	FEMA Region 8
^Kyle McCormick	Hazard Mitigation Specialist	FEMA Region 8
Lindsay Box	Executive Director	SUIT
^Lucy Duffy	Communications Specialist	FEMA Contractor, Resilience Action Partners
^Megan Main	Communications Manager	FEMA Contractor, Resilience Action Partners
Michael Barrow	Chief of Police	SUIT
^Patricia Gavelda	Tribal Grants Management Specialist	FEMA Region 8
Peter Nylander	Water Resources Head	SUIT
Priscilla Bancroft	Office of the Superintendent	BIA – Southern Ute Agency
Rich Gustafson	Fire Management	BIA – Southern Ute Agency
Seana Luzar	Lands Division Head	SUIT
Shane Seibel	Growth Fund Executive Director	SUIT Growth
Shelly Riddle	GIS Manager	SUIT
Sherri Helton	Emergency Manager	BIA
Summer Begay	Tribal Council Affairs Communications Specialist	SUIT
^Teresa Bagdol	Risk Specialist/Public Affairs Specialist	SUIT/FEMA Region 8
Tom McNamara	Field Manager – Southwest Service Area Counties and Tribal Nations	Colorado Division of Homeland Security & Emergency Management
Tyson Thompson	Director of Property and Facilities	SUIT

**Donald Brockus served as the primary point of contact for the tribe throughout the planning process.*

^Served on the FEMA BRIC Technical Assistance Team.

**Served in a consultant role for plan development.*

SUIT Public Engagement Approach

Public engagement is a cornerstone of the SUIT’s HMP update, ensuring that the perspectives and needs of the Tribe are integrated into hazard mitigation efforts. A comprehensive engagement strategy was developed by members of the TPC with guidance provided by FEMA Region 8 staff and contractors. The engagement strategy was implemented to gather input from Tribal members, residents, employees, and subject matter experts. This process aimed to foster a collaborative approach to identifying risk and prioritizing mitigation strategies.

Key components of the public engagement strategy included:

- Public Opinion Survey
- Sip, Chat, and Chew Event
- Growth Fund General Meeting
- Southern Ute Tribal Fair and Pow-Wow

These activities provided multiple platforms for residents to share their concerns about natural hazards and propose potential solutions.

Additionally, targeted engagement with subject matter experts and Tribal employees was conducted through 1:1 interviews, employee-focused events, and monthly TPC meetings. These efforts ensured that insights from Tribal departments, emergency management, and other stakeholders were incorporated into the plan’s development. A summary of each of the engagement efforts is provided in the following sections.

Kick-Off Meeting and Site Visit

A two-day site visit, May 23-24, 2024, to the Southern Ute Indian Reservation in May 2024 was made by FEMA Region 8, FEMA’s Community Engagement and Risk Communication (CERC) contractors for *Resilience Action Partners*, and JEO staff. The visit had two purposes:

- To gain insight on the unique needs of an HMP to support the SUIT.
- To allow the BRIC DTA support team to gain a better understanding of the tribe’s priorities, geography and needs.

The visit also coincided with the tribe’s annual Bear Dance, an event that provided a unique opportunity to meet tribal members and learn about their history and culture. Findings from this visit helped inform priorities for the update and development of the tribe’s HMP, as well as future BRIC grant applications.

Table 4: Site Visit Itinerary

ACTIVITY	ATTENDEES
DAY 1: MAY 23, 2024	
A.M.: Background Overview Discussion	Don Brockus, FEMA, CERC, and JEO
P.M.: HMP Kick-Off Meeting	TPC, FEMA, CERC, and JEO
DAY 2: MAY 24, 2024	
A.M.-1: Southern Ute Cultural Center & Museum	Don Brockus, Crystal Rizzo, FEMA, CERC, and JEO
A.M.-2: Reservation Driving Tour	Don Brockus, FEMA, CERC, and JEO
P.M.: SUIT Bear Dance	Don Brockus, FEMA, CERC, and JEO

Tribal Planning Committee members, FEMA representatives, and JEO staff held a project Kick-off Meeting on May 23, 2024. At this meeting attendees discussed key strategies and information to integrate across the planning process including:

- Public engagement in the HMP process,
- Proposed key engagement tasks and timeline for input,
- An overview of the planning process, HMP components, and regulatory requirements,
- Hazard identification to include in the risk assessment,
- TPC roles and responsibilities,
- And project schedule.

A summary of the site visit and kick-off meeting can be found in *Appendix A*.

Monthly TPC Meetings

Monthly meetings were held with members of the TPC. These meetings were intended to guide the development of the HMP and inform the process. During the meetings, TPC members were asked to provide feedback on the ongoing public engagement, knowledge of natural hazards, and identify appropriate mitigation solutions. The meetings typically took place on the third Thursday of each month from 1:30 – 3:00pm MST, with most joining via Microsoft Teams with an option to join in person. The table below provides the date and agenda for each meeting. Additional information from each meeting can be found in *Appendix A*.

Figure 3: Exhibit at the Southern Ute Cultural Center and Museum



Figure 4: Don Brockus, SUIT EM, with Members of HMP Team

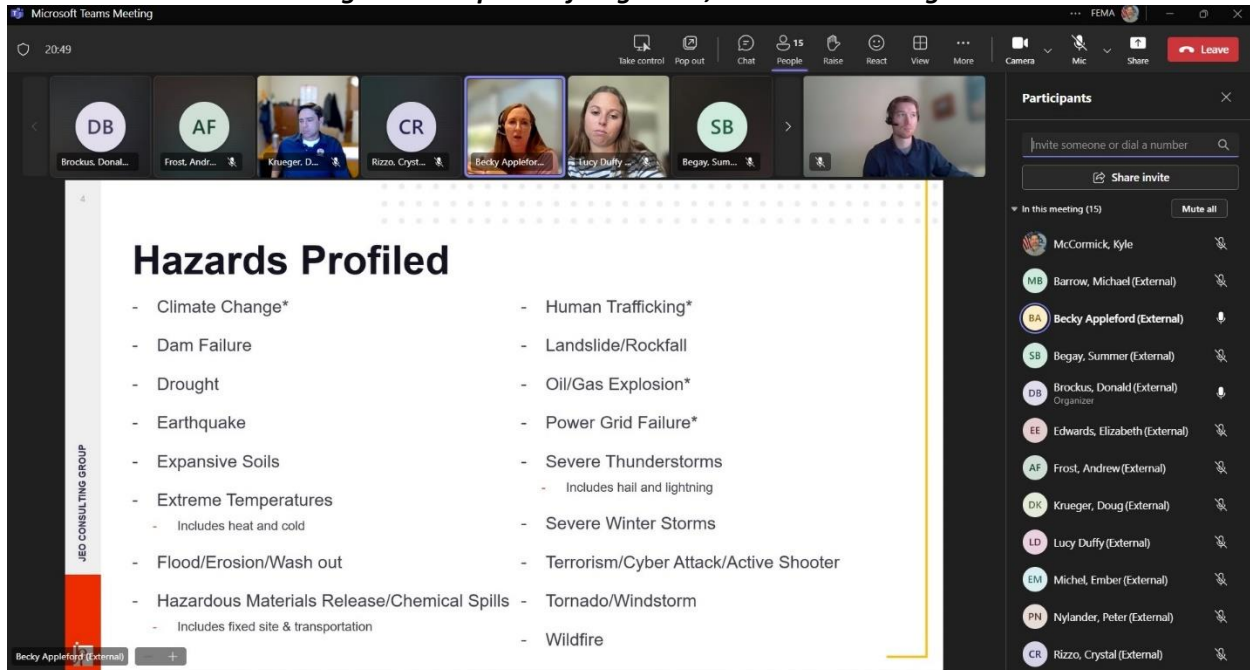


Photos by HMP Team

Table 5: Monthly TPC Meetings

DATE	AGENDA
July 25, 2024	<ul style="list-style-type: none"> • General updates • Public engagement activities • Review goals identified in previous HMP • Discussion of goals and objectives for updated HMP
August 15, 2024	<ul style="list-style-type: none"> • Updates on public engagement activities • Discussion on hazards (Mentimeter exercise) and impacts • Review updated goals and objectives
September 19, 2024	<ul style="list-style-type: none"> • Engagement events • Survey responses to date • Asset inventory and vulnerabilities discussion • Discuss priority hazards • Update previous mitigation actions (Mentimeter exercise)
October 17, 2024	<ul style="list-style-type: none"> • Survey response total and next steps • Discuss hazard problem statements • Continue mitigation strategy development (Miro exercise)
December 19, 2024	<ul style="list-style-type: none"> • Summary of survey results with key takeaways • Plan maintenance discussion • Prioritize new mitigation actions (Mentimeter exercise) • Updated project schedule
January 16, 2024	<ul style="list-style-type: none"> • TPC review of HMP discussion • Addressing missing information for plan • Schedule • Reviews and FEMA approval • Next steps

Figure 5: Snapshot of August 15, 2024 TPC Meeting



In addition to TPC meetings, additional outreach was conducted with interested parties using one-on-one interviews and SUIT employee engagement event.

Additional Engagement Efforts

1:1 Interested Party Interviews

To garner specific feedback from interested parties, 1:1 interviews were held with two individuals. Interviews were held with Cassie Atencio, Tribal hazard mitigation officer, and Wesley Crume Town of Ignacio Police Chief. Questions were asked to get feedback from Tribal departments and organizations that have a direct interest in protecting community assets and infrastructure from natural hazards. The interviewees were identified by the Risk & Emergency Management Team as a critical interested party for providing feedback to include in the HMP.

Southern Ute Employee Engagement Event

In an attempt to get feedback from Tribal Departments and employees beyond the TPC, a Pastries and Coffee Event was held during work hours (September 5, 2024) to promote the survey and get feedback directly from employees. The event was catered by the Sky Ute Casino and very well attended by employees.

Figure 6: Booth Setup for Employee Engagement Event

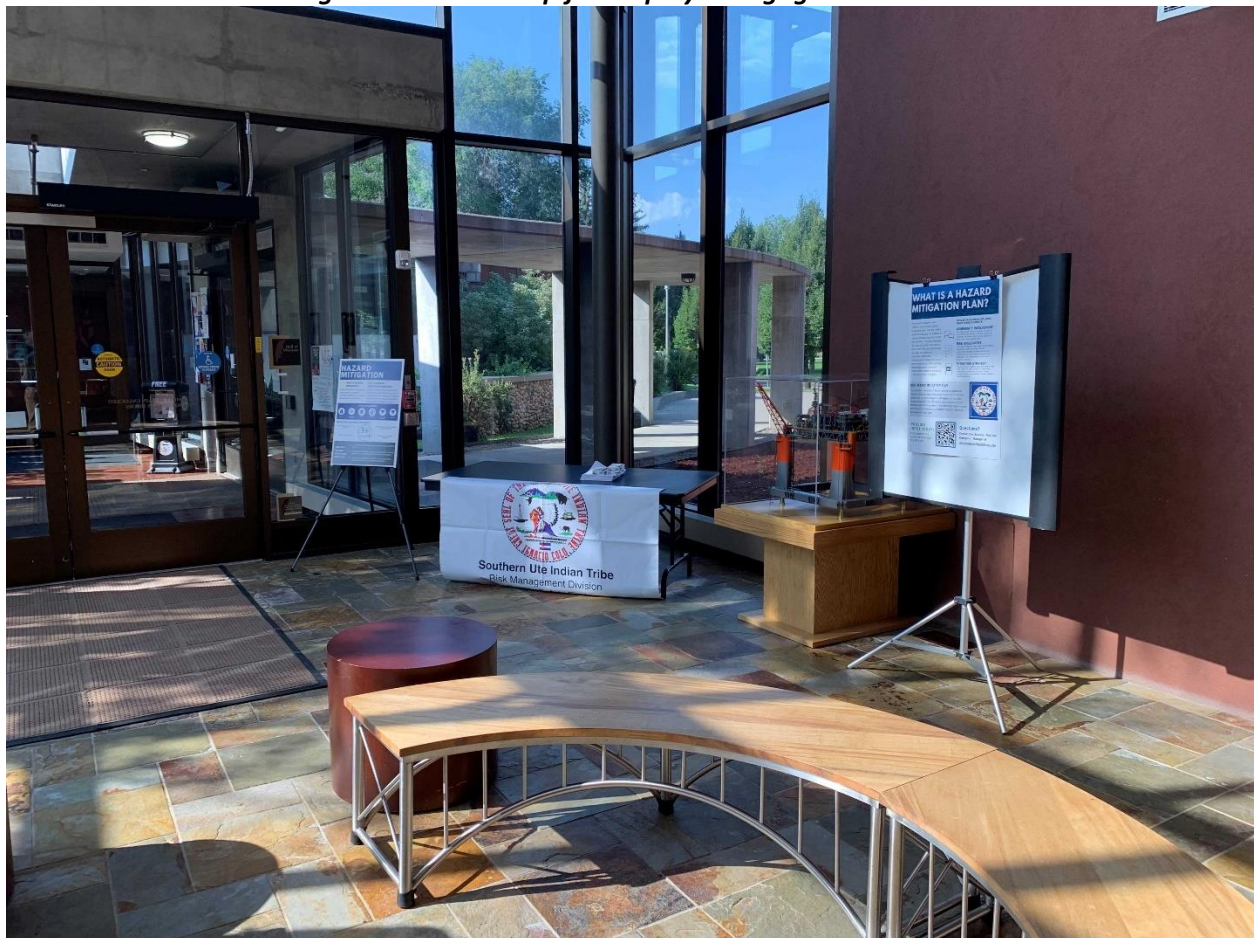


Photo by HMP Team

Public Involvement and Outreach

The Tribal Planning Committee emphasized the importance of involving tribal members, tribal departments, and the public in the planning process. For the purposes of this plan, the planning team defined the “public” as:

All members of the Southern Ute Indian Tribe, any non-tribal member residing or working within the reservation boundary, and stakeholders from within or outside the Southern Ute Reservation boundary.

The public involvement strategy developed by the Tribal Planning Committee and used throughout the plan update aimed to maximize Tribal capabilities while leveraging the FEMA staff expertise and guidance. Neighboring jurisdictions, key stakeholders, and Tribal members were identified and encouraged to attend and participate in the planning process through various means including:

- Sip, Chat, and Chew Event
- Southern Ute Indian Tribe Growth Fund General Meeting
- Southern Ute Tribal Fair and Pow-Wow Tabling Event
- Southern Drum Newspaper Article
- SUIT website and social media posts
- Posted flyers at SUIT facilities
- Public Opinion Survey

A2 Element and Requirements §201.7(c)(1)(i): Does the plan document an opportunity for public comment during the drafting stage and prior to plan approval, including a description of how the tribal government defined “public”?

- a. The plan shall describe how the tribal government defined “public.”
- b. The plan shall describe how the public was given the opportunity to be involved in the planning process and how their feedback was incorporated into the plan. Examples of public involvement include, but are not limited to, interactive websites with drafts for public review and comment, questionnaires or surveys, or booths at community events.
- c. The opportunity for participation shall occur during plan development, which is prior to the comment period on the final plan and prior to plan adoption/approval.

Sip, Chat, and Chew Event

The Sip, Chat & Chew Event is a monthly event hosted by the Tribe to discuss relevant topics with Tribal members, and there is typically a dinner or food served at the event. For the August 9, 2024 Sip, Chat and Chew Event, Don Brockus and Teresa Bagdol presented information about the Hazard Mitigation Plan Update and shared the survey with those in attendance to get feedback.

Southern Ute Indian Tribe Growth Fund General Meeting

During this meeting, the SUIT Public Information Officer highlighted the Hazard Mitigation Plan and handed out survey flyers with QR codes as well as physical copies for those that prefer that method. The General Meeting is highly attended by Southern Ute Tribal Members, so it was a good opportunity to gather input from SUIT members. The General Meeting occurred on September 12, 2024 from 9am to 4pm.

Figure 7: HMP Booth at the Pow-Wow (left) and Fairgrounds (right)



Photos by HMP Team



Southern Ute Tribal Fair and Pow-Wow Event

The SUIT Emergency Management Department held a booth at the 2024 Tribal Fair and Pow-Wow to discuss the HMP and get feedback through promotion of the survey. The tabling event was open to the public, which was held from September 5-8, 2024. The SUIT received over 30 survey responses during this event.

Additional Public Notifications

In addition to in person events, SUIT sent notifications to Tribal members and the public using various media. The following table provides a list of methods utilized during plan development to notify of the plan update and ways to engage throughout the planning process.

Table 6: Public Notification Methods

METHOD	NOTES
Newspaper Article	<ul style="list-style-type: none"> Southern Ute Drum – August 8, 2024
SUIT Social Media Posts	<ul style="list-style-type: none"> Instagram Facebook – August 7, September 13, and September 30, 2024 Twitter
SUIT Website	<ul style="list-style-type: none"> Included overview, survey link, and flyer
General Meeting Postcard	<ul style="list-style-type: none"> Available at General Meeting with link to survey

Figure 8: HMP Social Media Graphic

YOUR VOICE MATTERS!

HELP MAKE THE SOUTHERN UTE INDIAN RESERVATION A SAFER PLACE FOR FUTURE GENERATIONS

Disasters can happen anywhere. Hazards change over time. The Southern Ute Indian Tribe is taking proactive steps to protect our community from potential hazards and to mitigate risk. We are updating our Hazard Mitigation Plan and invite you to participate by taking this survey. Questions? Join tribal officials and FEMA at future community meetings to learn more. Look for announcements of upcoming dates.

WE WANT TO HEAR FROM YOU.

We are excited to invite all Southern Ute Tribal Members, businesses, and community organizations to participate in our survey.

Your feedback will be shared with SUIT community officials to help plan mitigation projects that address our community's needs. Help us reach our resilience goals by taking the survey today!

Please share your insights by October 1.

TAKE THE SURVEY VIA THE QR CODE OR AT THE BELOW LINK.

<https://bit.ly/3WyFIA9>

Public Opinion Survey

A successful planning effort includes active participation and buy-in from community leaders, interested parties, and the public. The public survey is a tool to both inform the general public of the plan's development and to gather feedback and input to be integrated into the final plan.

SUIT conducted a public survey on hazard mitigation and hazards risk from August to October 2024 to inform the Tribal Hazard Mitigation Plan update. From online and in-person surveys, 69 responses were collected. The results of their responses are analyzed below. The full survey responses are included in *Appendix B*.

Summary of Key Findings

- 67% of respondents reported being impacted by a hazard event in the past 5 years; wildfire was the most common reported hazard.
- The 5 hazards of most concern are: Human Trafficking, Drought, Climate Change, Oil/Gas Explosion, and Wildfire.
- The 5 hazards of least concern are: Expansive Soils, Landslide/Rockfall, Tornado/Windstorms, Dam Failure, and Earthquake.
- Protecting critical facilities, historic & cultural spaces, private property, natural features, community assets, and building teamwork and cooperation are all seen as Pretty Important or Extremely Important by over 87% of respondents.
- 62% of respondents see climate change as a major threat to the SUIT, with another 24% rating it a moderate threat; only 13% see it a minor threat or not a threat at all.
- 20% reported having someone in their household who would require additional assistance during a disaster.

Figure 10: Question 5 – How concerned are you about the following hazards?

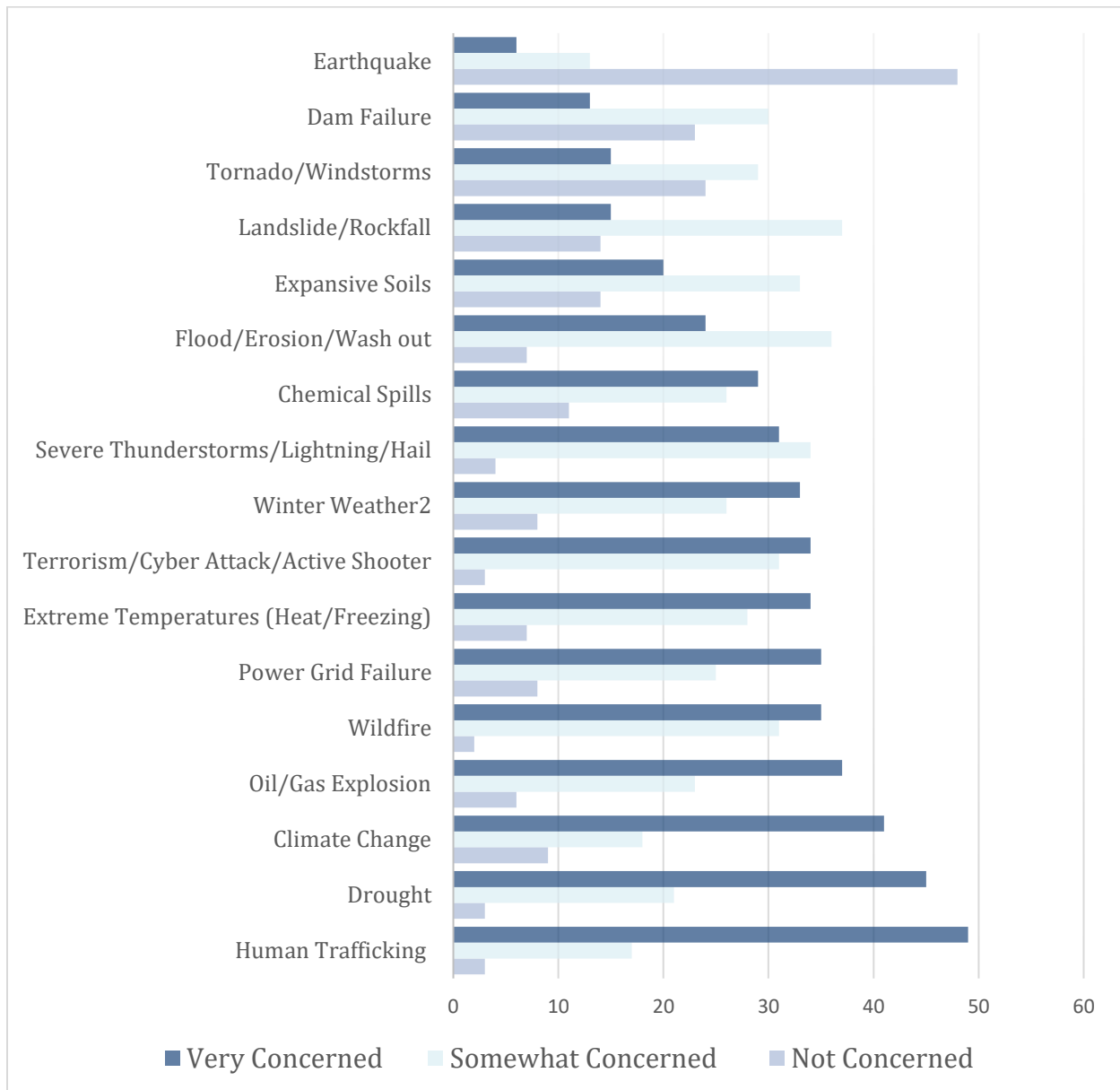


Figure 11: Question 8 – Natural disasters can have a significant impact on the SUIT Reservation but planning for these events can help us to better respond, recover and lessen the overall impact of future events. The following statements will help us determine community priorities in planning for these hazards. Please tell us how important each is to you.

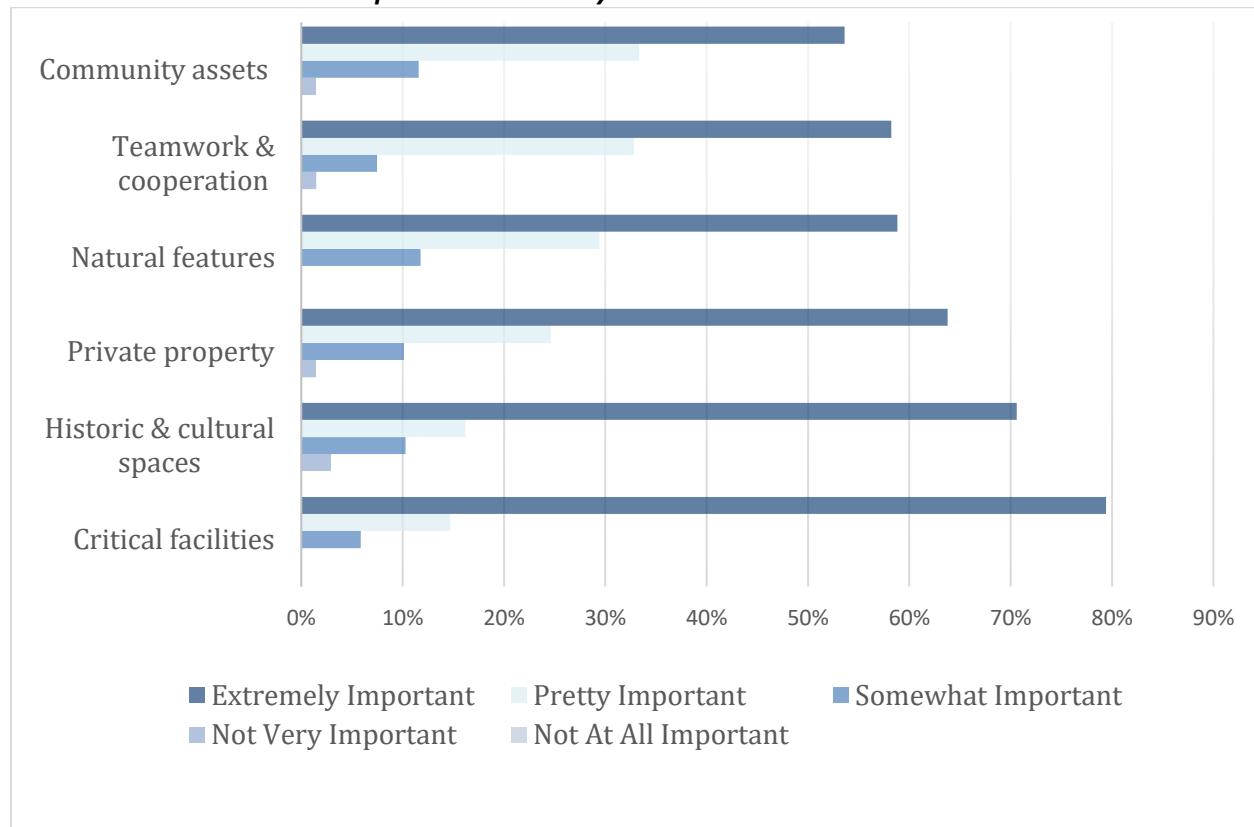


Table 7: Preferred Method of Communication (Question 11 of Survey)

Method of Communication	No. of Respondents
Southern Ute Drum/Newspaper	52
SUIT Website	43
Southern Ute Indian Tribe Facebook	42
Email	40
Radio – KSUT	37
Information Flyer/Handouts	32
Town Hall Meetings	25
Instagram – Southern Ute Indian Tribe	20
Word of Mouth	18
Southern Ute X/Twitter account	13

Observations & Recommendations

- The public’s perception of hazards in this survey should be compared to the rankings given those hazards in the Tribal Hazard Mitigation Plan to identify alignment and/or disconnects between data analysis and public perception.
- The Tribe should conduct additional planning and outreach for individuals who may require additional assistance during an emergency, particularly those who depend on electricity for medical devices. It may be appropriate to focus mitigation and preparedness strategies toward this population.
- The Tribe may want to conduct additional outreach to younger tribal members, both to gauge their perceptions, and to educate them on the risk from hazards.
- The Tribe should continue to use multiple information channels to deliver hazards information to the public; there is no one method that will reach everyone.

Neighboring Jurisdictions

Information regarding the HMP was also shared with identified stakeholders and neighboring jurisdictions who were encouraged to attend and provide local input. Below is a list of stakeholder groups who were invited to attend HMP meetings, request 1:1 interviews, or provide local feedback via the HMP public survey. Invitations to participate in the plan included email, phone calls, social media posts, project website updates, local news media, and flyers posted at key tribal locations.

- Archuleta County
- Bureau of Indian Affairs
- Colorado Division of Homeland Security and Emergency Management
- La Plata County
- Los Pinos Fire Protection District
- Town of Ignacio

Representatives attended TPC meetings or 1:1 interviews from all the above except from Archuleta or La Plata Counties. Information or feedback provided from these agencies is integrated throughout this plan.

The diverse and inclusive public engagement approach underscores the Tribe’s commitment to community-driven hazard mitigation, strengthening the plan’s ability to reflect the unique priorities and challenges of the SUIT.

A3 Element and Requirements §201.7(c)(1)(ii): Does the plan document, as appropriate, an opportunity for neighboring communities, tribal 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?

- a. The plan shall identify all tribal members/citizens, and partners who were given an opportunity to be involved in the planning process. During plan review, it is important for the reviewer to consider that variations in tribal capability and/or cultural practice may influence participation.
- b. The plan shall identify how tribal members/citizens and partners were invited to participate in the process.

Data Resources and Review

Effective hazard mitigation planning requires the review and inclusion of a wide range of data, documents, plans, and studies. The following table is a non-exhaustive list of identified sources utilized during this planning process to form risk hazard profiles, help define vulnerability, and shape appropriate mitigation actions for the Tribe.

Table 8: Document and Technical Resources

Documents, Plans, & Studies	
Comprehensive Economic Development Strategy and Hazard Mitigation Plan Alignment Guide (2022) https://www.fema.gov/sites/default/files/documents/fema_ceds-hmp-alignment-guide_2022.pdf	National Flood Insurance Program Community Status Book (2023) https://www.fema.gov/flood-insurance/work-with-nfip/community-status-book
Flood Insurance Studies https://msc.fema.gov/portal/home	National Response Framework (2019) https://www.fema.gov/emergency-managers/national-preparedness/frameworks/response
Fifth National Climate Assessment (2023) https://nca2023.globalchange.gov/	Colorado Water Plan (2023) https://dnrweblink.state.co.us/CWCB/0/edoc/219188/Colorado_WaterPlan_2023_Digital.pdf
Hazard Mitigation Assistance Guidance and Addendum (2015) https://www.fema.gov/sites/default/files/2020-07/fy15_hma_addendum.pdf	Colorado State Flood Hazard Mitigation Plan (2018) https://dnrweblink.state.co.us/CWCB/0/edoc/207256/2018ColoradoFloodMitigationPlanUpdateFinal.pdf
Local Mitigation Planning Handbook (2023) https://www.fema.gov/sites/default/files/document/s/fema_local-mitigation-planning-handbook_052023.pdf	Colorado State Hazard Mitigation Plan (2023) https://mars.colorado.gov/mitigation/enhanced-state-hazard-mitigation-plan-e-shmp
Local Mitigation Planning Policy Guide (2022) https://www.fema.gov/sites/default/files/documents/fema_local-mitigation-planning-policy-guide_042022.pdf	Robert T. Stafford Disaster Relief and Emergency Assistance Act (2021) https://www.fema.gov/sites/default/files/documents/fema_stafford_act_2021_vol1.pdf
Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (2013) https://www.fema.gov/sites/default/files/2020-06/fema-mitigation-ideas_02-13-2013.pdf	Tribal Mitigation Plan Review Guide (2017) https://www.fema.gov/media-library/assets/documents/18355
Mitigation Planning and the Community Rating System Key Topics Bulletin (2018) https://www.fema.gov/sites/default/files/2020-06/fema-mitigation-planning-and-the-community-rating-system-key-topics-bulletin_10-1-2018.pdf	Tribal Mitigation Plan Review Guide Policy (2017) https://www.fema.gov/media-library/assets/documents/18355
National Climate Assessment (2014) https://nca2014.globalchange.gov/	Colorado Wildfire Preparedness Plan (2024) https://dfpc.colorado.gov/coloradowildfirepreplan
Technical Agencies and Data Resources	
Arbor Day Foundation – Tree City Designation (2023) https://www.arborday.org/programs/treecityusa/directory.cfm	Colorado State Forest Service https://csfs.colostate.edu/
Bureau of Indian Affairs https://www.bia.gov/	Colorado Wildfire Management https://dfpc.colorado.gov/wildlandfire
CDC Social Vulnerability Index https://www.atsdr.cdc.gov/placeandhealth/svi/index.html	Colorado Local Public Health Agencies https://cdphe.colorado.gov/public-information/find-your-local-public-health-agency

Technical Agencies and Data Resources	
Federal Emergency Management Agency https://www.fema.gov/	
FEMA Flood Map Service Center https://msc.fema.gov/portal/advanceSearch	NOAA – Billion Dollar Weather and Climate Disasters https://www.ncdc.noaa.gov/billions/overview
High Plains Regional Climate Center http://climod.unl.edu/	National Weather Service http://www.weather.gov/
National Centers for Environmental Information https://www.ncei.noaa.gov/	NWS – Seasonal Drought Outlook https://www.cpc.ncep.noaa.gov/products/expert_assessment/sdo_summary.php
National Consortium for the Study of Terrorism and Responses to Terrorism (START) http://www.start.umd.edu/gtd/	The Census of Agriculture (2022) https://www.nass.usda.gov/AgCensus/
National Drought Mitigation Center – Drought Impact Reporter http://droughtreporter.unl.edu/map/	Union of Concerned Scientists – Killer Heat Interactive Tool https://www.ucsusa.org/resources/killer-heat-interactive-tool?location=lancaster-county--ne
National Drought Mitigation Center – Drought Monitor http://droughtmonitor.unl.edu/	United States Army Corps of Engineers – National Levee Database https://levees.sec.usace.army.mil/#/
National Historic Registry https://www.nps.gov/subjects/nationalregister/index.htm	United States Army Corps of Engineers - National Inventory of Dams https://nid.sec.usace.army.mil/orcls/f?p=105:1
National Oceanic Atmospheric Administration (NOAA) http://www.noaa.gov/	United States Department of Transportation – Pipeline and Hazardous Materials Safety Administration https://www.phmsa.dot.gov/
Natural Resources Conservation Service www.ne.nrcs.usda.gov	United States Census Bureau https://data.census.gov/cedsci/
Colorado Division of Water Resources – Dams https://dwr.state.co.us/tools/DamSafety/Dams	United States Department of Agriculture http://www.usda.gov
Colorado Department of Public Health & Environment – Animal-related Diseases https://cdphe.colorado.gov/animal-related-diseases	United States Department of Agriculture – Risk Management Agency http://www.rma.usda.gov
Colorado Department of Education https://www.cde.state.co.us/	United States Forest Service https://www.fs.fed.us/
Colorado Energy Office https://energyoffice.colorado.gov/	United States Geological Survey http://www.usgs.gov/
Colorado Department of Public Health & Environment https://cdphe.colorado.gov/	University of Nebraska-Lincoln – National Drought Mitigation Center http://drought.unl.edu/Planning/DroughtPlans/StatePlanning.aspx?st=sd
Colorado Department of Natural Resources https://dnr.colorado.gov/	Wildfire Risk to Communities: https://wildfirerisk.org/

TPC and Public Review

An initial draft of the HMP was provided to the TPC via a Google Drive link for their review and comments from January 3 – 16, 2025. At the conclusion of this period, the TPC met to go over questions and comments of the draft. Corrections and updates were incorporated into the draft prior in preparation of the public review period. Once the second draft of the HMP was completed, a public review period was opened to allow for tribal members and members of the public to review the plan and provide comments and changes

The public review period was open from February 5 – 19, 2025. Tribal members were notified of this public review period by social media posts, emails, and public notice for the Tribal Council Meeting on February 18. The HMP was also made available on the SUI website ([website URL](#)) to view and download the document. And a printed copy was available upon request from the Emergency Manager. Received comments and suggested changes were incorporated into the plan.

Plan Adoption

Based on FEMA requirements, this hazard mitigation plan must be formally adopted by the Tribal Council through approval of a resolution. This approval will create ‘individual ownership’ of the plan by each participant. Formal adoption provides evidence of a participant’s full commitment to implement the plan’s goals, objectives, and action items. A copy of the resolution draft submitted to participating jurisdictions is located in *Appendix A*. Copies of adoption resolutions may be requested from the Southern Ute Indian Tribe directly.

E2 Element and Requirements §201.7(c)(5): Does the plan include documentation that it has been formally adopted by the governing body of the tribal government requesting approval?

- a. The tribal government’s governing body shall submit documentation that the plan was adopted.

Once adopted, the Southern Ute Indian Tribe is responsible for implementing and updating the plan every five years. Those who participated directly in the planning process would be logical champions for updating the plan. In addition, the plan will need to be reviewed and updated annually or when a hazard event occurs that significantly affects the tribal area or tribal members.

CHAPTER 3: PLANNING AREA PROFILE

To identify local and specific vulnerabilities, it is vitally important to understand the people and built environment of the planning area. The following section is meant to provide an overall description of the characteristics of the Southern Ute Indian Tribe.

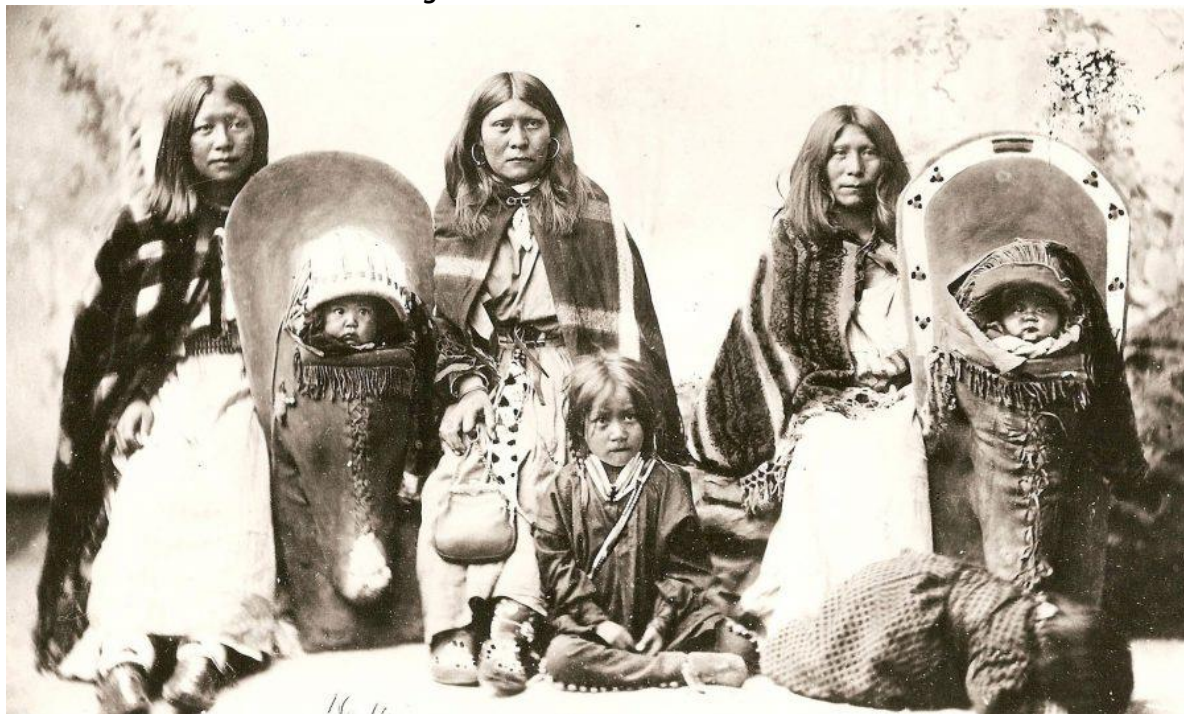
History of the Southern Ute People

The Southern Ute people are one of the oldest groups of people in Colorado, with a history dating back to the beginning of time according to tribal traditions. The Ute people originally inhabited a vast area including present-day Colorado, Utah, Wyoming, Nevada, New Mexico, and Arizona. They lived in harmony with the land, establishing a sustainable relationship with the ecosystem by traveling and camping in familiar sites and using well-established routes, such as the Ute Trail.

The Ute language, Shoshonean, is a dialect of the Uto-Aztecan language family, shared with other groups like the Paiute, Goshute, Shoshone, and Comanche. The Ute people were part of a highly developed society, with a shared language, values, and social and political practices. Different bands of Ute people settled in various regions before European contact, including the Mouache, Caputa, Weenuchiu, Uncompahgre, White River, Uintah, Pahvant, Timonogots, Sanpits, Moanumts, Sheberetch, and Comumba/Weber bands.

The Mouache and Caputa bands are now part of the Southern Ute Tribe, headquartered in Ignacio, Colorado, while the Weenuchiu are known as the Ute Mountain Utes, headquartered in Towaoc, Colorado. The Northern Ute Tribe consists of the Tabeguache, Grand, Yampa, and Uintah bands, located on the Uintah-Ouray reservation in Utah. Historically, the Utes were adept at living off the land, utilizing a variety of plants and animals for food, medicine, and tools.

Figure 12: Southern Ute Families



Source: Southern Ute Indian Tribe website

Before acquiring horses, the Utes used simple tools made of stone and wood, and they were skilled at hunting, trapping, and gathering wild plants. The introduction of horses, acquired as early as the 1580s, revolutionized their lifestyle, enabling them to hunt larger game like buffalo and travel further afield. The Utes became fierce warriors and skilled raiders, using horses to enhance their hunting and raiding capabilities.

Contact with Europeans began in the 16th century, with Spanish explorers and colonists influencing Ute culture through trade and conflict. The Spanish introduced livestock, tools, and diseases, leading to significant changes in Ute society. By the 18th century, the Utes had developed trade relationships with the Spanish, exchanging goods like tanned hides and dried meat for metal tools, weapons, and other items.

Figure 13: Southern Utes on Horseback



Source: Southern Ute Indian Tribe website

Throughout the 19th century, the Ute people faced increasing pressure from European settlers, leading to a series of treaties and agreements that significantly reduced their land holdings. The 1849 peace treaty with the United States, the 1863 Conejos treaty, and the 1873 Brunot Agreement were key moments in this process. The Brunot Agreement, in particular, is remembered by the Utes as a fraudulent loss of their lands, despite assurances that they would retain ownership.

In 1988, the Colorado Ute Indian Water Rights Settlement Act was approved, addressing the water rights of the Ute Mountain Ute and Southern Ute Tribes. This act aimed to provide irrigation, municipal, and industrial water to the tribes from the Animas La Plata water project, which was completed in 2009 with the filling of Nighthorse Reservoir. Despite these efforts, the Ute tribes still face challenges in securing adequate water supplies.

The Ute Chieftains Memorial, dedicated in 1939, honors four Ute leaders: Ouray, Buckskin Charley, Severo, and Ignacio. This monument, located in Ute Park, Ignacio, Colorado, symbolizes the enduring legacy and leadership of these chiefs, who guided their people through challenging times.

Today, the Southern Ute Tribe is composed of the Mouache and Caputa bands. Their reservation, established in 1895, covers a diverse landscape from high mountains to arid mesas, with seven rivers running through it. The tribe has approximately 1,400 members, with a significant portion of the population under the age of 30. The Southern Utes continue to navigate the complexities of maintaining their cultural heritage and managing natural resources within their reservation.

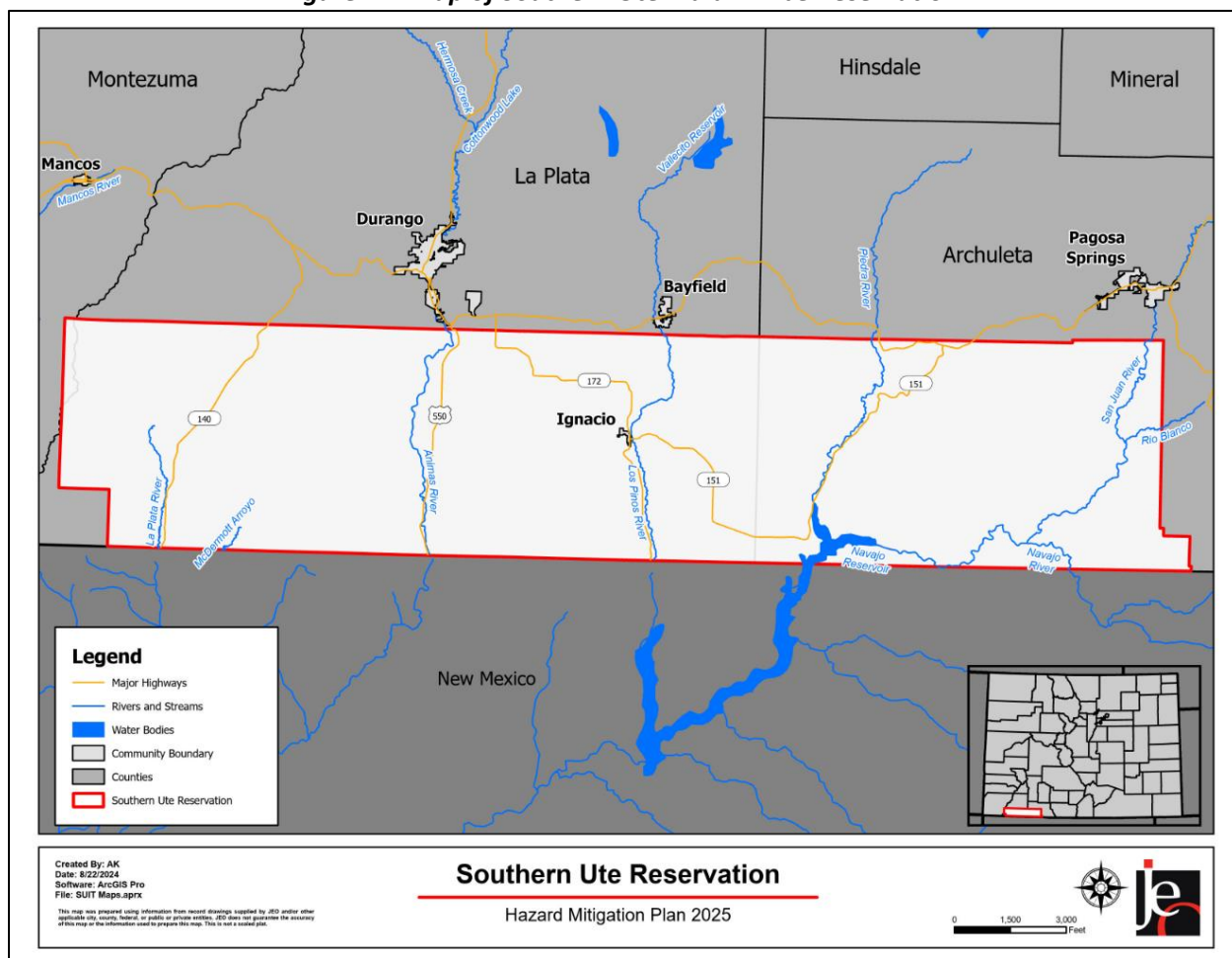
B1 Element and Requirements §201.7(c)(2)(i): Does the plan include a description of the type, location, and extent of all natural hazards that can affect the tribal planning area?

- a. The plan shall include a description of the tribal planning area

Project Area Geographic Summary

The Southern Ute Indian Tribe Reservation is located in southwestern Colorado and encompasses 681,000 acres in Archuleta, La Plata, and Montezuma Counties. The Ute Mountain Ute Reservation borders the Southern Ute Reservation to the west. The Town of Ignacio is the only incorporated community within the reservation, and it is also home to the Tribal headquarters. Other populated areas in the reservation include the communities of Arboles and Southern Ute. The nearest communities with additional emergency services beyond reservation boundaries are the City of Durango and the Town of Bayfield both located just north of the reservation. The next closest resource center is Farmington, New Mexico, which had a 2020 population of 46,624.

Figure 14: Map of Southern Ute Indian Tribe Reservation



Tribal Council and Departments

The Southern Ute Indian Tribe is governed by a Tribal Council and Executive Officer(s). The Tribe has numerous departments which oversee various functions and contribute to the overall success of the Nation. The list below is not exhaustive but does include some departments, committees, or roles which may aid in the pursuit of hazard mitigation projects:

- Economic Development
- Finance Department
- Tribal Health
 - Behavioral Health
 - Business Health Benefits
 - Community Health Services
 - Dental
 - Health Center
 - Optometry
 - Pharmacy
 - Physical Therapy
 - Shining Mountain
- Cultural Preservation
- Education
- Boys and Girls Club
- Environmental Programs
- Human Resources
- Justice and Regulatory
- Legal
- Natural Resources
- Permanent Fund Investments
- Property and Facilities
- Southern Ute Museum
- Utilities
- SunUte Community Center
- Tribal Housing
- Information Services
- Tribal Planning
- Tribal Services
 - Elder Services Program
 - Emergency Family Services
 - Food Distribution Program
 - Social Services Division
 - Vocational Rehabilitation Program

Population and Demographics

The population of the Southern Ute Indian Tribe is approximately 1,510 members, living on and off the reservation. The U.S. Census reports that the reservation itself had an estimated 2022 population of 13,528, which also includes non-members. This is a slight increase from the 2012 population estimate of 13,420. Since the U.S. Census Bureau provides population data for the reservation, but does not include data specifically for tribal members, further demographic breakdown will consist of reservation-wide data.

Figure 15: Historical Population for Reservation

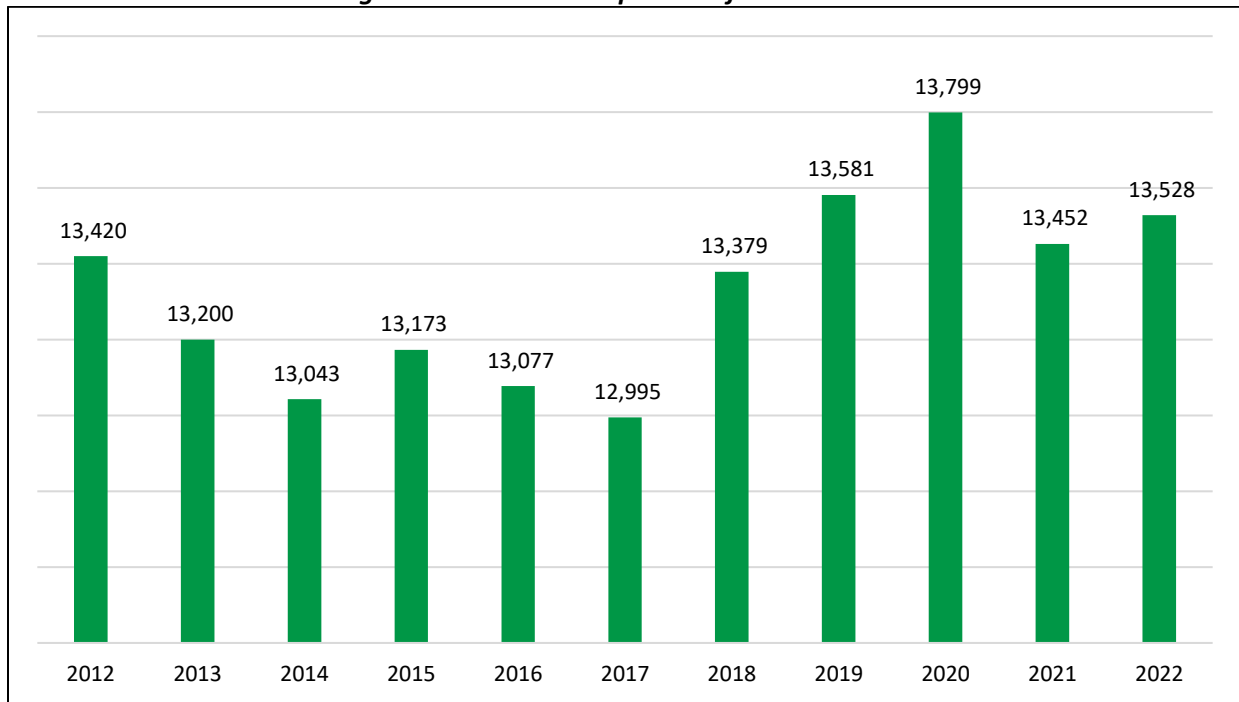
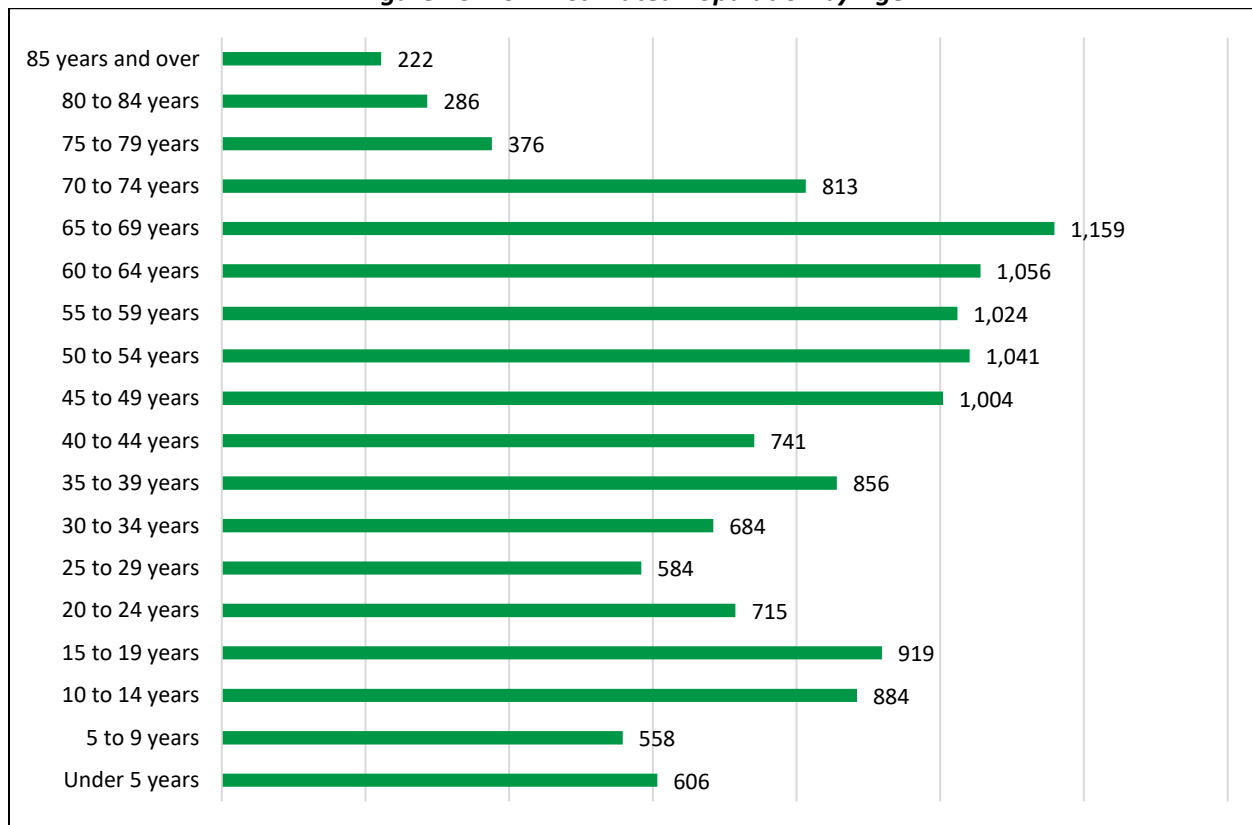


Figure 16: 2022 Estimated Population by Age



At-risk Populations

In general, at-risk populations may have difficulty with medical issues, poverty, extremes in age, and communications due to language barriers. Several outliers may be considered when discussing potentially at-risk populations, including:

- Not all people who are considered “at-risk” are actually at-risk;
- Outward appearance does not necessarily mark a person as at-risk;
- A hazard event will, in many cases, impact at-risk populations in different ways.

The National Response Framework defines at-risk populations as “...populations whose members may have additional needs before, during, and after an incident in functional areas, including but not limited to: maintaining independence, communication, transportation, supervision, and medical care.”¹⁵ Tribal elders and very young populations may be more vulnerable to certain hazards than other population groups.

In addition, vulnerabilities related to the ability to communicate are a concern. Members who speak English as a second language may struggle with a range of issues before, during, and after hazard events as members may be unable to effectively communicate with others or an inability to comprehend materials aimed at notification and/or education. When presented with a hazardous situation it is important that all community members be able to receive, decipher, and act on relevant information. An inability to understand warnings and notifications may prevent members reacting in a timely manner if warnings are not provided in the native language as well.

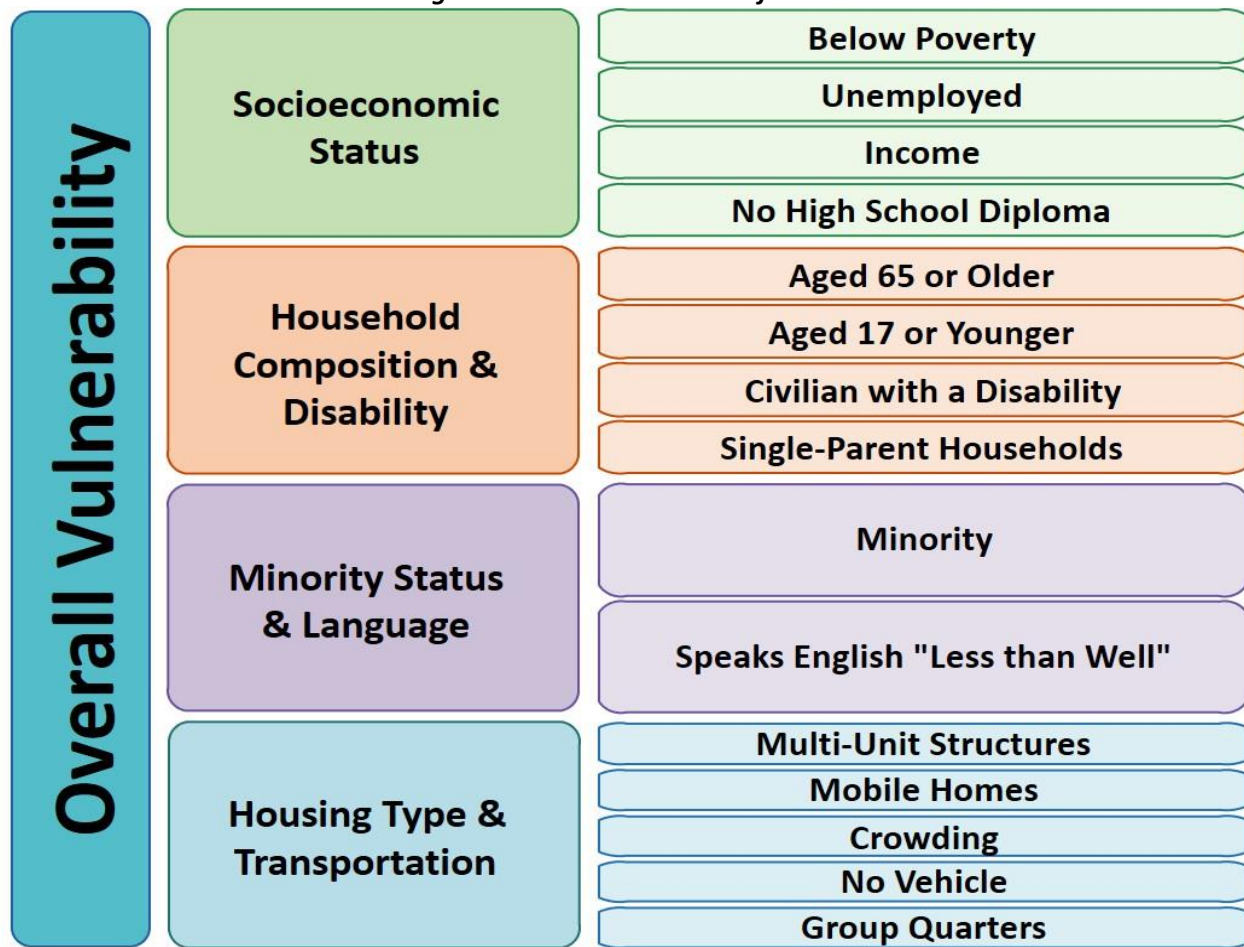
Social Vulnerability Index

Various social conditions such as poverty rates, vehicle access, language, or housing stock contribute to overall social vulnerability for the planning area. The Center for Disease Control (CDC) has developed a Social Vulnerability Index to help public health officials and emergency responders identify areas at greater risk before, during, and after major hazardous events. The index evaluates 15 social factors and breaks down vulnerability into four domains: socioeconomic status; household composition and disability; minority status and language; housing and transportation. See Figure 17 for a full description of variables utilized by the CDC to determine SVI values per jurisdiction. SVI provides specific socially and spatially relevant information to help public health officials and local planners better prepare communities to respond to emergency events such as severe weather, floods, disease outbreaks, or chemical exposure.¹⁶

¹⁵ United States Department of Homeland Security. June 2016. “National Response Framework Third Edition.” https://www.fema.gov/sites/default/files/2020-04/NRF_FINALApproved_2011028.pdf

¹⁶ Centers for Disease Control and Prevention/ Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program. CDC/ATSDR Social Vulnerability Index 2018. Database Colorado. https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html. Accessed April 2024.

Figure 17: Variables Utilized for SVI



Source: CDC, 2024

Possible scores range from 0 (lowest vulnerability) to 1 (highest vulnerability). Specific SVI values are not available for the Southern Ute Indian Tribe; however, the table below lists vulnerability scores for each of the two main counties that reside in the SUIT Reservation. Archuleta County has a higher vulnerability (0.3484), while La Plata County has a lower vulnerability (0.258).

Table 9: Social Vulnerability Score by County

COUNTY	SOCIAL VULNERABILITY SCORE
ARCHULETA	0.3484 – Low to Medium Vulnerability
LA PLATA	0.258 – Low to Medium Vulnerability

Source: CDC Social Vulnerability Index, 2024¹⁷

The average SVI value for the two counties is 0.3032 which correlates to a Low to Medium Vulnerability. This level of vulnerability suggests a possible need for additional assistance, either technical or financial, for both the local government and residents to pursue mitigation activities. Common barriers to sustainable and impactful mitigation work are a lack of time, money, or manpower. A medium score of

17 Centers for Disease Control and Prevention/ Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program. CDC/ATSDR Social Vulnerability Index 2022. SVI Interactive Map. <https://svi.cdc.gov/map.html>.

social vulnerability indicates that some residents may be struggling with basic household needs and thus pursuing mitigation activities could be a lower priority. Additionally, having a medium social vulnerability index value showcases the need for implemented mitigation actions to focus on vulnerable populations or areas of need. For the Southern Ute Indian Tribe these may include housing and health care for aging residents specifically.

Housing

Data related to the built environment is an important component of a hazard mitigation plan. It is essential that during the planning process the Tribe display an understanding of their built environment and works to identify needs that may exist within their planning area. The US Census provides some limited information related to housing units and potential areas of vulnerability. There are approximately 6,090 total housing units in the Reservation, of which approximately 81.4% are owner-occupied while approximately 18.6% are rentals. Home ownership is a key aspect to household mitigation success as often renters have less autonomy or ability to make retrofits or mitigate the property themselves.

Additional selected characteristics are examined in the table below including lacking complete plumbing facilities; lacking complete kitchen facilities; no telephone service available; housing units that are mobile homes; housing units with no vehicles available; and broadband access.

Table 10: Selected Housing Characteristics

	SUIT RESERVATION
OCCUPIED HOUSING UNITS	5,125 (84.2%)
LACKING COMPLETE PLUMBING FACILITIES	62 (1.2%)
LACKING COMPLETE KITCHEN FACILITIES	45 (0.9%)
NO TELEPHONE SERVICE AVAILABLE	139 (2.7%)
HOUSING UNITS WITH NO VEHICLES AVAILABLE	91 (1.8%)
MOBILE HOMES	1,754 (34.2%)
BROADBAND ACCESS	3,784 (73.8%)

Source: U.S. Census Bureau¹⁸

Approximately three percent of housing units within the reservation lack access to landline telephone service. This does not necessarily indicate that there is not a phone in the housing unit, as cellular telephones are increasingly a primary form of telephone service. However, this lack of access to landline telephone service with reverse 911 call trees does represent a population at increased risk during emergency response procedures.

Internet or broadband access—through Wi-Fi or cellphone coverage—is a critical means of sharing and receiving information regarding hazardous events, including storm warnings, evacuation orders, or

¹⁸ United States Census Bureau. "2022 Census Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov>.

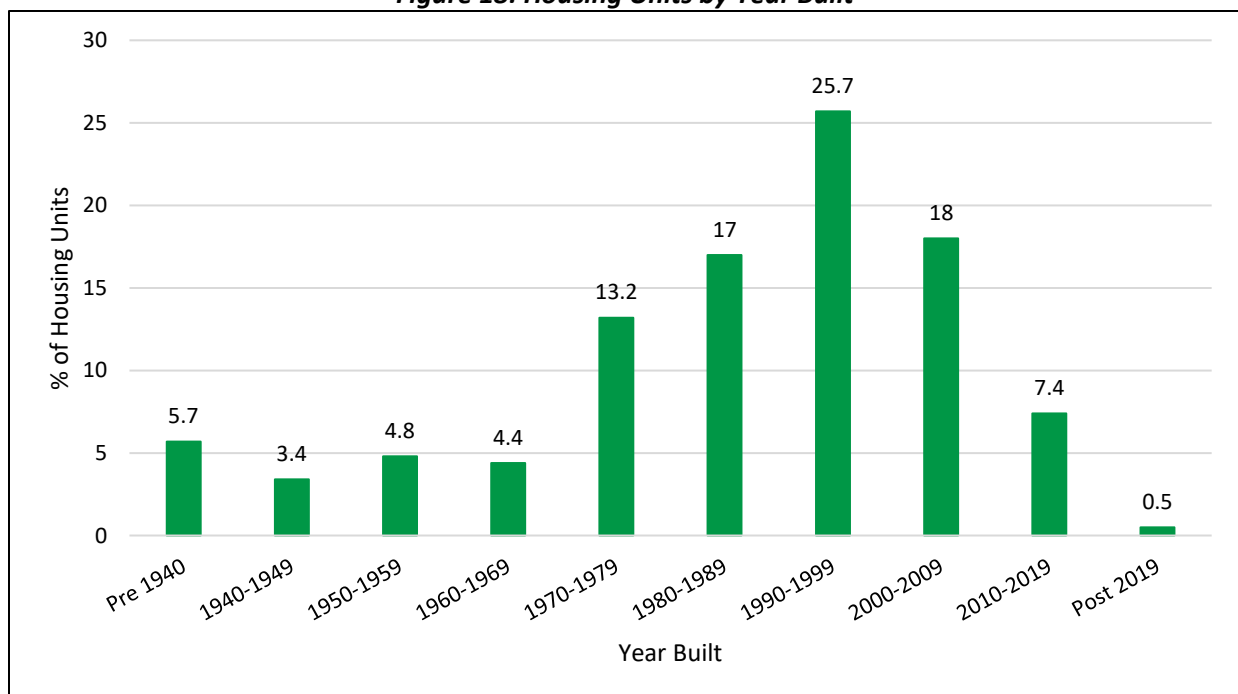
weather updates. Rural communities often lack adequate internet or broadband access. However, internet access is as vital a utility as electricity, as seen through the COVID-19 pandemic when many people worked or attended school from home. Almost 74 percent of households in the Reservation have a broadband internet subscription.

About 34 percent of all occupied housing units in the planning area are mobile homes, which have a higher risk of sustaining damages during high wind events, severe thunderstorms, and severe winter storms. Thunderstorms are classified as severe when wind speeds exceed 58 mph. This is just under the 60 mph threshold, when winds begin overturning mobile homes that are not anchored or are anchored incorrectly. Adopting local building codes is a cost-effective way for the Tribe to continue to improve housing stock durability.

Almost 16 percent of the homes in the Reservation are unoccupied. Unoccupied homes may not be maintained as well as occupied housing, thus adding to their vulnerability. Lastly, just under two percent of all occupied housing units do not have a vehicle available. Households without vehicles may have difficulty evacuating during a hazardous event and a reduced ability to access resources in times of need.

The majority of homes in the Reservation were built after 1970 (Figure 18). Housing age can serve as an indicator of risk, as structures built prior to state or local building codes being developed may be more vulnerable. According to the Department of Housing and Urban Development (HUD), older homes are at greater risk of poor repair and dilapidation resulting in blighted or substandard properties. Residents living in these homes may be at higher risk to the impacts of high winds, flooding, severe winter storms, and thunderstorms. With over 80% of homes built after 1970, most homes in the Reservation are at lower risk to damage from hazard events.

Figure 18: Housing Units by Year Built



Source: U.S. Census Bureau¹⁹

¹⁹ United States Census Bureau. "2022 Census Bureau American Community Survey: DP04: Selected Housing Characteristics." <https://data.census.gov>.

Land Ownership

The Southern Ute Indian Tribe Reservation is comprised of 677,622 acres, consisting of a checkboard pattern of land ownership. The Reservation includes Tribal trust lands, Indian allotments, homestead fee tracts, Tribally owned or Indian-owned fee land, and Bureau of Reclamation lands and National Forest Lands. The Tribe has title interest in 44% of the surface estate within the Reservation. Land ownership types, as outlined on the SUIT website, are shown below:

Tribal Trust Land – Land that has been set aside for the exclusive use and benefit of the Tribe but is owned by the United States in trust for the Tribe. The Tribe may use, lease, mortgage, or sell the Tribe’s interests in this land only if the federal government consents.

Allotted Lands (a/k/a allotments) – Parcels of land that were distributed by the federal government to individual Tribal members for agricultural development. The allotment process was discontinued by Congress in 1934, yet allotted lands continue to be owned by the federal government in trust for individual Indians and either held in trust by the federal government or subject to statutory restrictions on transfer of title.

Fee Land – Lands where the owner holds title to and controls the property. Generally, non-Indian owners may make decisions about the use of the land without Tribal oversight. Fee land was created within the Reservation when the federal government opened lands on the Reservation to homesteading by non-Indians, or original allotted trust lands were transferred to fee status.

Tribally-owned or Indian-owned Fee Land – Land owned by the Tribe or an individual Tribal member or non-member Indian.²⁰

Historic and Cultural Sites

Historic and cultural sites are particularly important to tribal members and may require specific protection. Sites that contain cultural resources such as old buildings, fossils, tipi rings, fire pits, old bones and flake chips from the making of arrowheads are protected. To aid in their protection, most cultural sites are not public information. Key historical sites and their history are described below:

- Sky Ute Fairgrounds - *The Indoor Arena provides a venue for events such as the annual Southern Ute Tribal Fair & Powwow, rodeos, and horse and cattle shows. There are stalls for horse boarding and 60 of them provide an outdoor run.*
- Bear Dance Grounds - *The Annual Ute Bear Dance which is held every spring is a social dance everyone can enjoy. Origin of the Bear Dance can be traced back to the fifteenth century when the Spanish first came upon the Utes in the springtime. When the first thunder in the spring was heard, it was time for the Bear Dance. According to some of the elders, this was usually around the middle of March. All the bands would come and set up camp and prepare for the dance. Many of the singers were ready to sing their songs which they had practiced or dreamed about during the winter months. The original meaning of the Bear Dance has long been dropped by the wayside as modern ways have intervened with the old methods of telling the meaning of the Bear Dance. It was the men who usually prepared the Bear Dance corral, and any other functions connected with*

²⁰ Southern Ute Indian Tribe. “Southern Ute Indian Tribe – Living in La Plata County”. Accessed November 2024. <https://www.southernute-nsn.gov/natural-resources/lands/assignments/living-in-la-plata-county/>.

the Bear Dance. The woman's role was to prepare the family's clothes that they were to wear during the dance. It was the role of the storyteller to tell the family about the way of life and this was done in the wintertime when the family was gathered around the campfires.

- Sun Dance Grounds - *The Sundance ceremony, conducted once a year in the middle of the summer, is the most important spiritual ceremony in the Ute tradition. As such, this ceremony is not open to the public as with the Bear Dance. The grounds are located north of the Bear Dance Grounds.*
- Ouray Memorial Cemetery - *In use since the 1800s, the Ouray Memorial Cemetery is used almost exclusively for tribal members. Located east of the Bear Dance Grounds, the cemetery is home to large cottonwood trees which are considered sacred to the Tribe.*
- Southern Ute Cultural Center and Museum - *The mission of the cultural center and museum is to foster understanding of and respect for the unique origin, culture, language, history, and way of life of the Núuchi (Ute People) and to advance people-to-people relations through inclusive and effective programming and services.*

Bison Program

The Southern Ute Tribe has managed a small herd of bison (or “buffalo”) since the early 1980s. The number of buffalo has grown significantly in recent years, from 31 in 2015 to 115 in 2023. This growth has occurred in partnership with the Intertribal Buffalo Council (ITBC), which assists Native Tribes with buffalo restoration on Indian lands. Buffalo are important to the Southern Ute Tribe, both for their spiritual significance and for their nutritional/dietary value. Restoring the Tribe's food sovereignty and traditional food system is important to Tribe, which has reached its goal of supplying the meat distribution program. The Division of Wildlife Resource Management maintains the herd within a 350-acre fenced area near the town of Ignacio, Colorado.

Figure 19: SUIT Bison Herd



Photo by HMP Team

Transportation

Transportation routes are necessary for the delivery of critical supplies and as potential evacuation routes. The main transportation routes on the Southern Ute Reservation consist of U.S. Highway 550, Colorado Highway 172, Highway 151, and Highway 140. The main populated areas of Ignacio and Arboles are located along these major roadways. The Durango-La Plata County Airport is located in the north central part of the Reservation, northwest of Ignacio. There are no rail lines on the Reservation. The mean travel time to work is 25.2 minutes. Most commuters drive alone to work (74.3%), while 8.2% carpool and 1.6% walk. According to the Colorado Department of Transportation, there are nine road bridges within the SUIT Reservation. Four of these have been ranked in Good condition and five are ranked in Fair condition. Fair-rated bridges are located on Highway 140 (P-04-A & P-04-E), Highway 550 (P-05-G), and Highway 151 (P-07-D).

Economy

The Southern Ute Indian Tribe has a strong economy. The Tribe employs around 1,600 people through its various governmental offices and business operations. The Tribe is also a significant contributor to the economy of the region and is the largest employer in La Plata County. Some of the Tribe’s economic ventures include:

The Southern Ute Growth Fund manages the Tribe’s business operations and investments. Its mission includes effective business management, prudent development of new enterprises, and reinvestment to ensure future prosperity for Tribal members. The Growth Fund has expanded significantly since its founding in 2000, with assets and operations spanning fourteen states and the Gulf of Mexico. This fund is a major economic driver in southwest Colorado, providing additional income to prevent poverty among Tribal members.

The Tribe has significant involvement in energy resources, such as gas and oil, which are a major component of its economic base. The Tribe’s energy resources are managed through the Southern Ute Growth Fund, which oversees various oil and gas ventures. These operations provide significant revenue for the Tribe and create numerous jobs.

The Sky Ute Casino Resort is a major employer, with over 400 employees, and contributes around \$14 million annually to the regional economy through employment. Approximately one-third of its workforce comprises local Native Americans. The Casino Resort supports local vendors for various services and products, injecting over \$2.5 million annually into the regional food supply chain. As the region’s only sizeable conference center, it attracts significant events and conferences, further boosting the local economy. The Casino Resort serves as a concert venue, enhancing the cultural and entertainment landscape of the area.

Figure 20: Sky Ute Casino Resort



Source: Sky Ute Casino Resort Website

Figure 21: Museum Display



Photo by HMP Team

The Southern Ute Cultural Center & Museum is an important cultural and tourist attraction in the region. Designed by renowned architects, the museum’s architecture and landscape incorporate cultural symbolism and a connection to the land. The cultural center and museum offer self-guided tours that chronicle the history of the Ute people from its origins to modern times, attracting visitors and contributing to the local economy.

The SunUte Community Center provides extensive recreational facilities, including a gymnasium, fitness center, rock climbing wall, swimming pools, and various outdoor amenities. Memberships are free for Tribal members and affordable for the broader community. The center offers meeting spaces, enhancing community engagement and well-being.

D1 Element and Requirements §201.7(d)(3): Was the plan revised to reflect changes in development?

- a. The plan shall describe changes in development that have occurred in hazard prone areas since the last plan was approved. Not all development will affect a tribal government’s vulnerability. If no changes are identified, plan updates shall validate the information in the previously approved plan.

Development Trends

There are numerous future developments and area of growth noted by the local planning team members and in the Tribe’s “Comprehensive Economic Development Strategy 2023-2025”. These are described below.

Areas for Growth

Housing Development

The Quichas Apartments, Buckskin Charlie Apartments, Rock Creek Subdivision, and Tranquilo Ct housing projects are all either in progress or being planned for. These projects will provide much-needed workforce housing to accommodate the region’s growing population. Approximately 150 housing units are planned for construction over the next three years, primarily concentrated in Ignacio and the west side of the reservation. However, infrastructure improvements, such as an extension of Ute Road to improve emergency access, will be necessary to support this expansion.

Broadband Connectivity

The Southern Ute Shared Services (SUSS) Broadband Modernization project is in progress, which will increase high-speed internet access. Plans for fiber to the home will ensure residents and businesses stay connected. The network currently serves most of the Ignacio area. Additional phases, including an extension to Wildcat Canyon, are planned in the coming years. Improved broadband infrastructure will also enhance emergency communication systems and facilitate advancements in telehealth and education.

Commercial Infrastructure

The Tribe’s commercial infrastructure is expanding with planned projects like the Business Park, Retail Plaza and Casino RV Park Expansion. These projects aim to diversify the local economy and broaden the tax base, reducing economic reliance on a few key industries. Additionally, the La Posta Road development near Durango will transition some agricultural land to commercial and industrial use, creating opportunities for mixed-use development as Durango’s economic footprint expands southward.

Limiting Factors

Economic Constraints

A limited tax base is a concern for the Tribe as it affects funding for essential services, infrastructure development, and overall capability to implement hazard mitigation projects. While the Tribe possesses valuable water rights and natural resources, existing infrastructure limitations—such as the outdated Pine River Indian Irrigation Project (PRIIP)—can hinder its ability to leverage these resources effectively. Inflation and high transportation costs further exacerbate development challenges, making it more expensive to import and export goods and materials.

Workforce Challenges

The Tribe is dealing with a lack of a skilled local workforce. Much is due to limited housing for workforce. The lack of adequate workforce housing has contributed to a reduced labor pool, making it difficult to attract and retain workers in critical sectors. Youth emigration is also a concern, as many younger tribal members leave the reservation for education and employment opportunities elsewhere, resulting in a "brain drain" that weakens the local economy and diminishes the customer base for businesses.

Infrastructure Gaps

Broadband infrastructure has historically been a problem for the tribe, but the current project is closing that gap. Commercial infrastructure on the reservation is underdeveloped, limiting the Tribe's ability to grow its tax base and create jobs. Transportation infrastructure is mostly adequate, but the distance to outside services and goods is an issue and the reservation lacks direct access to major rail lines and shipping routes. Additionally, land use policies present regulatory obstacles—while Trust Land is easier to develop due to the Tribe's sovereign jurisdiction, Fee Land falls under County regulations, creating cross-jurisdictional complexities that slow down projects.

Opportunities for Increased Resilience

Development Standards

While the Tribe does not have building codes, there are some resiliency measures being implemented in new developments. The Tribe works to ensure that new developments are resistant to natural hazards, such as wildfires and floods, with most new housing projects being located outside high-risk areas. The Tribe's architectural standards also emphasize the use of fire-resistant materials, such as stone, stucco, and metal. Additionally, new buildings are generally constructed according to La Plata County's building codes, helping ensure safety and durability.

Technology

The expansion of broadband technology is also strengthening resilience by improving access to services such as telehealth and remote education access, as well as allowing for expansion of the tribe's emergency communication system. Additional cell towers are being installed to close existing coverage gaps, further enhancing connectivity across the reservation.

Collaboration

The Tribe has mutual aid agreements with county governments and the Bureau of Indian Affairs (BIA) Fire Division to coordinate wildfire response efforts. Additionally, multiple fire districts serve different parts of the reservation, ensuring emergency preparedness across jurisdictions.

Resource Sustainability

The Tribe is exploring sustainable resource utilization strategies, such as improving water efficiency to enhance food sovereignty. Efforts are underway to modernize irrigation infrastructure, ensuring that agricultural lands can be used effectively. The Tribe is also leveraging oil and gas resources to strengthen energy independence while exploring renewable energy alternatives.

Food Sovereignty

Food sovereignty and supply chain improvements are being pursued to enhance community resilience. The Tribe is considering the development of a meat processing facility and a commercial greenhouse, which would provide local food production capacity and reduce reliance on external supply chains. Efforts to utilize additional water rights at Lake Nighthorse could further bolster agricultural sustainability and ensure a more secure food supply for the community.

Community Lifelines

Community Lifelines are vital to the continued delivery of key resources and services, as well as recovery efforts. The loss of these services significantly impacts the Tribe’s ability to care for residents and to recover from a disaster event.

Community Lifelines were identified and reviewed during this 2024 HMP update. Community Lifelines were identified to align with FEMA’s Community Lifelines approach. These lifelines and their subcomponents include, but are not limited to:

- Safety and Security – law enforcement, fire services, search and rescue, government services, and community safety buildings
- Food, Hydration, & Shelter
- Health and Medical – medical care, patient movement, public health, fatality management, and medical supply chain
- Energy – power (grid) and fuel centers
- Communications – infrastructure, alerts/warnings/messages, 911 call centers, responder communications, and finance
- Transportation – highway/roadways, mass transit, railway, aviation
- Hazardous Materials – Tier II facilities and HAZMAT
- Water Systems – potable water infrastructure, wastewater management

Facilities that may cause secondary impacts if damaged, contaminated, or destroyed, such as hazardous materials storage sites, are also considered community lifelines. The following table and figure provide a summary of the community lifelines for the Southern Ute Indian Tribe and key information. Lifelines located in the Flood Risk Hazard Area (FRHA), in wildfire priority areas (WPA), and/or in the wildland urban interface (WUI) are noted in the tables below. This does not constitute a comprehensive list of lifelines. Note that due to security concerns for some specific types of facilities and infrastructure, not all lifelines are mapped. Community lifelines should be reviewed and updated regularly by the local planning team during the annual review.

Table 11: Community Lifelines

CL NUMBER	NAME	ADDRESS	GENERATOR (Y/N)	LOCATED IN FLOODPLAIN (Y/N)
1	Ignacio Elementary School	395 Romero Ave	Unk	N
2	Ignacio Junior High & High School	315 Ignacio St	Unk	N
3	Ignacio Library	470 Goddard Ave	Unk	N
4	Education Center	330 Burns Ave	Unk	N
5	Wastewater Treatment Facility	16360 Hwy 172	Y	N
6	Water Treatment Plant*	981 County 518	Y	N
7	Ignacio Road Runner Transit Terminal	295 Lakin St	Unk	N
8	Sky Ute Fairgrounds - Horse Barns	200 Hwy 151	N	N
9	Sky Ute Fairgrounds - Bath House & RV Park	200 Hwy 151	N	N
10	Sky Ute Fairgrounds - Grandstand Building	200 Hwy 151	N	N
11	Sky Ute Fairgrounds - Indoor Arena & Building	200 Hwy 151	Unk	N
12	198 Hwy 151 - Office	198 Hwy 151	Unk	N
13	BIA Admin Office Building	383 Ute Rd	Unk	N
14	Patrick Silva Memorial Field	152 Ute Rd	N/A	N
15	Southern Ute Housing Authority	760 Shoshone Ave	Unk	N
16	SUCAP Administrative Office	285 Lakin	Unk	N
17	Multipurpose Facility and Chapel	256 Ute Rd	Unk	N
18	Senior Citizens Area	15345 Hwy 172	Unk	N
19	Ouray Memorial Cemetery	383 Ute Rd	N/A	N
20	Bear Dance Grounds and Area	152 Ute Rd	N/A	N
21	Sun Ute Community Recreational Fields	760 Shoshone Ave	N/A	N
22	Scott's Pond	285 Lakin	N/A	N
23	Emergency Dispatch and SUPD	149 Co Road 517	Y	N
24	KSUT-FM Radio Station	15345 Hwy 172	Unk	N
25	Southern Ute Health Center	69 Capote Dr	Unk	N

CL NUMBER	NAME	ADDRESS	GENERATOR (Y/N)	LOCATED IN FLOODPLAIN (Y/N)
26	Southern Ute Food Distribution	740 Goddard Ave	Unk	N
27	Water Dock 1*	17402 Hwy 172	N	N
28	Water Dock 2	517 County Rd 517	N	N
29	Sky Ute Casino	14324 Hwy 172	Y	N
30	Southern Ute Cultural Center and Museum	503 Ouray Dr	Unk	N
31	Motor Pool	815 County Road 517	N	N
32	Southern Ute Growth Fund	14933 Hwy 172	Unk	N
33	Southern Ute Forestry Department	575 County Road 517	Unk	N
34	Southern Ute Energy Department	14933 Hwy 172	Unk	N
35	Southern Ute Indian Montessori Academy	275 Mouache Dr	Unk	N
36	Leonard C Burch Building – Tribal Council and Administration	356 Ouray Dr	Unk	N
37	Red Willow Production Company – Headquarters	14933 Hwy 172	Unk	N
38	Various Bridges*	Varies	N/A	Y

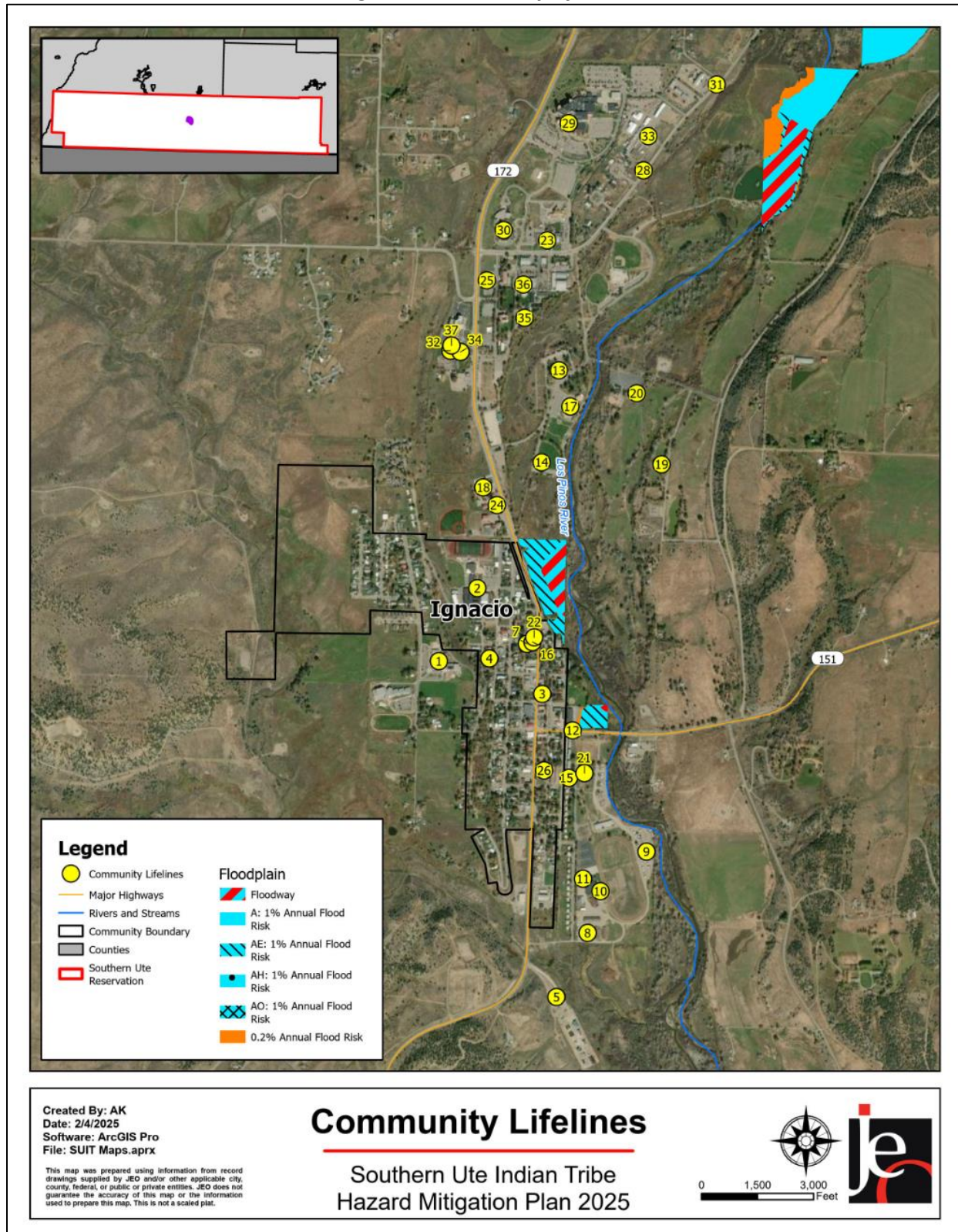
*Community Lifelines not displayed in map viewing area

Medical and Care Facilities

The SUIT Tribal Health Department’s mission is: “Strengthening the circle of wellness by providing progressive, traditionally balanced, compassionate, comprehensive healthcare to members of the Southern Ute Indian Tribe and other American Indian and Alaska Natives”. The Tribal health department operates a primary care clinic called the Southern Ute Health Center, located in Ignacio, Colorado. The center provides comprehensive care to the community and surrounding areas. The clinic seeks to ensure that the patient is the center of care and that it can assist in achieving the patient’s healthiest physical, mental, and spiritual state. The clinic offers medical, dental, optometry, and pharmacy services (among others).

In addition to the health clinic, the health department also provides community and home health services. The Community Health Services office provides home health visits, non-emergency transportation, medication delivery, homecare assistance, and provides health awareness through presentations, home visits, and community gatherings.

Figure 22: Community Lifelines



*Water Treatment Plant (#6), Water Dock 1 (#27), and Various Bridges (#38) are not displayed in map viewing area.

Plans and Studies

The Southern Ute Indian Tribe is regulated by Tribal ordinances, codes, and policies that address the Tribe’s capacity to implement pre- and post-disaster mitigation activities. It should be noted that as a sovereign nation, the Southern Ute Indian Tribe is not required to adhere to any local or state planning regulations; however, in an effort to be a good steward and neighbor, the Nation does strive to plan in consideration of state and local requirements. The Tribe must comply with applicable federal regulations for construction and maintenance of facilities, such as those administered by HUD, EPA and/or BIA, as well as other federal agencies.

Local Capabilities

A local capability assessment provides a review of existing policies, programs, and fiscal capabilities to mitigate identified hazards. When specific planning mechanisms are lacking or do not exist, the HMP may be used as a guide for future activity and development in the community.

C1 Element and Requirements §201.7(c)(3) and 201.7(c)(3)(iv): Does the plan include a discussion of the tribal government's pre- and post-disaster hazard management policies, programs, and capabilities to mitigate the hazards in the area, including an evaluation of tribal laws and regulations related to hazard mitigation as well as to development in hazard-prone areas?

- a. The plan shall describe the tribal government’s existing capabilities to mitigate hazards in the tribal planning area, including pre-disaster and post-disaster hazard management policies and programs.
- b. The plan shall include an evaluation of the tribal laws, regulations, policies, programs, and resources related to hazard mitigation and development in hazard-prone areas. The evaluation shall address the opportunities, as well as the challenges, of existing capabilities.

Table 12: Capability Assessment

	SURVEY COMPONENTS/SUBCOMPONENTS	SOUTHERN UTE INDIAN TRIBE
PLANNING AND REGULATORY CAPABILITY	Comprehensive Plan	Yes
	Capital Improvements Plan	Yes
	Economic Development Plan	Yes
	Tribal Emergency Operations Plan	Yes
	Watershed Management Plan	Yes
	Zoning Ordinance	No
	Floodplain Ordinance	No
	National Flood Insurance Program	No
	Building Codes	No
	Community Rating System	No
	Tribal Historic Preservation Agreement with National Park Service	Yes
	Debris Management Plan	No
	Pandemic Influenza Response Plan	No
	Evacuation Plan	No

SURVEY COMPONENTS/SUBCOMPONENTS		SOUTHERN UTE INDIAN TRIBE
	Community Wildfire Protection Plan	No (Archuleta and La Plata Counties have county-specific CWPPs)
ADMINISTRATIVE & TECHNICAL CAPABILITY	Planning Commission	Yes
	Tribal Historic Preservation Office	Yes
	Floodplain Administration	Yes
	GIS Capabilities	Yes
	Chief Building Official	No
	Civil Engineering	Yes
	Emergency Management	Yes
	Finance Department	Yes
	Grant Manager	Yes
	Mutual Aid Agreement/Memorandum of Understanding	Yes
FISCAL CAPABILITY	Capital Improvement Plan/ 1- & 6-Year plan	Yes
	Applied for grants in the past	Yes
	Awarded a grant in the past	Yes
	Authority to Levy Taxes for Specific Purposes such as Mitigation Projects	Yes
	Gas/Electric Service Fees	No
	Water/Sewer Service Fees	Yes
	General Obligation Revenue or Special Tax Bonds	No
EDUCATION AND OUTREACH CAPABILITY	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Yes
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Yes
	StormReady Certification	No
	Firewise Communities Certification	No
	Language Revitalization Educational Program	

Table 13: Overall Capability

OVERALL CAPABILITY	(LIMITED/MODERATE/HIGH)
DOES THE TRIBE HAVE THE FINANCIAL RESOURCES NEED TO IMPLEMENT MITIGATION PROJECTS?	Moderate
DOES THE TRIBE HAVE THE STAFF/EXPERTISE TO IMPLEMENT PROJECTS?	Moderate
DOES THE TRIBE HAVE THE COMMUNITY SUPPORT TO IMPLEMENT PROJECTS?	Moderate
DOES THE TRIBAL STAFF HAVE THE TIME TO DEVOTE TO HAZARD MITIGATION?	Limited

A4 Element and Requirements §201.7(c)(1)(iii): Does the plan describe the review and incorporation of existing plans, studies, and reports?

- a. The plan shall describe what existing plans, studies, and reports were reviewed.
- b. The plan shall document how relevant information was incorporated into the mitigation plan.

A5 Element and Requirements §201.7(c)(1)(iv): Does the plan include a discussion on how the planning process was integrated, to the extent possible, with other ongoing tribal planning efforts as well as other FEMA programs and initiatives?

- a. The plan shall describe how the tribal government integrated the current planning process and/or findings with other ongoing tribal planning efforts.
- b. The plan shall describe how the tribal government integrated the current planning process with other FEMA programs and initiatives.

Summary of Existing Plans

Other planning mechanisms within which the Southern Ute Indian Tribe may integrate Hazard Mitigation principles or mitigation actions and strategies may include tribal codes, stormwater management guidelines, wildfire protection plans, transportation studies, climate adaptation plans, education and outreach campaigns, or capital improvement programs. As planning mechanisms and activities are reviewed or implemented across the Reservation, Tribal Departments are responsible for ensuring the HMP goals and actions are evaluated or included as applicable. A brief summary of existing tribal plans and their relationship to the HMP are provided below.

Southern Ute Indian Tribe Drought Management Plan (2019)

The purpose of the SUI Drought Management Plan is to assist Tribal Council and Tribal staff with management of drought conditions and impacts when they occur on the Reservation. The plan provides the Tribe with a policy and decision-making tool that addresses monitoring, assessment of vulnerabilities, mitigation of long term drought impacts, and emergency response to direct and indirect drought impacts on the Reservation. The plan also outlines how several Tribal Divisions monitor, mitigate, and respond to drought. These include the Agriculture Division, Environmental Programs Division, Forestry Division, Range Division, Utilities Division – Water Treatment Plant, Water Resources Division, and Wildlife Division. Mitigation measures in the plan helped to inform this Hazard Mitigation Plan.

Southern Ute Indian Tribe Emergency Operations Plan (2014)

The SUI Emergency Operations Plan (EOP) describes the emergency management process to be used by the Tribe, and general guidelines and principles for managing the overall response and recovery activities during an emergency resulting from a natural or human-caused hazard.

The development of an all risk Emergency Operations Plan for the Southern Ute Indian Tribe required the analysis of hazards, that threaten the people, property and environment within the community. The hazard analysis is the foundation for mitigation strategies, planning and preparedness activities, response capabilities, and recovery and restoration. The EOP uses an “all-hazards” approach that provides generalized directions in response to disaster events. The plan also includes hazard-specific sections for addressing various hazardous events (e.g., dam failure, drought, flooding, wildfire, etc.). The EOP is activated or selectively applied when the Tribal Chairman declares a local disaster.

Southern Ute Indian Tribe Continuity of Government Plan (2014)

The Continuity of Government Plan establishes policy and guidance to ensure the execution of the critical functions for the Southern Ute Indian Tribe if an emergency threatens or incapacitates operations, and/or requires the relocation of selected personnel and functions. The plan ensures the continuance of essential operations should Tribal facilities and personnel be affected by any adverse event such as fire, severe storm, power disturbance/interruption, disease outbreak or an emergency or disaster due to terrorism, or a natural or technological hazard.

Southern Ute Indian Tribe Comprehensive Economic Development Strategy (2003-2025)

The SUIT Comprehensive Economic Development Strategy (CEDS) is a plan that identifies strategies to enhance and improve the economic environment of the Southern Ute Indian Reservation. The five strategic priorities developed are: improve the availability of diverse housing options; expand high-speed broadband connectivity; increase commercial infrastructure & community amenities, improve Tribal economic development capacity & ability to leverage underutilized resources; and enhance opportunities for business creation.

Southern Ute Indian Tribe Transportation Safety Plan (2016)

The SUIT Transportation Safety Plan is a strategic document that identifies and addresses critical safety concerns affecting the Southern Ute Tribe and the broader Four Corners region. Developed with input from Tribal Members and key stakeholders, the plan highlights the most pressing transportation safety issues and explores innovative solutions. Using data-driven analysis, it outlines four key areas of action that can be applied to various challenges. Building on the foundation set by the 2016 LRTP, the plan also identifies specific safety-focused projects, many of which have been actively pursued since its adoption in 2017.

Southern Ute Indian Tribe Long-Range Transportation Plan (2022)

The SUIT Long Range Transportation Plan (LRTP) is a key document updated regularly to guide transportation projects for the Tribe. It outlines near-term (1-2 years), mid-term (3-6 years), and long-term (7+ years) projects that impact both the Tribal community and the public. The plan focuses on life safety, healthy transportation, transit growth, and federal compliance. It is used to create the annual Control Schedule for federal funding and to identify potential partner agencies for various projects. Additionally, the LRTP helps the Tribe secure additional grant funding for transportation initiatives.

Southern Ute Indian Tribe Priority Climate Action Plan (2024)

The SUIT Priority Climate Action Plan provides a comprehensive analysis of the short-term, high-priority, and implementation-ready greenhouse gas emissions reductions measures that could be implemented by the SUIT Air Quality Division within the boundaries of the Reservation. The plan addresses hazardous materials/pollutants and ways to proactively reduce them.

Archuleta County Community Wildfire Protection Plan (2020)

The purpose of the Archuleta County Community Wildfire Protection Plan (CWPP) is to help effectively manage wildfires and increase collaboration and communication among organizations who manage fire. The CWPP discusses county-specific historical wildfire occurrences and impacts, identifies areas most at risk from wildfires, discusses protection capabilities, and identifies wildfire mitigation strategies.

The CWPP also lays out a program for reducing wildfire risk in the wildland-urban interface (WUI); applying fuel treatments on federal and private lands; reducing structural ignitability; increasing community safety; continuing successful education and community mobilization endeavors; enhancing partnerships between federal, state, and local agencies and among community organizations and local governments. Wildfire projects and concerns in the current hazard mitigation plan will be included during the next CWPP update.

La Plata County Community Wildfire Protection Plan (2023)

The purpose of the La Plata County Community Wildfire Protection Plan (CWPP) is to help effectively manage wildfires and increase collaboration and communication among organizations who manage fire. The CWPP discusses county-specific historical wildfire occurrences and impacts, identifies areas most at risk from wildfires, discusses protection capabilities, and identifies wildfire mitigation strategies.

The CWPP also lays out a program for reducing wildfire risk in the wildland-urban interface (WUI); applying fuel treatments on federal and private lands; reducing structural ignitability; increasing community safety; protecting community and county values like natural resources, watersheds, recreation, and economies; continuing successful education and community mobilization endeavors; enhancing partnerships between federal, state, and local agencies and among community organizations and local governments. The plan also defines La Plata County’s Priority Area and Areas of Concern. These include the Town of Ignacio within the Southern Ute Reservation.

Wildfire projects and concerns in the current hazard mitigation plan will be included during the next CWPP update.

C6 Element and Requirements §201.7(c)(4)(iii): Does the plan describe a process by which the tribal government will incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate?

- a. The plan shall describe the process the tribal government will use to incorporate the data, information, and hazard mitigation goals and/or actions from the mitigation plan into other planning mechanisms.

Budget and Funding Resources

By participating and producing this FEMA-approved Tribal Hazard Mitigation Plan, the Southern Ute Indian Tribe will be eligible for mitigation and disaster funding through the Hazard Mitigation Assistance Program. These FEMA grant programs provide various funding opportunities to support mitigation planning and projects to reduce potential disaster damages.

The Tribe’s current annual budget is generally limited in its capacity to pursue additional mitigation strategies or projects without the assistance of outside funding resources. It is the intent of the Southern Ute Indian Tribe to pursue grant opportunities in the future to assist in mitigating the Nation’s top hazards of concern. The Tribe received a Building Resilient Infrastructure and Communities (BRIC) grant from FEMA to fund the development of this HMP update. The grant provides up to 75% cost share from FEMA while the Tribe is responsible for 25% of the project cost which was provided through cash match. FEMA is also providing BRIC Direct Technical Assistance (DTA) to fulfill capacity gaps due to lack of staff and is working to enhance the Tribe’s capacity to manage the planning process. Once the plan is completed, BRIC DTA will support the identification of projects from the Tribal Hazard Mitigation Plan that can be pursued through project scoping or project grants.

Various funding opportunities are available which support mitigation efforts are laid out in Table 14 as described in FEMA’s *Mitigation Assistance Resource Guide*.²¹

Table 14: Funding Resources

SECTOR	FUNDING RESOURCE OR OPPORTUNITY	
COMMUNITY PLANNING AND CAPACITY BUILDING	FEMA Hazard Mitigation Assistance - Building Resilient Infrastructure and Communities https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities	Forest Stewardship Program https://www.fs.usda.gov/managing-land/private-land/forest-stewardship
	Emergency Management Performance Grants https://www.fema.gov/grants/preparedness/emergency-management-performance	USACE Floodplain Management Services Program https://www.nae.usace.army.mil/missions/public-services/flood-plain-management-services/
	HUD Community Challenge Planning Grants https://www.hud.gov/program_offices/economic_development/HUD-DOT_Community_Challenge_Grants	Community Development Block Grant (Disaster Recovery, State Program, or Mitigation Program) https://www.hudexchange.info/programs/cdbg/
	Federal Excess Personal Property Program https://www.fs.usda.gov/managing-land/fire/fepp	
ECONOMIC RECOVERY	EDA and Disaster Recovery https://eda.gov/	Tree Assistance Program https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/tree-assistance-program/index
	Section 108 Loan Guarantee Program https://www.hudexchange.info/programs/section-108/	Disaster Supplemental Funding https://eda.gov/disaster-recovery/supplemental/
	Disaster Assistance and Emergency Relief for Individuals and Businesses	Small Business Association Disaster Loan Program

²¹ FEMA. 2021. "Mitigation Assistance Resource Guide: Resources for Federal, State, and Non-Governmental Hazard Mitigation Support." https://www.fema.gov/sites/default/files/documents/fema_mitigation-assistance-resource-guide-tribal-nations_2021.pdf.

SECTOR	FUNDING RESOURCE OR OPPORTUNITY	
	https://www.irs.gov/businesses/small-businesses-self-employed/disaster-assistance-and-emergency-relief-for-individuals-and-businesses	https://www.sba.gov/funding-programs/disaster-assistance
HOUSING	Housing Preservation Grants https://www.rd.usda.gov/programs-services/single-family-housing-programs/housing-preservation-grants	BIA Housing Improvement Program https://www.bia.gov/bia/ois/dhs/housing-improvement-program
	203 (K) Rehabilitation Program https://www.hud.gov/program_offices/housing/sfh/203k	
INFRASTRUCTURE SYSTEMS	Greening America’s Communities https://www.epa.gov/smartgrowth/greening-americas-communities	Flood Mitigation Assistance Program https://www.fema.gov/grants/mitigation/floods
	Water and Waste Disposal Loan and Grant Program https://www.rd.usda.gov/programs-services/water-environmental-programs/water-waste-disposal-loan-grant-program	Hazard Mitigation Grant Program https://www.fema.gov/grants/mitigation
	Rehabilitation and Inspection Program https://www.mvp.usace.army.mil/Missions/Emergency-Management/Rehabilitation-Inspection/	Federal Highway Administration Emergency Relief Program https://www.fhwa.dot.gov/specialfunding/index.cfm#fa
	Continuing Authorities Program https://www.nae.usace.army.mil/Missions/Public-Services/Continuing-Authorities-Program/	
NATURAL AND CULTURAL RESOURCES	Sustainable Communities Regional Planning Grants https://www.hud.gov/program_offices/economic_development/sustainable_communities_regional_planning_grants	Office of Protected Resources Endangered Species Act https://www.fisheries.noaa.gov/funding-opportunities
	Environmental Planning and Historic Preservation https://www.fema.gov/emergency-managers/practitioners/environmental-historic	Drinking Water State Revolving Fund https://www.epa.gov/dwsrf
	Air Grants and Funding https://www.epa.gov/grants/air-grants-and-funding	Indian Environmental General Assistance Program

SECTOR	FUNDING RESOURCE OR OPPORTUNITY	
		https://www.epa.gov/tribal/indian-environmental-general-assistance-program-gap
	Nature Based and Green Infrastructure Solutions Grants https://www.epa.gov/green-infrastructure/green-infrastructure-funding-opportunities	Ecosystem Investment Partners https://ecosystempartners.com/
	Environment Grantmaking: Climate Solutions and Great Lakes https://www.joycefdn.org/grants/environment-guidelines	Five Star and Urban Waters Restoration Grant Program https://www.nfwf.org/programs/five-star-and-urban-waters-restoration-grant-program
	Climate Adaptation Fund https://www.wcsclimateadaptationfund.org/	Climate Solutions University https://www.mfpp.org/climate-solutions-university-2/
	Resilient Landscapes Funds https://landscaperesiliencefund.org/	Emergency Conservation Program https://www.fsa.usda.gov/programs-and-services/conservation-programs/emergency-conservation/index
	Wetland Mitigation Banking Program https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farmbill/?cid=nrcseprd362686	Conservation Reserve Program https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/
	Tribal Climate Resilience Program https://www.bia.gov/bia/ots/tribal-climate-resilience-program	Emergency Watershed Protection Program https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/
	Rivers, Trails, and Conservation Assistance Program https://www.nps.gov/orgs/rtca/index.htm	Environmental Quality Incentives Program https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/
	Section 404 of Clean Water Act https://www.epa.gov/cwa-404	Forest Legacy Program https://www.fs.usda.gov/managing-land/private-land/forest-legacy
	Clean Water State Revolving Fund https://www.epa.gov/cwsrf	Tribal Wetland Program Development https://www.epa.gov/wetlands/tribal-wetland-program-development-grant-request-applications
	Drought Assistance Program https://www.farmers.gov/protection-recovery/drought	Waste and Waste Disposal Loan and Grant Program https://www.rd.usda.gov/programs-services/water-environmental-programs/water-waste-disposal-loan-grant-program

In addition to federal funding resources, private funds may be used by the Tribe to implement projects. The Tribe may seek out and receive funding through local non-profit organizations and State of Colorado programs or agencies such as:

- Southwest Colorado Community Foundation - <https://www.swcommunityfoundation.org/>
- Colorado Main Street Program - <https://dlg.colorado.gov/main-street>
- Rural Health Information - <https://www.ruralhealthinfo.org/states/colorado>
- Colorado Watershed Assembly - <https://www.coloradowater.org/colorado-healthy-rivers-fund-1>
- Colorado Water Pollution Control State Revolving Fund - <https://www.cwrpda.com/water-pollution-control-revol>

C2 Element and Requirements §201.7(c)(3)(iv) and 201.7(c)(3)(v): Does the plan include a discussion of tribal funding sources for hazard mitigation projects and identify current and potential sources of Federal, tribal or private funding to implement mitigation activities?

- a. The plan shall describe the tribal government’s existing funding sources for hazard mitigation actions and/or projects, including:
 - 1. A general discussion of how the tribal government has used non-FEMA (tribal, private or other federal) funds for hazard mitigation projects; and
 - 2. A general discussion of how the tribal government has used FEMA mitigation funding, including HMGP, PDM, FMA, PA (C-G), and FMAG.
- b. The plan shall identify potential sources of funding to implement mitigation actions and/or projects. These shall include federal, tribal, and private sources.

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CHAPTER 4: HAZARD ANALYSIS AND RISK ASSESSMENT

The basis for the planning process is the regional and local risk assessment. This section contains a description of potential hazards, regional vulnerabilities and exposures, probability of future occurrences, and potential impacts and losses. By conducting a holistic risk assessment, the Tribe can develop specific strategies to address areas of concern identified through this process. The following table defines terms that will be used throughout this section of the plan.

- Hazard - A potential source of injury, death, or damages
- Asset - People, structures, facilities, and systems that have value to the community
- Risk - The potential for damages, loss, or other impacts created by the interaction of hazards and assets
- Vulnerability - Susceptibility to injury, death, or damages to a specific hazard
- Impact - The consequence or effect of a hazard on the community or assets
- Historical Occurrence - The number of hazard events reported during a defined period of time
- Extent - The strength or magnitude relative to a specific hazard
- Probability - Likelihood of a hazard occurring in the future

Methodology

The risk assessment methodology utilized for this plan follows the same methodology as outlined in the FEMA Local Mitigation Planning Handbook. This process consists of four primary steps:

- 1) Describe the hazard;
- 2) Identify vulnerable community assets;
- 3) Analyze risk; and
- 4) Summarize vulnerability.

When describing the hazard, this plan will examine the following items: previous occurrences of the hazard within the planning area; locations where the hazard has occurred in the past or has the potential to occur in the future; extent of past events and likely extent for future occurrences; probability of future occurrences; and specific vulnerabilities from the hazard. Risk analysis will include both qualitative (i.e., description of historic or potential impacts) and quantitative data (i.e., assigning values and measurements for potential loss of assets). For each of the hazards profiled the best and most appropriate data available have been considered.

B3 Element and Requirements §201.7(c)(2)(ii):

Does the plan include a description of [each] identified hazard's impact, as well as an overall summary of the vulnerability of the tribal planning area?

- a. The plan shall describe the potential impacts of each of the identified hazards on the tribal planning area.
- b. The plan shall provide an overall summary of the vulnerability of the tribal planning area to the identified hazards. An overall summary of vulnerability identifies structures, systems, populations, and other assets as defined by the tribal government.

Average Annual Damages

FEMA suggests that when the appropriate data is available, hazard mitigation plans should also provide an estimate of potential dollar losses for structures in vulnerable areas. This risk assessment methodology includes an overview of assets at risk and provides historic average annual dollar losses for all hazards for which historic event data are available. Additional loss estimates are provided separately for those hazards for which sufficient data is available. These estimates can be found within the relevant hazard profiles.

B2 Element and Requirements §201.7(c)(2)(i): Does the plan include information on previous occurrences of hazard events and on the probability of future hazard events for the tribal planning area?

- a. The plan shall include the history of previous events for each of the identified hazards.
- b. The plan shall include the probability of future events for each identified hazard. Probability must include considerations of future conditions, including the effects of long-term changes in weather patterns on identified hazards.

Average annual losses from historical occurrences can be calculated for those hazards which there is a robust historic record and for which monetary damages are recorded. There are three main pieces of data used throughout this formula.

- **Total Damages in Dollars:** This is the total dollar amount of all property damages and crop damages as recorded in federal, state, and local data sources. The limitation to these data sources is that dollar figures usually are estimates and often do not include all damages from every event, but only officially recorded damages from reported events.
- **Total Years of Record:** This is the span of years there is data available for recorded events.
- **Number of Hazard Events:** This shows how often an event occurs. The frequency of a hazard event will affect how a jurisdiction responds. A thunderstorm may not cause much damage each time, but multiple storms can have an incremental effect on housing and utilities. In contrast, a rare tornado can have a widespread effect on the area.

An example of the Event Damage Estimate is found below:

$$\text{Annual Damages (\$)} = \frac{\text{Total Damages (\$)}}{\text{Total Years Recorded (\#)}}$$

It should be noted NCEI data is not all inclusive and the database provides very limited information on crop losses. To provide a better picture of the crop losses associated with the hazards, crop loss information provided by the Risk Management Agency (RMA) of the USDA and Arizona State University’s Spatial Hazard Events and Losses Database for the United States (SHELDUS) were also utilized for this update of the plan for counties with available data. RMA collected data was from 2000 to 2023, while SHELDUS data is from 1960 to 2022. Data for all the hazards are not always available, so only those with an available dataset are included in the loss estimation.

NOTE: Damage estimates are based upon available zonal or county data and are not tribal specific. Direct impacts to Tribal members is likely underreported through available risk data.

Estimated Hazard Probability

Annual probability can be calculated based on the total years of record and the total number of years in which an event occurred. An example of the annual probability estimate is found below:

$$\text{Annual Probability (\%)} = \frac{\text{Total Years with an Event Occurring (\#)}}{\text{Total Years Recorded (\#)}} \times 100$$

The annual probability percentage was then categorized into one of four categories as described in the table below.

Table 15: Probability Rating and Categories

RATING	LIKELIHOOD	FREQUENCY OF OCCURRENCE
1	Unlikely	0%-5% probability to occur based on historical record
2	Possible	6%-49% probability to occur based on historical record
3	Likely	50%-79% probability to occur based on historical record
4	Highly Likely	80%-100% probability to occur based on historical record
5	Unknown	No data available for determination

Hazard Identification

The identification of relevant hazards for the planning area began with a review of the prior FEMA-approved Southern Ute Indian Tribe Hazard Mitigation Plan (2014). Hazards were evaluated at the kick-off meeting to determine which hazards were appropriate for this planning process. The hazards for which a risk assessment was completed are included in the following table.

Table 16: Hazards Evaluated in 2024 Plan

HAZARDS ADDRESSED IN THE PLAN			
Animal and Plant Disease	Expansive Soils	Landslide/Rockfall	Tornado/Windstorm
Dam Failure	Extreme Temperatures	Severe Thunderstorms/Lightning/Hail	Wildfire
Drought	Flood/Erosion/Washout	Winter Weather	
Earthquake	Hazardous Materials Release	Terrorism/Cyber Attack/Active Shooter	

Hazard Elimination or Changes

Given the location and history of the planning area the following hazards listed in the 2023 State of Colorado HMP and/or previous SUIH HMP were not included in this HMP. A brief explanation of why the hazards were eliminated is provided below.

- Avalanche – this hazard was identified as no longer being a concern for the planning area.
- Ground Subsidence – this hazard was identified as no longer being a concern for the planning area.
- Wildfire Vehicle Collision – this hazard was identified as no longer being a concern for the planning area.

Changes to hazards in this plan include the following:

- Hail and Lightning combined into Severe Thunderstorms as a hazard.
- New hazard Extreme Temperatures includes both Extreme Heat and Extreme Cold
- Tornado and Windstorm combined

B1 Element and Requirements §201.7(c)(2)(i): Does the plan include a description of the type, location, and extent of all natural hazards that can affect the tribal planning area?

- b. The plan shall include a description of the natural hazards that can affect the tribal planning area.
- c. The plan shall provide the rationale for the omission of any natural hazards that are commonly recognized to affect the tribal planning area.
- d. The description shall include information on the location and the extent of each identified hazard.

Hazard Assessment Summary Tables

The following tables provide an overview of the data contained in the hazard profiles. Hazards listed in these tables and throughout the section are in alphabetical order. These tables are intended to be a quick reference for people using the plan and do not contain source information. Source information and full discussion of individual hazards are included in individual hazard profiles.

Table 17: Hazard Occurrence

HAZARD		PREVIOUS OCCURRENCE EVENTS	APPROXIMATE ANNUAL PROBABILITY	LIKELY EXTENT
ANIMAL AND PLANT DISEASE	Animal Disease	3	Unknown	Unknown
	Plant Disease	0		
DAM FAILURE		0	Unlikely	Flooding greater than the 1% Annual Flood Risk Area.
DROUGHT		661 out of 1,552 months	Possible	Mild Drought
EARTHQUAKE		0	Unlikely	Less than 5.0 on the Richter Scale
EXPANSIVE SOILS		Unknown	Unknown	Minimal Impacts
EXTREME TEMPERATURES	Extreme Cold	Avg 0 days per year $\geq 100^{\circ}\text{F}$	Unlikely	Max Temp $\leq 10^{\circ}\text{F}$
	Extreme Heat	Avg 0 days per year with high of $\leq 10^{\circ}\text{F}$		Max Temp $\geq 100^{\circ}\text{F}$
FLOOD/ EROSION/ WASHOUT	Flash Flood	70	Likely	Some inundation/erosion of structures and roads near streams and rivers. Some evacuations of people may be necessary.
	Flood	15		
HAZARDOUS MATERIALS RELEASE	Fixed Site	12	Possible	1-8,000 gallons May affect an area $< 1/4$ mile.
	Transportation	57		
	Oil/Gas Explosion	Unknown	Unknown	Varies by event

HAZARD		PREVIOUS OCCURRENCE EVENTS	APPROXIMATE ANNUAL PROBABILITY	LIKELY EXTENT
LANDSLIDE/ROCKFALL		17	Unknown	Minimal to no damage to property.
SEVERE THUNDERSTORMS/ LIGHTNING/ HAIL	Hail	40	Highly Likely	Avg 1.2" hail >1" rainfall Avg 68 mph winds
	Heavy Rain	72		
	Lightning	26		
	Thunderstorm Wind	33		
SEVERE WINTER STORMS	Blizzards	0	Highly Likely	1-31" snow 14-68 mph winds
	Heavy Snow	63		
	Ice Storm	1		
	Winter Storms	76		
	Winter Weather	215		
TERRORISM/CYBER ATTACK/ACTIVE SHOOTER		0	Unknown	Varies by event
TORNADO/ WINDSTORM	Windstorm	2	Likely	54-119 mph
	Tornado	5		EFO-EF1
WILDFIRE		1,268	Highly Likely	Avg: 53 acres Range: <1-54,129 acres

Table 18: Hazard Loss Estimates

HAZARD		COUNT	PROPERTY	CROP ¹
ANIMAL AND PLANT DISEASE	Animal Disease ²	3	86 animals	N/A
	Plant Disease ¹	0		
DAM FAILURE ⁵		0	\$0	\$0
DROUGHT ⁶		661 out of 1,552 months	N/A	\$395,047
EARTHQUAKE ¹¹		0	\$0	\$0
EXPANSIVE SOILS		Unknown	N/A	N/A
EXTREME TEMPERATURES ⁷	Extreme Cold	Avg 0 days per year ≥100°F	N/A	\$16,835
	Extreme Heat	Avg 0 days per year with high of ≤10°F		\$2,528
FLOOD/EROSION/ WASHOUT ⁸	Flash Flood	70	\$7,133,000	\$174,414 ¹²
	Flood	15	\$134,500	
	Erosion/Washout	Unknown	N/A	
HAZARDOUS MATERIALS RELEASE	Fixed Site ³	12	\$0	N/A
	Transportation ⁴	57	\$473,242	N/A
	Oil/Gas Explosion	Unknown	N/A	N/A
LANDSLIDE/ROCKFALL ¹²		17	\$195,305	\$0 ¹²
Hail		40	\$87,500	\$21,028

HAZARD		COUNT	PROPERTY	CROP ¹
SEVERE THUNDERSTORMS/ LIGHTNING/ HAIL⁸	Heavy Rain	72	\$36,000	\$9,128
	Lightning	26	\$259,250	
	Thunderstorm Wind	33	\$1,213,728	
SEVERE WINTER STORMS⁸	Blizzards	0	\$0	\$124,483
	Heavy Snow	63	\$0	
	Ice Storm	1	\$0	
	Winter Storms	76	\$315,000	
	Winter Weather	215	\$15,000	
TERRORISM/CYBER ATTACK/ ACTIVE SHOOTER¹⁰		0	\$0	\$0
TORNADO/ WINDSTORM⁸	Windstorm	2	\$1,518,000	\$31,323
	Tornado	5	\$86,000	\$2,000
WILDFIRE⁹		1,268	\$20,230,000	\$0 ¹²

1 - USDA RMA, 2000 - 2023

2 - CO Department of Ag 2022 - July 2024

3 - NRC, 1990 - 2022

4 - PHSMA, 1971 - 2023

5 - CO Dam Safety Officials, 1978 - February 2024

6 - NCEI, 1996-2023

7 - High Plains Regional Climate Center. 2024

8 - NCEI, 1996 - 2023

9 - National Interagency Fire Center, 2014-July 2024

10 - University of Maryland, 1970 - 2020

11 - USGS, 1900 - June 2024

12 - SHELDUS, 1960-2022

Historical Disaster Declarations

There have been three Federal Disaster Declarations for the Southern Ute Indian Tribe, as summarized below.

- June 19, 2002– Wildfires in Colorado
- March 13, 2020 – Colorado COVID-19
- March 28, 2020 – Colorado COVID-19 Pandemic

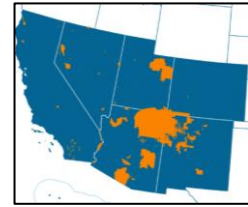
Prior to 2013, tribal disaster declarations were included in County or State-based Presidential emergency or major disaster declarations. The Sandy Recovery Improvement Act of 2013 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act to allow federally recognized Indian tribal governments the ability to request a disaster declaration. There were no Presidential Disaster Declarations available through FEMA.²²

22 Federal Emergency Management Agency. 2024. "Disaster Declarations." Accessed July 2024. <https://www.fema.gov/disasters>.

Climate

Long-term climate trends have shifted throughout the 21st century and have created significant changes in precipitation and temperature which have altered the severity and subsequent impacts from severe weather events. The Southern Ute Indian Tribe identified climate change as a top concern impacting tribal members and tribal services. A general discussion on climate impacts is included below, while more in-depth discussions are included in each hazard's risk assessment profile.

Figure 23: Southwest Region



The Southern Ute Indian Reservation is located within the Southwest region of the United States, which includes Arizona, California, Colorado, New Mexico, Nevada, and Utah (Figure 23). The Reservation's climate can be varied due to its inland continental location. Due to the area's semiarid climate and changes in elevation, temperatures vary widely from day to night and over short distances.

The Fifth National Climate Assessment has provided an overview of potential impacts:²³

Drought and Increasing Aridity Threaten Water Resources

Climate change has reduced surface water and groundwater availability for people and nature in the Southwest (very high confidence), and there are inequities in how these impacts are experienced (high confidence). Higher temperatures have intensified drought and will lead to a more arid future (very likely, high confidence); without adaptation, these changes will exacerbate existing water supply–demand imbalances (likely, high confidence). At the same time, the region is experiencing more intense precipitation events, including atmospheric rivers, which contribute to increased flooding (high confidence). Flexible and adaptive approaches to water management have the potential to mitigate the impacts of these changes on people, the environment, and the economy (medium confidence).

Adaptation Efforts Increase to Address Accelerating Impacts to the Region's Coast and Ocean

Large-scale marine heatwaves and harmful algal blooms have caused profound and cascading impacts on marine coastal ecosystems and economies (high confidence). Without implementation of adaptation or emissions-reductions measures, human-caused warming will drive more frequent and longer marine heatwaves (very likely, very high confidence), amplifying negative coastal effects (medium confidence). Sea level rise, along with associated impacts such as flooding and saltwater intrusion, will have severe and disproportionate effects on infrastructure, communities, and natural resources (likely, very high confidence). The California State Government has applied climate science to planning and decision-making for sea level rise, and multiple regions are moving toward climate-informed and adaptive strategies for fisheries (high confidence). However, climate planning and adaptation solutions for aquaculture are less clear (high confidence).

Increasing Challenges Confront Food and Fiber Production in the Southwest

Continuing drought and water scarcity will make it more difficult to raise food and fiber in the Southwest without major shifts to new strategies and technologies (high confidence). Extreme heat events will increase animal stress and reduce crop quality and yield, thereby resulting in widespread economic impacts (likely, high confidence). Because people in the Southwest have

²³ Fifth National Climate Assessment. 2023. "Chapter 28. Southwest". Accessed July 2024. <https://nca2023.globalchange.gov/chapter/28/>

adapted to drought impacts for millennia, incorporating Indigenous Knowledge with technological innovation can offer solutions to protect food security and sovereignty (medium confidence).

Climate Change Compromises Human Health and Reshapes Demographics

Increases in extreme heat, drought, flooding, and wildfire activity are negatively impacting the physical health of Southwest residents (high confidence). Climate change is also shaping the demographics of the region by spurring the migration of people from Central America to the Southwest (medium confidence). Individuals particularly vulnerable to increasing climate change impacts include older adults, outdoor workers, and people with low income (high confidence). Local, state, and federal adaptation initiatives are working to respond to these impacts (high confidence).

Changes in Wildfire Patterns Pose Challenges for Southwest Residents and Ecosystems

In recent years, the Southwest has experienced unprecedented wildfire events, driven in part by climate change (high confidence). Fires in the region have become larger and more severe (high confidence). High-severity wildfires are expected to continue in coming years, placing the people, economies, ecosystems, and water resources of the region at considerable risk (very likely, high confidence). Opportunities for adaptation include pre- and postfire actions that reduce wildfire risk and facilitate ecosystem restoration and include traditional land stewardship practices (high confidence) and the application of Indigenous cultural fire (medium confidence).

Climate Change Impacts

Observed changes in the intensity and frequency of extreme events are a significant concern now and in the future because of the social, environmental, and economic costs associated with the impacts of any given event. Challenges that are expected to affect communities, environments, and residents as a result of climate change include:

- Developing and maintaining sustainable agricultural systems
- Resolving increasing competition among land, water, and energy resources
- Conserving vibrant and diverse ecological systems
- Enhancing the resilience of the region's people to the impacts of climatic extremes

Certain groups of people may face greater difficulty when dealing with the impacts of a changing climate. Culturally sensitive groups, elders, and those living below the poverty line are particularly susceptible. Additionally, specific industries and professions tied to weather and climate, like outdoor tourism, commerce, and agriculture, are especially vulnerable.²⁴

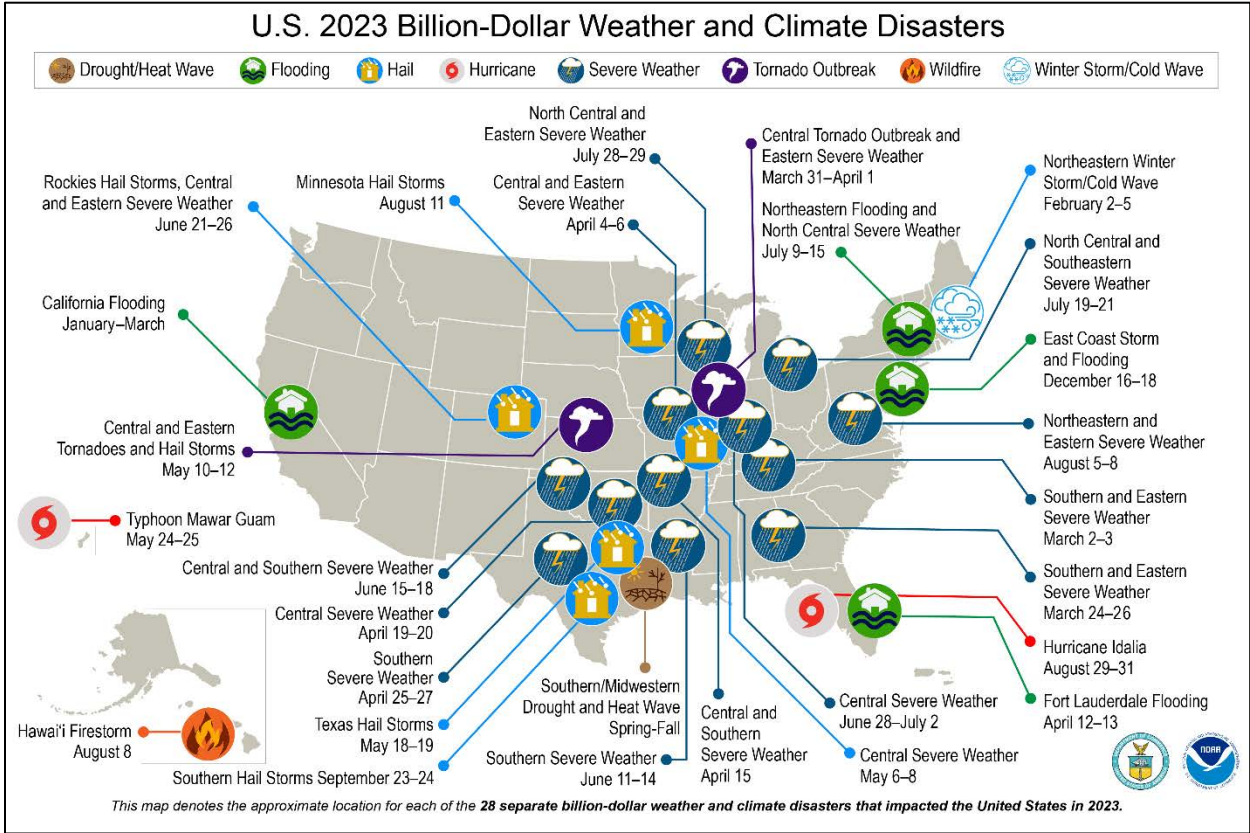
Climate change can reduce the availability of wild game, fish, and many ceremonial, medicinal, and subsistence plants which threatens community health for native communities by reducing food security and cultural well-being. Cultural and spiritual reliance on local ecosystems which provide water sources and subsistence food leads to increased vulnerability during extreme climate events. Some tribes are already observing impacts on traditional food and water sources due to climate change. The Crow Nation has noted that warming streams are impacting the health and distribution of fish species and microbial contamination of rivers has led to a loss of trusted water sources for ceremonial purposes.

²⁴ U.S. Environmental Protection Agency. "Climate Impacts on Society." Accessed July 2024.
https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-society_.html

As seen in the figure below, the United States is experiencing an increase in the number of billion-dollar natural disasters. Figure 25 shows a rise in the overall average of billion-dollar events in the state of Colorado.

The Southern Ute Indian Tribe will have to adapt to a changing climate and its impacts or experience an increase in economic losses, property damages, agricultural damages, and loss of life. Past events have typically informed mitigation plans to be more resilient to future events. This HMP includes strategies for the planning area to address these changes and increase resilience. Many mitigation actions or strategies that can be adopted today will produce long-lasting benefits to combat climate change.

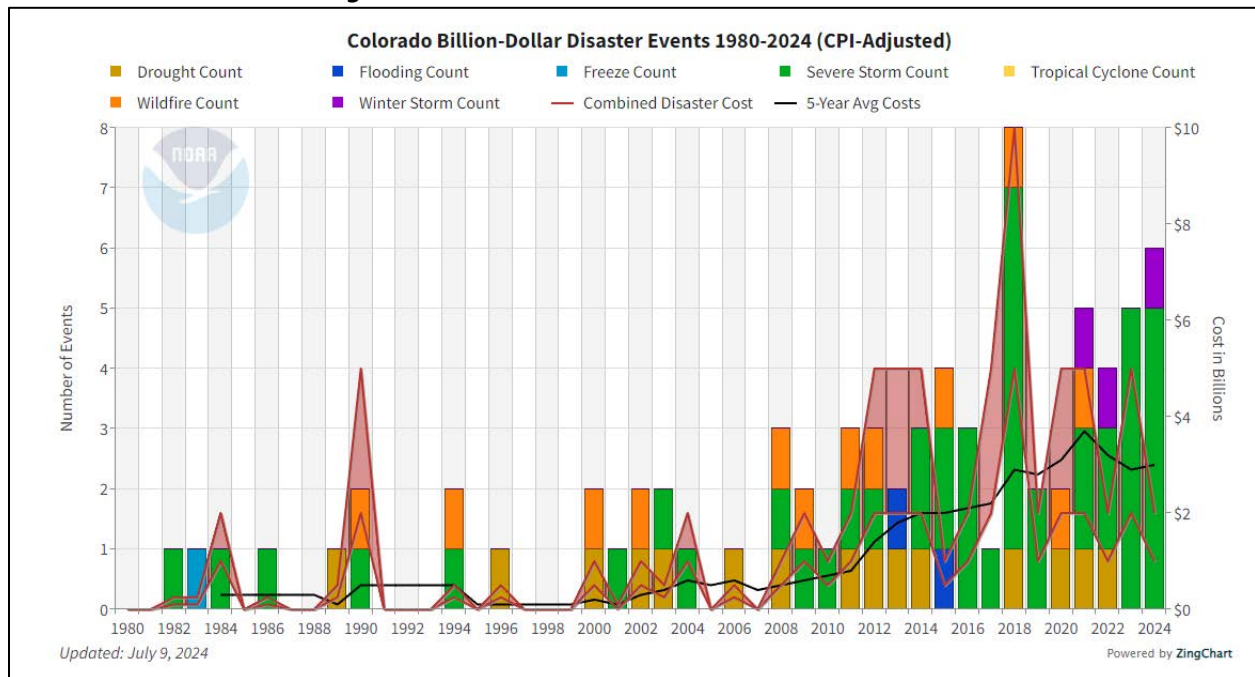
Figure 24: Billion Dollar Weather and Climate Disasters (2023)



Source: NOAA, 2024²⁵

25 NOAA. 2023. "Billion-Dollar Weather and Climate Disasters: Overview. Accessed February 2024. <https://www.ncdc.noaa.gov/billions/>

Figure 25: Billion Dollar Disaster Costs in Colorado



Source: NOAA, 2024

Hazard Profiles

Information from the Southern Ute Indian Tribe was collected and reviewed alongside hazard occurrence, magnitude, and event narratives as provided by available data resources. Based on this information, profiled hazards were determined to either have a historical record of occurrence or the potential for occurrence in the future. The following profiles will broadly examine the identified hazards.

Animal and Plant Disease

Animal and plant disease is any biological disease, virus, or infection that can reduce the quality or quantity of either animals or plants. With farming and ranching constituting a fair share of the Tribe's economy, specific agricultural diseases to the buffalo herd and food supplies would greatly impact the Tribe. According to the USDA Census of Agriculture in 2022, the market value of agricultural products sold in Archuleta and La Plata Counties was estimated at \$45 million, with this total split between crops (estimated \$20 million) and livestock (estimated \$25 million).²⁶ County numbers were used as tribal numbers were not available. Additionally, data is currently not available to distinguish between tribal owned vs. non-tribal owned agricultural products sold. It is anticipated that much of this economic output is driven by non-tribal owned persons or entities.

The following table shows the population of livestock within Archuleta and La Plata Counties. This count does not include wild populations that are also at risk from animal diseases. Of note, these populations are not fully tribally owned livestock and do not fully contribute to the Tribe's economic power; however, they do help showcase the existing populations at risk to disease outbreaks and transmission.

Table 19: Livestock Inventory

MARKET VALUE OF 2022 LIVESTOCK SALES	CATTLE AND CALVES	POULTRY EGG LAYERS	HOGS AND PIGS	SHEEP AND LAMBS
\$25,129,000	23,434	7,260	287	6,581

Source: U.S. Census of Agriculture

According to the USDA, the primary crops planted in the state of Colorado include wheat, corn, sorghum, and millet. The USDA Census of Agriculture report estimated nearly 96,817 acres of harvestable cropland in Archuleta and La Plata Counties. The following table provides the value and acres of land in farms for the counties.

Table 20: Land and Value of Farms

NUMBER OF FARMS	LAND IN FARMS (ACRES)	TOTAL CROPLAND	MARKET VALUE OF 2022 CROP SALES
1,002	575,285	96,817	\$19,853,000

Source: U.S. Census of Agriculture

Location

Agricultural diseases have the potential to occur across the Reservation with impacts to the economy of the Tribe if a major outbreak were to occur. Animal and plant diseases would likely occur on agricultural lands, range or pasture lands, and forests. The highest concern of disease impact for the Tribe would be where the Tribe's buffalo herd resides, near Ignacio. Tribal members who work in rural areas of the Reservation areas or who work in the agricultural sector are also at risk from animal-related diseases, tularemia, West Nile Virus, influenza, and pesticide poisoning.

²⁶ U.S. Department of Agriculture. 2024. "2022 Census of Agriculture".

Historical Occurrences

Animal Disease

The SUIT Reservation experienced a confirmed case of Highly Pathogenic Avian Influenza (HPAI) in April 2022. According to the Colorado Department of Agriculture (CDA), the virus was found in a mixed species backyard flock operation in La Plata County. The CDA advised poultry owners to increase their biosecurity measures to protect birds from HPAI. No human cases of avian influenza viruses have been detected in the United States.²⁷

A case of canine distemper was also found in the area when a gray fox was found with it in February 2022. Canine distemper is a highly transmissible disease and potentially lethal to unvaccinated dogs. The virus attacks the respiratory, gastrointestinal and nervous system of dogs. Humans and other non-canine pets are not affected.²⁸

Plant Disease

According to the United States Department of Agriculture - Risk Management Agency (RMA), no plant disease events occurred in the Reservation from 2000 to 2023. However, the Colorado State Forest Service (CSFS) indicated that various forest insects and diseases have impacted the Reservation. In 2023 alone, La Plata County experienced Western Spruce Budworm, Douglas-fir Beetle, Roundheaded Pine Beetle Complex, and Spruce Beetle. Between 1996 and 2023, both Archuleta and La Plata Counties were impacted by these and others, such as Mountain Pine Beetle and Western Balsam Bark Beetle.²⁹

Average Annual Losses

Average annual losses for agricultural animal disease cannot be calculated as there is no database available for documented historical events in the state. Although there were no cases of plant disease according to the USDA RMA (2000-2023), the Colorado State Forest Service indicated that various forest insects and diseases have impacted the Reservation. Using CSFS data (1996-2023), annual losses from insects/disease can be estimated for the planning area. Note that these events are categorized by county, so some events may be included which did not affect the Southern Ute Indian Tribe.

Table 21: Plant Disease/Pest Losses

COUNTY	MOUNTAIN PINE BEETLE (ACRES AFFECTED)	SPRUCE BEETLE (ACRES AFFECTED)	DOUGLAS-FIR BEETLE (ACRES AFFECTED)	TOTAL ACRES AFFECTED	AVERAGE ANNUAL ACRES AFFECTED
Archuleta	16,000	58,000	40,000	114,000	4,071
La Plata	12,000	47,000	19,000	78,000	2,786
TOTAL	28,000	105,000	59,000	192,000	6,857

Source: CSFS, 1996-2023

Extent

There is no standard for measuring the magnitude of agricultural diseases. Historical events have impacted a relatively small number of livestock and/or crop; however, pests have affected thousands of acres of forest throughout the planning area. Governing bodies such as the USDA, Colorado Department

27 Colorado Department of Agriculture. 2022. "Highly Pathogenic Avian Influenza Confirmed in Backyard Poultry in La Plata County". <https://ag.colorado.gov/press-release/highly-pathogenic-avian-influenza-confirmed-in-backyard-poultry-in-la-plata-county>.

28 Colorado Parks & Wildlife. 2022. "Canine Distemper in La Plata County Gray Fox Prompts Advisory from CPW". <https://cpw.state.co.us/news/02042022/canine-distemper-la-plata-county-gray-fox-prompts-advisory-cpw>.

29 Colorado State Forest Service. 2024. "Common Forest Insects & Diseases". <https://csfs.colostate.edu/forest-management/common-forest-insects-diseases/>.

of Agriculture, or the Southern Ute Indian Tribe can implement quarantines on farms if highly contagious and/or dangerous diseases are discovered. A large concern exists if agricultural disease were to impact the buffalo herd and require a cull of the existing herd.

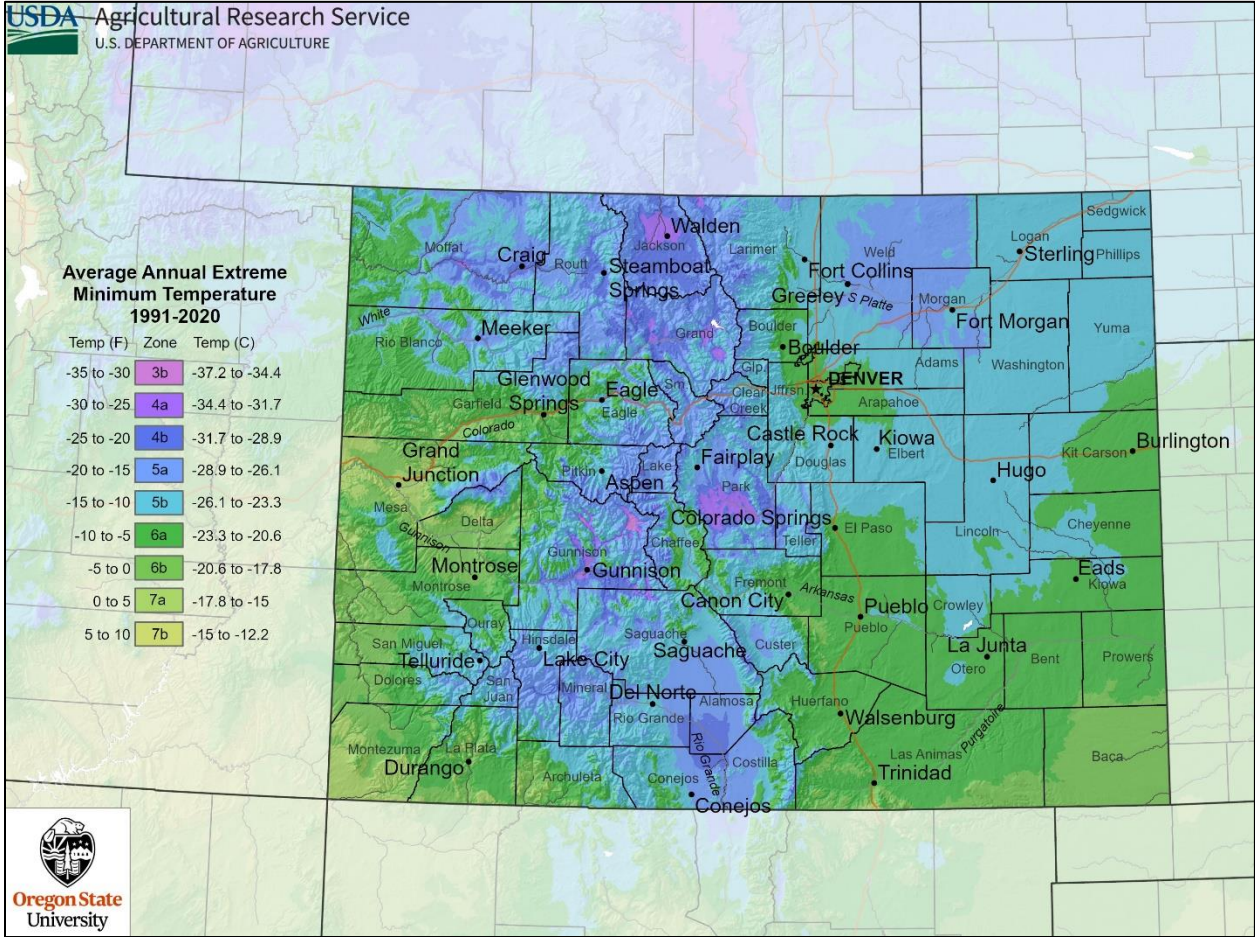
Probability

Animal and plant disease probability cannot be calculated due to the lack of available sufficient data. The probability of future occurrences remains high in the face of climate change bringing additional climatic stressors and new pests to the area.

Impacts from Climate Change

The agricultural sector will experience an increase in droughts, an increase in grass and wildfire events, changes in the growth cycle as winters warm, an influx of new and damaging agricultural diseases or pests, and changes in the timing and magnitude of rainfall. These changes have shifted the annual growing season and expected agricultural production conditions and the added stressors on agriculture could have devastating economic effects if innovative agricultural and livestock management practices are not adopted. The below figure (Figure 26) shows the current Plant Hardiness Zones of Colorado.

Figure 26: Colorado Plant Hardiness Zone Map



Source: USDA, 2024

Vulnerabilities to Bison Herd and Cultural Resources

The Southern Ute manage a bison herd for cultural preservation, dietary, and educational purposes. A vital aspect of protecting and preserving the buffalo herd is to be aware of livestock health concerns or risks. Below is a list of potential diseases common in buffalo and their general behaviors. Three of the diseases are zoonotic and can be transferred to humans if in contact with an infected buffalo.

- **Calf Scours**

This is a digestive disease that occurs when buffalo ingest infested feed, are overcrowded, exposed to extreme weather conditions, or other adverse environmental conditions for the herd. Wet environments, overcrowding, and poor nutrition are the main factors that cause this disease to spread.

- **Bovine Tuberculosis (zoonotic)**

This is a bacterial disease that spreads through direct contact, inhalation, or ingestion of the bacteria or resources infected with the bacteria. There is no treatment for bovine tuberculosis; quarantine of non-infected herds should be a priority to limit the spread of the disease. The USDA does have a monitoring and surveillance system for infected animals.³⁰ This disease can spread to humans if undercooked meat or unpasteurized dairy products are consumed. The bacteria can also enter the human body through cuts or scrapes.³¹

- **Foot and Mouth Disease**

FMD is a fast-spreading virus that infects all cloven-footed animals. Nearly all animals in herds can become ill, and younger animals are more susceptible to death. Although humans can be carriers of this disease, it is not considered life-threatening to humans.³²

- **Listeriosis (zoonotic)**

Listeriosis is a bacterial disease transmitted through buffalo ingesting vegetation or contaminated soil from fecal matter. Antibiotics can help treat this disease if caught before it enters the nervous system. Once the bacteria is neurologic, it becomes difficult to treat successfully.³³ Listeriosis may be transmitted to humans if they are in contact with an infected animal.³⁴

- **Osteragiosis**

This is a parasitic disease that has a high mortality rate for buffalo and other animals that come into contact with it. Transmission of osteragiosis happens when ingesting the larvae in pastures or on forage. The treatment for osteragiosis depends on the type.

- **Lungworm**

Lungworm is a parasitic disease that infects buffalo herds through consuming the larvae in pastures. The treatment for lungworm is usually favorable. The preventative treatment process involves ground treatment in late spring before the herd goes out to the pasture.³⁵

- **Anthrax (zoonotic)**

Buffalo can be infected with anthrax when they consume the spores in contaminated soil, plants, or water.³⁶ Outbreaks are most likely to occur during the summer, after long periods of wet seasons. Although there is no treatment for anthrax, it is rare in the United States. This disease is transmissible to humans through the consumption of infected meat or direct contact with an infected animal.³⁷

³⁰ The National Bison Association. "Bison Disease Field Guide." Retrieved May 2024, from <https://bisoncentral.com/wp-content/uploads/2019/02/Bison-Disease-Field-Guide-FINAL-Oct-9-2018.pdf/>

³¹ CDC Health Pets, Healthy People – Farm Animals: <https://www.cdc.gov/healthypets/pets/farm-animals.html>

³² Nebraska Department of Agriculture. "Foot and Mouth Disease Information." *Animal Health*. Retrieved from https://nda.nebraska.gov/animal/diseases/fmd/foot_mouth_disease_info.html

³³ Bison Disease Field Guide

³⁴ CDC Health Pets, Healthy People – Farm Animals: <https://www.cdc.gov/healthypets/pets/farm-animals.html>

³⁵ Bison Disease Field Guide

³⁶ CDC Health Pets, Healthy People – Farm Animals: <https://www.cdc.gov/healthypets/pets/farm-animals.html>

³⁷ Bison Disease Field Guide

The SUIT harvest “bear root” or Osha (*ligusticum porteri*), which is considered a significant medicinal herb and is often used for healing properties. Bear root grows throughout the Rocky Mountains, in elevations over 7,000 feet. Traditionally, bear root is harvested by SUIT during the spring when bears emerge from hibernation. While bear root grows outside the boundaries of the SUIT reservation, it’s a significant cultural resource and valued by the SUIT.

Osha is susceptible to several plant diseases, particularly those affecting roots, leaves, and stems. Some of the most common disease that can impact bear root include: fungal disease (e.g., powdery mildew), bacterial disease (e.g., leaf blight), viral disease (e.g., celery mosaic virus), and parasitic issues (e.g., nemotodes).

Several management practices can help minimize the impact of plant diseases on bear root. However, because bear root is traditionally wild-harvested rather than cultivated as a crop, conventional agricultural mitigation measures may be less effective. Instead, conservation-based approaches—such as habitat preservation, controlled harvesting, soil health monitoring, and community-led stewardship programs—are more suitable for protecting this culturally significant plant from disease threats.

Overall Vulnerabilities

Vulnerabilities to Animal and Plant Disease can have widespread and severe impacts. Individuals in direct contact with infected livestock are at immediate risk, and prolonged disease events can lead to potential food shortages. This is particularly serious for those living in poverty, as increased food prices can worsen their financial strain. Areas heavily reliant on agriculture can experience major economic threats, as large-scale or prolonged disease outbreaks can reduce tax revenues and strain local capabilities. In addition, land value fluctuations may drive population changes within affected areas.

Quarantine measures can disrupt transportation routes, further complicating the situation. Overall climate can intensify outbreaks, prolong impacts, and delay recovery periods. Additionally, changes in seasonal norms can facilitate the spread of invasive species and agricultural diseases, adding another layer of vulnerability to the agricultural sector.

Dam Failure

Dam failure floods are primarily a result of hydrologic or structural deficiencies. The operation of a man-made reservoir can also influence the safety of the structure. Dam failure by hydrologic deficiency is a result of inadequate spillway capacity, which can cause the level of a reservoir to exceed the capacity or height of the dam, also known as overtopping, during large flows into the reservoir. Dam failure by hydrologic deficiency typically occurs from excessive runoff after unusually heavy precipitation in the basin. Large waves generated from landslides into a reservoir, or the sudden inflow from upstream dam failures, are other causes of dam failure by overtopping. Overtopping is especially dangerous for an earth dam, because the down-rush of water over the crest erodes the dam face. If it continues long enough, the down-rush of water breaches the dam embankment and suddenly releases all the stored water into the downstream floodplain.

The mechanics of a structural failure depend on the type of dam and the mode of failure. While they can occur at any time, earthen dams appear to be most susceptible to structural failure during the fall and spring freezing and thawing cycles.

Examples of structural deficiencies include seepage through the embankment, piping along internal conduits, erosion, cracking, sliding, overturning, rodent tunneling, and other weakness in the structure. Old age is often at the root of structural deficiencies. Seismic activity in Colorado has also been recognized as a potential source of structural problems due to liquefaction of sand layers in the embankment of a dam.

DWR has classified dams into two main types: Jurisdictional Dams and Non-Jurisdictional Dam.

- **Non-Jurisdictional Dam** is a dam creating a reservoir with a capacity of 100 acre-feet or less and a surface area of 20 acres or less and with a height measured as defined in Rules 4.2.5.1 and 4.2.19 of 10 feet or less.
- **Jurisdictional Dam** is a dam creating a reservoir with a capacity of more than 100 acre-feet or creates a reservoir with a surface area in excess of 20 acres at the high-water line or exceeds 10 feet in height measured vertically from the elevation of the lowest point of the natural surface of the ground where that point occurs along the longitudinal centerline of the dam up to the crest of the emergency spillway of the dam.

Jurisdictional dams are further classified by the potential hazard each poses to human life and economic loss. The following are classifications and descriptions for each hazard class of Jurisdictional Dams:

- **No Public Hazard (NPH)** – dams assigned the NPH hazard potential classification are those for which no loss of human life is expected, and for which damage only to the dam owner’s property will result from failure.
- **Low Hazard Potential** – dams assigned the low hazard potential classification are those where failure or mis-operation results in no probable loss of human life and significant damage to structures and public facilities as defined for a Significant Hazard dam is not expected.

- **Significant Hazard Potential** – dams assigned the significant hazard potential classification are those dams where failure or mis-operation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns.
- **High Hazard** – dams assigned the high hazard potential classification are those where loss of human life is expected in the event of a failure.³⁸

Dams that are classified with high hazard potential require the creation of an Emergency Action Plan (EAP). The EAP defines responsibilities and provides procedures designed to identify unusual and unlikely conditions which may endanger the structural integrity of the dam within sufficient time to take mitigating actions and to notify the appropriate emergency management officials of possible, impending, or actual failure of the dam. The EAP may also be used to provide notification when flood releases will create major flooding. An emergency situation can occur at any time; however, emergencies are more likely to happen when extreme conditions are present. The EAP includes information regarding the notification of emergency response entities so that proper action can be taken to prevent the loss of life and property. Local emergency response entities generally included in an EAP include but are not limited to 911 Dispatch, County Sheriffs, Local Fire Departments, Emergency Management Agency Director, County Highway Department, and the National Weather Service (NWS).

Location

Communities or areas downstream of a dam, especially high hazard dams, are at greatest risk of property or infrastructure damage and loss of life due to dam failure. In total there are 30 dams located within the Southern Ute Reservation.

Table 22: Dams in Southern Ute Reservation

NON-JURISDICTIONAL	NO PUBLIC HAZARD	LOW HAZARD	SIGNIFICANT HAZARD	HIGH HAZARD	TOTAL
20	18	7	3	2	30

Source: DWR, 2024³⁹

The following table lists dams classified as “High Hazard” in the Reservation.

Table 23: High and Significant Hazard Dams in or near Southern Ute Reservation

NID	DAM NAME	OWNER	CONDITION ASSESSMENT	LAST INSPECTION DATE	DOWNSTREAM TOWN
CO01075	Red Mesa Ward	Red Mesa Reservoir & Ditch Co.	Conditionally Satisfactory	11/15/2023	Farmington, NM
CO03021	Long Hollow	La Plata Water Conservancy District	Satisfactory	11/15/2023	-
CO01695	Vallecito*	U.S. Bureau of Reclamation	-	-	Bayfield

38 Colorado Department of Natural Resources Division of Water Resources. 2020. “Guidelines for Hazard Classification”. Accessed July 2024. <https://dhrweblink.state.co.us/dwr/ElectronicFile.aspx?docid=3566963&dbid=0>.

39 Colorado Department of Natural Resources Division of Water Resources. June 2024. “Dam Safety”. <https://dwr.colorado.gov/services/dam-safety>.

CHAPTER FOUR: RISK ASSESSMENT

NID	DAM NAME	OWNER	CONDITION ASSESSMENT	LAST INSPECTION DATE	DOWNSTREAM TOWN
CO02952	Ridges Basin (Lake Nighthorse)*	U.S. Bureau of Reclamation	-	-	-
CO01095	Pargin (Lake Capote)^	Southern Ute Indian Tribe	-	-	Blanco, NM
CO00894	Pastorius – Main Dam^	Florida Consolidated Ditch Co.	Conditionally Satisfactory	4/20/2022	Bondad
CO02881	Pastorius – East Dike^	Florida Consolidated Ditch Co.	Satisfactory	4/20/2022	Bonda

Source: DWR, 2024

*Dam is located outside the Reservation

^Significant Hazard Dam

Figure 27: High/Significant Hazard Dams

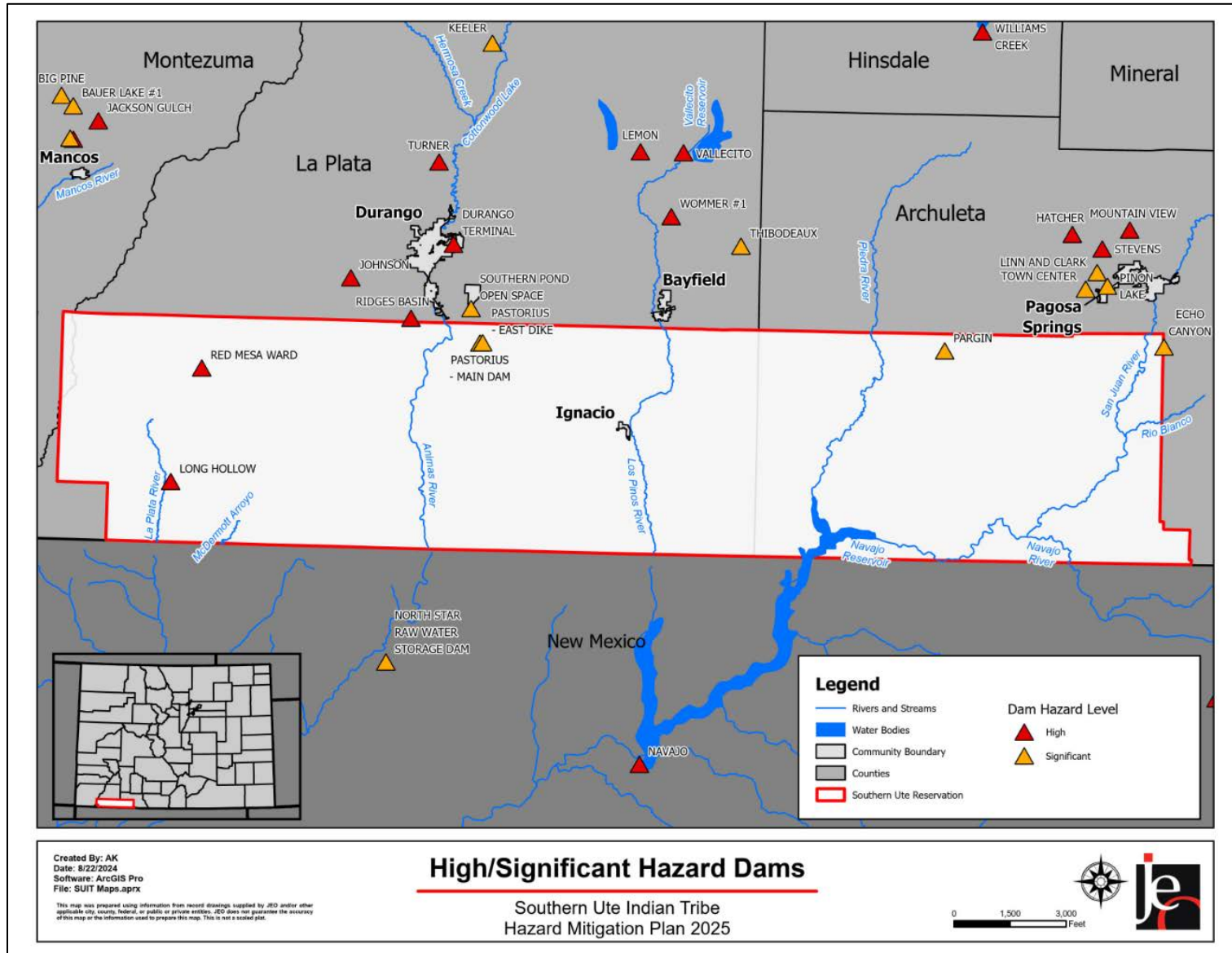


Figure 28: Low Hazard Dams

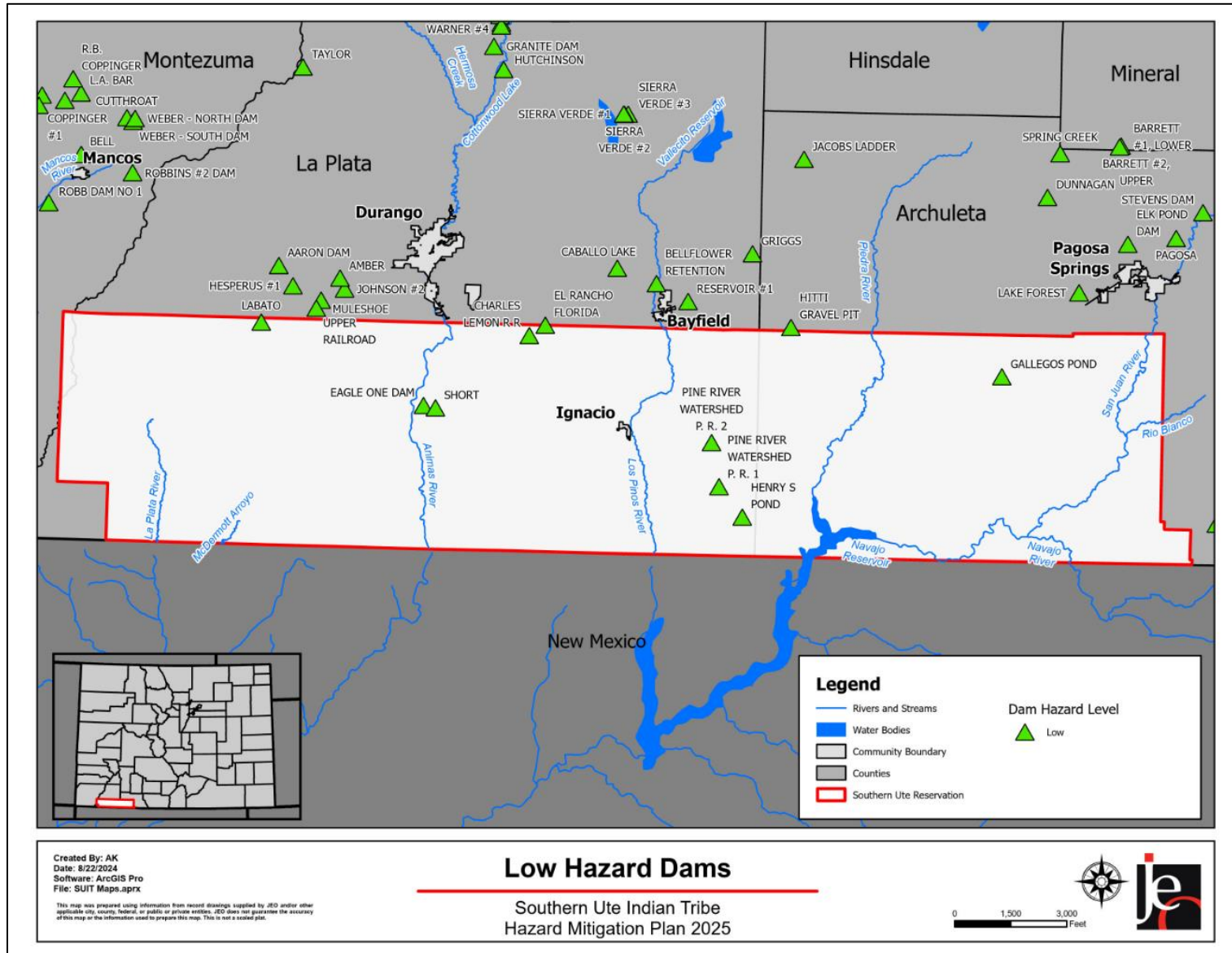
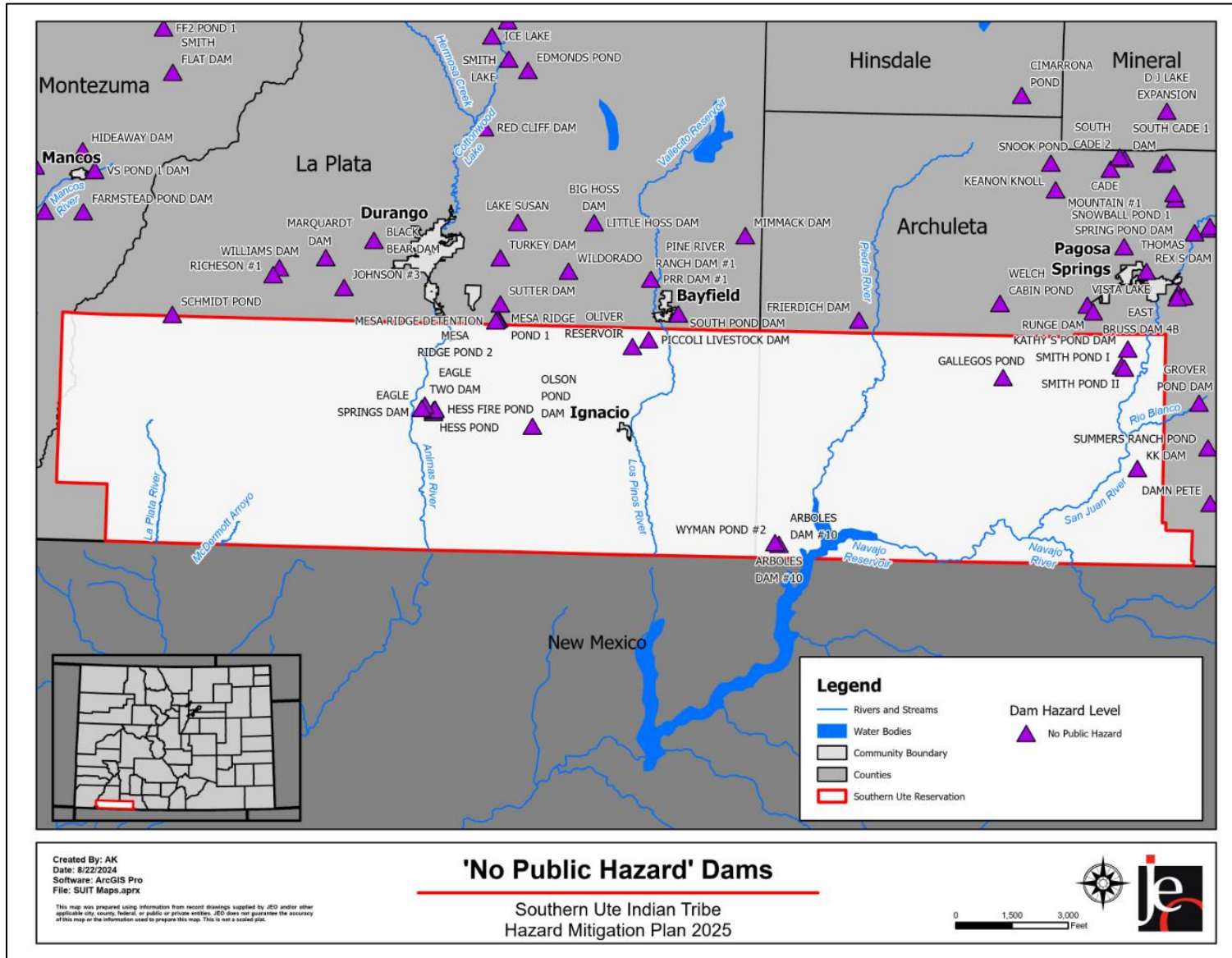


Figure 29: 'No Public Hazard' Dams



Dams of Concern Outside the Reservation

The Tribal planning team noted that the Vallecito Dam and Ridges Basin Dam (also known as Nighthorse Dam), both located outside Reservation boundaries, could impact the Reservation if a dam failure were to occur. A Vallecito Dam failure would be roughly equivalent to a 100 year flood event for the inundation area, according to the planning team. A Ridges Basin Dam failure would cause significant harm to tribal homes. Both Vallecito Dam and Ridges Basin Dam are classified as high hazard dams. Bayfield is listed as the downstream town for the Vallecito Dam. The Ridges Basin Dam does not list a downstream town.

Historical Occurrences

According to the Association of State Dam Safety Officials, there have been zero dam incidents in Southern Ute Reservation.⁴⁰ In the event that dam failure is imminent, the EAP for the dam governs the course of action.

Average Annual Losses

Since there have been no dam incidents reported within the Reservation, the average annual losses are \$0.

Extent

The extent of dam failure is indicated by its hazard classification. Note that hazard classification does not indicate the likelihood of a dam failure event to occur, but rather the extent of potential damages that may occur in case of a failure. Thus, the high hazard dams in the Reservation would have the greatest impacts if they were to fail.

Probability

There have been zero years with a reported dam failure out of 46 years, so the probability of dam failure occurring in any given year is *Unlikely*.

Impacts from Climate Change

Dams are designed partly based on assumptions about a river's flow behavior, expressed as hydrographs. Changes in weather patterns can have significant effects on the hydrograph used for the design of a dam. If the hydrograph changes, it is conceivable that the dam can lose some or all of its designed margin of safety, also known as freeboard. If freeboard is reduced, dam operators may be forced to release increased volumes earlier in a storm cycle in order to maintain the required margins of safety. Such early releases can increase flood potential downstream.

Overall Vulnerabilities

Overall vulnerabilities to dam failure vary based on surrounding development and other flood control measures. When dams fail, suddenly their contents are released at a high rate of speed, increasing the potential to cause injuries, loss of life, or property damage. For those living downstream of high hazard dams, evacuations are likely required, posing significant challenges for hospitals, nursing homes, and the elderly due to their limited mobility. The agricultural sector may suffer localized crop and rangeland losses, while homes and buildings in inundated areas face substantial flood damage. Transportation routes could also be closed for extended periods, disrupting both regular travel and emergency response. These closures can further complicate recovery and exacerbate the overall impact of dam failure.

40 Association of State Dam Safety Officials. 2024. "Dam Incident Database Search." Accessed July 2024. <https://damsafety.org/incidents>.

Drought

Drought is generally defined as a natural hazard that results from a substantial period of below normal precipitation. Although many inaccurately consider drought a rare and random event, it is actually a normal, recurrent feature of climate. Drought can occur in virtually all climatic zones, but its characteristics can vary significantly from one region to another. A drought often coexists with periods of extreme heat, which together can cause significant social stress, economic losses, and environmental degradation. The planning area is largely rural, which presents an added vulnerability to drought events; drought conditions can significantly and negatively impact the agricultural economic base.

The planning area is primarily rural with a few unincorporated community centers which present added vulnerabilities to extreme heat and drought events including significant distance to medical resources for many tribal residents and negative impacts to the local environment, agricultural land, or businesses in the area.

Drought conditions, while normal and easily weathered in the short term, can have long-lasting and pervasive impacts affecting a wide range of people, livestock, and industries. While many impacts of drought are non-structural, there is the potential that during prolonged drought events structural impacts like foundation cracking can occur from dry soil. Drought normally affects more people than other natural hazards, and its impacts are spread over a larger geographical area. Detection and early warning signs of drought conditions have improved recently but are still more difficult to identify than that of quick-onset natural hazards (e.g., flood, winter storms, tornadoes). According to the National Drought Mitigation Center (NDMC), droughts are classified into four major types:

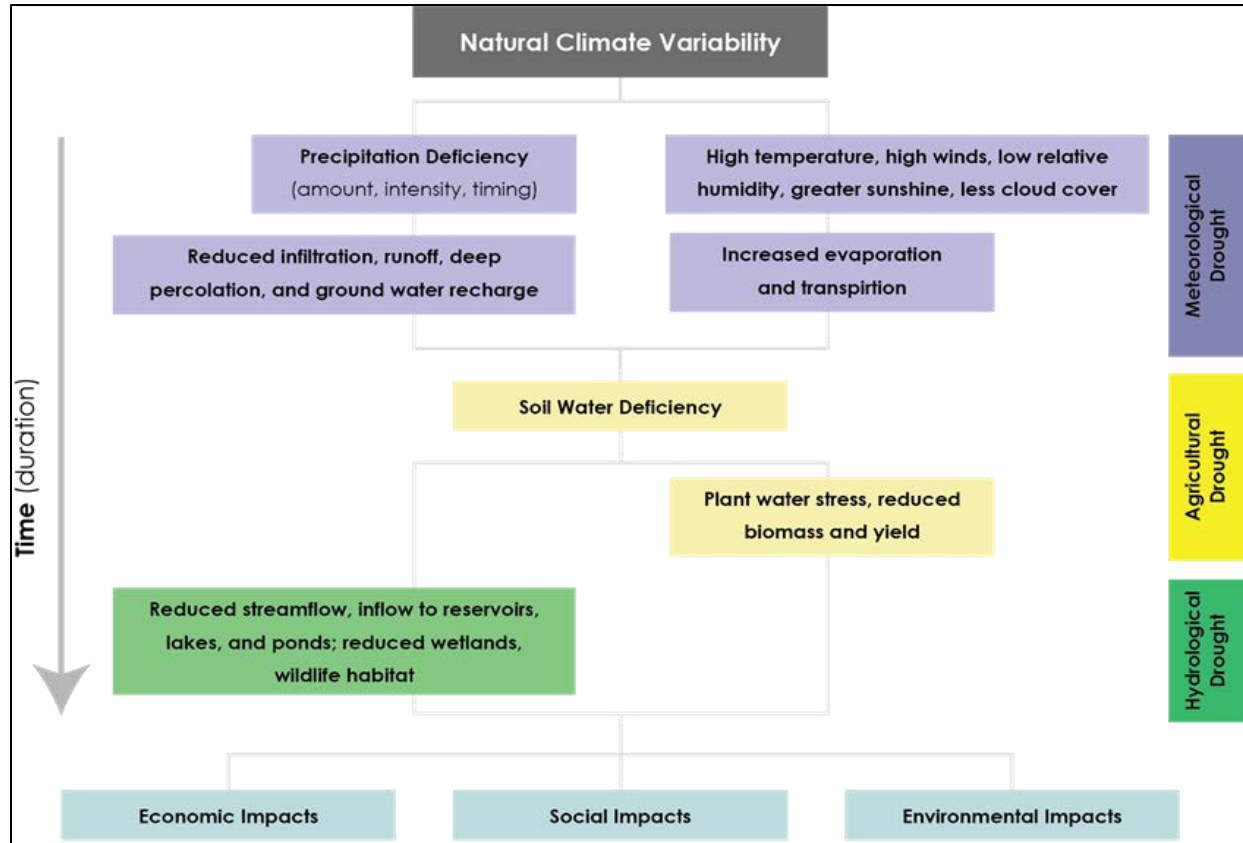
Drought is a normal, recurrent feature of climate, although many erroneously consider it a rare and random event. It occurs in virtually all climatic zones, but its characteristics vary significantly from one region to another.
~National Drought Mitigation Center

- **Meteorological Drought** – is defined based on the degree of dryness and the duration of the dry period. Meteorological drought is often the first type of drought to be identified and should be defined regionally as precipitation rates and frequencies (norms) vary.
- **Agricultural Drought** – occurs when there is deficient moisture that hinders planting germination, leading to low plant population per hectare and a reduction of final yield. Agricultural drought is closely linked with meteorological and hydrological drought; as agricultural water supplies are contingent upon the two sectors.
- **Hydrological Drought** – occurs when water available in aquifers, lakes, and reservoirs falls below the statistical average. This situation can arise even when the area of interest receives average precipitation. This is due to the reserves diminishing from increased water usage, usually from agricultural use of high levels of evapotranspiration, resulting from prolonged high temperatures. Hydrological drought often is identified later than meteorological and agricultural drought. Impacts from hydrological drought may manifest themselves in decreased hydropower production and loss of water-based recreation.
- **Socioeconomic Drought** – occurs when the demand for an economic good exceeds supply due to a weather-related shortfall in water supply. The supply of many economic goods includes, but are not limited to: water, forage, food grains, fish, and hydroelectric power.⁴¹

⁴¹ National Drought Mitigation Center. 2017. "Drought Basics." <http://drought.unl.edu/DroughtBasics.aspx>.

Figure 30 indicates different types of droughts, a commonly occurring temporal sequence, and the various types of effects that they can have on a community.

Figure 30: Sequence and Impacts of Drought Types



Source: National Drought Mitigation Center, University of Nebraska-Lincoln, 2017⁴²

Location

The entire Reservation is susceptible to the direct and indirect impacts resulting from drought, although drought can vary greatly across the Reservation. The Tribe’s 2019 Drought Management Plan notes that the western half of the Reservation is known as the “dry side” as it usually receives far less moisture than the eastern half. However, the Tribe’s three main sources of water – direct diversion water from rivers and streams, storage water, and groundwater – all have the potential to be impacted by drought.

Historical Occurrences

The Palmer Drought Severity Index (PDSI) is utilized by climatologists to standardize global long-term drought analysis. The PDSI was developed in 1965 to measure dryness based on recent precipitation and temperatures. The data for the planning area was collected from NOAA’s Climate Division 2 – Colorado between the years of 1895 and 2024.⁴³ Table 24 shows details of the Palmer Drought Severity classifications. Figure 32 shows the data from this period from NCEI. The negative Y axis represents a

42 National Drought Mitigation Center. 2017. “Types of Drought.” <http://drought.unl.edu/DroughtBasics/TypesofDrought.aspx>.

43 NCEI. 2024. “Climate at a Glance: Divisional PDSI Data”. <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/divisional/time-series/0502/pdsi/1/0/1895-2024>.

drought, for which ‘-2’ indicates a moderate drought, ‘-3’ a severe drought, and ‘-4’ an extreme drought.

Figure 31: Colorado Climate Divisions Map

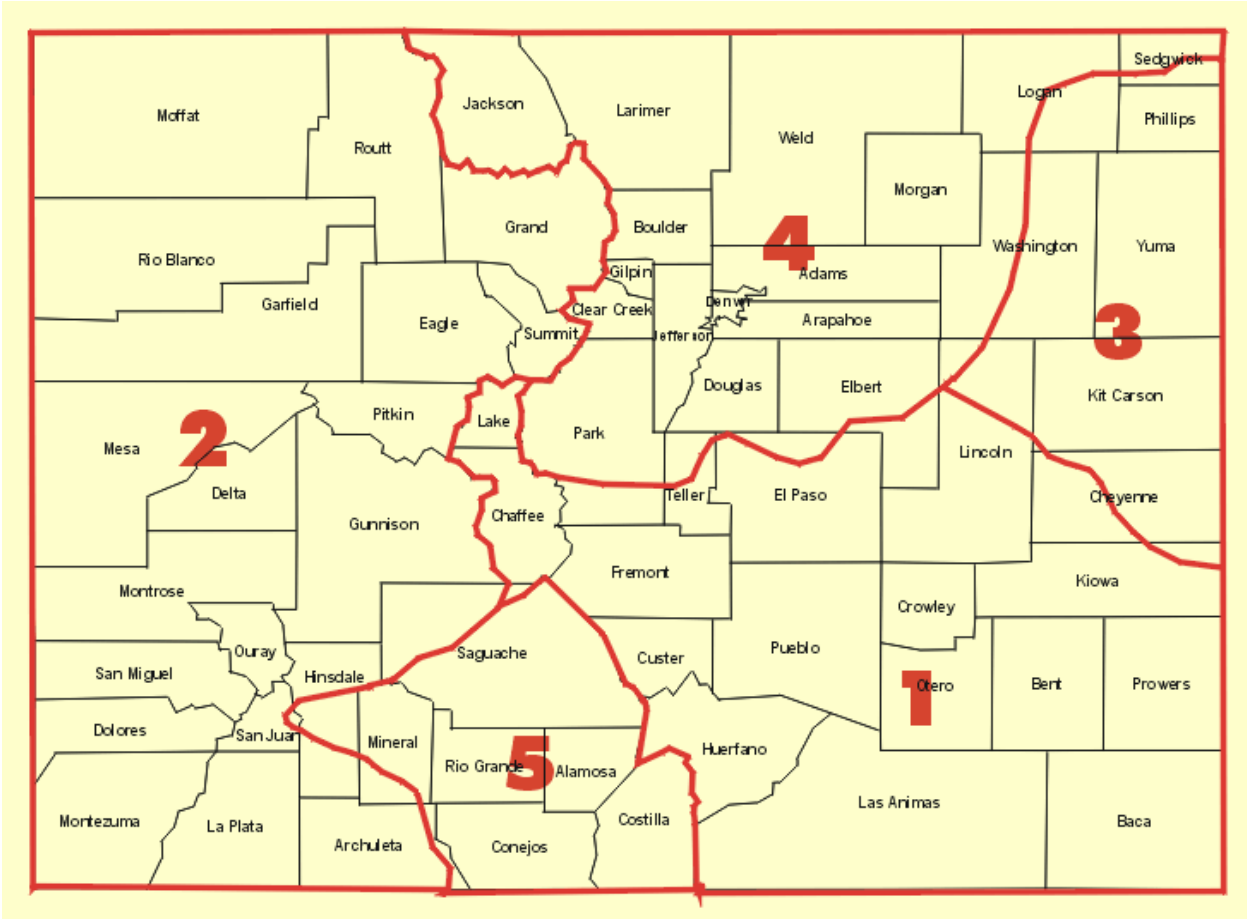
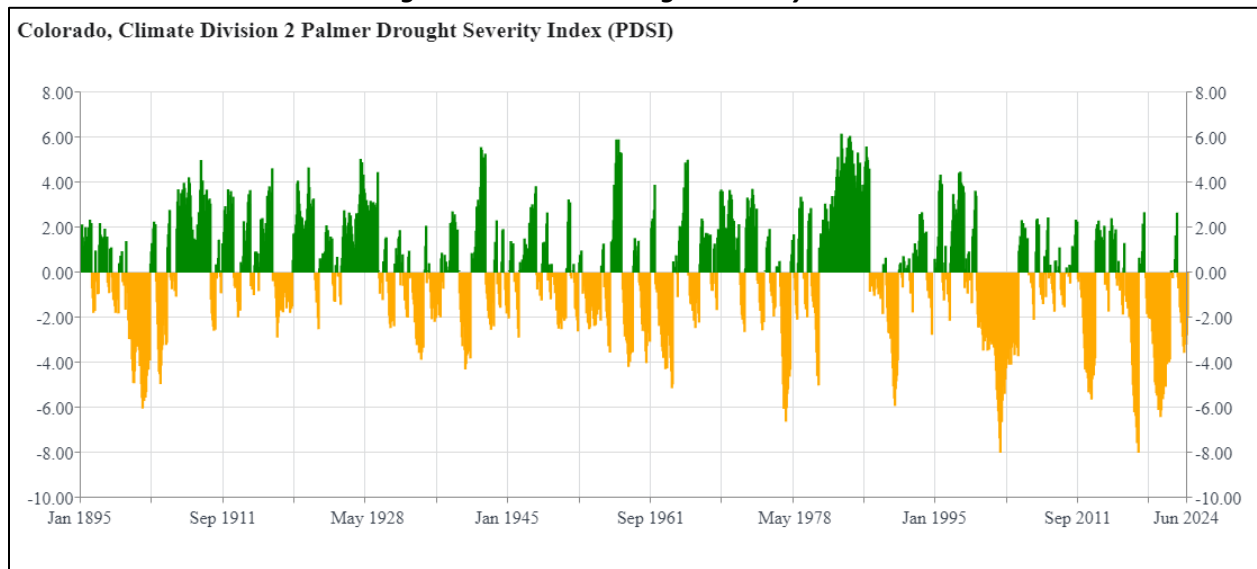


Table 24: Palmer Drought Severity Index Classification

NUMERICAL VALUE	DESCRIPTION	NUMERICAL VALUE	DESCRIPTION
4.0 OR MORE	Extremely Wet	-0.5 to -0.99	Incipient Dry Spell
3.0 TO 3.99	Very Wet	-1.0 to -1.99	Mild Drought
2.0 TO 2.99	Moderately Wet	-2.0 to -2.99	Moderate Drought
1.0 TO 1.99	Slightly Wet	-3.0 to -3.99	Severe Drought
0.5 TO 0.99	Near Normal	-4.0 or less	Extreme Drought
0.49 TO -0.49	Near Normal	--	--

Source: NCEI

Figure 32: Palmer Drought Severity Index



Source: NOAA

Drought is a cyclical event with periods of drought followed by periods of wet or non-drought conditions. Table 25 shows the data quantitatively (i.e., number of months in drought by PDSI classification) from 1895 to May 2024. This data indicates it is reasonable to expect drought to occur regularly across the Reservation. The Reservation has experienced every drought condition, with Mild Drought being the most frequent.

Table 25: Historical Months in Drought

DROUGHT MAGNITUDE	MONTHS IN DROUGHT	PERCENTAGE
-1 MAGNITUDE (MILD)	187/1,552	12%
-2 MAGNITUDE (MODERATE)	88/1,552	5.7%
-3 MAGNITUDE (SEVERE)	101/1,552	6.5%
-4 MAGNITUDE OR GREATER (EXTREME)	113/1,552	7.3%
TOTAL MONTHS IN DROUGHT	489/1,552	31.5%

Source: NOAA, Jan 1895-May 2024⁴⁴

Using the data from the PDSI, the planning area has experienced extreme droughts approximately 15 times since 1895. Some of the extreme drought events have lasted for multiple years (1901-1902, 2002-2003, 2012-2013, 2017-2018, 2020-2022).

Average Annual Losses

The direct and indirect effects of drought are difficult to quantify. Potential losses such as power outages could affect businesses, homes, and critical facilities. High demand and intense use of air conditioning or water pumps can overload the electrical systems and cause damage to infrastructure. The annual property estimate was determined based upon NCEI Storm Events Database since 1996. Annual crop loss was determined based upon the Spatial Hazard Events and Losses Database for the United States (SHELDUS)

44 NCEI. 2024. "Climate at a Glance: Divisional PDSI Data". <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/divisional/time-series/0502/pdsi/1/0/1895-2024>.

since 1960. This does not include losses from displacement, functional downtime, economic loss, injury, or loss of life. The NCEI did not report property damages from drought during the period of record, while SHELDUS reported over \$1,886,792 in crop damages in Archuleta and La Plata Counties. SHELDUS data is not available for the SUIT reservation individually.

Table 26: Drought Losses

HAZARD TYPE	TOTAL PROPERTY LOSS ¹	AVERAGE ANNUAL PROPERTY LOSS ¹	TOTAL CROP LOSS ²	AVERAGE ANNUAL CROP LOSS ²
DROUGHT	\$0	\$0	\$1,886,792	\$29,949

1 Indicates the data is from NCEI (1996 to 2023); 2 Indicates data is from SHELDUS (1960 to 2022)

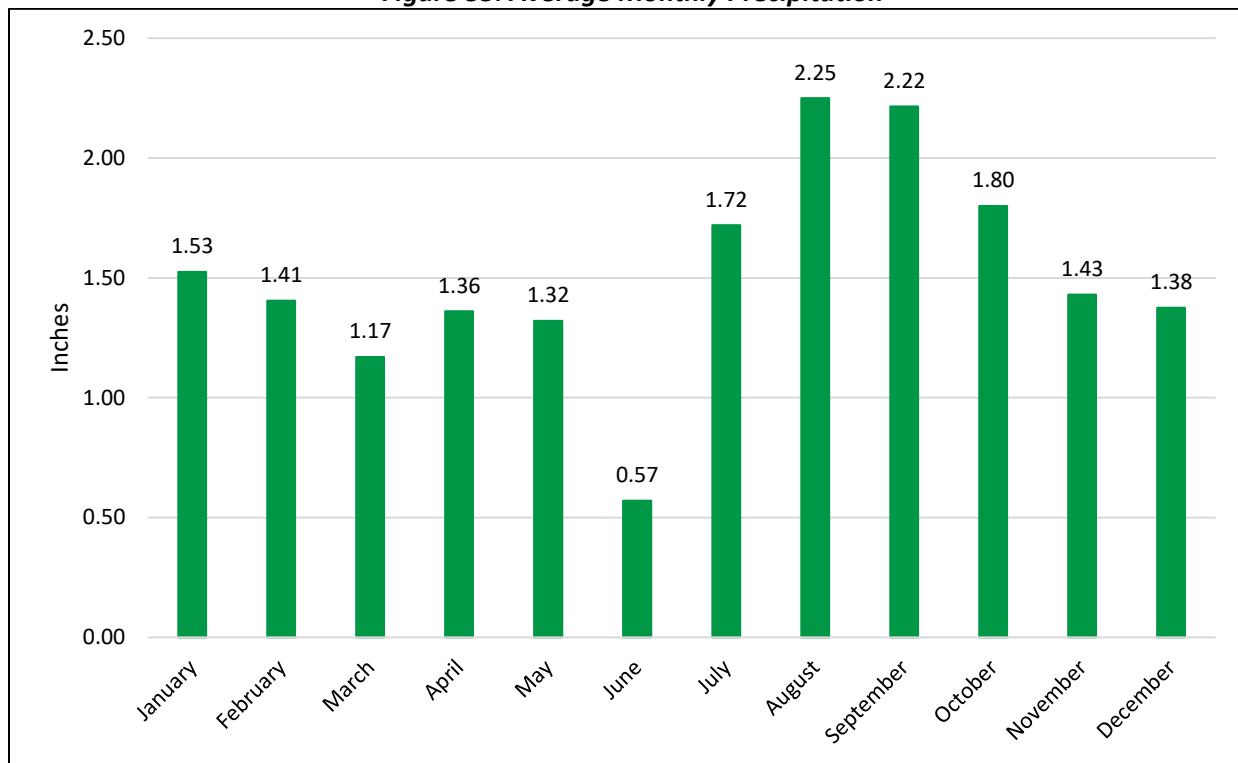
Extent

Based on the historical drought data (Table 27), it is reasonable to expect extreme drought to occur on average 7.3 percent of total months for the planning area. Severe drought occurred in 101 months of the 1,552 months of record (6.5 percent of total months). Moderate drought occurred in 88 months of the 1,552 months of record (5.7 percent of months), and mild drought occurred in 187 of the 1,552 months of record (12 percent of months). Wet or non-drought conditions occurred in 1,063 months, or 68.5 percent of months. These statistics show that the drought conditions of the planning area are highly variable.

On average, the planning area receives approximately 18.14 inches of precipitation annually.⁴⁵ The following figure shows average precipitation per month in the planning area. The months of August and September experience the most significant average increase in precipitation and indicate periods of time when flooding may be most prevalent. Prolonged deviations from the norm demonstrate drought conditions and influence growing conditions for farmers or resource management needs for local agricultural producers.

⁴⁵ NOAA National Centers for Environmental Information. June 2024. "Data Tools: 1991-2020 Normals." [datafile]. <https://www.ncdc.noaa.gov/cdo-web/datatools/normals>.

Figure 33: Average Monthly Precipitation



Source: NCEI 2024

Probability

Table 27 summarizes the magnitude of drought and monthly probability of occurrence as summarized and calculated using the PDSI index. Nearly 32% of the time, the Southern Ute Reservation is anticipated to experience drought.

Table 27: Period of Record in Drought

MAGNITUDE	MONTHS IN DROUGHT	MONTHLY PROBABILITY
NO DROUGHT	1,063/1,552	68.5%
MILD DROUGHT	187/1,552	12%
MODERATE DROUGHT	88/1,552	5.7%
SEVERE DROUGHT	101/1,552	6.5%
EXTREME DROUGHT	113/1,552	7.3%
TOTAL MONTHS IN DROUGHT	489/1,552	31.5%

Source: NOAA, Jan 1895-May 2024⁴⁶

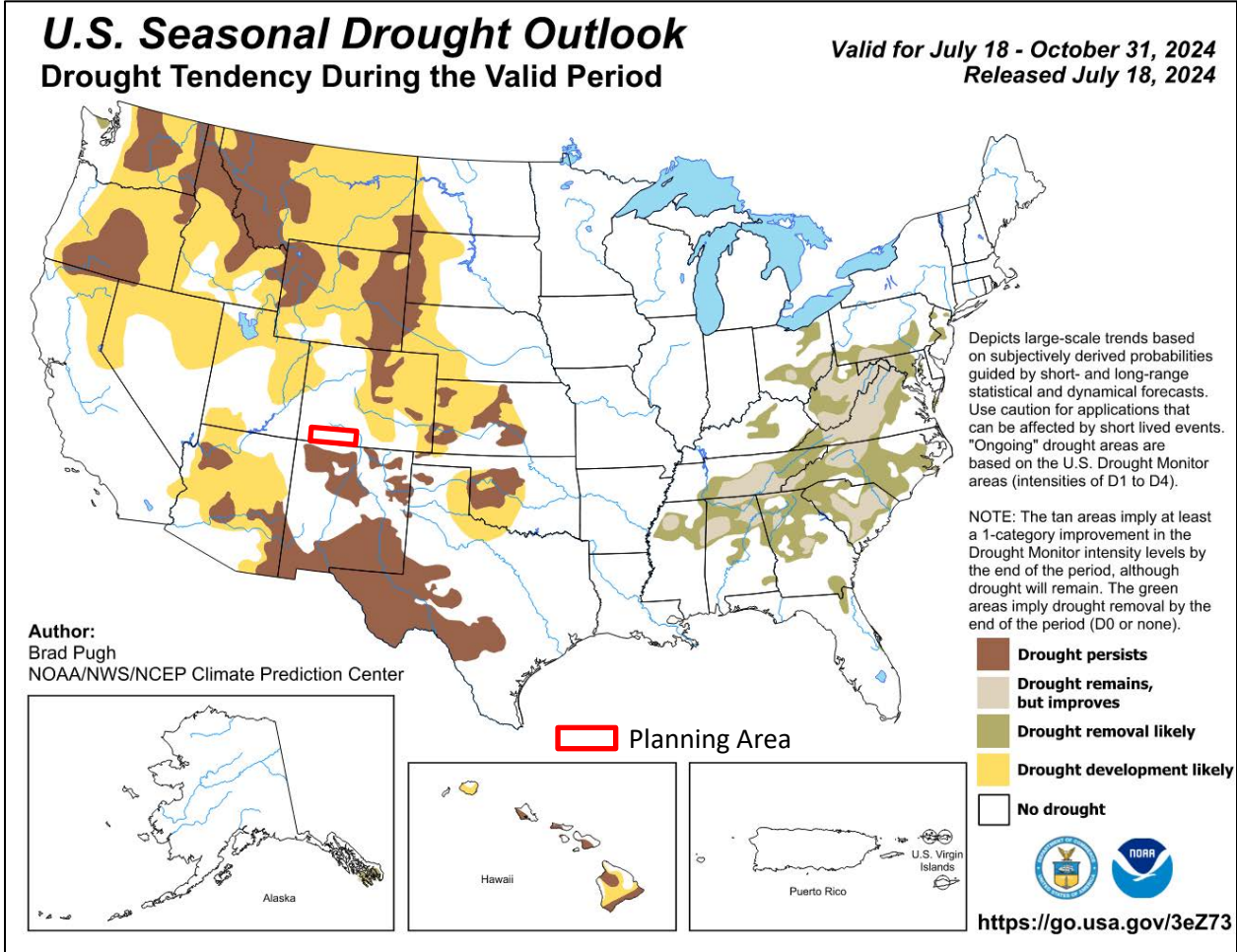
The U.S. Seasonal Drought Outlook (Figure 34) provides a short-term drought forecast that can be utilized by local officials and residents to examine the likelihood of drought developing or continuing within three months as based on existing conditions. The drought outlook is updated consistently throughout the year and should be reviewed on an ongoing basis. The following figure provides the drought outlook from July

46 NCEI. 2024. "Climate at a Glance: Divisional PDSI Data". <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/divisional/time-series/0502/pdsi/1/0/1895-2024>.

18, 2024, as an example. The U.S. Drought Monitor also provides a state overview of drought conditions (Figure 35).

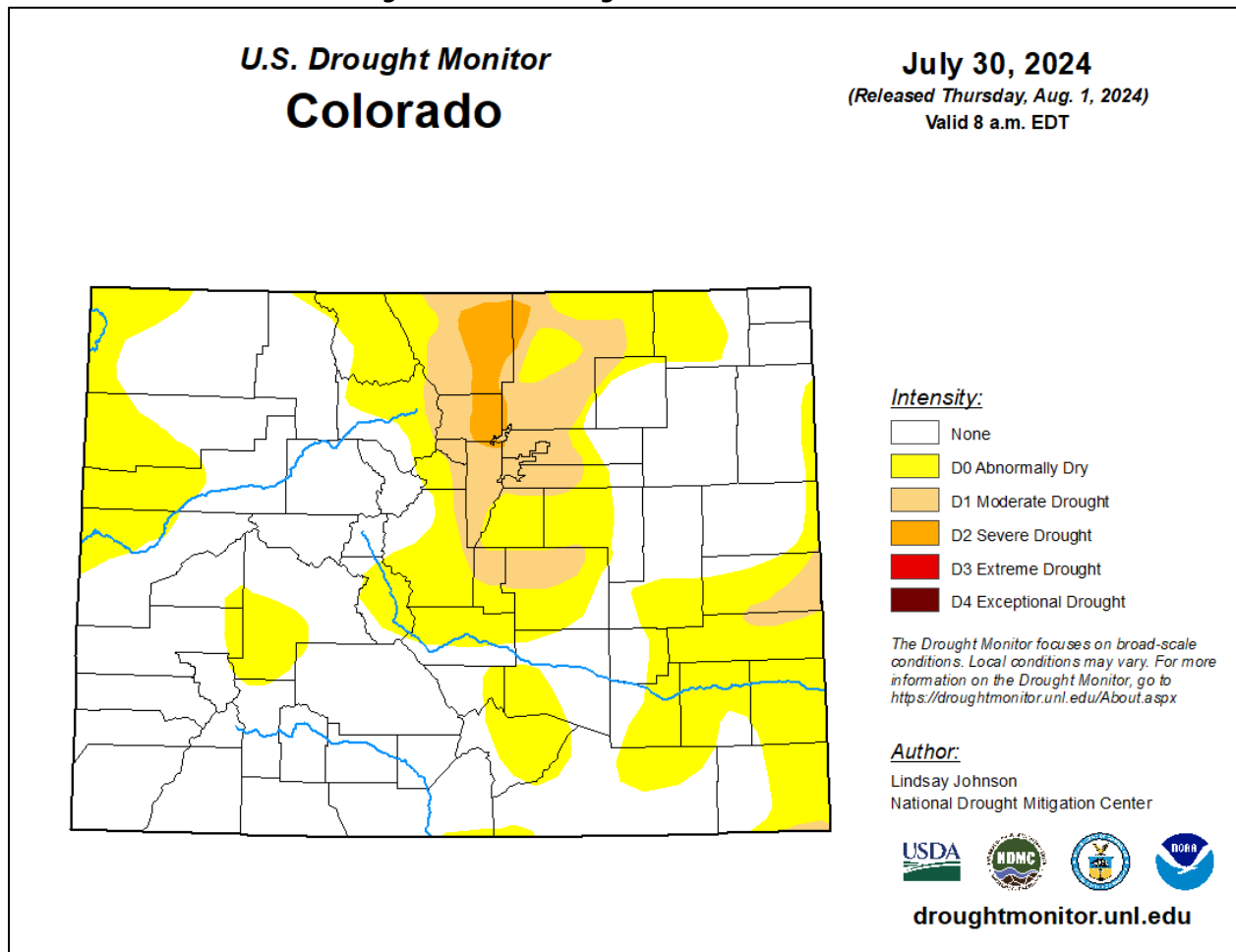
Based on this historical record, the annual probability of drought occurring in the future is *Possible*.

Figure 34: U.S. Seasonal Drought Outlook



Source: NOAA, August 2024

Figure 35: U.S. Drought Monitor - Colorado



Source: National Drought Mitigation Center, August 2024

Future Development

Any future developments are likely to increase water demand, increase travel on local transportation routes, and influence continued growth on economic sectors at risk from the impacts of drought. Growing communities will need to adapt and account for increased water demands for residential, commercial, and industrial development.

Impacts from Climate Change

An increase in average temperatures will contribute to the rise in the frequency and intensity of hazardous events like drought, which will cause significant economic, social, and environmental impacts on tribal members. Although drought is a natural part of the climate system, increasing temperatures will increase evaporation rates, decrease soil moisture, and lead to more intense droughts in the future, having negative impacts on farming. This will cause significant economic, social, and environmental impacts on farming and community water systems in the planning area. The increase in droughts will also lead to an increased risk of wildfire events from lightning strikes and other wildfire starters as vegetation become

drier.⁴⁷ The area will remain vulnerable to periodic drought as most projected increases in precipitation are anticipated to occur during the winter months, while increasing temperatures lead to increased soil drying.

In May of 2024, the Tribe established a partnership with the USDA’s Natural Resources Conservation Service (NRCS) through the Conservation Stewardship Program. The purpose of this partnership is to enhance rangeland resiliency and health on Tribal lands. The Southern Ute Indian Tribe is the first to enter an Alternative Funding Arrangement through the Conservation Stewardship Program, illustrating their commitment to natural resource conservation.

The Southern Ute Indian Tribe already implements top-tier rangeland management and monitoring practices. This agreement will assist in maintaining that high standard while also helping to more widely adopt and implement a strategic invasive noxious weed treatment plan over the next five years. This treatment will target species from Colorado’s noxious species list to improve rangeland health and resiliency in the face of increasing drought conditions. Enrolling 125,000 acres of rangeland, the partnership aims to address additional resource concerns and learn from indigenous ecological practices, ensuring the land remains healthy and resilient for future generations.

Vulnerabilities to Cultural Resources

According to the SUIT Drought Management Plan (2019), the bison herd is at risk to drought impacts. The plan states: “Chronic drought conditions impact the bison herd primarily through reduced forage and water availability. This, in turn, increases animal stress and a propensity to breach fences and “wander” in search of additional forage. Elevated stress can also cause animals to become sick, lose conditioning, fail at reproduction, or die. Poor animal condition, or loss of animals, can reduce the availability of healthy animals that can be harvested in support of the Tribe’s bison meat distribution program.”

As discussed in the Animal and Plant Disease section, bear root is a cultural resource that’s harvested by SUIT every spring. Bear root is vulnerable to drought due to its reliance on moist, well-drained soils in certain habitats found in the Rocky Mountains. Prolonged drought can reduce plant growth, weaken root systems, and impact its availability for traditional use. Mitigation strategies include habitat conservation, sustainable harvesting, soil moisture retention techniques (e.g., mulching), and community-led monitoring efforts to ensure long-term resilience.

Overall Vulnerabilities

Drought causes significant economic, environmental, and social impacts. Drought impacts several sectors including agriculture, rural and municipal water supplies, fish and wildlife, tourism, recreation, water quality, soil erosion, the incidence of wildfires or flash floods, electricity demand, and other sectors. Drought can also indirectly impact personal and business incomes, tax revenues, unemployment, and other social or economic areas as well.

Drought affects both surface and groundwater sources. Groundwater resources are impacted at a much slower rate but also take longer to recover. Reduced precipitation during a drought means that groundwater supplies are not replenished at a normal rate. This can lead to a reduction in groundwater levels and problems such as reduced pumping capacity or wells going dry. Shallow wells are more susceptible than deep wells. Drought brings or intensifies other related hazards—reduced water supplies,

⁴⁷ NCEI. 2022. “State Climate Summaries – Colorado”. <https://statesummaries.ncics.org/chapter/col/>.

grasshoppers, plant disease, wind erosion, and wildfires. In addition, extreme heat with or without prolonged drought can stress humans, crops, and animals, causing heat-related illness and in some cases, death. Additionally, future development would likely increase the intensity of drought impacts including increased demand on water systems and supply, increased demand on electric providers, heat island effects, and increased dependence on agricultural industry.

The National Drought Mitigation Center’s (NDMC) Drought Impact Reporter documents the impacts of drought throughout the United States. The following table summarizes, by category, the impacts within the SUIT Reservation between 2000 and July 2024. Many of these reported impacts have been in the agricultural sector. According to the Drought Impact Reporter, since 2000 there have been 99 impacts reported in the planning area. While a valuable means of recording some drought impacts, the Drought Impact Reporter does not account for every impact from drought. Therefore, while there were 99 *reported* impacts, the actual number of drought impacts since 2000 is likely much higher.

Table 28: Reported Drought Impacts (2000-2023)

COUNTY	AGRICULTURAL	BUSINESS & INDUSTRY	ENERGY	FIRE	PLANT & WILDLIFE	RELIEF, RESPONSE, & RESTRICTIONS	SOCIETY & PUBLIC HEALTH	TOURISM & RECREATION	WATER SUPPLY & QUALITY
ARCHULETA	20	2	0	12	16	17	2	7	13
LA PLATA	28	3	1	16	22	27	4	11	25

Source: NDMC – Drought Impact Reporter Dashboard, 2024

The following tables provide information related to regional vulnerabilities and FEMA’s National Risk Index values for drought.

Table 29: National Risk Index Drought Vulnerabilities

COUNTIES	RISK INDEX	EXPECTED ANNUAL LOSS
ARCHULETA	Very Low	Very Low
LA PLATA	Relatively Low	Very Low

Source: FEMA National Risk Index, 2024

The Southern Ute Utilities Division Water Treatment Plant provides drinking water resources to the Town of Ignacio, Tribal membership, Sky Ute Casino, and the SUIT campus. The water system is dependent on intake from the Los Pinos River to meet annual demand. The Utilities Division will request additional water flow from the Vallecito Reservoir to meet demand should the Los Pinos River’s production levels require it.

Earthquake

An earthquake is the result of a sudden release of energy in the Earth's tectonic plates that creates seismic waves. The seismic activity of an area refers to the frequency, type, and size of earthquakes experienced over a period of time. Ground shaking, landslides, liquefaction, and amplification are the specific hazards associated with earthquakes. The severity of these hazards depends on several factors, including soil and slope conditions, proximity to a fault, earthquake magnitude, and type of earthquake.

- **Ground shaking** is the motion felt on the earth's surface caused by seismic waves generated by an earthquake. Ground shaking is the primary cause of earthquake damage. The strength of ground shaking depends on the magnitude of the earthquake, the type of fault, and distance from the epicenter (where the earthquake originates). Buildings on poorly consolidated and thick soils will typically see more damage than buildings on consolidated soils and bedrock.
- **Earthquake-induced landslides** are secondary earthquake hazards that occur from ground shaking. They can destroy roads, buildings, utilities, and other critical facilities necessary to respond to recover from an earthquake.
- **Liquefaction** occurs when ground shaking causes wet granular soils to change from a solid state to a liquid state. This results in the loss of soil strength and the soil's ability to support weight. Buildings and their occupants are at risk when the ground can no longer support these buildings and structures.
- **Amplification** is the phenomenon when soils and soft sedimentary rocks near the earth's surface increase the magnitude of the seismic waves generated by the earthquake. The amount of amplification is determined by the thickness of geologic materials and their physical properties. Buildings and structures built on soft and unconsolidated soils face greater risk.

Location

The most likely locations to experience an earthquake are near a fault line. According to the USGS, there are no major fault lines that run through the Reservation; however, there are two smaller fault lines nearby. One fault line runs through Rio Grande County, northeast of the Archuleta County. The other runs through Costilla County, east of Archuleta County.

Historical Occurrences

According to the USGS, there have been zero earthquakes within Archuleta County and La Plata County between 1900 – September 2024 greater than 1.0 magnitude. SHELUS data reported \$0 in property damages with no injuries. While not within the Reservation, a magnitude 4 (M_L) earthquake did occur near Dulce, New Mexico in 1966. This earthquake was felt in southeast Southern Ute Reservation.

Average Annual Losses

The annual property and crop loss was determined based upon SHELUS data from 1960 – 2022. This does not include losses from displacement, functional downtime, economic loss, injury, or loss of life. There was no property or crop damages reported from earthquakes.

Extent

Earthquakes are measured by magnitude and intensity. Magnitude is measured by the Richter Scale, a base-10 logarithmic scale, which uses seismographs around the world to measure the amount of energy released by an earthquake. Intensity is measured by the Modified Mercalli Intensity Scale, which determines the intensity of an earthquake by comparing actual damage against damage patterns of earthquakes with known intensities. The following tables summarize the Richter Scale and Modified Mercalli Scale. Based on historical record, earthquakes in the county are likely to measure 5.0 or less on the Richter Scale.

Table 30: Richter Scale

RICHTER MAGNITUDES	EARTHQUAKE EFFECTS
LESS THAN 3.5	Generally not felt, but recorded
3.5 – 5.4	Often felt, but rarely causes damage
UNDER 6.0	At most, slight damage to well-designed buildings. Can cause major damage to poorly constructed buildings over small regions
6.1 – 6.9	Can be destructive in areas up to about 100 kilometers across where people live
7.0 – 7.9	Major earthquake. Can cause serious damage over larger areas
8 OR GREATER	Great earthquake. Can cause serious damage in areas several hundred kilometers across.

Source: FEMA, 2020⁴⁸

Table 31: Modified Mercalli Intensity Scale

SCALE	INTENSITY	DESCRIPTION OF EFFECTS	CORRESPONDING RICHTER SCALE MAGNITUDE
I	Instrumental	Detected only on seismographs	
II	Feeble	Some people feel it	< 4.2
III	Slight	Felt by people resting, like a truck rumbling by	
IV	Moderate	Felt by people walking	
V	Slightly Strong	Sleepers awake; church bells ring	< 4.8
VI	Strong	Trees sway, suspended objects swing, objects fall off shelves	< 5.4
VII	Very Strong	Mild alarm; walls crack; plaster falls	< 6.1
VII	Destructive	Moving cars uncontrollable; masonry fractures, poorly constructed buildings damaged	
IX	Ruinous	Some houses collapse; ground cracks; pipes break open	< 6.9
X	Disastrous	Ground cracks profusely; many buildings destroyed; liquefaction and landslides widespread	< 7.3
XI	Very Disastrous	Most Buildings and bridges collapse; roads, railways, pipes, and cables destroyed; general triggering of other hazards	< 8.1

⁴⁸ Federal Emergency Management Agency. 2020. "Earthquake Risk." <https://www.fema.gov/emergency-managers/risk-management/earthquake>.

SCALE	INTENSITY	DESCRIPTION OF EFFECTS	CORRESPONDING RICHTER SCALE MAGNITUDE
XII	Catastrophic	Total destruction: trees fall; ground rises and falls in waves	> 8.1

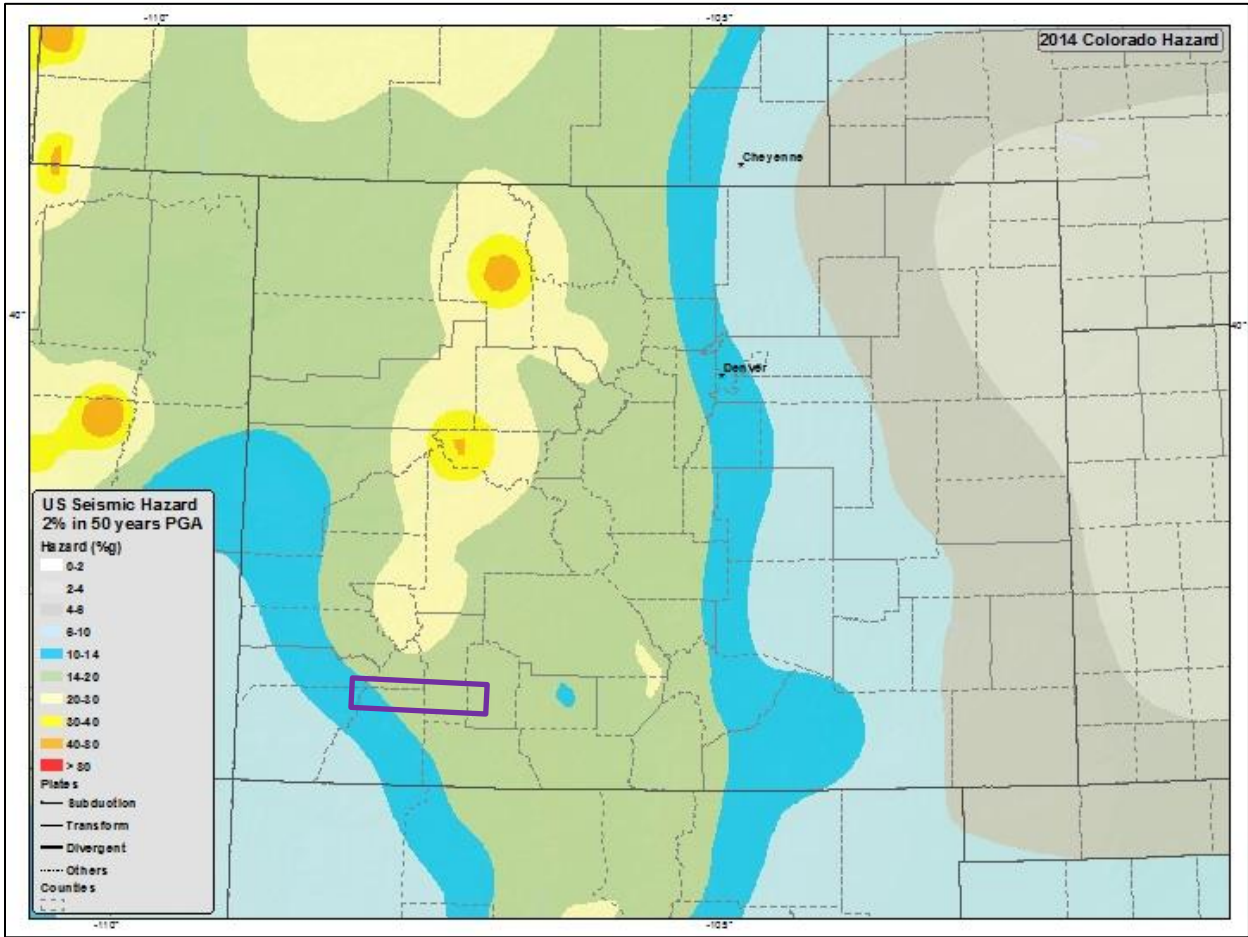
Source: FEMA, 2020

Probability

Figure 36 displays the seismic hazard map for Colorado, which illustrates ground motions having a 2% probability of exceedance in 50 years. The Southern Ute Reservation has a 2% probability of having between .08 and 0.20 peak ground accelerations (PGA) over 50 years.

There have been zero years with a reported earthquake out of 125 years, so the probability of earthquake occurring in the Reservation in any given year is *Unlikely*.

Figure 36: Seismic Hazard Map - Colorado



Source: USGS, 2014⁴⁹

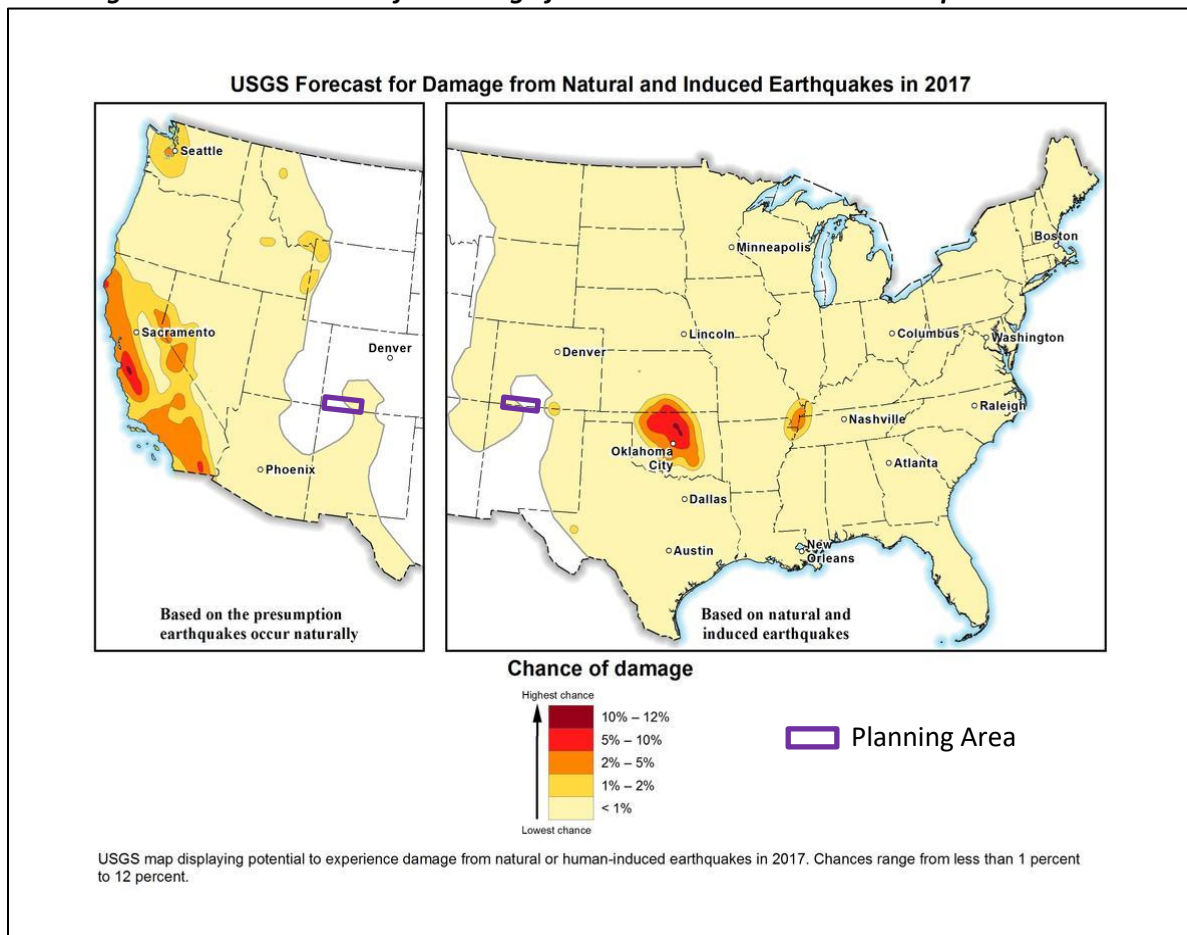
49 U.S Geological Survey. 2014. "2014 Seismic Hazard Map – Colorado." Accessed October 2024. <https://www.usgs.gov/media/images/2014-seismic-hazard-map-colorado>.

Induced Seismicity

In recent years, induced seismicity has become an increasingly relevant issue. Induced seismicity are earthquakes instigated by human activities and would not have occurred otherwise. There is a range of unique causes of induced seismicity, including impounding surface water reservoirs, removing mass by quarrying, extraction of resources (groundwater, coal, geothermal fluids), injection activities (waste fluid disposal, fracking, research experiments, gas storage, enhanced oil recovery, carbon dioxide sequestration), and nuclear testing.

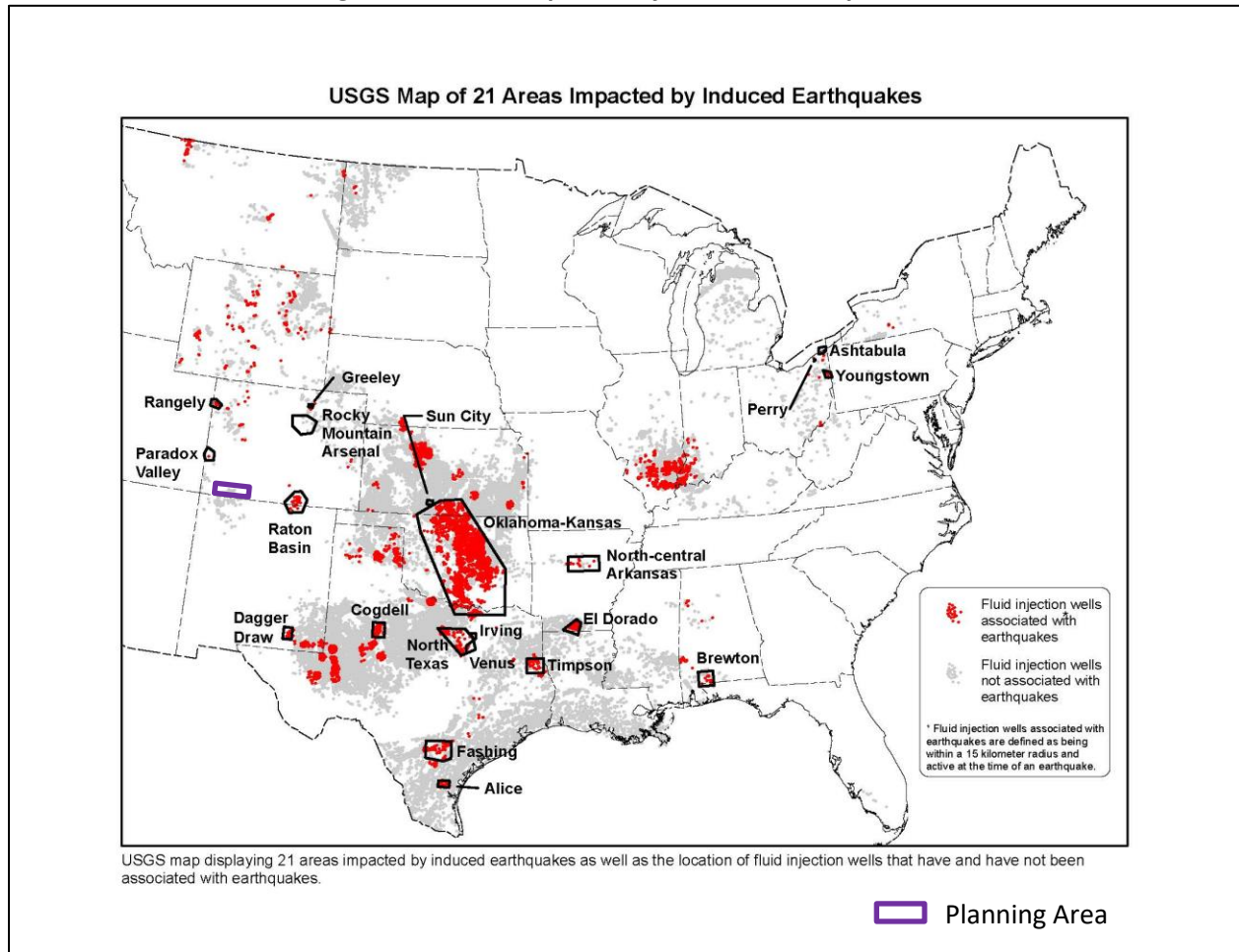
In more recent years there has been an increase in documented seismic activity potentially induced by waste fluid disposal. In March 2016, the USGS released its first induced earthquake hazard model. Figure 37 displays forecasted damage related to induced earthquakes. Areas within the U.S. that have been impacted by induced earthquakes was also mapped by USGS (Figure 38). This map indicates there are fluid injection wells located within the Reservation; however, these are not currently associated with earthquakes. The Raton Basin, east of the planning area has experienced earthquakes associated with fluid injection wells, such as a 5.3 magnitude event in 2011, according to the 2018-2023 Colorado Enhanced HMP.

Figure 37: USGS Forecast for Damage from Natural and Induced Earthquakes in 2017



Source: USGS, 2017⁵⁰

50 U.S Geological Survey. 2017. "USGS Forecast for Damage from Natural and Induced Earthquakes in 2017." Accessed October 2024. <https://www.usgs.gov/media/images/usgs-forecast-damage-natural-and-induced-earthquakes-2017>.

Figure 38: Areas Impacted by Induced Earthquakes

Source: USGS, 2016⁵¹

Impacts from Climate Change

Currently, there is no known direct association with climate change and earthquake events. However, as climate change exacerbates effects on other hazard types such as drought, it may produce more frequent or greater earthquake events. A report in 2017 by NASA's Jet Propulsion Laboratory⁵² found that alternating periods of drought and heavy precipitation caused the Sierra Mountain Range in California to rise and fall as the ground swelled/contracted. The study did not specifically look at potential impacts on fault lines, but such stress changes could potentially be felt on faults.

Overall Vulnerabilities

Vulnerabilities to earthquakes include risk of injury or death from falling objects and collapsing structures. Low-income individuals and families are particularly at risk, as they may lack the financial resources to retrofit their homes to withstand seismic activity. Earthquakes can cause both short-term and long-term business interruptions, significantly impacting the local economy.

51 U.S. Geological Survey. 2016. "USGS Map of 21 Areas Impacted by Induced Earthquakes 2016." Accessed October 2024. <https://d9-wret.s3.us-west-2.amazonaws.com/assets/palladium/production/s3fs-public/atoms/files/Wells-Seismicity.pdf>.

52 Argus, D. et al. 2017. "Sierras lost water weight, grew taller during drought." NASA's Jet Propulsion Laboratories. <https://climate.nasa.gov/news/2663/sierras-lost-water-weight-grew-taller-during-drought/>.

The damage extends to buildings, homes, and other structures, with foundation cracking, falling objects, and shattered windows being common issues. Subterranean infrastructure, such as water and gas lines, is also susceptible to damage, leading to potential service disruptions. Additionally, power loss from damaged utility poles, roadways cracking, and damage to oil and gas infrastructure further intensify the overall impact of earthquakes.

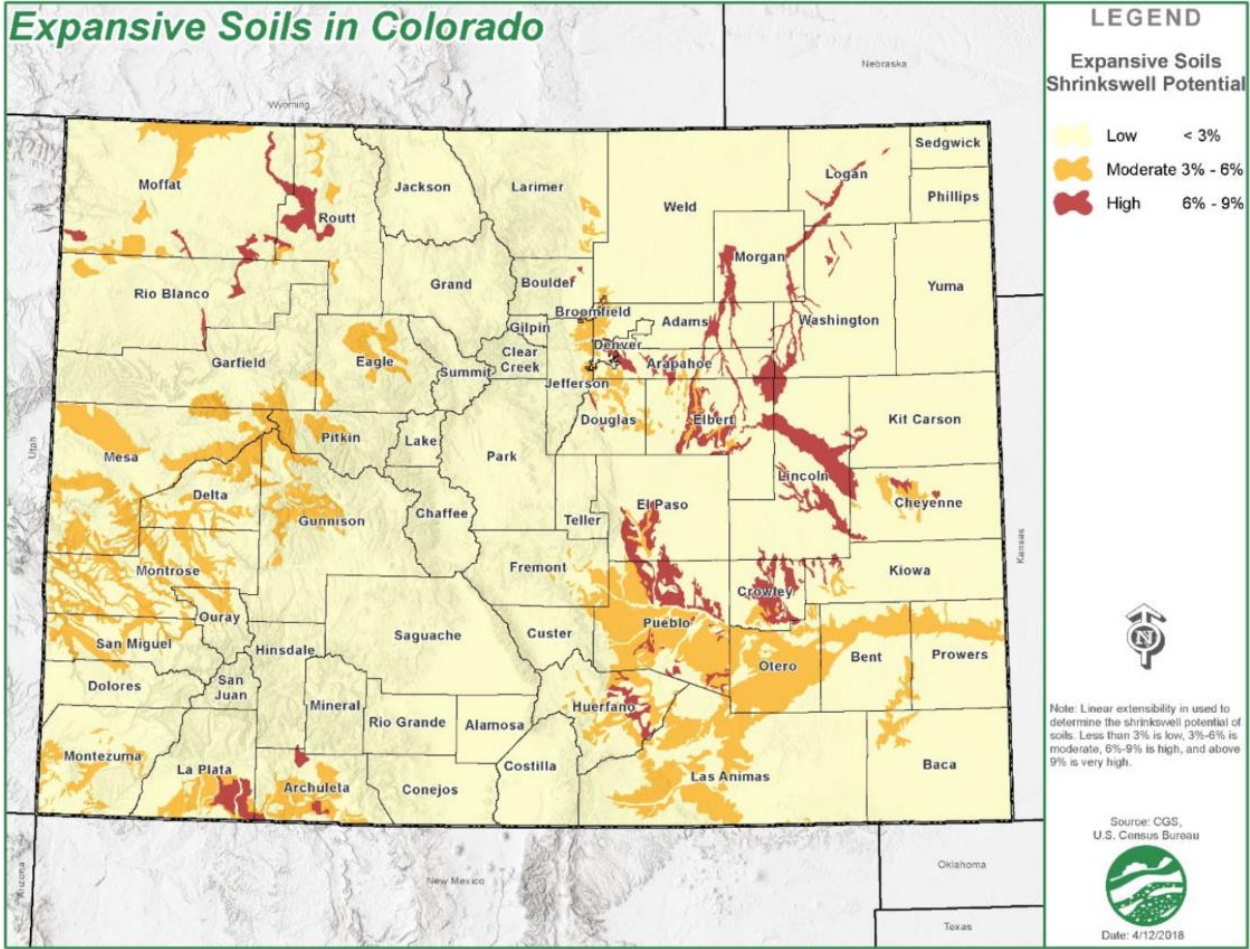
Expansive Soils

Expansive or swelling soils are soils or soft bedrock that increase in volume as they get wet and shrink as they dry out. Swelling soils contain a high percentage of clay particles capable of absorbing large quantities of water. Soil volume may expand ten percent or more as the clay becomes wet. The powerful force of expansion is capable of exerting pressures of 30,000 pounds per square foot or greater on foundations, slabs, or other confining structures. These soils tend to remain at constant moisture content in their natural state. Exposure to natural or human-caused water sources throughout development results in swelling. In many instances, the soils do not regain their original dryness after construction but remain moist and expanded due to the changed environment.

Location

Expansive soils are located throughout much of the SUIT Reservation, as seen in the following figure. Due to the softer nature of swelling clay and its increased erosion rate from wind and precipitation, expansive soils are more likely to occur in valleys, plains, and low-lying areas.

Figure 39: Expansive Soils in Colorado



Source: State of Colorado Enhanced HMP, 2018-2023

Historical Occurrences

The Colorado Geological Survey (CGS) website provides some historical events of expansive soil and the damages across the state of Colorado. According to CGS, there were no reported historical expansive soil events in the Reservation. However, the planning team indicated that expansive soils do impact the area. One recent incident led to structural damage to homes in the Cedar Point subdivision of Ignacio. Plans are in place to rebuild these homes, ensuring that engineering standards are followed to withstand impacts of expansive soils.

Average Annual Losses

Due to a lack of reported expansive soil events, it is not possible to calculate average annual loss for expansive soils in the planning area.

Extent

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than three percent; moderate if three to six percent; high if six to nine percent; and very high if more than nine percent. If the linear extensibility is more than three, shrinking and swelling can cause damage to buildings, roads, and other structures. Areas in the Reservation are identified as low, moderate, and high risk.

Probability

Expansion of soils is a naturally occurring process that has occurred historically and will continue to do so across the Reservation. However, due to the limited historical occurrence data, it is not currently possible to estimate annual probability. Therefore, the future probability is being classified as *Unknown*.

Impacts from Climate Change

It is likely that continued changes to the regional climate will lead to an increase in frequency and intensity of drought or rainfall/flash flooding events across the state. There are periods of heavy rain or prolonged dryness that can impact the expansion and swelling of soils. For the purposes of this plan, it is assumed that if current climate trends continue, it is probable that expansive soil events will increase in frequency for the SUIT Reservation.

Overall Vulnerabilities

Expansive soils pose significant vulnerabilities, largely due to their tendency to shrink and swell with moisture changes. This can lead to unstable buildings and infrastructure, increasing the potential for injury. Property and infrastructure losses can occur too, as shifting soil can damage building foundations, causing them to crack and settle. This instability also affects underground lines, such as water and gas lines, leading to cracks and potential service disruptions.

Roadways are also vulnerable and can experience settling and cracking, disrupting transportation and increasing maintenance costs. The damage to critical building foundations and infrastructure highlights the need for careful monitoring and mitigation strategies in areas prone to expansive soils.

Extreme Temperatures

Extreme temperatures include durations of time at both the low and high ends of the thermometer. What constitutes extreme cold varies from region to region but is generally accepted as being temperatures that are significantly lower than the average low temperature. For the purposes of this plan, extreme cold is being defined as the high temperature being 10°F or below while extreme heat is defined as temperatures being 100°F or higher. Conditions for extreme heat are defined by temperatures substantially hotter and/or more humid than average for a location at that time of year. This includes temperatures (including heat index) in excess of 100 degrees Fahrenheit or at least three successive days of 90-plus degrees Fahrenheit.

Extreme cold can be dangerous to the well-being of people and animals as prolonged exposure to cold causes the human body to lose heat faster than it can be produced and use up the body's stored energy. As a result, abnormally low body temperature can lead to hypothermia and frostbite. Cold can cause fuel to congeal in storage tanks and supply lines, stopping electric generators, overpower a building's heating system, and cause water and sewer pipes to freeze and rupture. Extreme cold also increases the likelihood of ice jams on flat rivers or streams. When combined with high winds from winter storms, extreme cold becomes extreme wind chill, which is extremely hazardous to health and safety.

Extreme heat is often associated with periods of drought but can also be characterized by long periods of high temperatures in combination with high humidity. During these conditions, the human body has difficulty cooling through the normal method of the evaporation of perspiration. Health risks including heatstroke, sunstroke, cramps, exhaustion, and fatigue may arise when a person is overexposed to heat. Extreme temperatures can also cause people to overuse furnaces and air conditioners, which can lead to power failures. Power outages for prolonged periods increase the risk of health events such as heat stroke or hypothermia and subsequent fatalities. The planning area is partially rural, which presents an added vulnerability to extreme events; those medically suffering from extreme temperature conditions may be farther away from medical resources as compared to those living in an urban setting.

Along with humans, animals also can be affected by extreme temperatures and humidity. Cattle and other farm animals respond to heat by reducing feed intake, increasing their respiration rate, and increasing their body temperature. These responses assist the animal in cooling itself, but this is usually not sufficient. When animals overheat, they will begin to shut down body processes not vital to survival, such as milk production, reproduction, or muscle building.

Other secondary concerns connected to extreme temperatures hazards include water shortages brought on by drought-like conditions and high demand during heat spells or from interrupted utility services from broken pipes during extreme cold periods. Government authorities report that civil disturbances and riots are more likely to occur during heat waves or water shortages. In cities, pollution becomes a problem because the heat traps pollutants in densely populated urban areas. Adding pollution to the stresses associated with the heat magnifies the health threat to the urban population.

Location

The entire planning area is subject to extreme temperatures – both heat and cold affect the entire planning area.

Historical Occurrences

According to the High Plains Regional Climate Center (HPRCC), on average, the planning area experiences less than one day above 100°F per year or 12 days with a high of 10°F or below. The planning area experienced the most days on record above 100°F in 1988 with two days, while the most days below 10°F occurred in 1971 and 1991 with 3 days each.

Average Annual Losses

The direct and indirect effects of extreme heat are difficult to quantify. There is no way to place a value on the loss of human life. Potential losses such as power outages could affect businesses, homes, and critical facilities. High demand and intense use of air conditioning can overload the electrical systems and cause damage to infrastructure. The NCEI database did not report any property damage due to extreme heat events.

Table 32: Extreme Temperatures Loss Estimation

HAZARD TYPE	AVG # OF DAYS ¹	TOTAL PROPERTY LOSS ²	AVERAGE ANNUAL PROPERTY LOSS	TOTAL CROP LOSS ³	AVERAGE ANNUAL CROP LOSS
EXTREME HEAT	<1	\$0	N/A	\$2,528	\$105
EXTREME COLD	<1	\$0	N/A	\$16,835	\$701

Source: 1 indicates the data is from HPRCC (1906-2023); 2 NCEI (1996-2023); 3 USDA RMA (2000-2023)

Estimated Loss of Electricity

According to the FEMA Benefit Cost Analysis Reference Guide, if an extreme heat event occurred within the planning area, the following table assumes the event could potentially cause a loss of electricity for 10% of the population at a cost of \$174 per person per day.⁵³ In rural areas, the percent of the population affected, and duration may increase during extreme events. The assumed damages do not take into account physical damages to utility equipment and infrastructure.

Table 33: Loss of Electricity - Assumed Damage

JURISDICTION	2022 (EST) POPULATION	POPULATION AFFECTED (ASSUMED)	ELECTRIC LOSS OF USE ASSUMED DAMAGE PER DAY
SUIT Reservation	13,528	1,353	\$235,422

Extent

The National Weather Service (NWS) is responsible for issuing excessive heat or cold temperature outlooks, forecasts, watches, or warnings. The NWS’ definitions are provided below.^{54,55:}

- **Heat Advisories** are issued when temperatures of at least 100°F or Heat Index values of at least 105°F are expected generally within the next 24 hours.
- **Cold Weather Advisory** is issued when seasonably cold air temperatures or wind chill values, but not extremely cold values, are expected or occurring. Be sure you and your loved ones dress appropriately and cover exposed skin when venturing outdoors.

53 Federal Emergency Management Agency. July 2020. "FEMA Benefit-Cost Analysis (BCA) Toolkit 6.0 Release Notes." https://www.fema.gov/sites/default/files/2020-08/fema_bca_toolkit_release-notes-july-2020.pdf.

54 National Weather Service. 2023. "Heat Information Page". Accessed September 2023. <https://www.weather.gov/dmx/dssheat>.

55 National Weather Service. 2024. "Understanding Cold Weather Alerts". Accessed October 2024. <https://www.weather.gov/safety/cold-ww>.

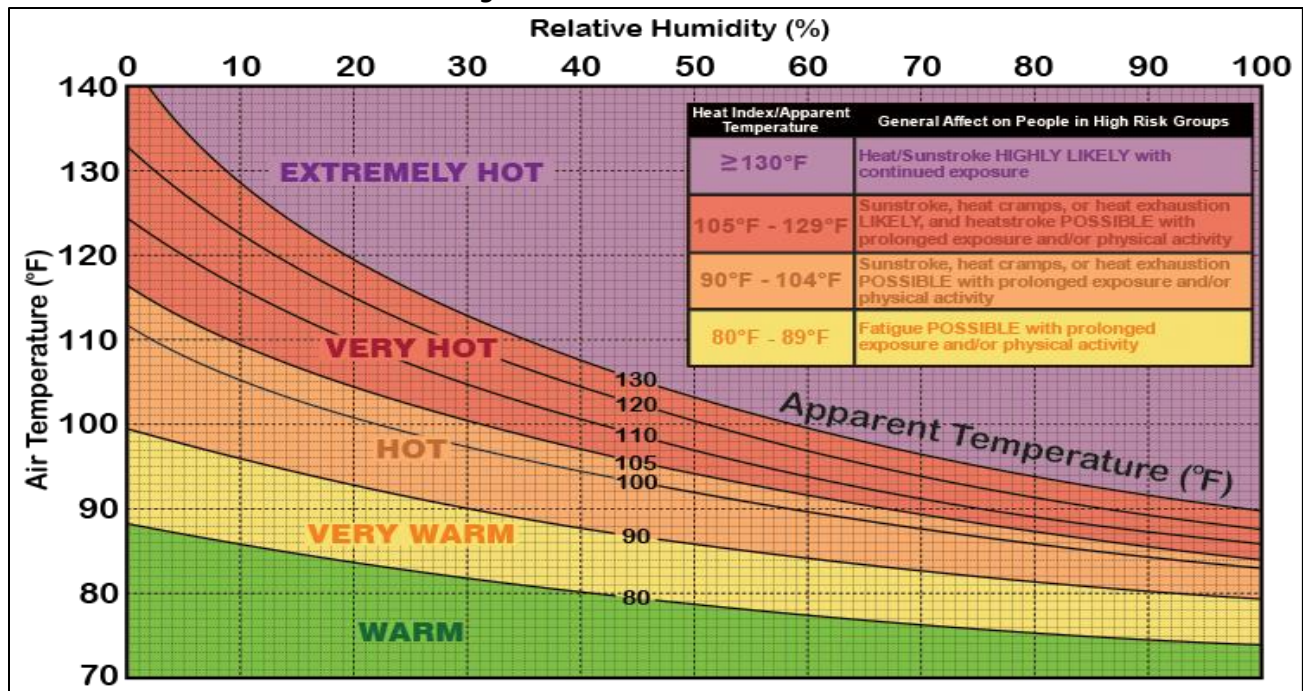
- **Excessive Heat Watches** are issued when the Heat Index values are expected to reach or exceed 110°F and not fall below 75°F for at least a 48-hour period, beginning in the next 12 to 48 hours.
- **Extreme Cold Watch** is issued when dangerously cold air temperatures or wind chill values are possible. As with a Warning, adjust your plans to avoid being outside during the coldest parts of the day. Make sure your car has at least half a tank of gas and update your winter survival kit.
- **Excessive Heat Warnings** are issued when Heat Index values are expected to reach or exceed 110°F and not fall below 75°F for at least a 48-hour period, beginning in the next 24 hours.
- **Extreme Cold Warning** is issued when dangerously cold air temperatures or wind chill values are expected or occurring. If you are in an area with an Extreme Cold Warning, avoid going outside. If you have to go outside, dress in layers, cover exposed skin, and make sure at least one other person knows your whereabouts. Update them when you arrive safely at your destination.

A key factor to consider regarding extreme heat situations is the humidity level relative to the temperature. As is indicated in the following figure from the National Oceanic and Atmospheric Administration, as the relative humidity increases, the temperature needed to cause a dangerous situation decreases. For example, for 100% relative humidity, dangerous levels of heat begin at 86°F whereas a relative humidity of 50% requires 94°F. The combination of relative humidity and temperature result in a heat index as demonstrated below:

$$100\% \text{ Relative Humidity} + 86^{\circ}\text{F} = 112^{\circ}\text{F Heat Index}$$

Figure 40 is designed for shady and light wind conditions. Exposure to full sunshine or strong hot winds can increase hazardous conditions and raise heat index values by up to 15°F.

Figure 40: NOAA Heat Index

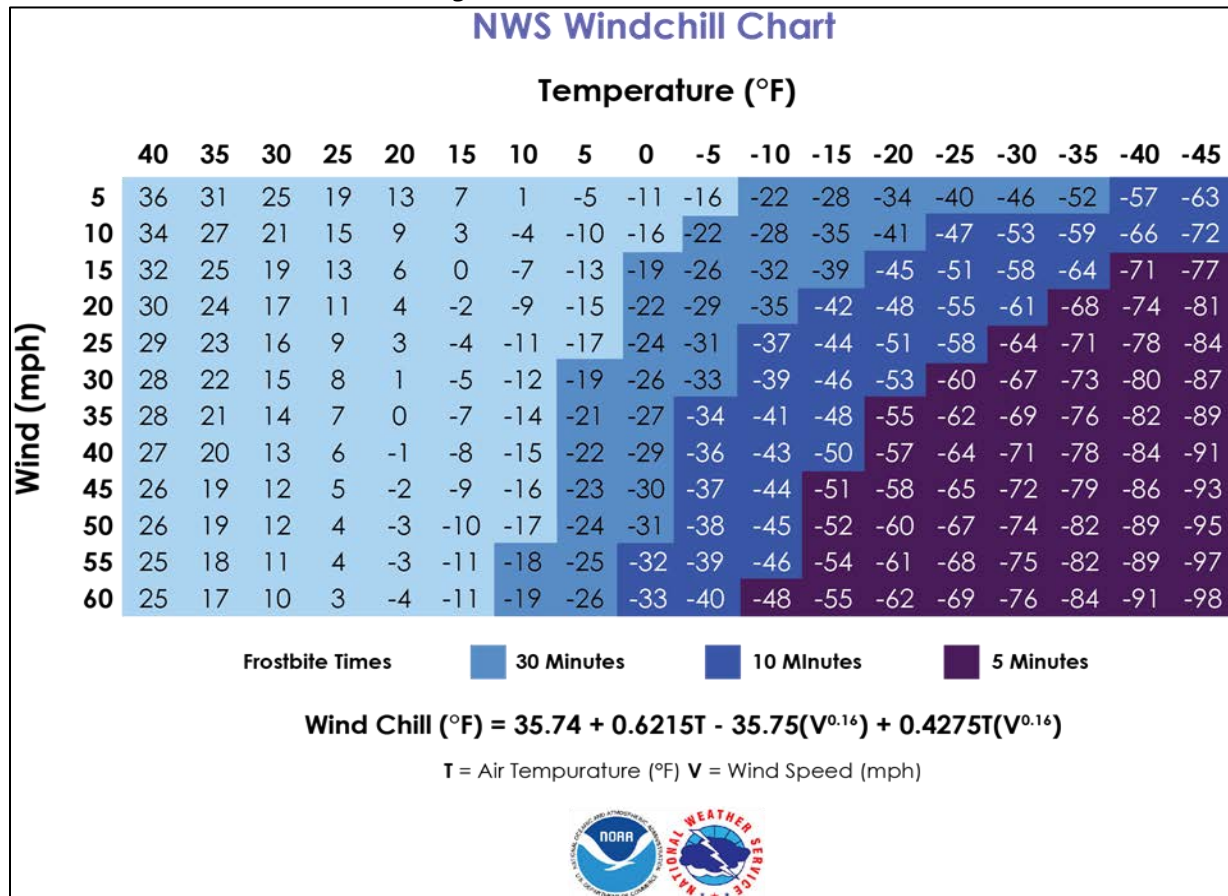


Source: NOAA, 2024⁵⁶

⁵⁶ National Oceanic and Atmospheric Administration, National Weather Service. 2020. "Heat Index". http://www.nws.noaa.gov/om/heat/heat_index.shtml.

A key factor to consider regarding extreme cold situations is the wind chill. The Wind Chill Index was developed by the NWS to determine the decrease in air temperature felt by the body on exposed skin due to wind. The wind chill is always lower than the air temperature and can quicken the effects of hypothermia or frostbite as it gets lower. The figure below shows the Wind Chill Index used by the NWS.

Figure 41: Wind Chill Index Chart

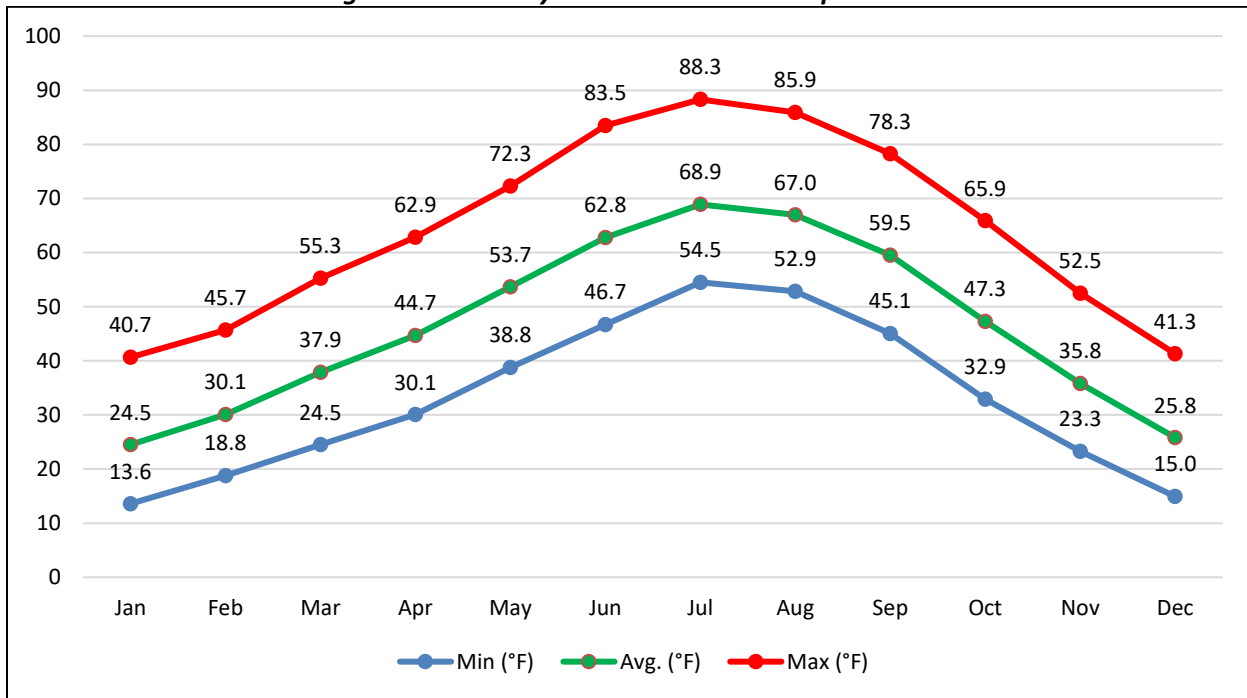


Source: NWS⁵⁷

For the planning area, the coldest months of the year are December, January, and February. The average low temperatures for these months are all below freezing (average low for the three months 15.8°F). The average high temperature for these months is 42.6°F. In the planning area, the months with the highest temperatures are June, July, and August. The average high temperature for these months is approximately 85.9°F while the average low temperature for these months is 51.4°F.

57 National Weather Service. 2001. "Wind Chill Chart." <https://www.weather.gov/safety/cold-wind-chill-chart>.

Figure 42: Monthly Climate Normals Temperatures



Source: NCEI, 2024

The impacts of extreme temperatures, specifically extreme heat, are exacerbated by other risk factors such as diabetes, obesity, heart disease, or other health equity concerns. Many vulnerable communities and populations at-risk face greater exposure to heat or cold, have fewer resources to respond or escape conditions, and are more likely to suffer severe consequences if left unassisted. Populations at highest risk are those without shelter or who are stranded, or who live in a home that is poorly insulated or without adequate HVAC systems. Other impacts of extreme temperatures include asphyxiation (unconsciousness or death from a lack of oxygen) from toxic fumes from emergency heaters; household fires, which can be caused by fireplaces and emergency heaters; and frozen/burst pipes. Elderly populations are considered particularly vulnerable to the impacts of extreme temperatures events

Probability

Extreme temperatures are not a regular part of the climate for the planning area. Extreme heat events of over 100°F occur less than 1 day annually. Extreme cold events (max temperature of 10°F) also occur less than one day a year, on average. Thus, the probability that extreme temperatures (either heat or cold) will occur in any given year in the planning area is *Unlikely*. Due to the anticipated impacts from climate change, the likelihood of future extreme temperature events will increase in frequency and magnitude.

Impacts from Climate Change

The Union for Concerned Scientists released a report in July 2019 titled *Killer Heat in the United States: Climate Choices and the Future of Dangerously Hot Days*⁵⁸ which included predictions for extreme heat events in the future dependent on future climate actions. The table below summarizes those findings for the planning area.

⁵⁸ Union of Concerned Scientists. 2019. "Killer Heat in the United States: Climate Choices and the Future of Dangerously Hot Days". <https://www.ucsusa.org/sites/default/files/attach/2019/07/killer-heat-analysis-full-report.pdf>.

Table 34: Extreme Heat Predictions for Days Over 100°F

COUNTY	WHERE WE ARE NOW	WHERE WE ARE CURRENTLY HEADED	
	Historical 1971-2000 Avg	Mid-Century 2036-2065 Avg	Late Century 2070-2099 Avg
Archuleta	0	0	1
La Plata	0	0	1
Total	0	0	2

Source: Union of Concerned Scientists, 2019⁵⁹

Impacts from climate change will significantly affect the prevalence and extent of extreme temperature conditions. The Fifth National Climate Assessment noted numerous impacts including increasing health risks from extreme heat conditions or increased severe wildfire events with hot dry conditions. The Reservation may also experience more than one climate related impact simultaneously such as drought and extreme heat. The season length of heat waves in many U.S. cities has increased by over 40 days since the 1960s.

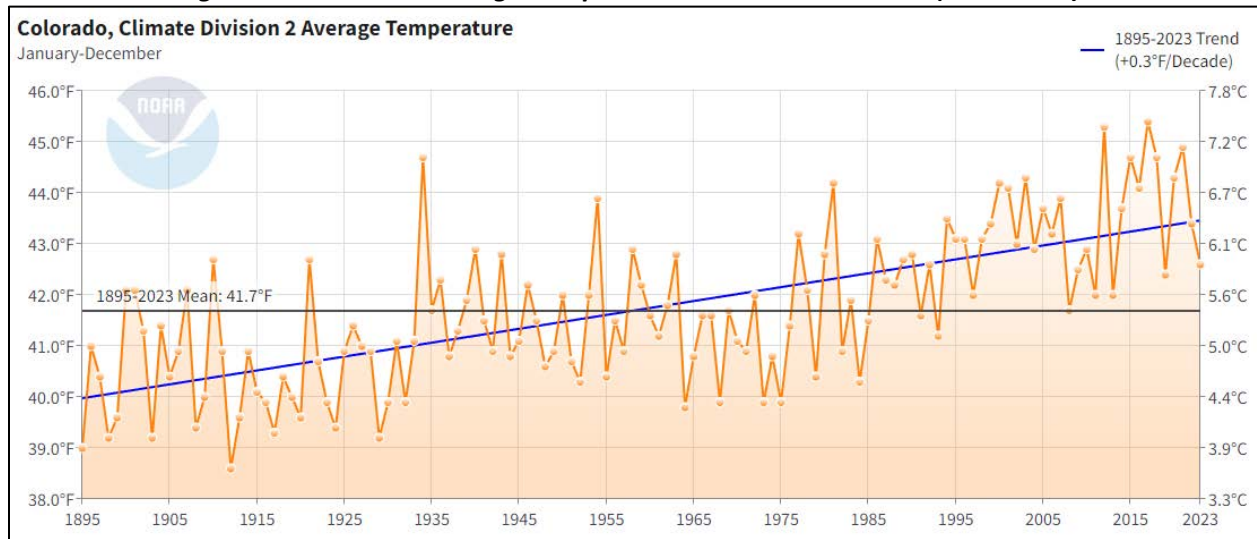
Extreme heat and cold poses a significant risk to human health and labor productivity in the agricultural, construction, and other outdoor sectors. The elderly, pregnant women, and children are most vulnerable to negative health impacts during extreme temperature conditions. Heatwaves may also impact plant health, with negative effects on crops during essential growth stages. Increasing temperatures and drought may reduce the potential for aquifers to recharge, which has long-term implications for the viability of agriculture in the region.

More frequent and severe temperature waves are also expected to increase stresses on the energy systems and local resources; rising temperatures are expected to reduce electricity generation capacity while increasing energy demands and costs, which can in turn lead to power outages and blackouts. Rising temperatures are leading to increased demand for water and energy. In parts of the region, this will constrain development, stress natural resources, and increase competition for water among communities, agriculture, energy production, and ecological needs.

According to the NOAA U.S. Climate Normals for the SUIT Reservation, the average temperature for the month of July is 68.9°F. The average temperature for the month of January is 24.5°F. Average maximum and minimum temperatures recorded in the Reservation indicate that monthly minimum temperatures can range from as low as 13.6 degrees (January) to average maximum temperatures of 88.3 degrees (July).

Since 1895 the overall average temperature of Colorado’s Climate Division 2 (which includes the SUIT Reservation) has increased by 3.6°F (Figure 43). While overall temperature shifts have not been consistent, the trend for increasing temperatures is apparent. Climate modeling suggests warmer temperature conditions will continue in the coming decades and rise steadily into mid-century. This trend will likely contribute to an increase in the frequency and intensity of hazardous events, which will cause significant economic, social, and environmental impacts on tribal members.

59 Union of Concerned Scientists. 2019. “Extreme Heat and Climate Change: Interactive Tool”. <https://www.ucsusa.org/resources/killer-heat-interactive-tool>.

Figure 43: Colorado Average Temperature - Climate Division 2 (1895-2023)

The length of the frost-free season (i.e. growing season) has also been increasing nationally since the 1980s. While a longer growing season may provide some benefit for heavily agricultural areas, concurrent changes in temperature, water availability, and pest pressures may cause additional adverse impacts. For instance, longer growing seasons coinciding with periods of drought and extreme heat can indicate lower production from increased plant mortality and increased risk to wildfire ignition probability and fuel load potentials. On average, the contiguous United States has seen an increase of two weeks to the annual growing season since 1985.⁶¹

Vulnerabilities to Bison Herd and Cultural Resources

Bison are incredibly hardy animals built for the intense temperature swings found in southern Colorado. However, even bison can be negatively impacted by extreme temperatures. In general, temperatures below freezing (28 degrees or below) cause about a 48% decrease in movement rates. An increase in movement patterns and distance for buffalo occurred as temperatures rise.⁶² Due to the limited space available to the SUIT's bison herd, additional resources would need to be allocated to the herd to ensure adequate water and shade. During periods of extreme temperatures, the animals can become stressed, ill, or more temperamental in their search for water.

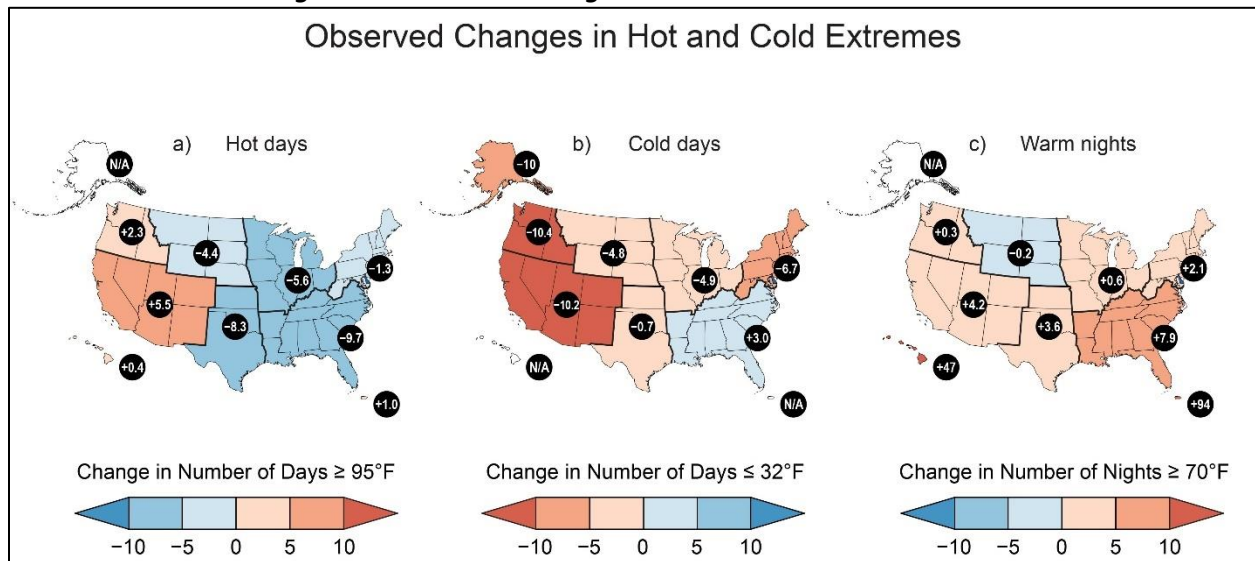
There are no direct impacts to cultural resources from extreme heat; however, key cultural sites may suffer from indirect impacts as extreme temperatures may limit or restrict tourism to key sites (Powwow grounds and museum) or lead to other cascading hazard impacts such as power outages, wildfires, or drought conditions.

60 NOAA. 2024. "Climate at a Glance: Divisional Time Series.". Accessed September 2024. https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/divisional/time-series/0502/tavg/12/12/1895-2023?base_prd=true&begbaseyear=1895&endbaseyear=2023&trend=true&trend_base=10&begtrendyear=1895&endtrendyear=2023.

61 U.S. Global Change Research Program. 2023. "Fifth National Climate Assessment: Appendix 4 - Indicators". Accessed 2024. https://nca2023.globalchange.gov/img/figure/a4_13.jpg.

62 McMillan, N. A., Fuhlendorf, S. D., Luttbeg, B., Goodman, L. E., Davis, C. A., Allred, B. W., & Hamilton, R. G. (2022). Bison movements change with weather: Implications for their continued conservation in the Anthropocene. *Ecology and Evolution*, 12, e9586. <https://doi.org/10.1002/ece3.9586>

Figure 44: Observed Changes in the Hot and Cold Extremes



Source: National Climate Assessment, 2023⁶³

Overall Vulnerabilities

All segments of the population are vulnerable to the effects of extreme heat, some specific groups have higher levels of vulnerability to extreme heat including tribal elders, residents in medical care facilities, children, those isolated from social interactions, and low-income groups. Elders and those in medical care facilities typically have lower tolerance for temperature extremes and can quickly feel the effects of extreme temperatures. Low-income populations and young children under the age of 5 are especially at risk and susceptible to the effects of extreme temperatures. Young children have a smaller body mass to surface ratio making them more vulnerable to heat-related morbidity and mortality. Children also become dehydrated more quickly than adults, making for greater concern. Low-income people and families may lack resources that mitigate the impacts of extreme heat such as air conditioning. The agricultural economy, especially livestock, is highly vulnerable and at great risk during periods of extreme heat. Heat stress in feedlot cattle can cause reduced performance, and in the most severe cases, death of the animals, resulting in losses to the local agricultural industry.

Like minors, elders (age 65 and greater) are often more significantly impacted by temperature extremes. During prolonged heat or extreme cold waves, seniors may lack resources to effectively address the hazards and as a result may incur injury or potentially death. Prolonged power outages (either standalone events or as the result of other contributing factors) can have significant impacts on any citizen relying on medical devices for proper bodily functions or those that live in insufficient housing.

The nonprofit First Street Foundation has developed a Risk Factor tool to help understand risks from a changing climate at the county or community level. Risk Factor provides an overview for heat risk at the county level. The following table outlines each county's heat factor risk.

63 U.S. Global Change Research Program. 2023. "Fifth National Climate Assessment." Accessed 2024. <https://nca2023.globalchange.gov/chapter/28/>.

Table 35: County Heat Factor Risk

	OVERALL HEAT FACTOR RISK	TOTAL PROPERTIES AT RISK	LIKELIHOOD OF 3+ DAY HEAT WAVE (>100°F)	HEALTH CAUTION DAYS	HOT DAYS	NUMBER OF COOLING DAYS (REQUIRING AC)
Archuleta	Minor Heat Factor	11,136	46% likelihood this year 14% likelihood in 30 years	1 day this year 3 days in 30 years	7 days this year 19 days in 30 years	132 days this year 146 days in 30 years
La Plata	Minor Heat Factor	13,656	84% likelihood this year 50% likelihood in 30 years	2 days this year 6 days in 30 years	7 days this year 18 days in 30 years	135 days this year 148 days in 30 years

Source: Risk Factor, 2024⁶⁴

Note: Health caution days = days where “feels like” temperature exceeds 90F; Hot days = days where “feels like” temperature exceeds 100F.

The following tables provide information related to regional vulnerabilities and FEMA’s National Risk Index values for Heat Waves and Cold Waves.

Table 36: National Risk Index Heat/Cold Wave Vulnerabilities

COUNTIES	RISK INDEX	EXPECTED ANNUAL LOSS
Archuleta	Cold – Very Low Heat – None	Cold – Very Low Heat – None
La Plata	Cold – None Heat – Very Low	Cold – None Heat – Very Low

Source: FEMA National Risk Index, 2024

Those at greatest risk for temperature-related illness include infants and children up to four years of age, people 65 years of age and older, people who are overweight, and people who are ill or on certain medications. Area elder care facilities, senior housing facilities, and childcare facilities are vulnerable to extreme temperatures. However, even young and healthy individuals are susceptible if they participate in strenuous physical activities during hot weather. In agricultural areas, the exposure of farm workers, as well as livestock, to extreme temperatures is a major concern.

Most notably, power failure during an extreme heat or cold event could shut down these facilities’ HVAC systems if back-up power capabilities were not available. Additionally, infrastructure damage such as road damage can occur as a result of extreme heat. When asphalt is exposed to prolonged extreme heat, it can cause buckling of asphalt-paved roads, driveways, and parking lots.

⁶⁴ First Street Foundation. “Risk Factor: Heat Factor.” Accessed September 2024. <https://firststreet.org/>.

Flood/Erosion/Washout

Flooding due to rainfall can occur on a small-scale at the local level but can also extend throughout an entire drainage basin. Heavy accumulation of ice or snow can also cause flooding during the melting stage. These events are complicated by the freeze/thaw cycles characterized by moisture thawing during the day and freezing at night. There are two main types of flooding in the planning area: riverine flooding and flash flooding.

Riverine Flooding

Riverine flooding, typically more slowly developing with a moderate to long warning time, is defined as the overflow of rivers, streams, drains, and lakes due to excessive rainfall, rapid snowmelt or ice melt. The areas adjacent to rivers and stream banks that carry excess floodwater are called floodplains. A floodplain or flood risk area is defined as the lowland and relatively flat area adjoining a river or stream. The terms “base flood” and “100-year flood” refer to the area in the floodplain that is subject to a one percent or greater chance of flooding in any given year. Floodplains are part of a larger entity called a basin or watershed, which is defined as all the land draining to a river and its tributaries.

Flash Flooding

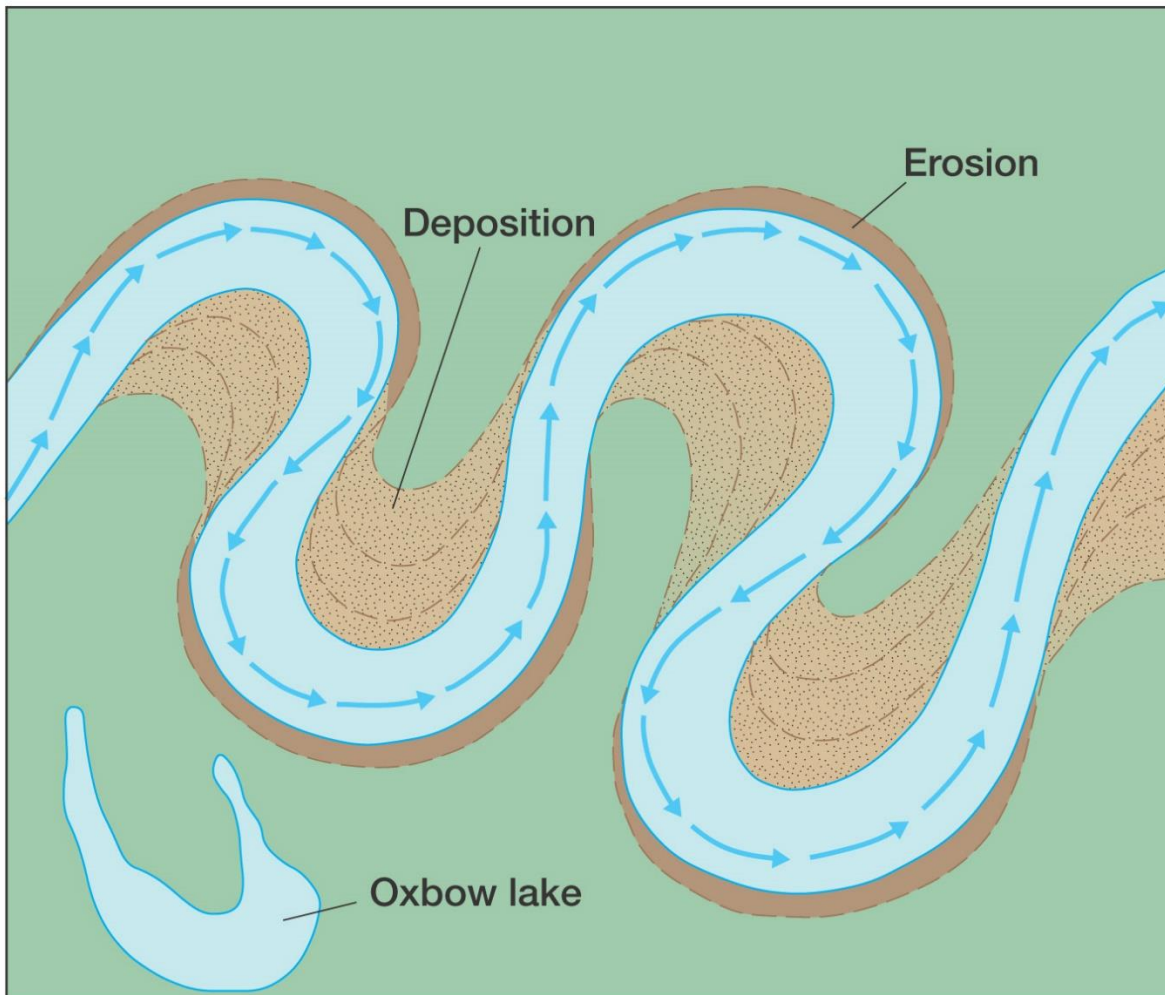
Flash floods, typically rapidly developing with little to no warning time, result from convective precipitation usually due to intense summer storms or sudden releases due to failure of an upstream impoundment created behind a dam, landslide, or levee. Flash floods are distinguished from regular floods by a timescale of fewer than six hours. Flash floods cause the most flood-related deaths as a result of this shorter timescale to respond to the rising waters.

Archuleta and La Plata have digital Flood Insurance Rate Maps (FIRMs) which identify the Special Flood Hazard Areas (SFHAs), the Base Flood Elevations (BFEs), and the risk premium zones for communities.

Erosion

The Colorado Geological Survey (CGS) defines erosion as “the removal and simultaneous transportation of earth materials from one location to another by water, wind, waves or moving ice.” Deposition is defined as the placing of eroded material in a new location. Washout is a rapid type of erosion where floodwater or rainwater washes away the soil around a structure or road.

One example of erosion and deposition is shown in Figure 45.

Figure 45: Stream Erosion and Deposition

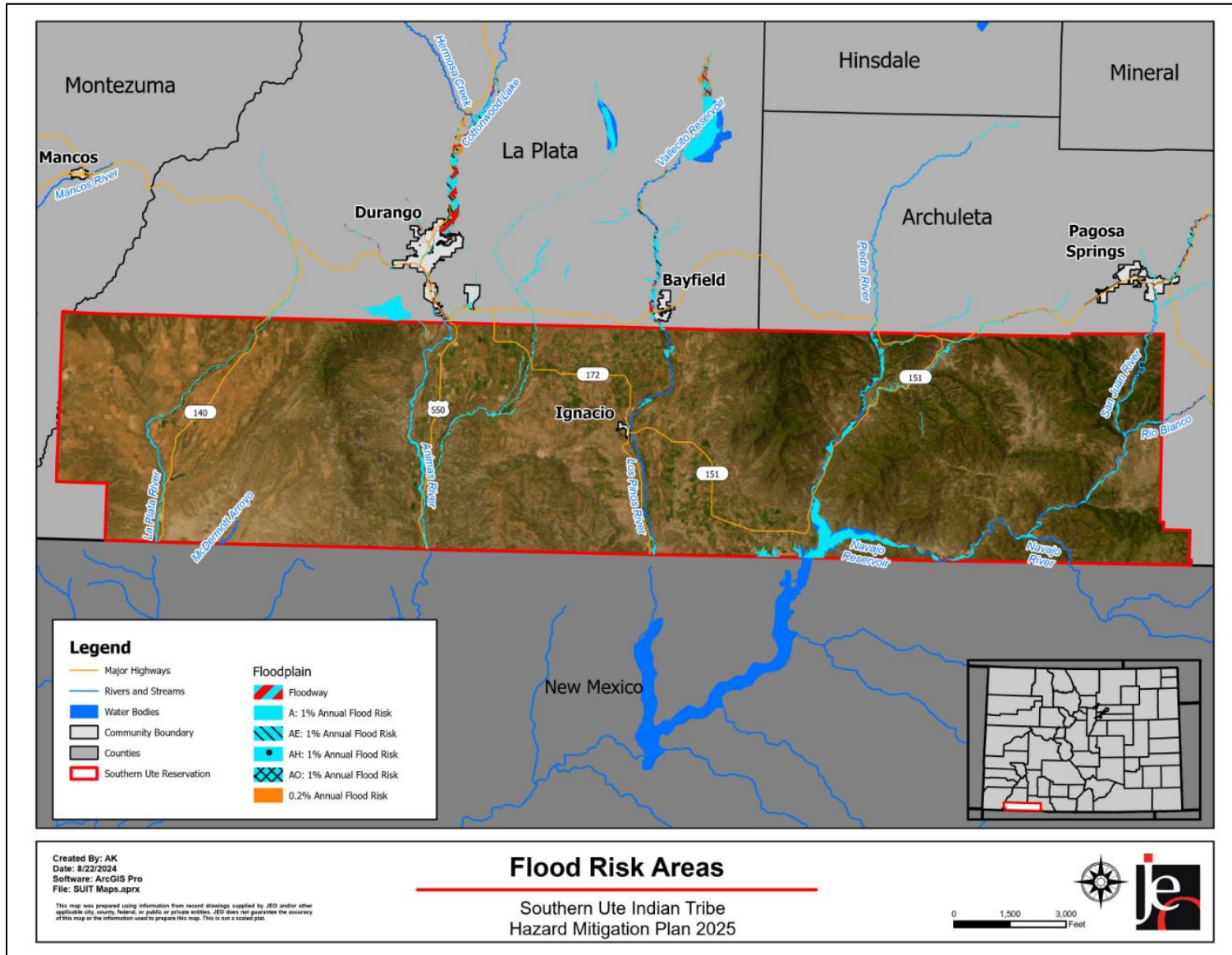
Source: Pearson Prentice Hall, Inc., 2005

Location

Major rivers include La Plata River, Animas River, Florida River, Los Pinos River, Piedra River, Navajo River, and San Juan River. In addition, there are a number of creeks and tributaries to these rivers and creeks. There are also lakes and reservoirs within the Reservation, including Navajo Reservoir, Capote Lake, Short Reservoir, Pastorius Reservoir, and Red Mesa Ward Reservoir. Flooding can occur throughout the Reservation as a result of snowmelt, widespread rainfall, or intense thunderstorms. High soil moisture, frozen ground, and rainfall on melting snowpacks contribute to the most severe floods. In addition, there is potential for flooding from dam failure.

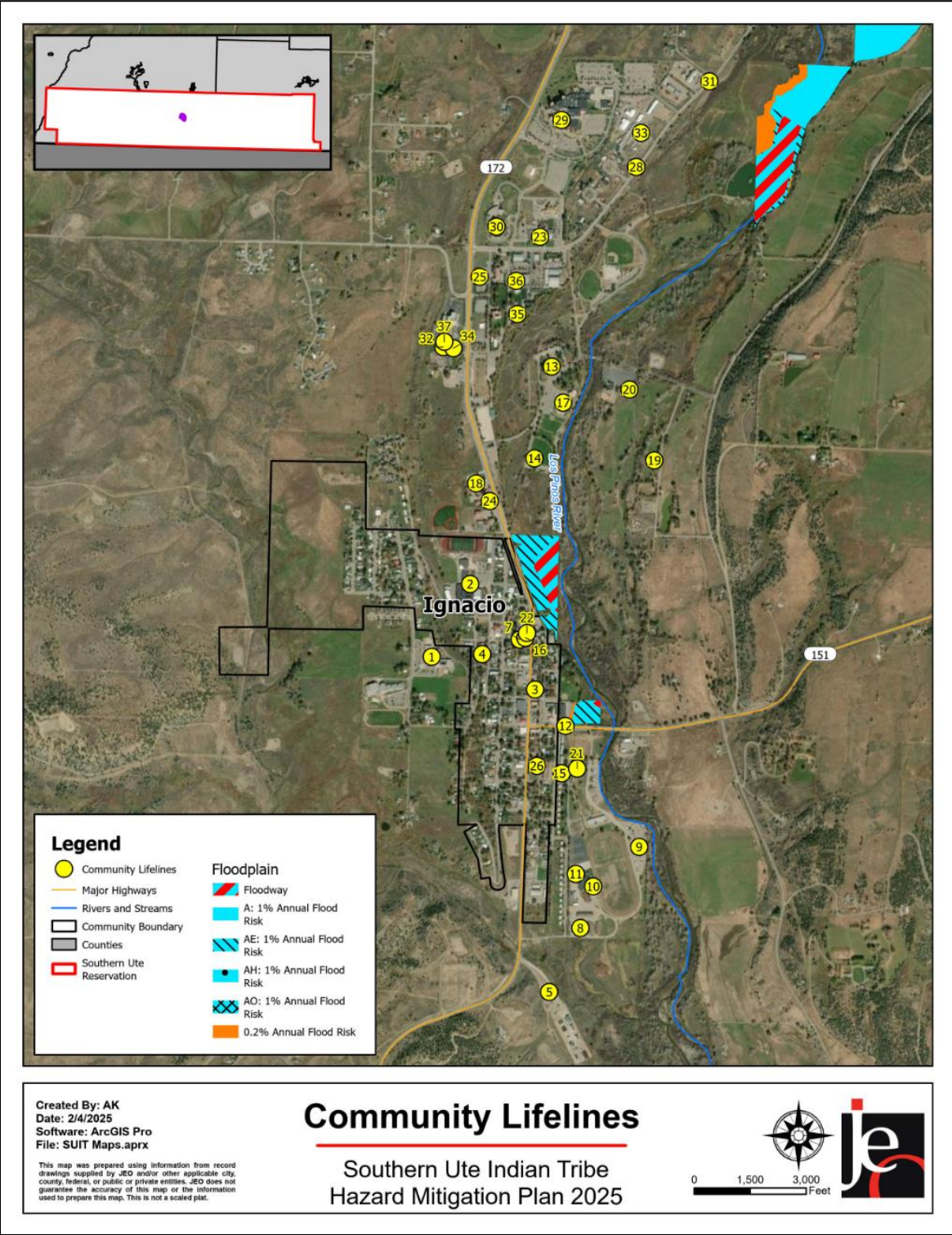
The local planning team indicated that large flood events are not common in the Reservation. However, smaller events have led to road washout and erosion. Some large culverts throughout the Reservation are notorious for washout during flood events. Other locations prone to washout include rural roads used by energy producers as well as roads used for forest management, hunting, and agriculture. Areas that are a continuous problem include McDermott Arroyo and 44 Canyon. Another location of concern is along County Road 500 at a bend in the San Juan River where erosion and washout have affected the roadbed. Figure 46 shows the digital Flood Risk Hazard Areas within the Reservation.

Figure 46: Flood Risk Hazard Areas



The following figure shows the digital Flood Risk Hazard Areas in relation to the Southern Ute Tribe's Community Lifelines. The only Community Lifelines located **within** the floodplain are Various Bridges.

Figure 47: SUIT Flood Risk Hazard Areas and Community Lifelines



*Water Treatment Plant (#6), Water Dock 1 (#27), and Various Bridges (#38) are not displayed in map viewing area.

The State of Colorado has developed a Colorado Hazard Mapping product for fluvial/erosion hazard areas; however, Archuleta and La Plata Counties have not been mapped at this point.⁶⁵ Point sources of erosion often occur in areas where humans interact with exposed earth, such as construction sites. Waterways perpetually remove and carry soil downstream. Erosion and deposition problems are exacerbated in wildfire burn areas. Locations of greatest risk include rivers , highways, and along burn scars.

Flood Studies and Risk Products

Risk Mapping, Assessment, and Planning (Risk MAP) is a FEMA program that provides communities with flood information and additional flood risk data (e.g. flood depth grids, percent chance grids, etc.) that can be used to enhance their mitigation plans and take action to better protect their residents. As of October 2024, no portions of the planning area are currently undergoing flood risk mapping activities.

Flood Insurance Studies for Archuleta County and La Plata County have been developed by FEMA. Report information is shown in Table 37.

Table 37: Flood Insurance Study Information

PRODUCT ID	DOCUMENT NAME	EFFECTIVE DATE
08007CV000B	Flood Insurance Study: Archuleta County, Colorado and Incorporated Areas	10/05/2023
08067CV001B	Flood Insurance Study: La Plata County, Colorado and Incorporated Areas	04/25/2024

Historical Occurrences

The NCEI reports events as they occur in each community. A single flooding event can affect multiple communities and counties at a time; the NCEI reports these large scale, multi-county events as separate events. The result is that a single flood event in both Archuleta and La Plata Counties could be reported by the NCEI as separate events. According to the NCEI, 70 flash flooding events occurred in the two counties, resulting in \$7,133,000 in property damage. 15 riverine flooding events caused \$134,500 in property damage. The total crop loss according to SHELDUS is \$174,414

Several flood events have directly impacted the Southern Ute Indian Reservation. Available NCEI reports from past events are described below.

- July 2018** – *Major flooding, mud and rockslides occurred in the Animas Valley along the Colorado Highway 550 corridor between mile markers 33 and 37. Fast moving flood waters and debris flowed in excess of 6 feet deep in places. About 6 feet of debris blocked Highway 550. The highway was closed for approximately 4.5 hours for debris cleanup. The flood waters and debris also flowed across the Durango and Silverton Narrow Gauge Railroad tracks which lead the train to stop and, as a result of the closure of the highway, about 800 passengers were stranded north of Durango. A section of the railroad track was heavily damaged. Significant damage occurred in the Whispering Pines and Pine Acres subdivisions where flash flood waters flowed. The flash flood waters and debris also traveled across a section of County Road 250 and caused widespread damage at the Durango North/Riverside KOA campground. Radar estimated half an inch to an inch of rain fell within a short period of time in the general area of the flash flooding.*

65 Colorado Water Conservation Board. 2024. "Colorado Hazard Mapping & Risk MAP Portal – MAP Fluvial/Erosion Hazard Mapping." <https://coloradohazardmapping.com/hazardMapping/fluvialMapping/Map>.

- October 2006** – *A persistent fetch of subtropical moisture brought heavy rainfall to La Plata County in southwest Colorado for two consecutive days, October 5th and 6th. The two-day rainfall amounts in the areas of heaviest flooding ranged from 1.99 to 3.51 inches. The first reports of flooding and flash flooding came from the La Plata County Sheriff's office at 1530 MST on Friday October 6th, when flooding had occurred along County Road 250 north of Durango and also near Vallecito Reservoir. In the community of North Vallecito, a 44 foot self-contained RV, a cabin, and a shed were carried by the flood waters down Vallecito Creek and totally destroyed, with pieces ending up in Vallecito Reservoir. Part of a garage and two snowmobiles were swept away by flood waters and an unattended SUV was swept into the current but later pulled to high ground. Vallecito Creek carved out a new 4 to 5 foot channel in North Vallecito in the back yards of residences, with the new channel adjacent to the back decks of some homes. An enormous amount of landscape was destroyed in Vallecito and North Vallecito. Dikes and levees built in 1970 around Vallecito Creek were initially breached at several points around 2215 MST on 10-6-06 and were subsequently destroyed. Flood waters came up to the foundation of houses and left at least 18 houses surrounded by water. Law enforcement and other emergency service providers evacuated residents of Vallecito and North Vallecito, mostly prior to the dike and levee failures. An underground telephone cable in North Vallecito became exposed and severed by logs in the flood waters, eliminating phone service to homes and businesses around Vallecito Reservoir. Flooding also occurred along Bolteus Creek. Roads were flooded at various locations in La Plata County with fast moving water generally 6 to 18 inches deep. Several landslides were also reported, some of which closed down the Durango-Silverton Narrow Gauge Railroad due to debris on the tracks.*
- September 2002** – *Flash flooding was widespread along the east side of the Animas Valley. Very large debris flows accompanied the flash floods. Two large houses in the path of the flows incurred extensive damage. Two mobile homes were knocked off their foundations. And some sheds were heavily damaged or destroyed. Mud, large trees, and boulders the size of cars covered many sections of county roads and residential properties up to 10 feet deep. A six mile section of irrigation canal was completely filled with debris. 750 people were evacuated from the Bar D Chuckwagon restaurant after being trapped for nearly three hours.*

The planning team noted that energy facilities have been impacted by flooding in the past. Serious rain events have led to flooding of midstream energy facilities and breached irrigation canals, resulting in a large disruption to agricultural production in the area.

There are no known sources for historical erosion/washout events. Erosion can commonly occur after wildfire events and heavy rains when runoff wash down over dead and loosened trees, grasses, shrubs or other debris. Although there have been no major erosion events reported in the Reservation, the planning team noted that smaller erosion/washout events have occurred. For example, one recent event in summer 2023 completely washed out a culvert along Highway 151 near Chimney Rock. This closed the highway for multiple months and in turn led to longer emergency response times in the area.

Another area particularly prone to erosion and washout is along County Road 500 at a bend in the San Juan River. The river is undermining the road bank, which sits 100 feet above the river and has a gas line running under it. Cracks have appeared in the soil within 10 feet of the road and nearby property owners have expressed concern. The planning team indicated that no known injuries or fatalities have occurred as a result of flooding, erosion, or washout.

Average Annual Losses

The average damage per event estimate was determined based upon the NCEI Storm Events Database since 1996. This does not include losses from displacement, functional downtime, economic loss, injury or loss of life. Flooding caused a total average of \$259,554 in property damages and \$2,768 in crop losses per year for the planning area.

Table 38: Flooding Losses

HAZARD TYPE	# OF EVENTS ¹	AVERAGE # EVENTS PER YEAR	TOTAL PROPERTY LOSS ¹	AVERAGE ANNUAL PROPERTY LOSS	TOTAL CROP LOSS ²	AVERAGE ANNUAL CROP LOSS
FLASH FLOOD	70	2.5	\$7,133,000	\$254,750	\$174,414	\$2,768
FLOOD	15	0.5	\$134,500	\$4,804		
TOTAL	85	3	\$7,267,500	\$259,554	\$174,414	\$2,768

Source: 1 NCEI (1996-2023), 2 SHELDUS (1960-2022)

Extent

The NWS has three categories to define the typical severity of a flood once a river reaches flood stage as indicated in Table 39.

Table 39: Flooding Stages

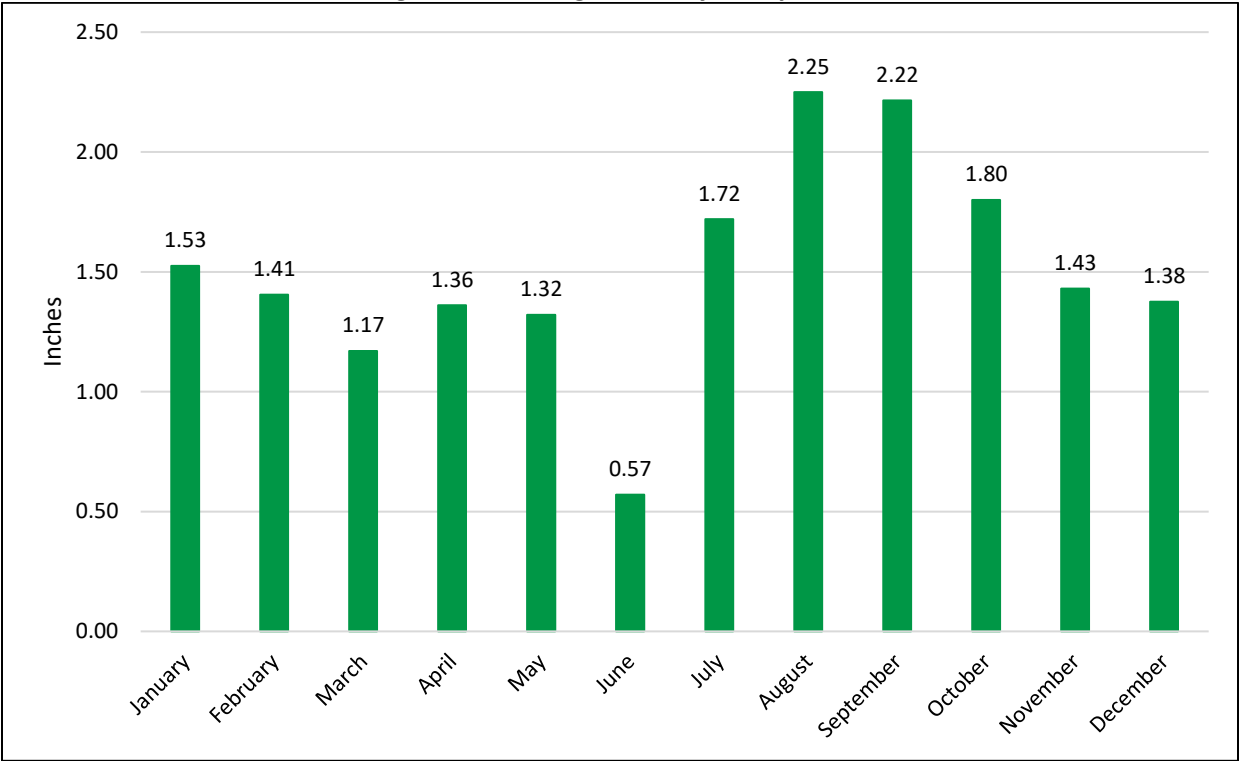
FLOOD STAGE	DESCRIPTION OF TYPICAL FLOOD IMPACTS
MINOR FLOODING	Minimal or no property damage, but possibly some public threat or inconvenience
MODERATE FLOODING	Some inundation of structures and roads near streams. Some evacuations of people and/or transfer of property to higher elevations are necessary
MAJOR FLOODING	Extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations

Source: NOAA, 2017⁶⁶

The following figure (Figure 48) shows the normal average monthly precipitation for the planning area, which is helpful in determining whether any given month is above, below, or near normal in precipitation. The most common month for flooding within the planning area is July, as seen in Figure 49. The planning area is likely to experience minor to moderate flooding regularly.

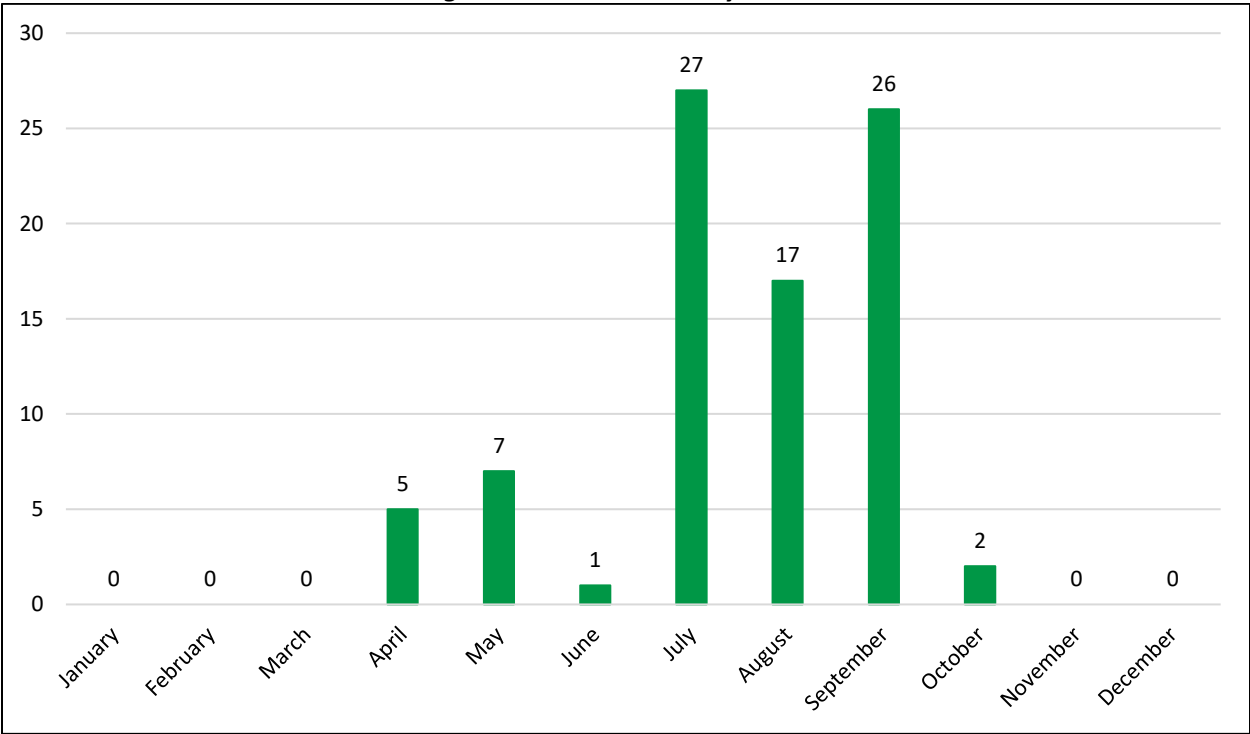
⁶⁶ National Weather Service. 2017. "Flood Safety." <http://www.floodsafety.noaa.gov/index.shtml>.

Figure 48: Average Monthly Precipitation



Source: NCEI

Figure 49: Flood Events by Month



Source: NCEI

National Flood Insurance Program

The NFIP was established in 1968 to reduce flood losses and disaster relief costs by guiding future development away from flood hazard areas where feasible; by requiring flood resistant design and construction practices; and by transferring the costs of flood losses to the resident of floodplains through flood insurance premiums. In return for availability of federally-backed flood insurance, jurisdictions participating in the NFIP must agree to adopt and enforce floodplain management standards to regulate development in special flood hazard areas (SFHA) as defined by FEMA's flood maps. As of October 2024, the Southern Ute Tribe does not participate in the NFIP.

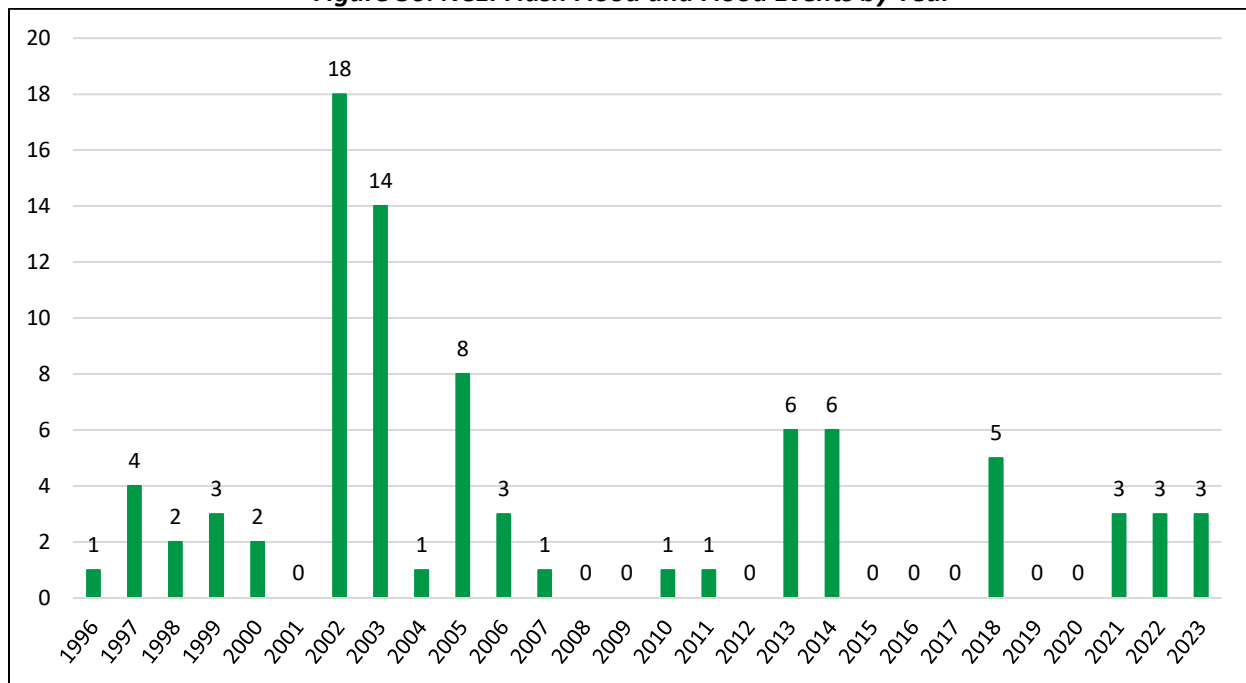
The extent of erosion and deposition is largely related to the impacted area's location. Erosion can result in minor inconveniences or total destruction in a limited area. Events near human development can cause property and infrastructure damage. However, events may also occur in rural areas of the Reservation with little impact to people, property, or infrastructure.

Erosion and deposition are aggravated by natural events such as heavy rain or high stream flow, high wind, and wildfires. Erosion can remove earth from beneath bridges, roads, expose utility lines, and expose foundations of structures adjacent to streams. The deposition of material can block culverts, aggravate flooding, destroy crops, and cause overall degradation of the water conveyance and the water supply. Undercutting can lead to an increased risk of landslide and rockfall.

Riverine erosion has many consequences including land and development loss. Other problems include water quality reduction due to high sediment loads and native aquatic habitat loss. Erosion and deposition can also increase risk of pollution of surface waters, as nutrients and pesticides from agricultural and residential uses are more easily carried off the surface by runoff. This can affect recreation-based economy that depends highly on quality of waters for fishing, boating, and overall appeal of rivers and reservoirs.

Probability

The NCEI reports 15 flooding and 70 flash flooding events from 1996 to 2023 in Archuleta and La Plata Counties. Some years had multiple flooding events. Figure 50 shows the events broken down by year. Based on the historical record, there is a 68 percent probability that flooding will occur annually in these two counties (19 out of 28 years with a reported event).

Figure 50: NCEI Flash Flood and Flood Events by Year

Source: NCEI

Based on this historical record, the annual probability of flooding occurring in the future is *Likely*.

Impacts from Climate Change

Current climatic trends are expected to result in decreased summer precipitation and streamflow in Colorado's major rivers. As a result, the risk of riverine flooding may be reduced. However, it is probable that the state will experience an increase in frequency and magnitude of winter precipitation,⁶⁷ this in combination with warming air and surface temperatures may produce earlier spring runoff. This may lead to an increase in riverine flooding during the early months of the year, and a decrease in riverine flooding towards the end of the year.

Climate trends may result in decreased snowpack, intensification of precipitation events, and an increased frequency of drought and wildfires. Erosion and deposition will be a secondary hazard following these other hazards. Overall land area exposed to erosion and deposition may increase as wildfire and flooding events occur throughout the county. Additionally, the increase in frequency, duration, and magnitude of drought conditions is anticipated to cause increased wind-born erosion.

Overall Vulnerabilities

Flooding on the SUIT Reservation has occurred from storm events, snow melt, ice jams, and flash floods. Winters have been generally warmer over the past decade with little associated ice formation and potential for ice jams. Despite general drought conditions over the past decade, rainfall can be intense and erratic with potential for flash flooding in localized areas.

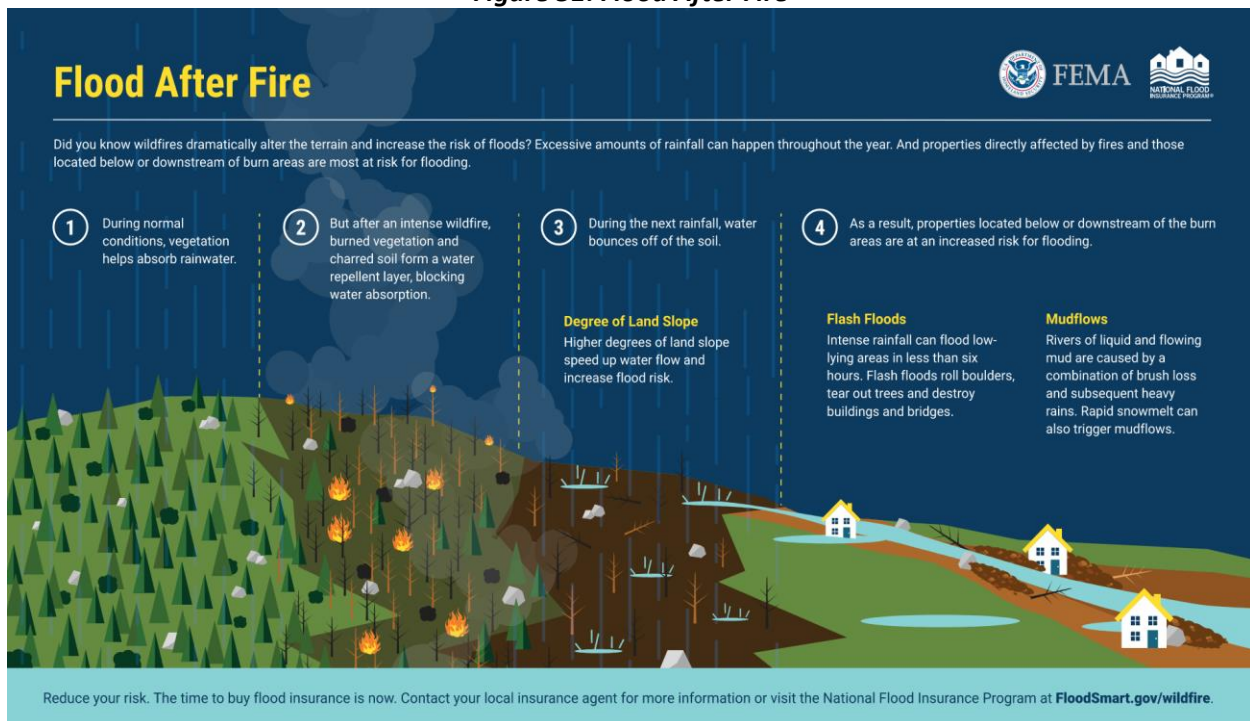
An updated national study examining social vulnerability as it relates to flood events found that low-

⁶⁷ Colorado Department of Transportation. May 14, 2021. "Climate Study: Changing Climate and Extreme Weather Impacts on Geohazards in Colorado". <https://www.codot.gov/programs/planning/data-studies/cdot-climate-resilience-study.pdf>.

income and minority populations, including tribal populations, are disproportionately vulnerable to flood events.⁶⁸ These groups may lack needed resources to mitigate potential flood events as well as resources that are necessary for evacuation and response. Flash floods are more often responsible for injuries and fatalities than prolonged flood events. Flash flooding can occur anywhere on the reservation and additionally can be exacerbated by recent wildfires which may leave large areas without vegetation to retain water runoff. Other groups that may be more vulnerable to floods, specifically flash floods, include the elderly, those outdoors during rain events, and those in low-lying areas. Tribal elders may suffer from a decrease or complete lack of mobility and as a result, be caught in flood-prone areas. Residents in rural areas, campgrounds, or open park space may be more vulnerable to flooding events. Many of these areas exist in natural flood hazard risk areas and can experience rapid rise in water levels resulting in injury or death.

Flooding issues are particularly pronounced in recently burned areas from wildfire events. Wildfire can cause complete vegetation mortality and reduce permeability of soil. Limited retention, an undersized stormwater management system and water storage options in the reservation produce increased vulnerability to flood impacts. FEMA has provided additional information in recent years detailing the relationship between wildfire and flooding (Figure 51). Wildfire events remove vegetation and harden soil, reducing infiltration capabilities during heavy rain events. Subsequent severe storms that bring heavy precipitation can then escalate into flash flooding, dealing additional damage to structural inventory, utilities, and transportation corridors.

Figure 51: Flood After Fire



Source: FEMA, 2020⁶⁹

68 Tate, E., Rahman, M.A., Emrich, C.T. et al. Flood exposure and social vulnerability in the United States. Nat Hazards (2021). <https://doi.org/10.1007/s11069-020-04470-2>

69 FEMA and NFIP. 2020. "Flood After Fire." Accessed September 2020. https://www.fema.gov/media-library-data/1573670012259-3908ab0344ff8fbf5d537ee0c6fb531d/101844-019_FEMA_FAF_Infographic-ENG-web_v8_508.pdf

Any future development in flood hazard risk areas should be discouraged to protect future assets. Land-use regulations should be used to limit development in flood hazard risk areas and other flood prone areas as well as protecting natural flood mitigation features. Buyout programs can be used to eliminate properties located in flood hazard risk areas, especially properties that have experienced repetitive losses. The Tribe may also consider incorporating “Green Infrastructure” to address flooding concerns, and examples of this would include using permeable surfaces for parking areas, using rainwater retention swales, developing rain gardens, developing green roofs, and establishing greenways along creeks, tributaries, or rivers.

Hazardous Materials Release

The following description for hazardous materials is provided by the Federal Emergency Management Agency (FEMA):

Chemicals are found everywhere. They purify drinking water, are used in agriculture and industrial production, fuel our vehicles and machines, and simplify household chores. But chemicals also can be hazardous to humans or the environment if used or released improperly. Hazards can occur during production, storage, transportation, use, or disposal. The community is at risk if a chemical is used unsafely or released in harmful amounts.

Hazardous materials in various forms can cause fatalities, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Many products containing hazardous chemicals are used and stored in homes routinely. Chemicals posing a health hazard include carcinogens, toxic agents, reproductive toxins, irritants, and many other substances that can harm human organs or vital biological processes.

Chemical manufacturers are one source of hazardous materials, but there are many others, including service stations, hospitals, and hazardous materials waste sites. Varying quantities of hazardous materials are manufactured, used, or stored at an estimated 4.5 million facilities in the United States—from major industrial plants to local dry-cleaning establishments or gardening supply stores.

Hazardous materials come in the form of explosives, flammable and combustible substances, poisons, and radioactive materials. Hazardous material incidents are technological (meaning non-natural hazards created or influenced by humans) events that involve large-scale releases of chemical, biological or radiological materials. Hazardous materials incidents generally involve releases at fixed-site facilities that manufacture, store, process or otherwise handle hazardous materials or along transportation routes such as major highways, railways, navigable waterways and pipelines.

Fixed sites are those that involve chemical manufacturing sites and stationary storage facilities. The Environmental Protection Agency (EPA) requires the submission of the types and locations of hazardous chemicals being stored at any facility within the state over the previous calendar year. This is completed by submitting a Tier II form to the EPA as a requirement of the Emergency Planning and Community Right-to-Know Act of 1986. Likewise, the U.S. Department of Transportation, through the U.S. Pipeline and Hazardous Materials Safety Administration (PHMSA), has broad jurisdiction to regulate the transportation of hazardous materials, including the discretion to decide which materials shall be classified as hazardous. These materials are placed into one of nine hazard classes based on their chemical and physical properties. The hazard schedules may be further subdivided into divisions based on their characteristics. Because the properties and characteristics of materials are crucial in understanding the dynamics of a spill during a transportation incident, it is important for response personnel to understand the hazard classes and their divisions.

The transportation of hazardous materials is defined by PHMSA as “...a substance that has been determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce...” According to PHMSA, hazardous materials traffic in the U.S. now exceeds 1,000,000 shipments per day. Nationally, the U.S. had 108 fatalities associated with the transport of hazardous

materials between 2007 through 2016. While such fatalities are a low probability risk, even one event can harm many people.

Table 40 demonstrates the nine classes of hazardous material according to the 2024 Emergency Response Guidebook.

Table 40: Hazardous Material Classes

CLASS	TYPE OF MATERIAL	DIVISIONS
1	Explosives	Division 1.1 – Explosives which have a mass explosion hazard Division 1.2 – Explosives which have a projection hazard but not a mass explosion hazard Division 1.3 – Explosives which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard Division 1.4 – Explosives which present no significant hazard Division 1.5 – Very insensitive explosives with a mass explosion hazard Division 1.6 – Extremely insensitive articles which do not have a mass explosion hazard
2	Gases	Division 2.1 – Flammable gases Division 2.2 – Non-flammable, non-toxic gases Division 2.3 – Toxic gases
3	Flammable liquids (and Combustible liquids)	
4	Flammable solids; Substances liable to spontaneous combustion; Substances which, on contact with water, emit flammable gases	Division 4.1 – Flammable solids, self-reactive substances and solid desensitized explosives Division 4.2 – Substances liable to spontaneous combustion Division 4.3 – Substances which in contact with water emit flammable gases
5	Oxidizing substances and Organic peroxides	Division 5.1 – Oxidizing substances Division 5.2 – Organic peroxides
6	Toxic Substances and infectious substances	Division 6.1 – Toxic substances Division 6.2 – Infectious substances
7	Radioactive materials	-
8	Corrosive substances	-
9	Miscellaneous hazardous materials/dangerous goods and articles	-

Source: *Emergency Response Guidebook, 2024*⁷⁰

Location

According to the Colorado Oil and Gas Conservation Commission, there are a total of 2,943 active oil and gas wells within the SUIT Reservation, as of June 2024 (Figure 52).⁷¹ The SUIT Department of Energy noted that the northern San Juan Basin has proved to be a prolific source for coal bed methane gas and allowed

70 U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration. 2024. "2024 Emergency Response Guidebook." <https://www.phmsa.dot.gov/hazmat/erg/emergency-response-guidebook-erg>.

71 Colorado Oil and Gas Conservation Commission. June 2024. "Daily Activity Dashboard". <https://cogcc.state.co.us/dashboard.html#/dashboard>.

the Tribe to flourish. There are about 1,000 producing wells and over 100 active midstream energy facilities located on Tribal trust lands. Many of these active facilities are located in Pinion Juniper woodland and Pinion Juniper savanna forest types which under the right conditions, can produce extreme wildfire behavior. Figure 53 shows Tribal lands where there are likely energy assets (shown in green).

Approximately XX facilities that house hazardous materials (Tier II facilities) are located within the Southern Ute Indian Reservation, according to the Tribe. Many of the community lifelines in those locations are in proximity to chemical fixed sites and should be prioritized in case of a spill that requires cleanup efforts.

Tier II data to be provided.

Figure: Tier II Hazardous Material Facilities
Map to be added

Hazardous material releases during transportation primarily occur on major transportation routes. A large number of spills also typically occur during the loading and unloading of chemicals for highway and pipeline chemical transport. Transportation corridors in the planning area are primarily US Routes and State Routes. There are no railroads within the Reservation. A map of transportation corridors can be seen in Figure 54. Major highways in the Reservation are shown with a half-mile buffer.

According to PHMSA, there are several gas transmission and hazardous liquid pipelines located in the planning area. A map of the pipelines from PHMSA for Archuleta and La Plata Counties can be seen below (Figure 55 and Figure 56).⁷² The U.S. Energy Information Administration (EIA) indicates that there are multiple natural gas pipelines, and no crude oil or petroleum product pipelines that run through the county.⁷³

⁷² Pipeline and Hazardous Materials Safety Administration. 2024. "National Pipeline Mapping System." <https://www.npms.phmsa.dot.gov/>.

⁷³ U.S. Energy Information Administration. 2023. "Maps – Crude Oil Pipelines, Natural Gas Interstate and Intrastate Pipelines, Petroleum Products Pipelines." https://www.eia.gov/maps/layer_info-m.php

Figure 52: Oil and Gas Wells

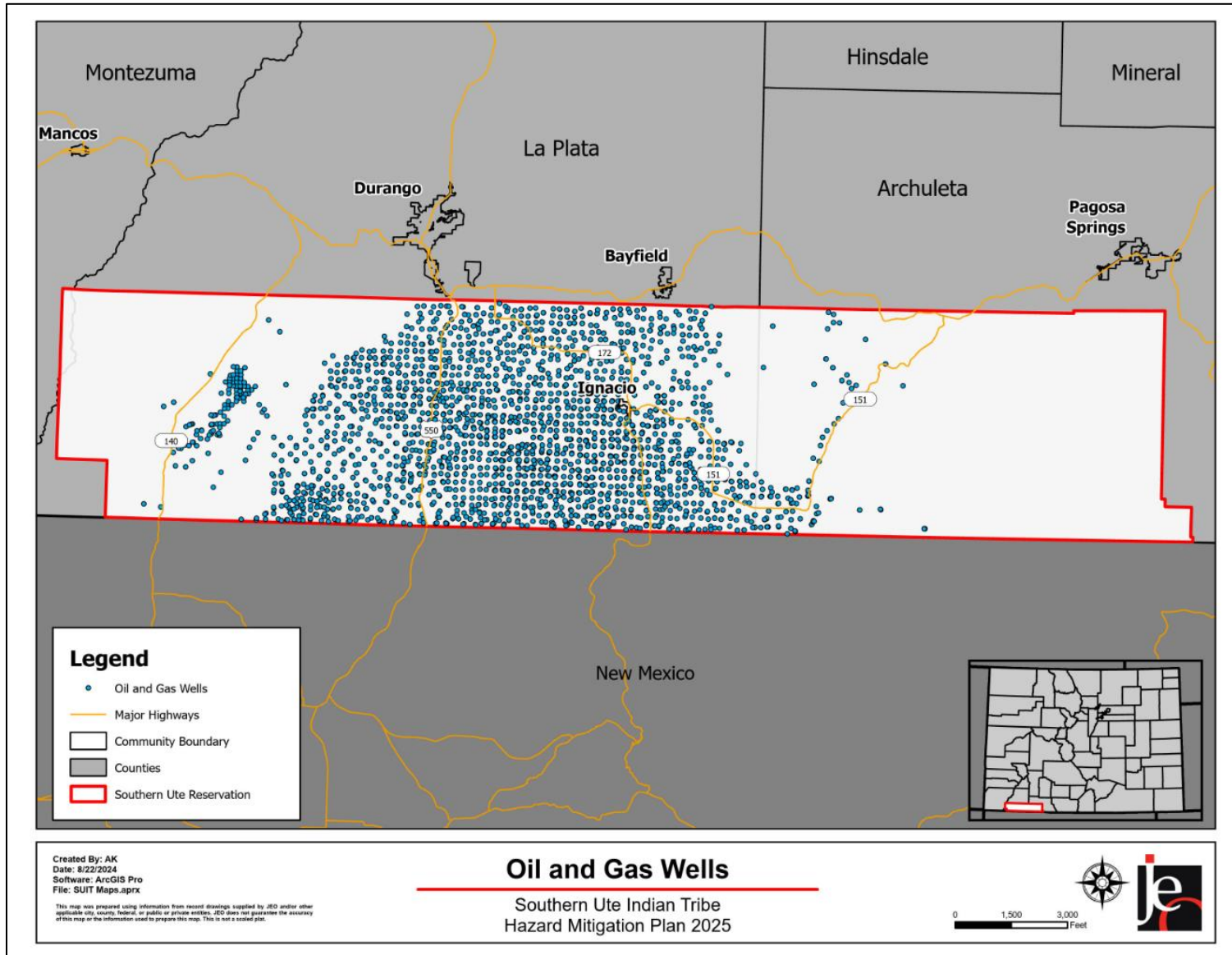
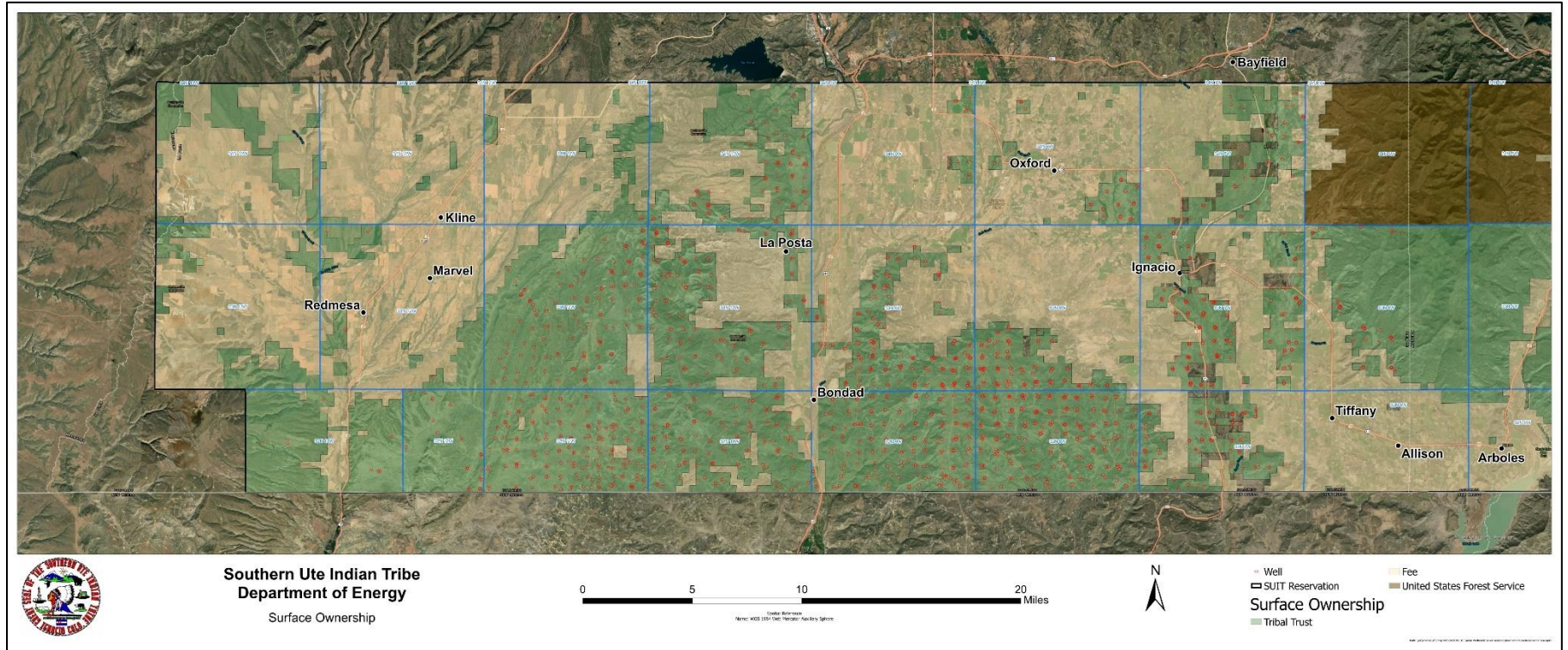


Figure 53: Tribal Land with Likely Energy Assets (shown in green)



Source: SUIT DOE, 2024

Figure 54: Transportation Corridors

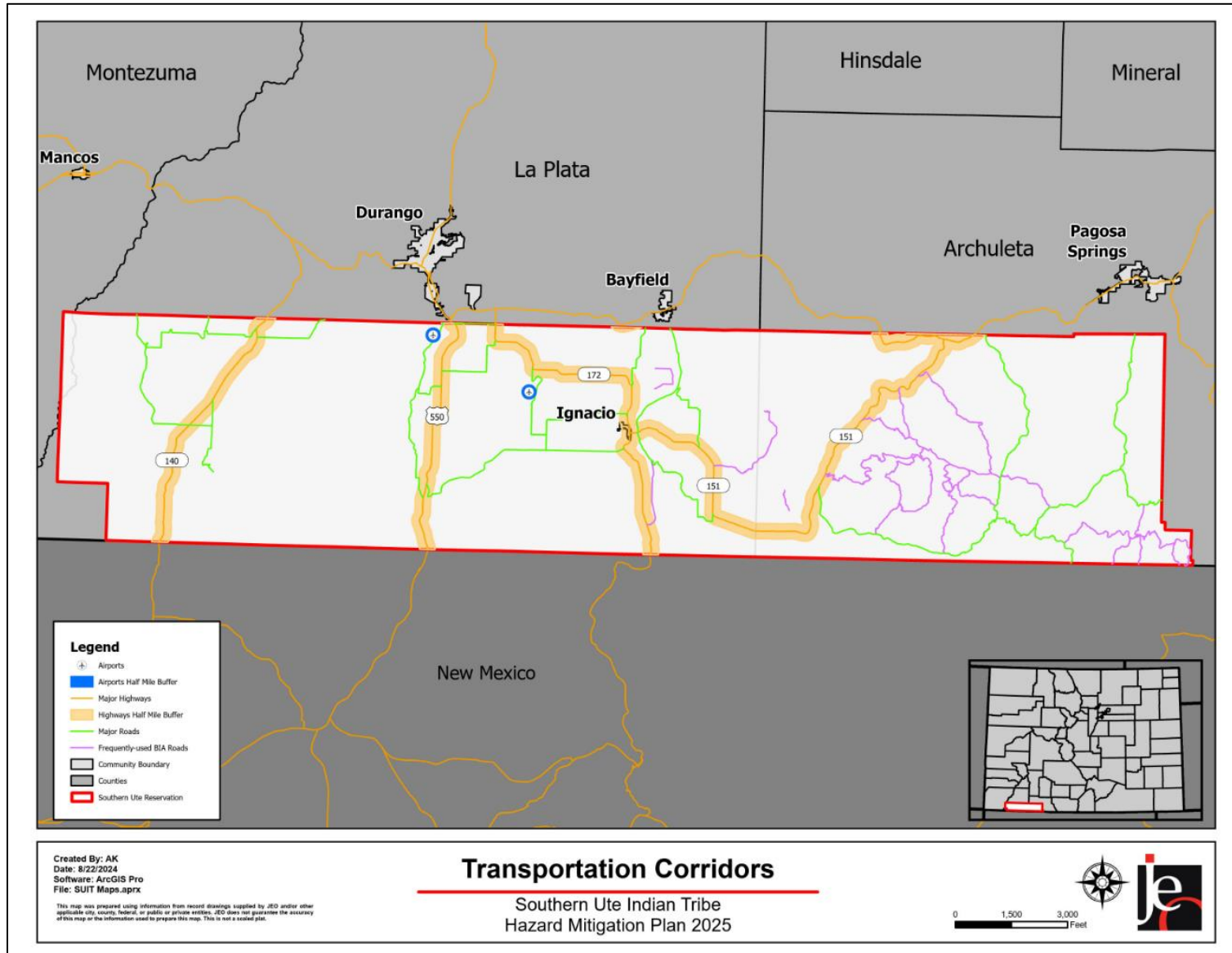
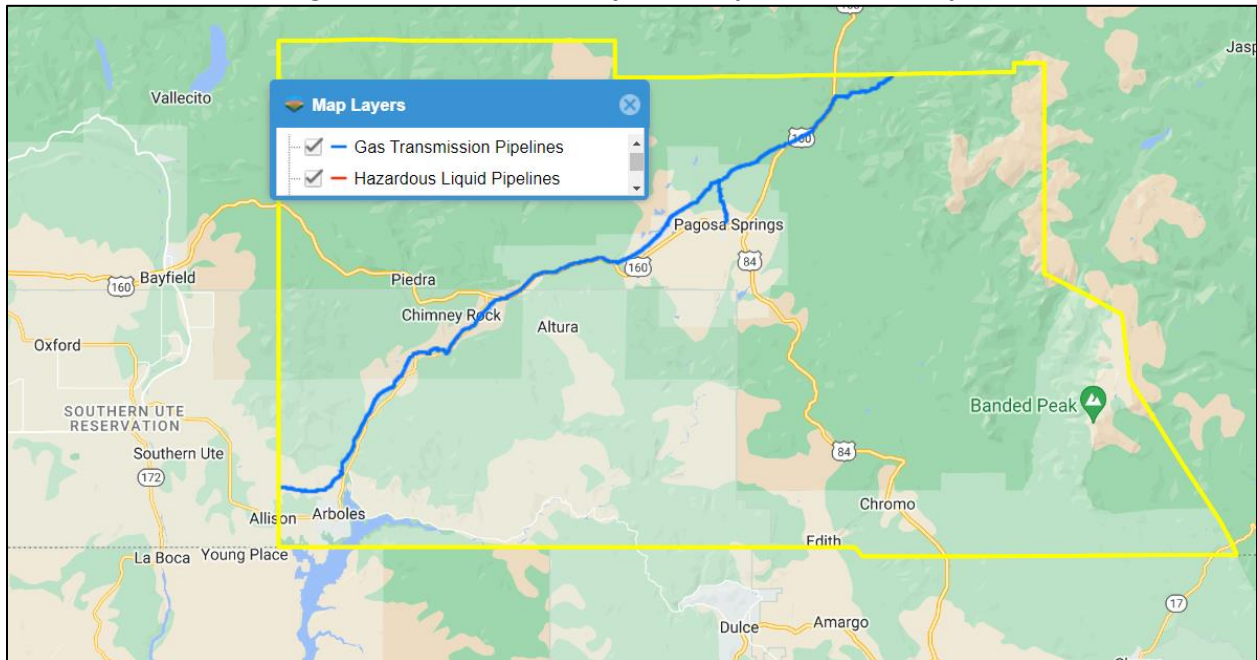
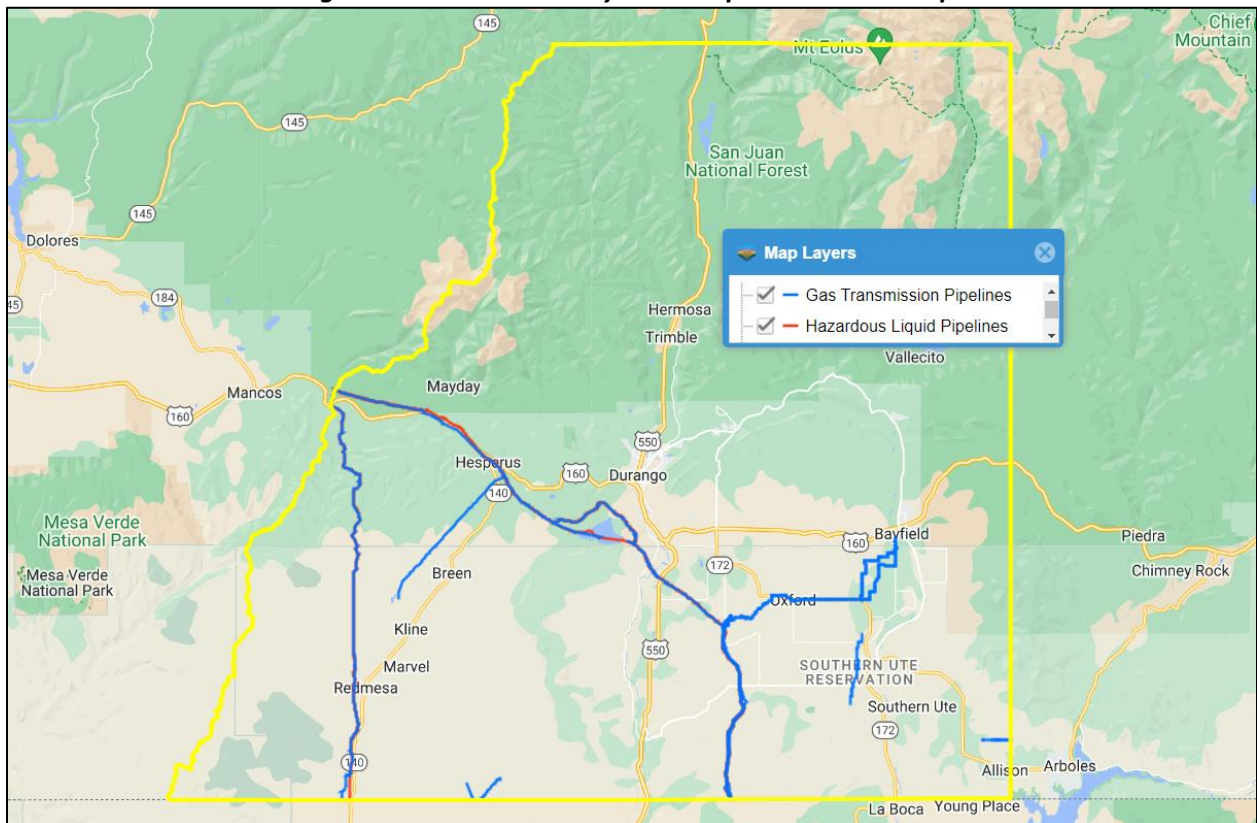


Figure 55: Archuleta County Public Pipeline Viewer Map



Source: National Pipeline Mapping System⁷⁴

Figure 56: La Plata County Public Pipeline Viewer Map



⁷⁴ National Pipeline Mapping System. 2024. "Public Viewer." Accessed June 2024. <https://pvnpm.s.phmsa.dot.gov/PublicViewer/>.

Historical Occurrences

The National Response Center (NRC) is the national point of contact for reporting oil and chemical spills in the United States. According to the NRC, there have been 12 fixed site chemical spills between 1990 and 2022 within Archuleta and La Plata Counties. There were no reported injuries, fatalities, or damages.

The U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) reports transportation of chemical material incidents. According to PHMSA, 57 hazardous material transportation spills have been reported within Archuleta and La Plata Counties between 1971 and 2023. This does not mean other spill events did not occur in the planning area, simply that they may not be reported here. From those hazardous material transportation spills no evacuations, injuries, or fatalities were reported. Total damages were estimated at \$473,242.

Due to the lack of a comprehensive database on gas and oil explosions, it is unknown if or how many events occurred in the Reservation. Seismic data from the USGS does indicate that five separate explosion events occurred in the western part of the Reservation. This could indicate possible explosions from gas or oil wells.

Average Annual Losses

There have been 12 chemical fixed site spills in the planning area reported from the NRC, and 57 transportation spills as reported by PHMSA. Neither the NRC nor PHMSA track crop losses from chemical spills. These events resulted in a reported \$473,242 total in property damages. This does not include losses from displacement, functional downtime, economic loss, injury, or loss of life.

Table 41: Hazardous Material Event Losses

HAZARD TYPE	NUMBER OF EVENTS	TOTAL INJURIES	TOTAL EVACUATED	TOTAL LOSS
CHEMICAL FIXED SITE SPILLS	12	0	0	\$0
CHEMICAL TRANSPORTATION SPILLS	57	0	0	\$473,242
GAS/OIL EXPLOSIONS	N/A	N/A	N/A	N/A

Source: NRC, 1990-2022; PHMSA, 1971-2023

Gas/Oil Explosion data was not available.

Extent

The extent of chemical spills at fixed sites varies and depends on the type of chemical that is released with a majority of events localized to the facility. The probable extent of chemical spills during transportation is difficult to anticipate and depends on the type and quantity of chemical released. There has been a total of 69 hazardous material spills in the planning area. No spill events led to injuries, fatalities, or injuries. Based on historical records, it is likely that any spill involving hazardous materials will not affect an area larger than a quarter mile from the spill location.

Probability

Given the historical record of occurrence for fixed chemical spill events, there is a 21 percent probability that a spill will occur annually in these two counties (7 out of 33 years with a reported event).

For chemical transportation spill events, there is a 49 percent probability that a spill will occur annually in these two counties (26 out of 53 years with a reported event).

Based on this historical record, the annual probability of hazardous material spills occurring in the future is *Possible*.

Climate Change Impacts

Shifting climate trends will have a direct impact on water and energy demands. As the number of 100°F days increases, along with warming nights, the stress placed on the energy grid will likely increase and possibly lead to more power outages. Severe weather events also stress energy production, infrastructure transmission, and transportation. Roads are at risk of damages from flooding, extreme heat, erosion, or added stress from increased residential demands.⁷⁵ Critical facilities and vulnerable populations that are not prepared to handle periods of power outages, particularly during heat waves, will be at risk.

Overall Vulnerabilities

Resident safety is a major vulnerability during hazardous material spills due to the potential for negative health impacts and the need to evacuate. Elders or those with disabilities may have trouble evacuating during chemical releases. To reduce the risk to people and property damage, future development should encourage chemical storage and manufacturing facilities to be built away from critical facilities or vulnerable areas such as medical facilities, schools, daycares, tribal elder residences, or culturally significant areas. Specific vulnerabilities exist for critical facilities or vulnerable population centers (schools, daycares, medical facilities, etc.) which are most heavily populated during the daytime as most chemical transportation incidents occur during the weekday daytime hours.

The Southern Ute Indian Tribe's Emergency Operations Plan (EOP) outlines multiple vulnerabilities to hazardous material releases. These include the BP Amoco refinery located 13 miles west of Ignacio on County Road 307, along with the gathering lines that enter and exit the facility. A release at the refinery would have the greatest impact on families and property adjacent to it. The Durango/La Plata County Airport is located a mile to the east and would also be greatly impacted. The Public Service Co. also has a delivery station 10 miles east of Ignacio on County Road 330. Impacts from a release at the delivery station would be harm and damage to the families and property near the station.

Another vulnerability stated in the EOP is the numerous gas and oil wells located throughout the SUIT Reservation. Compressor stations, such as those in the Mesa Mountains (southwest of Ignacio) and the Picnic Flats (west of the Animas River), could also cause problems if a release were to occur. The greatest impact would be the potential damage to natural resources such as the forest and cultural sites.

⁷⁵ USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II: Report-in-Brief [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 186 pp.

Landslide/Rockfall

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

Landslide

Typical landslides are the downward and outward movement of slopes with dirt, rocks, vegetation, and other debris. Landslides may also be referred to as slumps, rockslides, debris slides, lateral spreading, debris avalanche, earth flows, and soil creep. The size of a landslide usually depends on the geology and landslide triggering mechanism. Landslides initiated by rainfall tend to be smaller, while those initiated by earthquakes may be very large.

Landslides are typically triggered by periods of heavy rainfall or rapid snowmelt. Earthquakes, changes to hydrology, removal of vegetation, and excavations may also trigger landslides. Certain geologic formations are more susceptible to landslides than others. Human activities, including locating development near steep slopes, can increase susceptibility to landslide events as well. Landslides on steep slopes are more dangerous because movements can be rapid. Some characteristics that determine the type of landslide are slope of the hillside, moisture content, and the nature of the underlying materials.

Slow moving landslides can occur on relatively gentle slopes and can cause significant property damage. However, slow moving landslides are far less likely to result in serious injuries than rapidly moving landslides that can leave little time for evacuation.

Rockfall

Rockfall occurs when blocks of material come loose on steep slopes. Weathering, erosion, or excavations, such as those along highways, can cause falls where the road has been cut through bedrock. They are fast moving with the materials free falling or bouncing down the slope. The volume of material involved could be large or small, and the velocity of the fall may cause significant damage. Rockfalls can threaten human life, impact transportation corridors and communication systems, and result in other property damage. Spring is typically the rockfall season in Colorado as snow melts and saturates soils and temperatures enter into freeze/thaw cycles.

Location

Due to the varied topography of the Reservation, many areas with sloping terrain may experience landslides, debris flow, and rockfall hazards. In 2002, the Colorado Geological Survey updated the Colorado Landslide Mitigation Plan.⁷⁶ The updated plan contains a ranked list of communities, areas, and facilities most at risk from landslides. Hazard areas are grouped by relative severity into three tiers:

- **Tier One** – Serious cases needing immediate or ongoing action or attention because of the severity of potential impacts.

⁷⁶ Rogers, W.P. 2005. "Critical Landslides of Colorado." CGS. <https://coloradogeologicalsurvey.org/hazards/landslides/>.

- **Tier Two** – Significant but less severe; or where adequate information and/or some mitigation is in place; or where current development pressures are less extreme.
- **Tier Three** – Similar to Tier Two but with less severe consequences or primarily local impacts.

One area near the SUIT Reservation was identified in the Colorado Landslide Mitigation Plan as a Tier One hazard type. The plan provides the following description of the area.⁷⁷

Tier One

San Juan River Landslide (Jackson Mountain), one-half mile below confluence of East Fork and West Fork of San Juan River, Archuleta County

“This active landslide is caused by erosion of the west bank of the San Juan River as it impinges on the weak shaley bank materials to the northwest. The slide is horseshoe shaped and is about 2,000 ft. in width at the highway and extends about one-half mile upslope. The slide is known to have been active since about 1970. Several times since then it has severed the highway, requiring closures. It has also disrupted water and gas supply lines for the town of Pagosa Springs. Each time the slide has advanced, the highway and utility lines have eventually been restored, only to repeat the cycle the next time that river erosion and high soil moisture prevail.

The utility lines for the town of Pagosa Springs have been re-designed to above-ground lines to minimize damage and repair costs. Structural mitigation by armoring and buttressing the riverbank/roadway fill would probably not be effective for very long considering the size and instability of the upslope slide mass. Because of its reactivation, with disruption of US Hwy 160 at approximately ten-year intervals, this is a continuing serious hazard that must eventually be mitigated. Avoiding the slide area would involve two river crossings for the highway and re-routing and two river crossings for the utilities.” “...this alternative should be given serious consideration in medium to long range planning for US Hwy 160 corridor and the utility lines.”

Historical Occurrences

According to SHELDUS, there were 17 reported landslide events in Archuleta and La Plata Counties between 1960 and 2022; however, no damage or injuries were reported.⁷⁸ Although the USGS Landslide Hazard Program’s Inventory reported no individual landslide point locations, the Colorado Geological Survey provides a map showing areas where landslides have likely occurred (Figure 58). There are likely landslides which have occurred in rural portions of the reservation which have also not been reported. According to the Tribal planning team, rockfall events occur periodically. One recent rockfall occurred on County Road 310 near Bondad where a boulder landed in the middle of the road. This stretch of road, just east of Highway 550, is prone to rockfall events, especially where there is a steep grade. No fatalities or injuries were reported from any landslide or rockfall events.

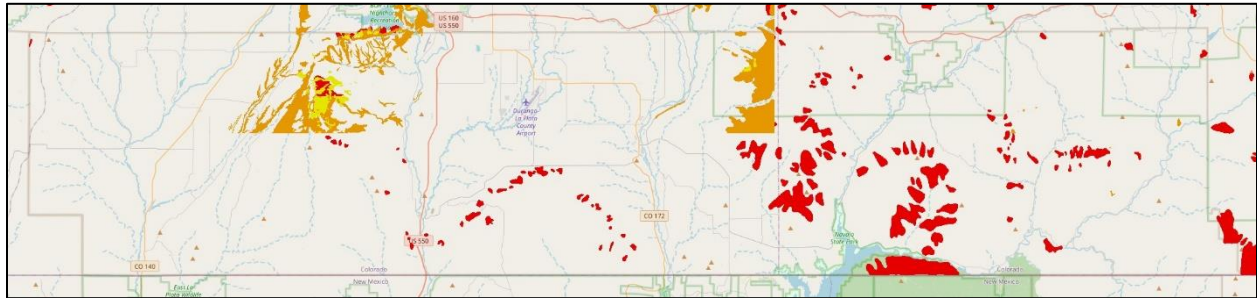
⁷⁷ Rogers, W.P. 2005. “Critical Landslides of Colorado.” CGS. <https://coloradogeologicalsurvey.org/hazards/landslides/>.

⁷⁸ Arizona State University. 2024. “Spatial Hazard Events and Losses Database for the United States (SHELDUS)”. <https://sheldus.asu.edu/SHELDUS/>.

Figure 57: Rockfall Along CR 318/310



Photo by TPC Member

Figure 58: Areas Likely to Have Experienced Landslide Events

Source: CGS, 2024⁷⁹

Average Annual Losses

Due to a lack of reported landslide events and minimal rockfall reports, it is not possible to calculate average annual loss for landslides and rockfall in the planning area.

Extent

Given a lack of reported landslide impacts, no reported economic damages, and the rural nature of this region, the extent of a landslide event is likely minimal. The most vulnerable locations for landslides in the reservation are near community centers or homes in non-developed, rural areas.

Probability

Due to a lack of reported landslide and rockfall events, it is not possible to calculate landslide probability for the SUIT reservation. Based on this historical record, the annual probability of landslides or rockfall occurring in the future is *Unknown*.

Impacts from Climate Change

As climate change continues to impact local weather events in the area, the risk of landslides and rockfall may increase alongside increasing frequency and magnitude of heavy rain or drought events.

Overall Vulnerabilities

Vulnerabilities to landslide and rockfall events exist for both residents and the built environment. Injuries can occur when landslides or rockfall occur near developed areas, primarily if residents are unable to avoid debris flows. Other vulnerabilities exist for agricultural land and injuries to cattle, horses, or other livestock; and to underground infrastructure such as water pipes. Existing water pipes in the reservation are aged and brittle in many areas.

79 Colorado Geological Survey. 2024. "Colorado Landslide Inventory."
<https://cologeosurvey.maps.arcgis.com/apps/webappviewer/index.html?id=9dd73db7fbc34139abe51599396e2648>.

Severe Thunderstorms/Lightning/Hail

Severe thunderstorms are common and unpredictable seasonal events which typically occur between April and September. A severe thunderstorm is typically defined as a storm that produces lightning, hail one inch or more in diameter, or winds of 50 knots (58 mph) or more. When cold upper air sinks and the warm, moist air rises, storm clouds or “thunderheads” develop, resulting in thunderstorms. This can occur singularly, in clusters, or in lines. Lightning, by definition, is present in all thunderstorms and can cause harm to humans and animals, fires to buildings and agricultural lands, and electrical outages in electrical systems. Lightning can strike up to 25 miles from the portion of the storm depositing precipitation.

While the majority of thunderstorms do not cause damage, they can escalate to severe storms and the potential for damages increases. Damages can include: crop losses from wind and hail; property losses due to building and automobile damages from hail; high wind; flash flooding; and death or injury to humans and animals from lightning, drowning, or getting struck by falling or flying debris. Figure 59 displays the average number of days with thunderstorms across the country each year. The planning area experiences an average of 54 to 63 thunderstorms over the course of one year.

Hail

Hail is considered precipitation in the form of irregular pellets or balls of ice that are more than 5 millimeters in diameter falling from a cumulonimbus cloud.

Lightning

Lightning is a visible electrical discharge from a thunderstorm that can occur within or between clouds, between cloud and air, between cloud and the ground, or between the ground and a cloud.

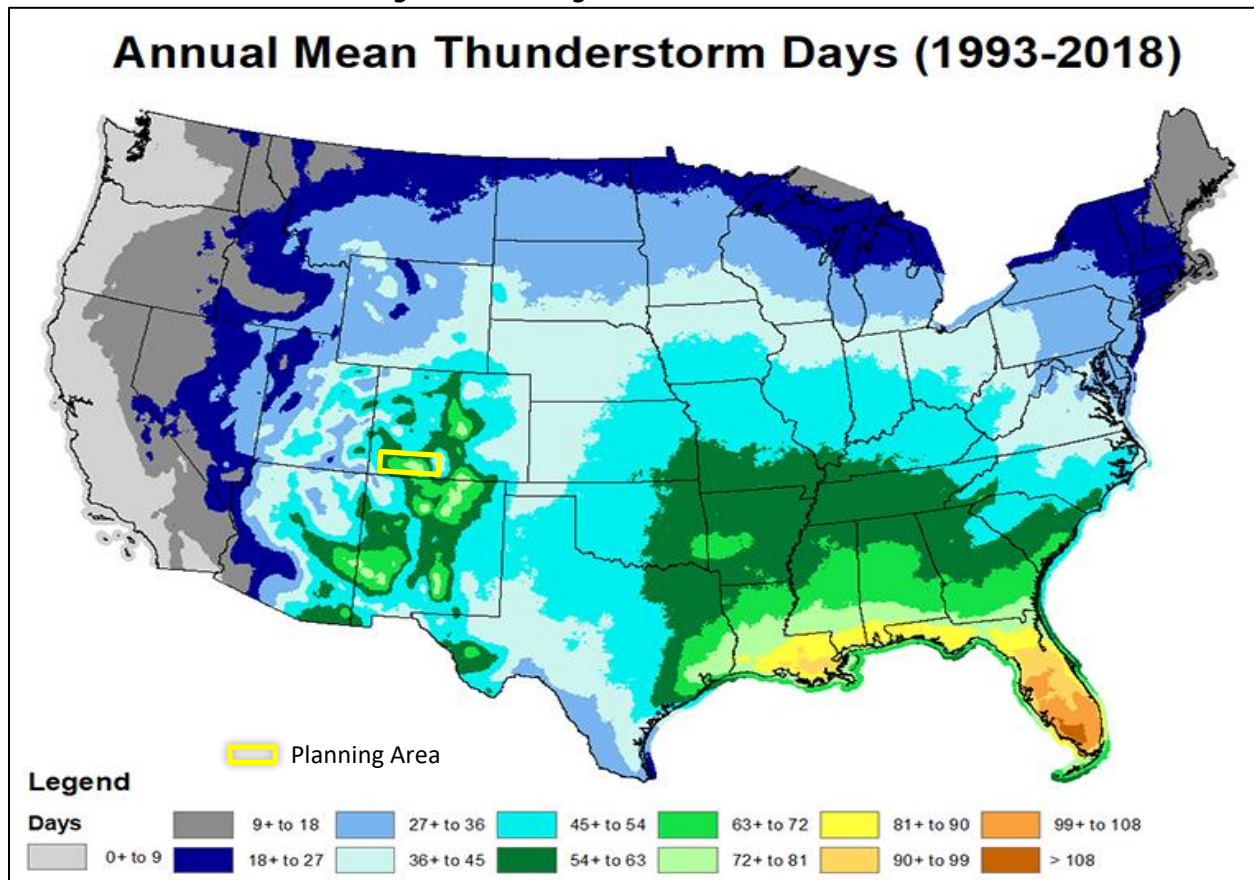
Heavy Rain

Thunderstorms typically produce heavy rainfall for a short period. Heavy rains can cause flash flooding, which can have catastrophic effects.

Thunderstorm Wind

Thunderstorms are produced by a cumulonimbus cloud and are accompanied by lightning and thunder. Downbursts and derechos are strong winds that can cause significant damage during a thunderstorm.

Figure 59: Average Annual Thunderstorms



Location

The entire area of the SUIT reservation is subject to severe thunderstorms including lightning, hail, wind, and heavy rain.

Historical Occurrences

Severe thunderstorms in the planning area usually occur in the afternoon and evening during the summer months. The NCEI reports events as they occur in each community. A single severe thunderstorm event can affect multiple communities and counties at a time; the NCEI reports these large scale, multi-county events as separate events. The result is a single thunderstorm event covering the entire reservation could be reported by the NCEI as multiple events in both Archuleta and La Plata Counties. The NCEI does not identify events as they occur specifically within the SUIT reservation, thus all records for Archuleta and La Plata Counties are included in this analysis.

The NCEI reports a total of 33 thunderstorm wind, 72 heavy rain, 26 lightning, and 40 hail events in Archuleta and La Plata counties from 1996 to 2023. In total these events resulted in \$1,596,478 in property damages. The USDA RMA data does not specify severe thunderstorms as a cause of loss, however heavy rains and hail which may be associated with severe thunderstorms caused \$145,511 in crop damages in

80 National Weather Service. 2020. "Global Weather: Introduction to Thunderstorms." https://www.weather.gov/jetstream/tstorms_intro#:~:text=It%20is%20estimated%20that%20there,its%20share%20of%20thunderstorm%20occurrences.

the two counties. There were nine injuries, and three fatalities reported in association with these storm events; however, none were reported within the Reservation. The Tribal planning team indicated that past lightning strikes have resulted in many wildfire events in the Reservation. The Sky Ute Casino and Resort has also been impacted by lightning. A direct hit to the central plant building in 2017 damaged generators, HVAC, and SCADA systems. Damage extended to the chapel, with its HVAC also affected. The Tribe is looking to improve its lightning protection across the area and is currently seeking grant funding to fund best management practices for electrical infrastructure. Power outage also has occurred on the Reservation due to severe thunderstorm events.

Average Annual Losses

The average damage per event estimate was determined based upon recorded damages from the NCEI Storm Events Database (1996-2023) and number of historical occurrences. This does not include losses from displacement, functional downtime, economic loss, injury, or loss of life. Severe thunderstorms cause an average of \$57,017 per year in property damages and \$1,257 in crop damages annually.

Table 42: Severe Thunderstorm Losses

HAZARD TYPE	# OF EVENTS ¹	AVERAGE # EVENTS PER YEAR	TOTAL PROPERTY LOSS ¹	AVERAGE ANNUAL PROPERTY LOSS	TOTAL CROP LOSS ²	AVERAGE ANNUAL CROP LOSS
HAIL	40	1.4	\$87,500	\$3,125	\$21,028	\$876
HEAVY RAIN	72	2.6	\$36,000	\$1,286		
LIGHTNING	26	0.9	\$259,250	\$9,259		
THUNDERSTORM WINDS	33	1.2	\$1,213,728	\$43,347		
TOTALS	171	6.1	\$1,596,478	\$57,017	\$30,156	\$1,257

Source: 1 NCEI (1996-2023), 2 USDA RMA (2000-2023)

Extent

The geographic extent of a severe thunderstorm event may be large enough to impact the entire planning area (such as in the case of a squall line, derecho, or long-lived supercell) or just a few square miles, in the case of a single cell that marginally meets severe criteria. The NWS defines a thunderstorm as severe if it contains hail that is one inch in diameter or capable of winds gusts of 58 mph or higher. The Tornado and Storm Research Organization (TORRO) scale is used to classify hailstones and provides some detail related to the potential impacts from hail. Table 43 outlines the TORRO Hail Scale.

Table 43: TORRO Hail Ranking

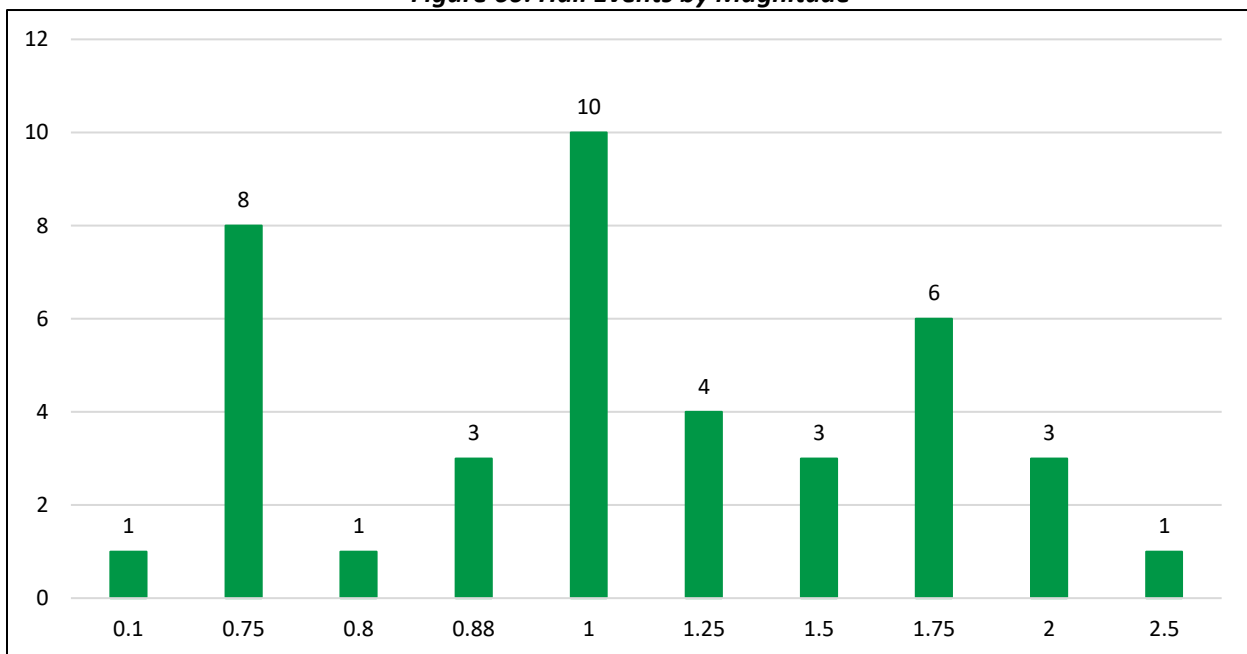
Class	Type of Material	Divisions
H0: Hard Hail	5 mm; 0.2 in (pea size)	No damage
H1: Potentially Damaging	5-15 mm; 0.2-0.6in (marble)	Slight general damage to plants and crops
H2: Significant	10-20 mm; 0.4-0.8 in (grape)	Significant damage to fruit, crops, and vegetation
H3: Severe	20-30 mm; 0.8-1.2 in (walnut)	Severe damage to fruit and crops, damage to glass and plastic structures
H4: Severe	30-40mm; 1.2-1.6 in (squash ball)	Widespread damage to glass, vehicle bodywork damaged

Class	Type of Material	Divisions
H5: Destructive	40-50 mm; 1.6-2.0 in (golf ball)	Wholesale destruction of glass, damage to tiled roofs; significant risk of injury
H6: Destructive	50-60 mm; 2.0-2.4 in (chicken egg)	Grounded aircrafts damaged, brick walls pitted; significant risk of injury
H7: Destructive	60-75 mm; 2.4-3.0 in (tennis ball)	Severe roof damage; risk of serious injuries
H8: Destructive	75-90 mm; 3.0-3.5 in (large orange)	Severe damage to structures, vehicles, airplanes, risk of serious injuries
H9: Super Hail	90-100 mm; 3.5-4.0 in (grapefruit)	Extensive structural damage, risk of severe or even fatal injuries to persons outdoors
H10: Super Hail	>100 mm; >4 in (melon)	Extensive structural damage; risk of severe or even fatal injuries to persons outdoors.

Source: TORRO, 2017⁸¹

The NCEI reported 40 individual hail events across the planning area. As the NCEI reports events per county, this value overestimates the total amount of thunderstorm events. The average hailstone size was 1.20 inches. Events of this magnitude correlate to an H4 Severe classification. It is reasonable to expect H4 classified events to occur several times in a year throughout the planning area. In addition, it is reasonable, based on the number of occurrences, to expect larger hailstones to occur in the planning area annually. The following figure outlines average hail size by event.

Figure 60: Hail Events by Magnitude



Source: NCEI, 1996-2023

Probability

Based on historical records and reported events, severe thunderstorm events are likely to occur on an annual basis. The NCEI reported a severe thunderstorm event (hail, lightning, heavy rain, or thunderstorm

⁸¹ Tornado and Storm Research Organization. 2017. "Hail Scale." <http://www.torro.org.uk/hscale.php>.

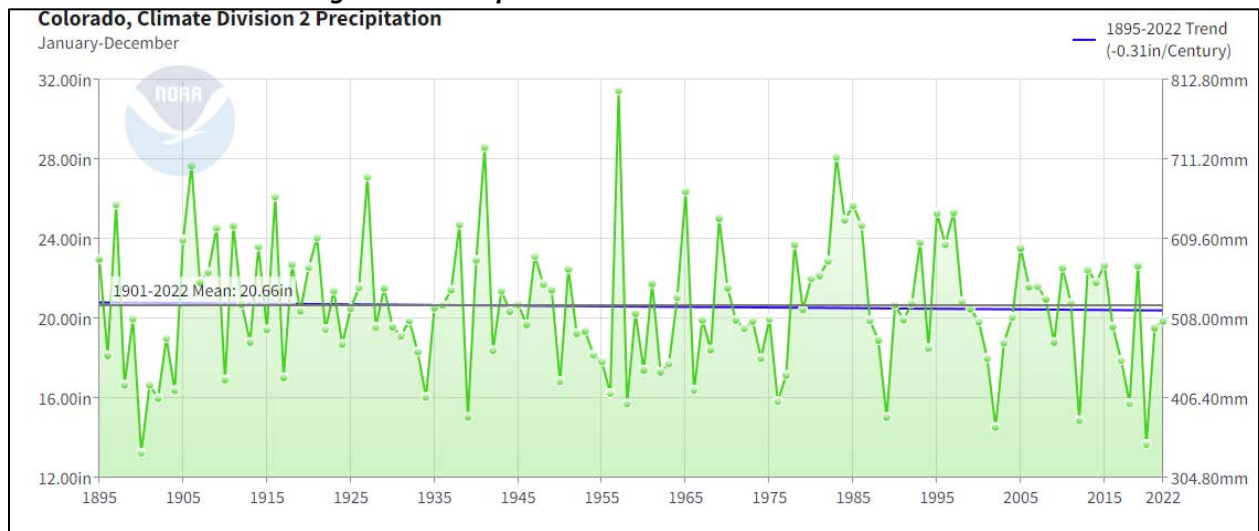
winds) 27 out of 28 years during the period of record (1996-2023), resulting in 96 percent chance annually for thunderstorms.

Based on this historical record, the annual probability of thunderstorms occurring in the future is *Highly Likely*.

Impacts from Climate Change

With the changing climate, precipitation is projected to increase in the winter and possibly decrease in the summer. Although heavier winter precipitation could provide important water for the water-scarce Southwest, projected rising temperatures will raise the snow line. More precipitation will likely fall as rain instead of snow, which will reduce water storage in the snowpack, particularly at those lower mountain elevations that are now on the margins of reliable snowpack accumulation.

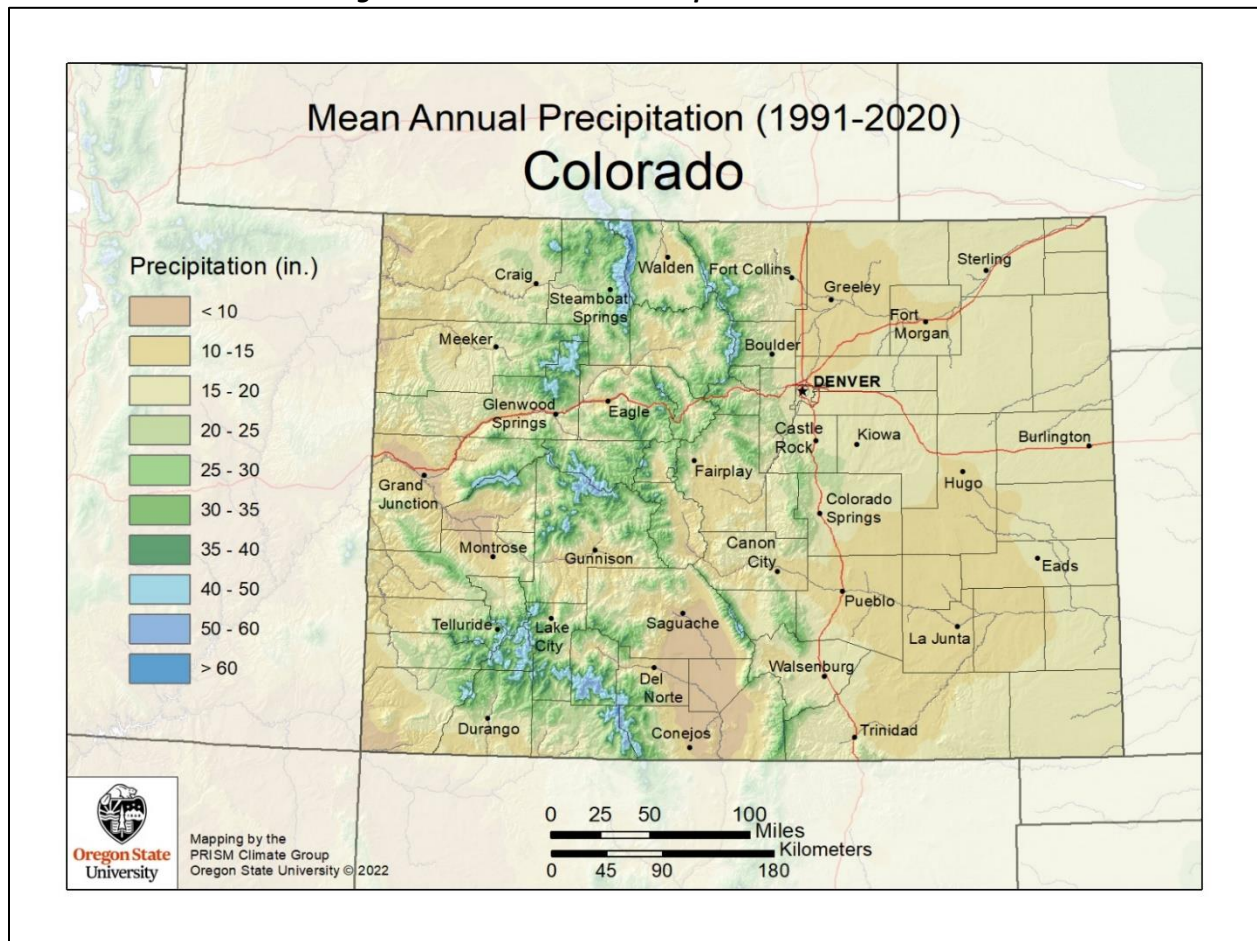
Figure 61: Precipitation - Colorado Climate Division 2



Source: NOAA, 2024⁸²

82 NOAA. 2024. "Climate at a Glance: Divisional Time Series.". Accessed Sept 2024. https://www.ncdc.noaa.gov/cag/statewide/time-series/24/pcp/12/12/1895-2024?base_prd=true&begbaseyear=1901&endbaseyear=2024&trend=true&trend_base=100&begtrendyear=1895&endtrendyear=2024

Figure 62: Mean Annual Precipitation - Colorado



Source: Oregon State University PRISM Climate Group, 2024⁸³

Vulnerabilities to Cultural Resources

Buffalo are incredibly hardy animals and are likely to weather severe thunderstorms well with no major hardship. However, the infrastructure around the buffalo pastures is at greater risk during severe storms of damage or failure, leading to buffalo escaping from designated pens. This is a large concern and would pose a massive challenge to local law enforcement and tribal departments to return the herd to their designated space.

Physical cultural resource sites such as the Powwow grounds, Bear grounds, museum, and cemetery are at risk of damage during severe thunderstorms, particularly from hail and wind impacts.

Overall Vulnerabilities

Vulnerable populations at greatest risk to severe thunderstorms include the elderly, those living in aged or damaged homes, and those caught outside during storm events. During severe thunderstorms, it is not uncommon for residents and towns to lose power for a temporary or prolonged period of time. These power outages may prove deadly for elders or disabled residents that are reliant upon powered medical

83 Oregon State University PRISM Climate Group. "Average Annual Precipitation for Colorado". Accessed September 2024. https://prism.oregonstate.edu/projects/gallery_view.php?state=CO

devices. Tribal elders or residents with disabilities are generally less mobile than many other members of the community, making them more vulnerable to a wide range of threats. Unanchored or improperly anchored mobile homes are at high risk during thunderstorms because they can be turned over by winds of 60 to 70 mph.

Agriculture is at risk during severe thunderstorms when cattle or horses are caught outside. Heavy rain from thunderstorms may trigger flash flooding. Hail, lightning strikes, downed trees, or flash floods from heavy rain can cause injury or fatalities to livestock. Lightning generally causes little direct damage, but it is responsible for starting wildfires in the right conditions, which can result in significant damage.

Severe Winter Storms

Winter storms and winter conditions can bring extreme cold, freezing rain, heavy or drifting snow, and blizzards. Blizzards are particularly dangerous due to drifting snow and the potential for rapidly occurring whiteout conditions which greatly inhibit all travel. Generally, winter storms occur between October and April in the planning area.

- **Blizzards** - Blizzards are particularly dangerous due to drifting snow and the potential for rapidly occurring whiteout conditions, which greatly inhibits vehicular traffic. Heavy snow is usually the most defining element of a winter storm. Large snow events can cripple the entire reservation for several days by hindering transportation, knocking down tree limbs and utility lines, structurally damaging buildings, and injuring or killing crops and livestock.
- **Extreme Cold** - Along with snow and ice storm events, extreme cold is dangerous to the well-being of people and animals. What constitutes extreme cold varies from region to region but is generally accepted as temperatures that are significantly lower than the average low temperature. For the planning area, the coldest months of the year are January, February, and December. The average low temperatures for these months are all below freezing (average low for the three months in the planning area is 13.0°F). The average high temperatures for the months of January, February, and December are near 40.7°F in the planning area.⁸⁴
- **Ice Accumulation** - Along with snow events winter storms also have the potential to deposit significant amounts of ice. Ice buildup on tree limbs and power lines can cause them to collapse. This is most likely to occur when either rain falls and freezes upon contact, especially in the presence of wind, or snowfall warms to thaw and re-freezes. Ice accumulation can also lead to many problems on the roads, as it makes them slick, causing automobile accidents, and making vehicle travel difficult.

Location

The entire SUIT Reservation is at risk of severe winter storms.

Historical Occurrences

Due to the regional scale of severe winter storms, the NCEI reports events as they occur in each county. For the purposes of this plan, records were collected from both Archuleta and La Plata counties as NCEI does not collect reservation specific records. According to the NCEI, there were a combined 355 severe winter storm events for the planning area from 1996 to 2023. These recorded events caused a total of \$330,000 in property damages and \$124,483 in crop damages.

The most damaging event occurred on November 8, 1998, as the NCEI stated: "A cold and moist Pacific trough produced the first major winter storm of the season for western Colorado. 8 to 24 inches of snow fell in most mountain areas. 6 to 10 inches accumulated in most lower elevation areas of west-central and southwest Colorado. Some of the largest snow totals included 25 inches at Telluride, 24 inches at Purgatory Ski Area, 24 inches at Molas Pass and Coal Bank Pass, 24 inches at Aspen Ski Area, 19 inches near Ouray, 17 inches at Fort Lewis, 16 inches at Crested Butte, 15 inches near Pagosa Springs, and 15 inches on the Grand Mesa. Windy conditions produced areas of blowing a drifting snow in the mountains. A gust to 67 MPH was measured on the mountains above Telluride. Snow packed roads resulted in

⁸⁴ NOAA National Centers for Environmental Information. July 2024. "Data Tools: 1991-2020 Normals." [datafile]. <https://www.ncdc.noaa.gov/cdo-web/datatools/normals>.

numerous traffic accidents throughout western Colorado. The heavy snow broke down many power poles and trees in southwest Colorado, leaving over 10,000 people without power for a day or two. 20 residential fires were reported in the Durango area due to downed power lines. TV and CATV communications were disrupted in portions of southwest Colorado for about a day.”

Average Annual Losses

The average damages per event estimate was determined based upon NCEI Storm Events Database since 1996 and includes aggregated calculations for each of the five types of winter weather as provided in the database. This does not include losses from displacement, functional downtime, economic loss, injury, or loss of life. Severe winter storms have caused an average of \$11,786 per year in property damage for the planning area.

Table 44: Severe Winter Storm Losses

HAZARD TYPE	# OF EVENTS ¹	AVERAGE # EVENTS PER YEAR	TOTAL PROPERTY LOSS ¹	AVERAGE ANNUAL PROPERTY LOSS	TOTAL CROP LOSS ²	AVERAGE ANNUAL CROP LOSS
BLIZZARD	0	0	\$0	\$0	\$124,483	\$4,446
HEAVY SNOW	63	2.25	0	0		
ICE STORM	1	0.03	\$0	\$0		
WINTER STORMS	76	2.71	\$315,000	\$11,250		
WINTER WEATHER	215	7.68	\$15,000	\$536		
TOTALS	355	12.67	\$330,000	\$11,786	\$124,483	\$4,446

Source: 1 NCEI (1996-2023), 2 USDA RMA (2000-2023)

Extent

The Sperry-Piltz Ice Accumulation Index (SPIA) was developed by the NWS to predict the accumulation of ice and resulting damages. The SPIA assesses total precipitation, wind, and temperatures to predict the intensity of ice storms. Ice Storm Warnings are issued when accumulation of at least 0.25 inches is expected from a storm. The following figure shows the SPIA index.

Figure 63: SPIA Index

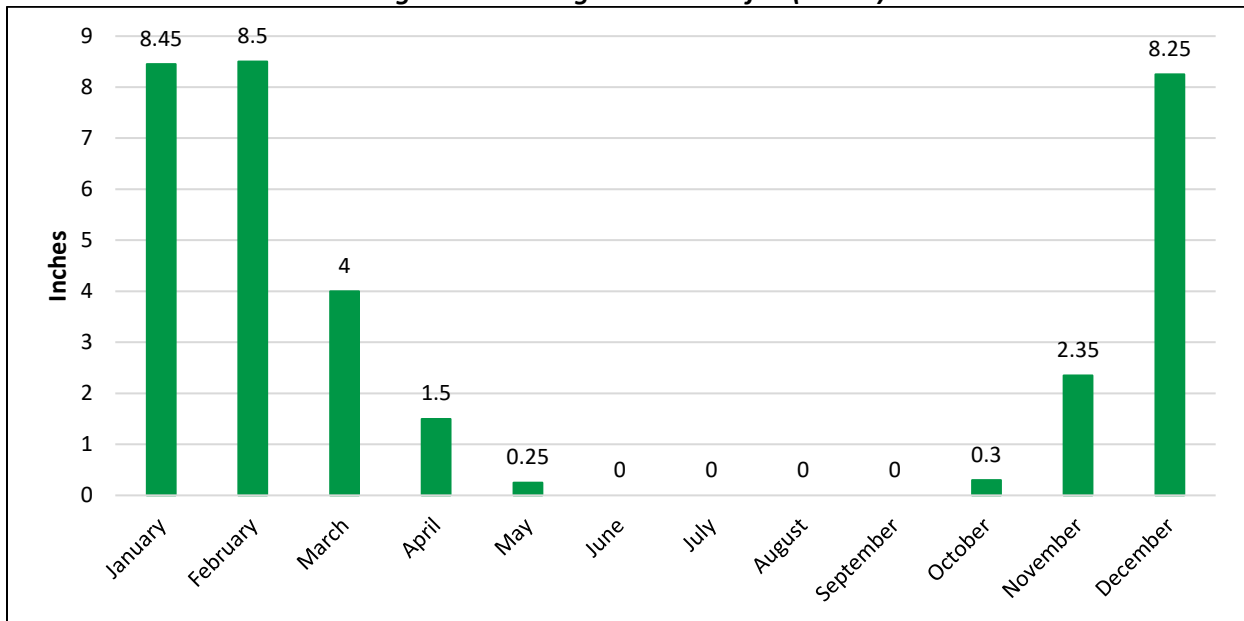
The Sperry-Piltz Ice Accumulation Index, or “SPIA Index”			
<i>Copyright, February, 2009</i>			
ICE DAMAGE INDEX	*AVERAGE ICE AMOUNT (in inches) <i>Revised: Oct. 2011</i>	WIND (mph)	DAMAGE AND IMPACT DESCRIPTIONS
0	<0.25	<15	Minimal risk of damage to exposed utility systems; no alerts or advisories needed for crews, few outages.
1	0.10 – 0.25	15 – 25	Some isolated or localized utility interruptions are possible, typically lasting only a few hours. Roads and bridges may become slick and hazardous.
	0.25 – 0.50	>15	
2	0.10 – 0.25	25 – 35	Scattered utility interruptions expected, typically lasting 12 to 24 hours. Roads and travel conditions may be extremely hazardous due to ice accumulation.
	0.25 – 0.50	15 – 25	
	0.50 – 0.75	>15	
3	0.10 – 0.25	> – 35	Numerous utility interruptions with some damage to main feeder lines and equipment expected. Tree limb damage is excessive. Outages lasting 1 – 5 days.
	0.25 – 0.50	25 – 35	
	0.50 – 0.75	15 – 25	
	0.75 – 1.00	>15	
4	0.25 – 0.50	> – 35	Prolonged and widespread utility interruptions with extensive damage to main distribution feeder lines and some high voltage transmission lines/structures. Outages lasting 5 – 10 days.
	0.50 – 0.75	25 – 35	
	0.75 – 1.00	15 – 25	
	1.00 – 1.50	>15	
5	0.50 – 0.75	> – 35	Catastrophic damage to entire exposed utility systems, including both distribution and transmission networks. Outages could last several weeks in some areas. Shelters needed.
	0.75 – 1.00	> – 25	
	1.00 – 1.50	> – 15	
	> 1.50	Any	

(Categories of damage are based upon combinations of precipitation totals, temperatures and wind speeds/directions.)

Source: SPIA-Index⁸⁵

Average monthly snowfall for the planning area is shown below, which shows the snowiest months are between December and February. The annual average total snowfall for the region is approximately 33.6 inches according to NCEI. A common snow event (likely to occur annually) will result in accumulation totals between one and nine inches. Often these snow events are accompanied by high winds. It is reasonable to expect wind speeds of 45 to 45 mph with gusts reaching 60 mph or higher. Strong winds and low temperatures can combine to produce extreme wind chills of 20°F to 40°F below zero. It should be noted that, while recent climate trends indicate the frequency and intensity of severe winter storms is increasing, it is anticipated that the extent of snow cover will decrease in future years.

85 SPIA-Index. 2009. “Sperry-Piltz Ice Accumulation Index.” <https://www.spia-index.com/>.

Figure 64: Average Total Snowfall (inches)

Source: NCEI

Probability

Based on historical records and reported events, severe winter storm events are likely to occur on an annual basis. The NCEI reported a severe winter storm event (blizzard, heavy snow, ice storms, winter storms, or winter weather) every year within the period of record (1996-2023), resulting in 100 percent chance annually for severe winter storms.

Based on this historical record, the annual probability of winter storms occurring in the future is *Highly Likely*.

Impacts from Climate Change

With a changing climate, winter precipitation is projected to increase. An increase in winter precipitation can have positive impacts on Colorado's water-scarce Southwest, but it is projected that rising temperatures will raise the snow line. Rising temperatures will also result in an earlier melting of the snowpack, an increase in evaporation rates, and decreased soil moisture, which will further decrease water availability during the summer months.⁸⁶

Colorado is expected to receive more snow during mid-winter months at higher elevations.⁸⁷ However, as increasing temperatures persist over time, an earlier snowmelt may occur that changes the timing and efficiency of runoff.

⁸⁶ NOAA NCEI. 2024. "Colorado State Climate Summary." Accessed 2024. <https://statesummaries.ncics.org/chapter/co/>

⁸⁷ Colorado Department of Transportation. May 14, 2021. "Climate Study: Changing Climate and Extreme Weather Impacts on Geohazards in Colorado". <https://www.codot.gov/programs/planning/data-studies/cdot-climate-resilience-study.pdf>.

Vulnerabilities to Cultural Resources

Buffalo are incredibly hardy animals and are likely to weather severe weather well with no major hardship. However, severe winter storms with ice, snow, and winds can prevent access to the buffalo herd or down fencing. The infrastructure around the buffalo pastures is at greater risk during severe storms of damage or failure, leading to buffalo escaping from designated pens. This is a large concern and would pose a massive challenge to local law enforcement and tribal departments to return the herd to their designated spaces.

Severe winter storms can also have significant impacts on culturally sacred sites. These storm events can cause physical damage to the sites, such as erosion, structural damage from drifting snow, or hinder access to these sites, disrupting traditional practices integral to the tribe's culture.

Overall Vulnerabilities

Critical facilities and infrastructure including emergency response and recovery operations, warning and communication systems, wells and water treatment, and many other services vital for returning the jurisdiction's functions to normal, are at risk during winter storm events due to potential power outages, lack of access, and structural damages.

All building stock and infrastructure are at risk of being damaged or affected by a severe winter storm. Power outages, which occur on a regular basis with severe weather, in combination with cold temperatures and wind-chill, can pose a significant threat to human life.

The collection of snow and ice on power lines and electrical equipment can cause equipment damage, downed power lines, and a loss of electricity. Snow and ice accumulations on transportation corridors can lead to obstruction of traffic flow and hinder emergency response. Snowfall events can also trap residents in their homes until streets or homes are cleared. Weather patterns also vary drastically across the Reservation, with some areas receiving much greater snowfall than others. Severe winter storms can also cause significant damage to the natural environment and trees, with branches downing electrical lines, blocking roadways, or causing building and property damage. Trees across the Reservation have experienced damage and tree mortality due to heavy snow and ice accumulation.

An additional concern regarding heavy snowfall and persistent ground temperatures above freezing includes a phenomenon called Snow Mold. Snow molds are a variety of cold resistant soil-borne fungi that can impact winter crops and turfgrasses when snow cover persists for extended periods of time. The deep snow cover acts as insulation for the ground, allowing soil temperatures to remain just above freezing underneath the snow and providing relative humidity near saturation, conditions which are perfect for fungus growth.

There is no guaranteed method of prevention for snow mold, but a few practices can help reduce the impacts. Early seeding that occurs in early to late August can produce larger, well-tillered plants that will have a higher chance of recovery from snow mold infections come spring.⁸⁸ Late seeding that occurs in late October can also be beneficial as the small plants may escape the disease entirely, but if infected are more likely to die completely. Yield potentials of late seeded plants may also be negatively impacted. Some fungicides are labeled for snow molds but are only suggested for areas where snow mold has been severe

⁸⁸ Department of Plant Pathology and Crop and Soil Sciences of Washington State University. 1999. "Snow Mold Diseases of Winter Wheat in Washington." Accessed April 2022. https://s3-us-west-2.amazonaws.com/smallgrains.wsu.edu/uploads/2013/12/EB1880_Snowmold.pdf

for several years in a row and the cost is justified.⁸⁹ Fungicides must also be applied before snow cover occurs. Some additional practices that may help reduce snow mold impacts beyond seeding time are to avoid heavy nitrogen applications in late fall and promote rapid drying and warming in the spring through improving field drainage⁹⁰.

The Reservation receives an average snowfall of 34 inches per year.⁹¹ Changing extremes in precipitation are anticipated in the coming decades with more significant snowfall events. Climate modeling suggests that warmer temperature conditions will continue in the coming decades and rise steadily into mid-century.⁹² These rising temperatures may result in shorter snow coverage periods, allowing sunlight to enter the plant material and kill off growing mold.

Severe winter storms regularly result in damages to power lines and telephone lines, as well as other infrastructure related to threat communication (e.g., radio and television antennas). This potential for decreased message dissemination combined with potential power outages results in higher levels of vulnerability for the elderly, individuals and families living below the poverty line, those isolated from social interactions, groups with limited mobility, and residents that are new to the area/region. Elders are at higher risk of being isolated during severe winter storms as a result of decreased mobility, as well as a diminished ability to remove accumulations of snow and ice from vehicles and driveways. The most common injuries and deaths during extreme cold events are hypothermia and frostbite. Hypothermia affects a person's brain, making the victim unable to think clearly while frostbite is an injury caused by human cells freezing. Frostbite can permanently damage body tissues, and severe cases can lead to amputation. The most common areas on the body for frostbite include the nose, ears, cheeks, chin, fingers, or toes.

Highly vulnerable populations include elders, children, those living in sub-standard housing, or those living in rural areas without adequate access to assistance. Individuals and families below the poverty line and those isolated from social interactions may lack resources or access to resources that could mitigate the impacts of severe winter storms. Needed resources include sufficient food supplies when snowed in, and alternative heating sources during prolonged power outages. Severe winter storms often result in closed or impassable roadways. This increases the vulnerability among segments of the population that already have decreased mobility, making it important that they have a social network that can check on them and ensure they have access to heat and food.

89 Crop Protection Network. "Snow Molds of Wheat". Published January 2022. <https://cropprotectionnetwork.org/encyclopedia/snow-molds-of-wheat>

90 UMass Extension Turf Program. "The Snow Molds". Accessed April 2022. <https://aq.umass.edu/turf/fact-sheets/snow-molds>

91 NOAA National Centers for Environmental Information. June 2024. "Data Tools: 1991-2020 Normals." [datafile]. <https://www.ncdc.noaa.gov/cdo-web/datatools/normals>.

92 Union of Concerned Scientists. 2019. "Extreme Heat and Climate Change: Interactive Tool". <https://www.ucsusa.org/resources/killer-heat-interactive-tool>.

Terrorism/Cyber Attack/Active Shooter

According to the Federal Bureau of Investigation (FBI), there is no single, universally accepted definition of terrorism. Terrorism is defined in the Code of Federal Regulations as “the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof in furtherance of political or social objectives” (28 C.F.R. Section 0.85).

The FBI further describes terrorism as either domestic or international, depending on the origin, base, and objectives of the terrorist organization. For the purpose of this report, the following definitions from the FBI will be used:

- **Domestic terrorism** is the unlawful use, or threatened use, of force or violence by a group or individual based and operating entirely within the United States or Puerto Rico without foreign direction committed against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof in furtherance of political or social objectives.
- **International terrorism** involves violent acts or acts dangerous to human life that are a violation of the criminal laws of the United States or any state, or that would be a criminal violation if committed within the jurisdiction of the United States or any state. These acts appear to be intended to intimidate or coerce a civilian population, influence the policy of a government by intimidation or coercion, or affect the conduct of a government by assassination or kidnapping. International terrorist acts occur outside the United States or transcend national boundaries in terms of the means by which they are accomplished, the persons they appear intended to coerce or intimidate, or the locale in which their perpetrators operate or seek asylum.

There are different types of terrorism depending on the target of attack which are Political Terrorism, Bio-terrorism, Cyber-terrorism, Eco-terrorism, Nuclear-terrorism, Narco-terrorism, and Agro-terrorism. Terrorist activities are also classified based on motivation behind the event (such as ideology: i.e. religious fundamentalism, national separatist movements, and social revolutionary movements). Terrorism can also be random with no ties to ideological reasoning. The FBI also provides clear definitions of a terrorist incident and prevention:

- A terrorist *incident* is a violent act or an act dangerous to human life, in violation of the criminal laws of the United States, or of any state, to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives.
- Terrorism *prevention* is a documented instance in which a violent act by a known or suspected terrorist group or individual with the means and a proven propensity for violence is successfully interdicted through investigative activity.

Note: the FBI investigates terrorism-related matters without regard to race, religion, national origin, or gender. Reference to individual members of any political, ethnic, or religious group in this report is not meant to imply that all members of that group are terrorists. Terrorists represent a small criminal minority in any larger social context.

The Department of Homeland Security and its affiliated agencies are responsible for disseminating any information regarding terrorist activities in the country. The system in place is the National Terrorism Advisory System (NTAS). NTAS replaced the Homeland Security Advisory System (HSAS) which was the color-coded system put in place after the September 11th attacks by Presidential Directive 5 and 8 in

March of 2002. NTAS replaced HSAS in 2011. NTAS is based on a system of analyzing threat levels and providing either an imminent threat alert or an elevated threat alert. An *Imminent Threat Alert* warns of a credible, specific and impending terrorist threat against the United States. An *Elevated Threat Alert* warns of a credible terrorist threat against the United States. The Department of Homeland Security, in conjunction with the Southern Ute Tribe and other federal agencies, will decide whether a threat alert of one kind or the other should be issued should credible information be available. Each alert provides a statement summarizing the potential threat and what, if anything, should be done to ensure public safety. The NTAS Alerts will be based on the nature of the threat: in some cases, alerts will be sent directly to law enforcement or affected areas of the private sector, while in others, alerts will be issued more broadly to the American people through both official and media channels.

A rising type of terrorism of concern is the increased prevalence of cyber-terrorism. The National Conference of State Legislatures defines cyberterrorism as: *the use of information technology by terrorist groups and individuals to further their agenda. This can include use of information technology to organize and execute attacks against networks, computer systems and telecommunications infrastructures, or for exchanging information or making threats electronically. Examples are hacking into computer systems, introducing viruses to vulnerable networks, web site defacing, denial of service attacks, or terroristic threats made via electronic communication.*"

Location

Terrorist attacks could occur anywhere within the Southern Ute Reservation or at any tribal-owned facility; however, they would likely occur in population centers where members are located or directed towards specific tribal-owned facilities. Within these areas, concerns are related to political unrest and racism that may target businesses, culturally significant locations, or tribal buildings.

Historical Occurrences

Historical terrorism event data was gathered from the Global Terrorism Database, maintained by the University of Maryland and the National Consortium for the Study of Terrorism and Responses to Terrorism (START), as well as a general literature review on the history of the Tribe. The START database contains information for over 200,000 terrorist attacks. According to the database, no terrorist events were reported in the planning area between 1970-2020.⁹³

Average Annual Losses

The average damage per event estimate was determined based upon the START Global Terrorism Database information since 1970. Due to a lack of reported terror attack events, the average annual loss is \$0.

Extent

Terrorist attacks can vary greatly in scale and magnitude, depending on the location, method, and target of the attack. Local concerns have been identified for computer systems, rural water supplies, and equipment. Since 2001, biased crimes against Middle Eastern/Muslim populations, Jewish populations, and African Americans have increased steadily.⁹⁴ Racial tensions also exist between Tribal populations and local, state, and federal governments. Cyber-attacks directed towards tribal critical facilities are likely to

93 National Consortium for the Study of Terrorism and Responses to Terrorism (START). 2024. Global Terrorism Database [Data file]. Retrieved from <https://www.start.umd.edu/gtd>.

94 FBI. 2021. "Hate Crime Statistics." [1996-2019]. <https://www.fbi.gov/services/cjis/ucr/hate-crime>.

have a larger impact, such as disruption to communications system or the Sky Ute Casino Resort. Terroristic events towards individual Tribal members are likely to be small in extent but are more likely to cause physical or bodily harm to those involved.

Probability

Given that there were no reported incidents that have occurred over the 50 years, it is not possible to determine annual probability of future terrorism events. For the purpose of this plan, the annual probability of terrorism occurring in the future is *Unknown*.

Impacts from Climate Change

The conversation surrounding changing climate has led to some individuals and groups who deny its significance to act violently to make their statement clear to the public. There are also those who take extreme measures to declare the severity of climate change and its impacts to ecosystems.⁹⁵ With the change in climate patterns and certain environments becoming more susceptible to hazards, it is important to be aware of potential threat areas (e.g., vegetated areas during drought seasons, power districts during severe weather) in the case of entities using those spaces to cause significant damage.

Overall Vulnerabilities

Terroristic events are most likely to occur at high visibility target locations such as the Bear Dance Grounds or Sky Ute Casino Resort. Public shootings or bomb threats have increased over the past decade prompting additional security measures and drills. Additionally, as climate change continues to impact the region, environmental issues may be leveraged as a motive for violence. This motive may apply to either “eco-warriors” or climate-change deniers. Vulnerable populations are most likely to feel the impacts of terrorist attacks as well as are more likely to be targeted. People at greatest risk can include first responders, tribal elders, or media reporters.

95 Elizabeth L. Chalecki: Environmental Terrorism Twenty Years On. *Global Environmental Politics* 2024; 24 (1): 1–9. doi: https://doi.org/10.1162/glep_a_00728

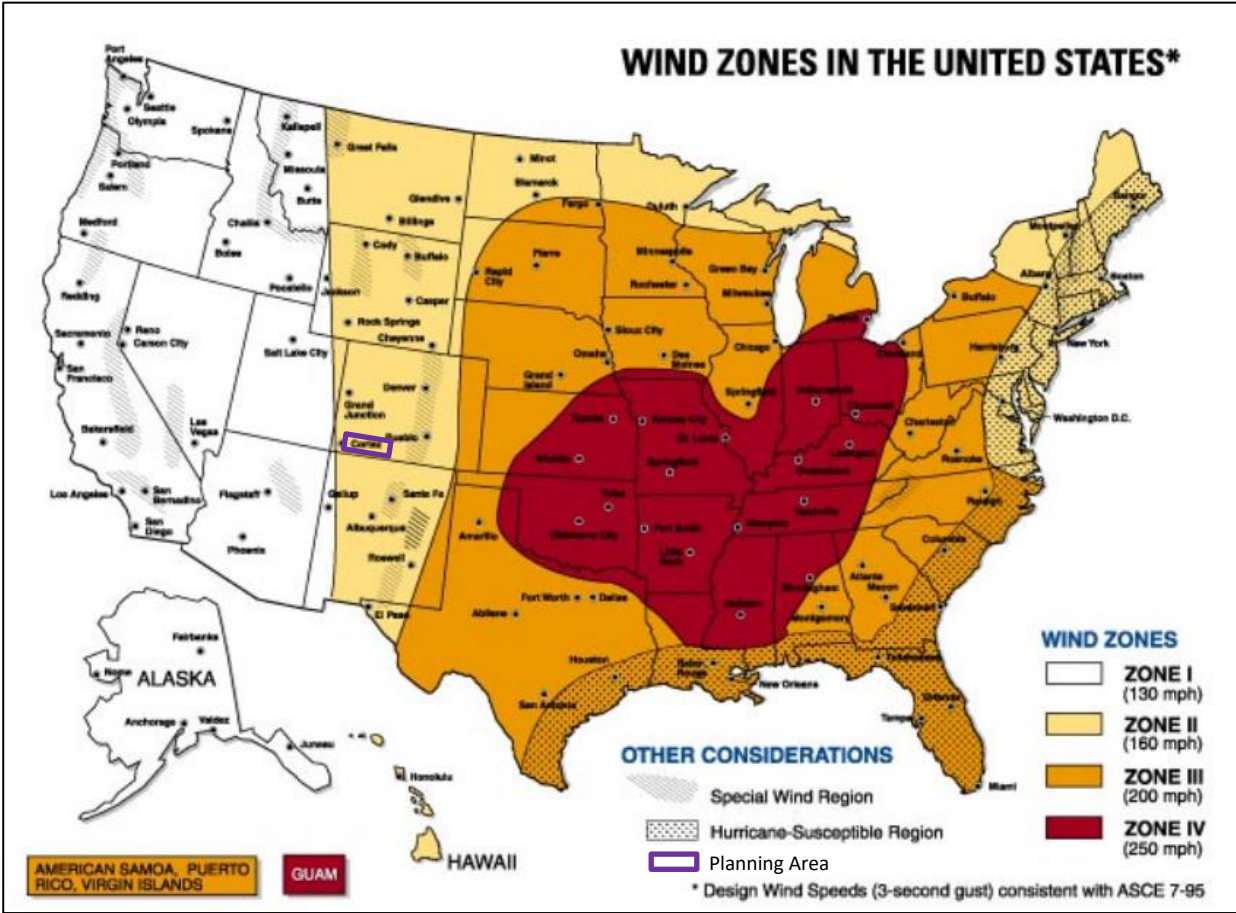
Tornado/Windstorm

High Winds

High winds typically accompany severe thunderstorms, severe winter storms, tornadoes, and other large low-pressure systems, which can cause significant crop damage, downed power lines, loss of electricity, traffic flow obstructions, and significant property damage including trees, overhead power lines, residents' homes, and other infrastructure.

The NWS defines high winds as sustained wind speeds of 40 mph or greater lasting for 1 hour or longer, or winds of 58 mph or greater for any duration.⁹⁶ The NWS issues High Wind Advisories when there are sustained winds of 31 to 39 miles per hour and/or gusts to 58 mph or greater for any duration. The figure below shows the wind zones in the United States. Wind zones are based on the maximum wind speeds that can occur from a tornado or hurricane event. The SUIT Reservation is located in Zone II which has maximum winds of 160 mph, equivalent to an EF3 tornado.

Figure 65: Wind Zones in the U.S.



Source: FEMA

⁹⁶ National Weather Service. 2017. "Glossary." <http://w1.weather.gov/glossary/index.php?letter=h>.

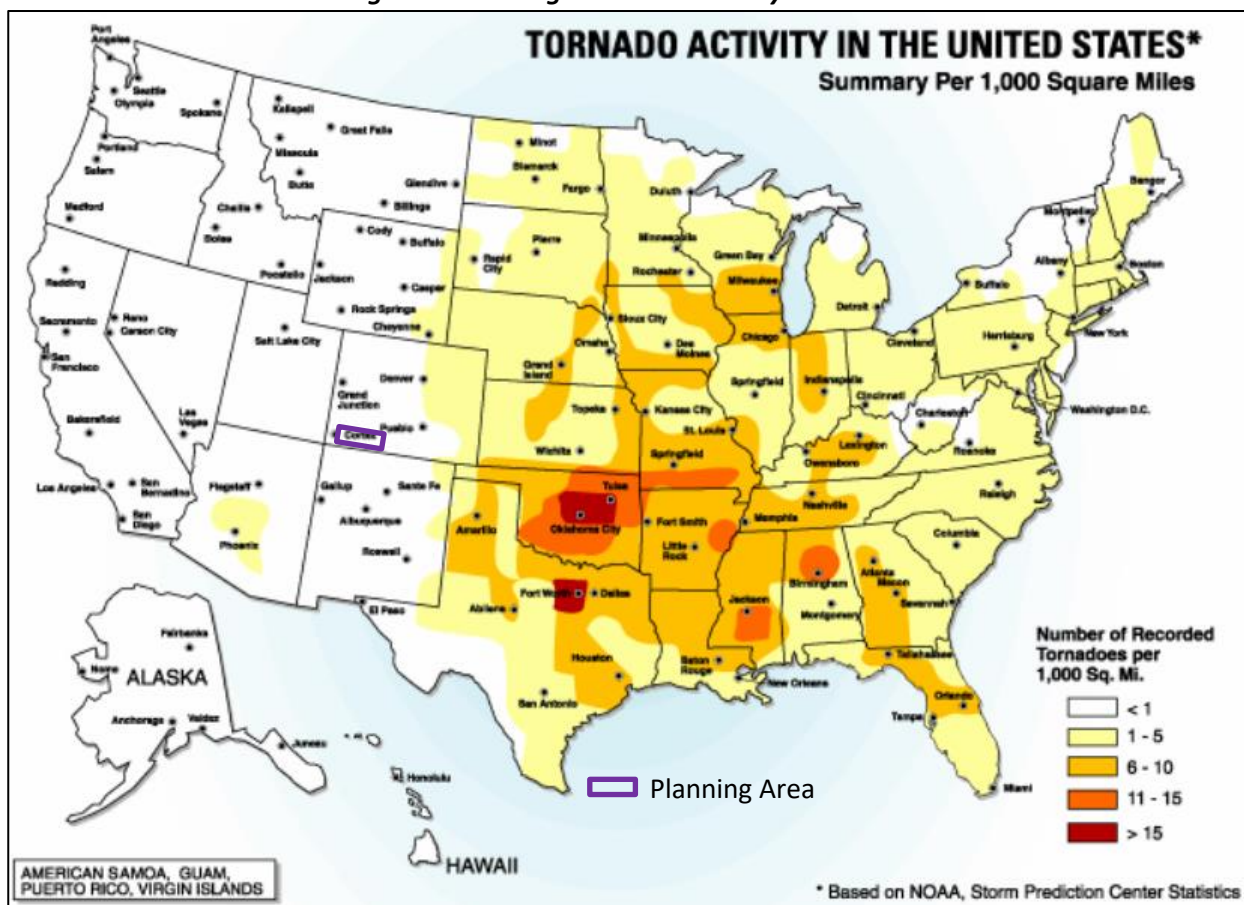
Tornadoes

High winds are a critical component of tornado formation. A tornado is typically associated with a supercell thunderstorm. For a rotation to be classified as a tornado, three characteristics must be met:

- There must be a microscale rotating area of wind, ranging in size from a few feet to a few miles wide;
- The rotating wind, or vortex, must be attached to a convective cloud base and must be in contact with the ground; and,
- The spinning vortex of air must have caused enough damage to be classified by the Fujita Scale as a tornado.

Once tornadoes are formed, they can be extremely violent and destructive. They have been recorded all over the world but are most prevalent in the American Midwest and South, in an area known as “Tornado Alley.” Approximately 1,250 tornadoes are reported annually in the contiguous United States. Tornadoes can travel distances over 100 miles and reach over 11 miles above ground. Tornadoes usually stay on the ground no more than 20 minutes. Nationally, the tornado season typically occurs between May and July. On average, 80 percent of tornadoes occur between noon and midnight. For the planning area, tornadoes are not common, but when they do occur, they have a higher potential to develop during the summer months.

Figure 66: Average Tornado Activity in the U.S.



Source: FEMA

Location

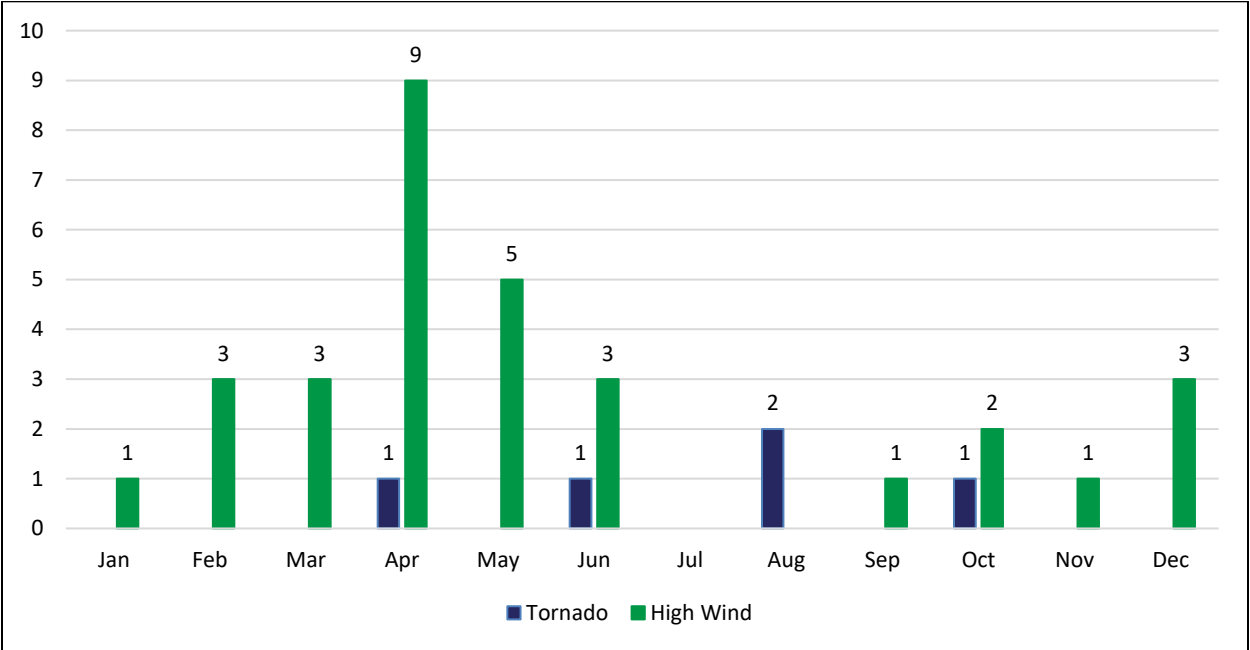
High winds and tornadoes can occur across the reservation. The impacts would be greater in more densely populated areas and culturally significant locations, such as Ignacio. Few significant tornado events have directly impacted residential centers located in the planning area, but touchdowns and tornado events can occur anywhere in the planning area.

Historical Occurrences

Due to the regional scale of high winds, the NCEI reports events as they occur in each county. While a single event can multiple counties at a time, the NCEI reports them as separate events. There were 31 high wind events that occurred between 1996 and 2023 and five tornadic events ranging in magnitude from F0 to F1. \$1,604,000 in property damages were reported for these events and \$33,323 in crop damages from tornadoes and high winds.

As seen in Figure 67, the majority of high wind events occur in the spring and winter months, while tornado events occur mostly in the spring and summer. No injuries or fatalities were reported as a result of these events.

Figure 67: Tornado and High Wind Events by Month



Source: NCEI, 1996-2023

Average Annual Losses

The average damage per event estimate was determined based upon NCEI Storm Events Database since 1996 and number of historical occurrences. This does not include losses from displacement, functional downtime, economic loss, injury or loss of life. \$1,604,000 in property damages were reported in the NCEI Storm Events Database from high winds and tornadoes. Damages from high winds and tornadoes can vary greatly depending on the severity or magnitude of each event. These estimates include both tribal and non-tribal assets and damages.

Table 45: High Winds and Tornado Losses

HAZARD TYPE	# OF EVENTS ¹	AVERAGE # EVENTS PER YEAR	TOTAL PROPERTY LOSS ¹	AVERAGE ANNUAL PROPERTY LOSS	TOTAL CROP LOSS ²	AVERAGE ANNUAL CROP LOSS
HIGH WINDS	31	1.1	\$1,518,000	\$54,214	\$31,323	\$1,305
TORNADOES	5	0.2	\$86,000	\$3,071	\$2,000	\$83

Source: 1 NCEI (1996-2023), 2 USDA RMA (2000-2023)

Extent

The Beaufort Wind Scale can be used to classify wind strength while the magnitude of tornadoes is measured by the Enhanced Fujita Scale. The following table outlines the Beaufort scale including wind speed ranking, range of wind speeds per ranking, and a brief description of conditions for each.

Table 46: Beaufort Wind Ranking

Beaufort Wind Force Ranking	Range of Wind	Conditions
0	<1 mph	Smoke rises vertically
1	1-3 mph	Direction shown by smoke but not wind vanes
2	4-7 mph	Wind felt on face; leaves rustle; wind vanes move
3	8-12 mph	Leaves and small twigs in constant motion
4	13-18 mph	Raises dust and loose paper; small branches move
5	19-24 mph	Small trees in leaf begin to move
6	25-31 mph	Large branches in motion; umbrellas used with difficulty
7	32-38 mph	Whole trees in motion; inconvenience felt when walking against the wind
8	39-46 mph	Breaks twigs off tree; generally, impedes progress
9	47-54 mph	Slight structural damage; chimneypots and slates removed
10	55-63 mph	Trees uprooted; considerable structural damages; improperly or mobiles homes with no anchors overturned
11	64-72 mph	Widespread damages; very rarely experienced
12 - 17	72 - > 200 mph	Hurricane; devastation

Source: Storm Prediction Center, 2017⁹⁷

The Enhanced Fujita Scale replaced the Fujita Scale in 2007. The Enhanced Fujita Scale does not measure tornadoes by their size or width, but rather the amount of damage caused to human-built structures and trees after the event. The official rating category provides a common benchmark that allows comparisons to be made between different tornadoes. The enhanced scale classifies EF0-EF5 damage as determined by engineers and meteorologists across 28 different types of damage indicators, including different types of building and tree damage. To establish a rating, engineers and meteorologists examine the damage, analyze the ground-swirl patterns, review damage imagery, collect media reports, and sometimes utilize photogrammetry and videogrammetry. Based on the most severe damage to any well-built frame house, or any comparable damage as determined by an engineer, an EF-Scale number is assigned to the tornado. The following tables summarize the Enhanced Fujita Scale and damage indicators. According to a recent report from the National Institute of Science and Technology on the Joplin Tornado, tornadoes rated EF3

97 Storm Prediction Center: National Oceanic and Atmospheric Administration. 1805. "Beaufort Wind Scale." <http://www.spc.noaa.gov/faq/tornado/beaufort.html>.

or lower account for around 96 percent of all tornado damages.⁹⁸

Table 47: Enhanced Fujita Scale

Storm Category	3 Second Gust (mph)	Damage Level	Damage Description
EF0	65-85	Gale	Some damages to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages to sign board.
EF1	86-110	Weak	The lower limit is the beginning of hurricane wind speed; peels surface off rooms; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages might be destroyed.
EF2	111-135	Strong	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
EF3	136-165	Severe	Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted.
EF4	166-200	Devastating	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown, and large missiles generated.
EF5	200+	Incredible	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel re-enforced concrete structures badly damaged.
EF No Rating	--	Inconceivable	Should a tornado with the maximum wind speed in excess of EF5 occur, the extent and types of damage may not be conceived. A number of missiles such as iceboxes, water heaters, storage tanks, automobiles, etc. will create serious secondary damage on structures.

Source: NOAA; FEMA

Table 48: Enhanced Fujita Scale Damage Indicator

Number	Damage Indicator	Number	Damage Indicator
1	Small barns, farm outbuildings	15	School – 1 story elementary (interior or exterior halls)
2	One- or two-family residences	16	School – Junior or Senior high school
3	Single-wide mobile homes	17	Low-rise (1-4 story) buildings
4	Double-wide mobile homes	18	Mid-rise (5-20 story) buildings
5	Apartment, condo, townhouse (3 stories or less)	19	High-rise (over 20 stories)
6	Motel	20	Institutional buildings (hospital, government, or university)
7	Masonry apartment or motel	21	Metal building systems
8	Small retail buildings (fast food)	22	Service station canopy
9	Small professional (doctor office, branch bank)	23	Warehouse (tilt-up walls or heavy timber)

⁹⁸ Kuligowski, E.D., Lombardo, F.T., Phan, L.T., Levitan, M.L., & Jorgensen, D.P. March 2014. "Final Report National Institute of Standards and Technology(NIST) Technical Investigation of the May 22, 2011, Tornado in Joplin, Missouri."

Number	Damage Indicator	Number	Damage Indicator
10	Strip mall	24	Transmission line tower
11	Large shopping mall	25	Free-standing tower
12	Large, isolated (“big box”) retail building	26	Free standing pole (light, flag, luminary)
13	Automobile showroom	27	Tree- hardwood
14	Automotive service building	28	Tree- softwood

Source: NOAA; FEMA

Using the NCEI reported events, the most common high wind event in the planning area is a level 9 on the Beaufort Wind Ranking scale. The reported high wind events ranged from 54 mph to 119 mph, with an average speed of 76 mph. Based on the historical record, it is most likely that tornadoes that occur within the planning area will be of F1/EF1 strength. Of the five reported tornado events, two were EF0/F0 and three were EF1/F1.

Probability

Given the historical record of occurrence for tornado events (4 out of 28 years with reported events), for the purposes of this plan, the annual probability of tornado occurrence is 14 percent. Given the historical record of occurrence for high wind events (14 out of 28 years with reported events), for the purposes of this plan, the annual probability of wind event occurrence is 50 percent. However, high wind events may be more common than presented here but have simply not been reported in past years.

Based on this historical record, the annual probability of tornadoes and high winds occurring in the future is *Likely*.

Impacts from Climate Change

Tornado patterns have changed over the years, with tornado events occurring in clusters and outside of states that are considered within Tornado Alley. Although there is no definitive correlation between climate change and tornadoes, the rise in warmer and wetter climate conditions can produce favorable circumstances for tornadoes and severe thunderstorms to form.⁹⁹

Overall Vulnerabilities

Tornadoes and high winds occur with irregularity and can affect the entire planning area. All building stock and above ground infrastructure, including critical facilities, are at risk of being damaged or affected by tornadoes and high winds. Tornadoes and high winds can cause structure loss, downed power lines, loss of electricity, obstruction to traffic flow, and significant damage to trees and the natural environment. A catastrophic event could lead to major economic loss for the jurisdiction. High wind speeds and flying debris can pose a significant threat to human life and safety.

High winds and tornadoes can impact a wide range of people and properties, including people living in mobile homes. Mobile homes that are not anchored or are not anchored properly can be blown over by winds as fast as 60 to 70 mph. A 2007 study conducted by Dr. W. Ashley at Northern Illinois University found that between 1985 and 2005, 44 percent of all tornado-related fatalities occurred in mobile homes while between 20 and 30 percent occurred in permanent homes. Tornado related deaths in mobile homes have increased over the timeframe investigated from 37-percent of all fatalities between 1986 and 1990

⁹⁹ National Geographic. “Tornadoes and Climate Change.” October 2023. <https://education.nationalgeographic.org/resource/tornadoes-and-climate-change/>.

to nearly 57-percent of all fatalities from 2001 to 2005. The timing of tornadoes also impacts the vulnerability of people living in mobile homes. The 2007 study found that while only 25.8 percent of tornadoes occur between sunset and sunrise, they account for 42.5 percent of tornado fatalities. This is a result of a number of factors including decreased ability to identify tornadoes in the dark, decreased ability to communicate tornado threats due to a high rate of people sleeping during the night, and a higher number of people in the housing units (i.e. mobile home) during the nighttime. Other factors that may increase vulnerability to the threat posed by high winds and tornadoes include age, poverty levels, and home rentals. The 2007 study found that the middle aged (those over 40 years of age) and elderly are more vulnerable which may be a result of decreased mobility, higher rate of auditory complications, or lack of resources need to mitigate potential tornado related impacts.

To reduce damages and potential risks, building codes for new structures can be strengthened, requiring increased rebar in foundations, enhanced nailing patterns for wall sheathing, the use of Simpson Strong Ties and Straps, and require the use of anchors and tie-downs of mobile homes. Additionally, individuals can choose to build to an optional Code Plus Standard, such as Fortified for Safer Living. Safe rooms can be installed in new structures as well as made to adapt to existing structures. In-ground safe rooms can be installed in existing structures for as little as \$4,000. The installation of public safe rooms in areas around vulnerable populations can increase the safety of members or visitors in those areas.

Wildfire

Wildfire, also known as grass fires, brush fires, forest fires, or wildland fires, is defined as any fire occurring on wildlands that requires suppression response. Wildfires range in size from less than an acre to thousands of acres in some cases. Fire events can rapidly spread from their original source, change direction quickly, and jump gaps (such as roads, rivers, and fire breaks). Wildfire events are particularly dependent on the local conditions including temperature, humidity, wind speed, wind direction, topography or slope, and available fuel load. While some wildfires burn in remote or inaccessible regions, others can cause extensive destruction of homes and other property located in the wildland-urban interface (WUI), the zone of transition between developed areas and undeveloped wilderness.

Fire season in Colorado typically occurs from May through September. Primary sources of the ignitions from the fire events in the SUIT Reservation are from natural causes such as lightning strikes and human causes such as camping, debris or open burning, equipment, and other human causes. Across the Reservation, fuel sources include timber, brush, grass, and shrub.¹⁰⁰ Fuel and structure durability are the primary factors people can control and are the target of most mitigation efforts. The NWS monitors the risk factors including high temperature, high wind speed, fuel moisture (greenness of vegetation), low humidity, and cloud cover in the state on a daily basis.

Another concern for the Southern Ute Indian Tribe is wildfires as a result of drought and lightning strikes or an event caused or exacerbated by a hazardous materials release. Wildfire and hazardous materials events can also create smoke or hazardous environmental conditions, impacting the health of tribal members.

Location

The SUIT Reservation is served by the BIA Southern Ute Agency Branch of Fire Management along with five other fire protection districts: Los Pinos Fire Protection District, Durango Fire Protection District, Fort Lewis Mesa Fire Protection District, Upper Pine River Fire Protection District, and Pagosa Fire Protection District. The Durango – La Plata County Airport also has a fire department that serves the airport. Wildland fire can occur throughout the SUIT Reservation. There are three categories of interface fire:

- The classic wildland-urban interface exists where well-defined urban and suburban development presses up against open expanses of wildland areas;
- The mixed wildland-urban interface is characterized by isolated homes, subdivisions, and small communities situated predominantly in wildland settings; and
- The occluded wildland-urban interface exists where islands of wildland vegetation occur inside a largely urbanized area.

In the planning area, the primary type of interface fire is mixed wildland-urban interface.

Community Wildfire Protection Plans

Even though wildfire is a natural part of the ecosystem, it can present a substantial hazard to life and

100 National Interagency Fire Center. 2024. "Wildland Fire Incident Locations (2003-2024)." [datafile] Accessed September 2024. https://data-nifc.opendata.arcgis.com/datasets/b4402f7887ca4ea9a6189443f220ef28_0/explore?location=37.573332%2C-105.367269%2C8.49&showTable=true.

property, especially in the wildland-urban interface. Archuleta County¹⁰¹ and La Plata County¹⁰² both completed Community Wildfire Protection Plans in recent years. These plans assess countywide risk to wildfire and identify strategic investments to mitigate risk and promote preparedness. Further discussion of these plans is included in Chapter Six: Plan Integration and Capabilities.

Wildland Urban Interface

The wildland urban interface (WUI) is generally defined as any area where man-made improvements are built close to, or within, natural terrain and flammable vegetation, and where potential for wildland fire exists. Figure 68 displays a map of the wildland urban interface for the Southern Ute Reservation, created by the Colorado State Forest Service. Figure 69 illustrates the WUI for the Town of Ignacio and SUIT Campus. In these figures, the WUI “reflects housing density depicting where humans and their structures meet or intermix with wildland fuel”.¹⁰³ The various WUI classes are illustrated in houses per acre. For the Southern Ute Reservation, it is estimated that 12,070 people or 97% of the total population live within the WUI.

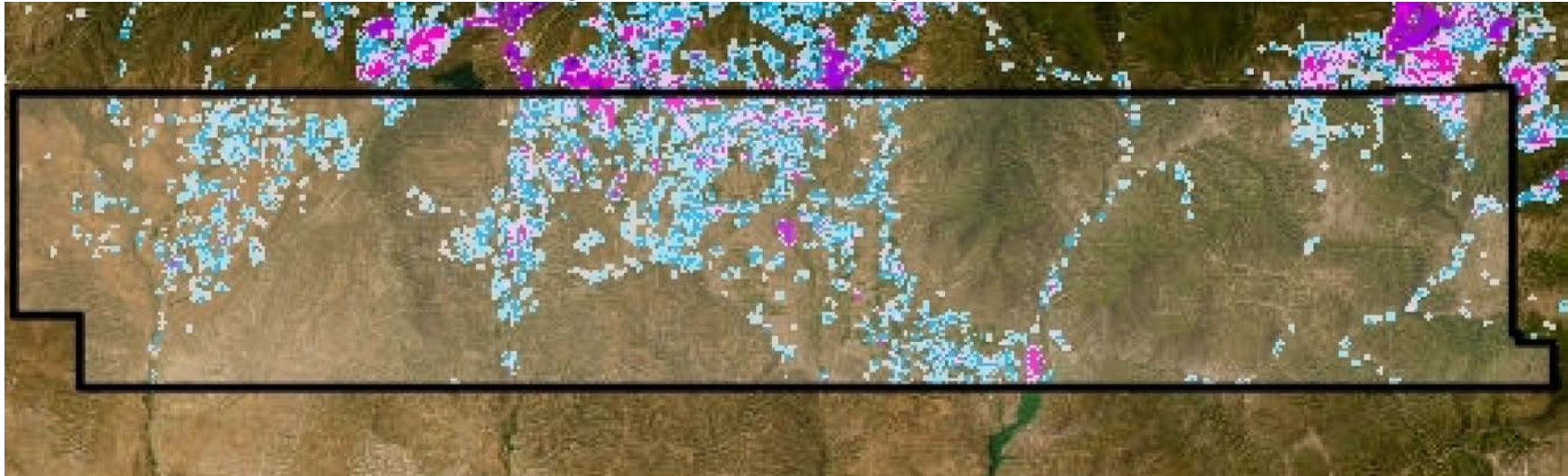
Flammable vegetation within the WUI can vary. Figure 70 depicts the various types of vegetation throughout the Reservation. The four main types are Pinyon-Juniper, Ponderosa Pine, Agriculture and Shrubland.

101 Colorado State Forest Service. 2019. “Archuleta County Community Wildfire Protection Plan.” https://csfs.colostate.edu/wp-content/uploads/2021/01/CO-AUX_CWPP_FINAL-2019.pdf.

102 Colorado State Forest Service. 2023. “La Plata County Community Wildfire Protection Plan.” https://csfs.colostate.edu/wp-content/uploads/2023/09/La_Plata_County_CWPP_2023_FINAL.pdf.

103 Colorado State Forest Service. “Wildfire Risk Viewer: Wildland Urban Interface”. Accessed September 2024. <https://co-pub.coloradoforestallatlas.org/#/>.

Figure 68: Wildland Urban Interface (WUI)



Southern Ute

Wildland Urban Interface

- 1 - Less than 1 house/40 ac
- 2 - 1 house/40 ac to 1 house/20 ac
- 3 - 1 house/20 ac to 1 house/10 ac
- 4 - 1 house/10 ac to 1 house/5 ac
- 5 - 1 house/5 ac to 1 house/2 ac
- 6 - 1 house/2 ac to 3 houses/ac
- 7 - More than 3 houses/ac

Source: Colorado State Forest Service ¹⁰⁴

104 Colorado State Forest Service. "Wildfire Risk Viewer: Wildland Urban Interface". Accessed September 2024. <https://co-pub.coloradoforestallas.org/#/>.

Figure 69: Wildland Urban Interface - Ignacio/SUIT Campus

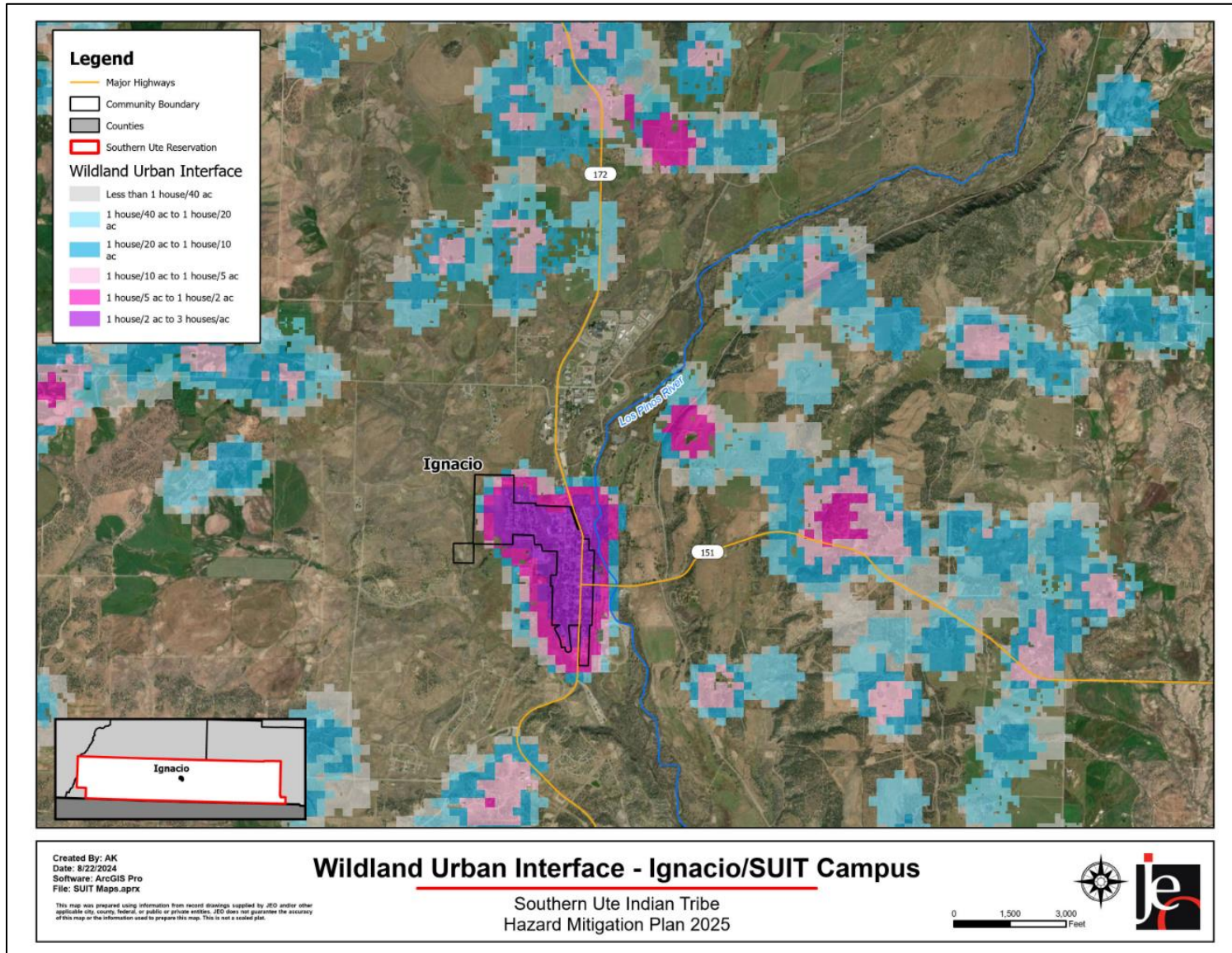
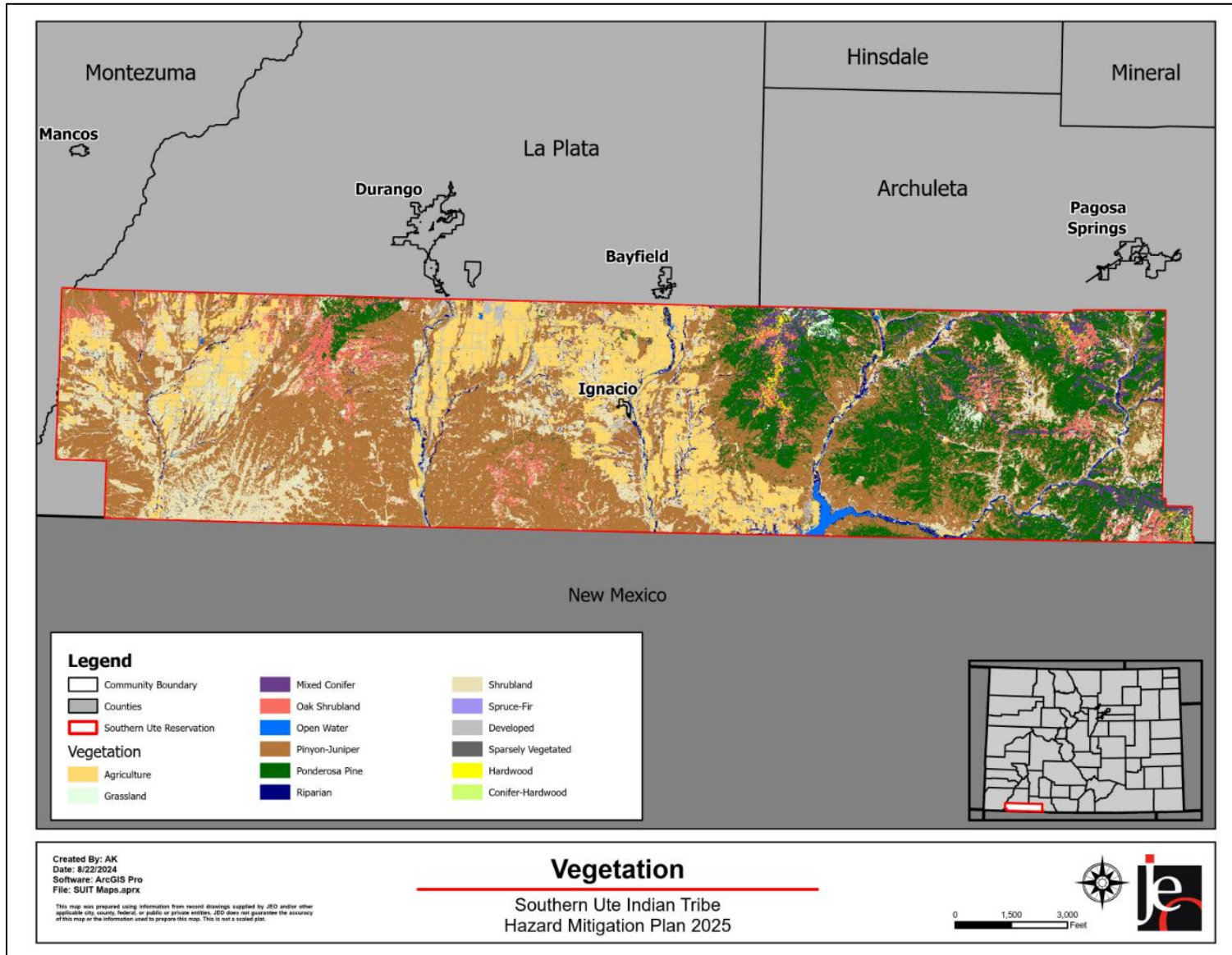


Figure 70: Vegetation

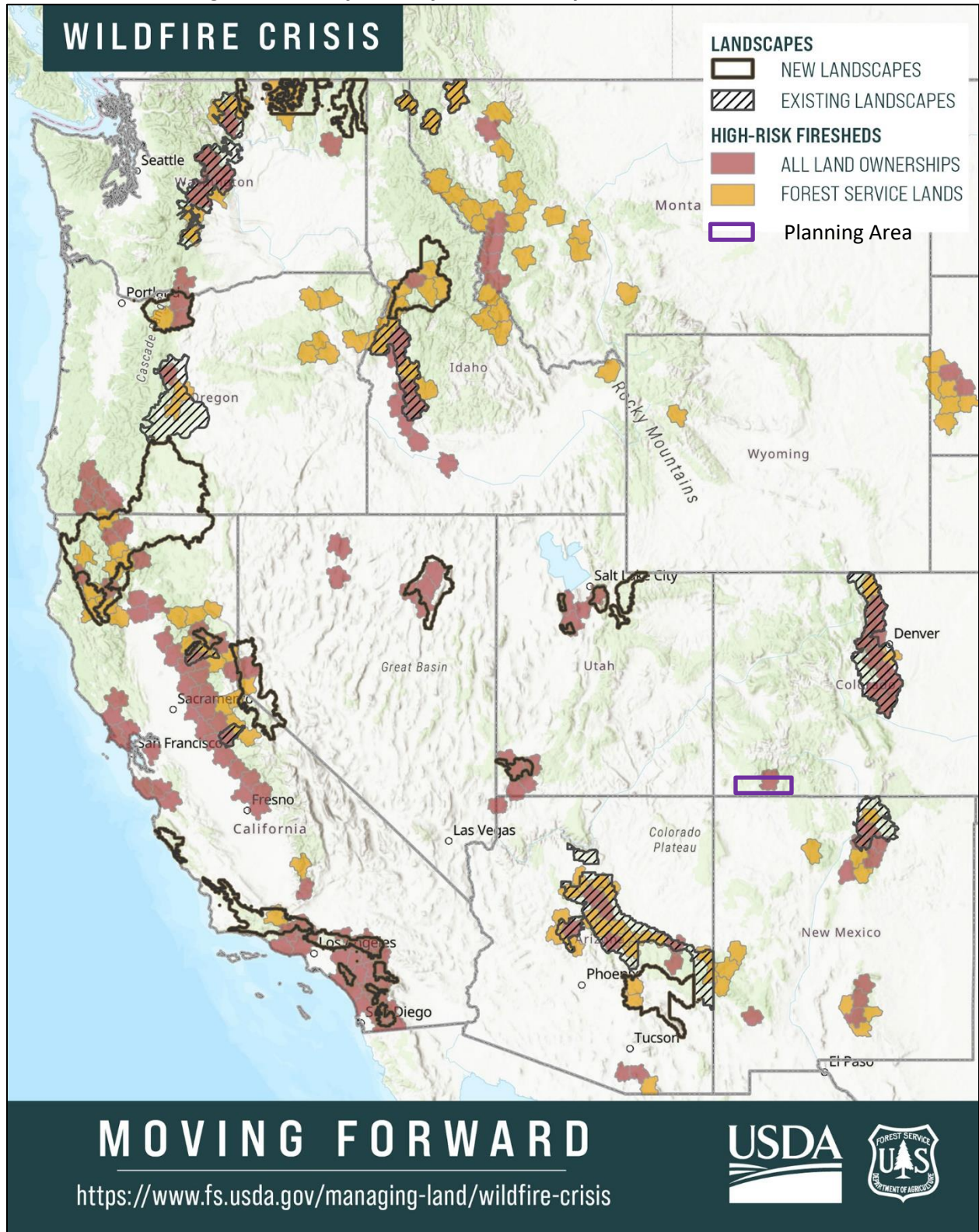


In its 2022 Wildfire Crisis Strategy, the U.S. Forest Service (USFS) identified 21 priority areas (or “firesheds”) that have significant forest health issues or wildfire risk (shown in *Figure 71*).¹⁰⁵ One of these high-risk fireshed areas is located within the Southern Ute Reservation: the Durango High-Risk Fireshed. This fireshed area was recently funded for wildfire mitigation and treatment as part of the U.S. Forest Service’s Wildfire Risk Reduction Project. According to the USFS, the project will “reduce wildfire risk and restore forest health through 3,000 acres of initial mechanical treatments that will enable 9,000 acres of future prescribed fire follow up treatments in the San Juan National Forest. These efforts will take place in the Durango High-Risk Fireshed, which is at increased risk due to hazardous fuels buildup. The efforts to reduce this increased risk will be accomplished in collaboration with many partners ranging from non-governmental organizations to government and Tribal entities.”¹⁰⁶

105 USDA/USFS. 2022. “Confronting the Wildfire Crisis: A Strategy for Protecting Communities and Improving Resilience in America’s Forests”. https://www.fs.usda.gov/sites/default/files/fs_media/fs_document/Confronting-the-Wildfire-Crisis.pdf.

106 USDA/USFS. 2024. “Rocky Mountain Region Receives \$10 Million to Combat the Wildfire Crisis.” <https://www.fs.usda.gov/detail/mbr/news-events/?cid=FSEPRD1204926>.

Figure 71: Identified Wildfire Risk Priority Areas (Western U.S.)



Historical Occurrences

The SUIT Reservation is a fire-prone area with many fire events occurring annually; however, it is important to note that there is no comprehensive fire event database. Fire events, magnitude, and local responses were reported voluntarily by local agencies and local reporting standards can vary annually. Actual fire events and their impacts are likely underreported in the available data.

Data on the number of fire events is recorded through the Wildfire Interagency Geospatial Services (WFIGS) Group that tracks national wildland fire incidents from the Integrated Reporting of Wildfire Information (IRWIN). Fire events are filtered to reduce redundancy and ensure accuracy of the data collected from existing fire reporting applications. Historical occurrences for this plan were collected from this database. In total, there were 1,268 wildfires reported between 2014 and July 2024 in Archuleta and La Plata Counties. Table 49 lists the larger fires (by acres burned).

Table 49: Larger Wildfire Events Since 2014

FIRE YEAR	INCIDENT NAME	ACRES BURNED	NEAREST LOCATION	SOURCE AGENCY
2002	Missionary Ridge	90,000	Durango	TPC*
2017	Eight Four Two	1,020	Bayfield	N/A
2017	Lightner Creek	412	Durango	N/A
2017	Payan	185	Arboles	N/A
2018	416	54,129	Durango	FS
2018	Horse	710	Pagosa Springs	FS
2019	Pine Tree	742	Ignacio	BIA
2019	441	325	Durango	FS
2019	577	95	Bayfield	FS
2020	Six Shooter	220	Durango	BIA
2022	Plumtaw	735	Pagosa Springs	USFS
2022	Perins Peak	106	Durango	CSFS
2022	Bear Dance	89	Ignacio	BIA
2023	Quartz Ridge	2,850	Pagosa Springs	USFS
2023	Dry Lake	1,372	Bayfield	USFS
2023	Trail Springs	1,358	Pagosa Springs	USFS
2023	Chris Mountain	511	Pagosa Springs	USFS
2023	Coal Mine	292	Pagosa Springs	BIA
2023	Arkansas Loop	127	Ignacio	BIA
2023	Mill Creek 2	121	Pagosa Springs	USFS
2024	Snow Ranch	386	Pagosa Springs	USFS

Source: National Interagency Fire Center (NIFC) – Wildland Fire Incidents Locations (2014-July 2024)¹⁰⁷

*Provided by Tribal Planning Committee (TPC)

107 National Interagency Fire Center. 2024. "Wildland Fire Incident Locations." Accessed September 2024. https://data-nifc.opendata.arcgis.com/datasets/b4402f7887ca4ea9a6189443f220ef28_0/explore?location=37.573332%2C-105.367269%2C8.49&showTable=true

Bear Dance Fire – June 2022

On June 3, 2022, a wildfire broke out on the tribal trust land just north of the Tribe’s Bear Dance grounds. The fire, visible from nearby Ignacio, burned 89 acres over the course of two days and required evacuations of the Southern Ute Tribal Campus and the Sky Ute Casino and Resort. The rapid spread of the fire was attributed to dense clusters of dry cottonwood trees and an accumulation of natural, yet hazardous, brush and thicket. Under different wind conditions, the fire could have intensified, resulting in greater damage. A number of cottonwood trees, spiritually significant to the Tribe, were burned.

The cause of the wildfire remains undetermined, and the area where the fire originated has been closed for safety reasons. Fortunately, no injuries were reported, and no structures were damaged. On May 6, 2024, a project to remove hazardous materials was completed, and the trail associated with the fire was reopened on May 17, 2024.

Figure 72: Bear Dance Fire



Source: Jeremy Wade Shockley/Southern Ute Drum

Six Shooter Fire – June 2020

On June 16, 2020, a wildfire began in Six Shooter Canyon, located in the south central region of the SUIIT Reservation. Over four days, the wildfire consumed 224 acres. Fortunately, there were no injuries or damage as the fire was effectively contained within the canyon. The rapid spread and slow burn of the wildfire were attributed to dense clusters of brush, thickets, and trees, coupled with a prevailing dry spell. The cause of the fire was suspected to be a lightning strike.

Figure 73: Six Shooter Fire



Source: Howard Richards Jr/Southern Ute Drum

Average Annual Losses

The annual average property loss estimate was determined based upon NCEI database since 1996. This does not include losses from displacement, functional downtime, economic loss, injury, or loss of life. Average annual crop loss data is based on SHELDUS information from 1960-2022. NCEI reported a total of \$20,230,000 in property damage from wildfires. SHELDUS did not report any crop damages.

Damage caused by wildfires extends past the loss of building stock, recreation areas, timber, forage, wildlife habitat, and scenic views. Secondary effects of wildfires, including erosion, landslides, introduction of invasive species, and changes in water quality, all increase due to the exposure of bare ground and loss of vegetative cover following a wildfire, and can often be more disastrous than the fire itself in long-term recovery efforts.

Table 50: Wildfire Losses

HAZARD TYPE	# OF EVENTS ¹	AVERAGE # EVENTS PER YEAR	TOTAL PROPERTY LOSS ²	AVERAGE ANNUAL PROPERTY LOSS	TOTAL CROP LOSS ³	AVERAGE ANNUAL CROP LOSS
WILDFIRE	1,268	115	\$20,230,000	\$722,500	\$0	\$0

Source: 1 NIFC (2014-July 2024), 2 NCEI (1996-2023), 3 SHELDUS (1960-2022)

Extent

The United States Department of Agriculture and U.S. Forest Service created the interactive web resource *Wildfire Risk to Communities* to help jurisdictions understand, explore, and reduce wildfire risk. Populated areas in the Reservation have a greater risk than 75% of all other tribal areas and counties in Colorado (Figure 74).

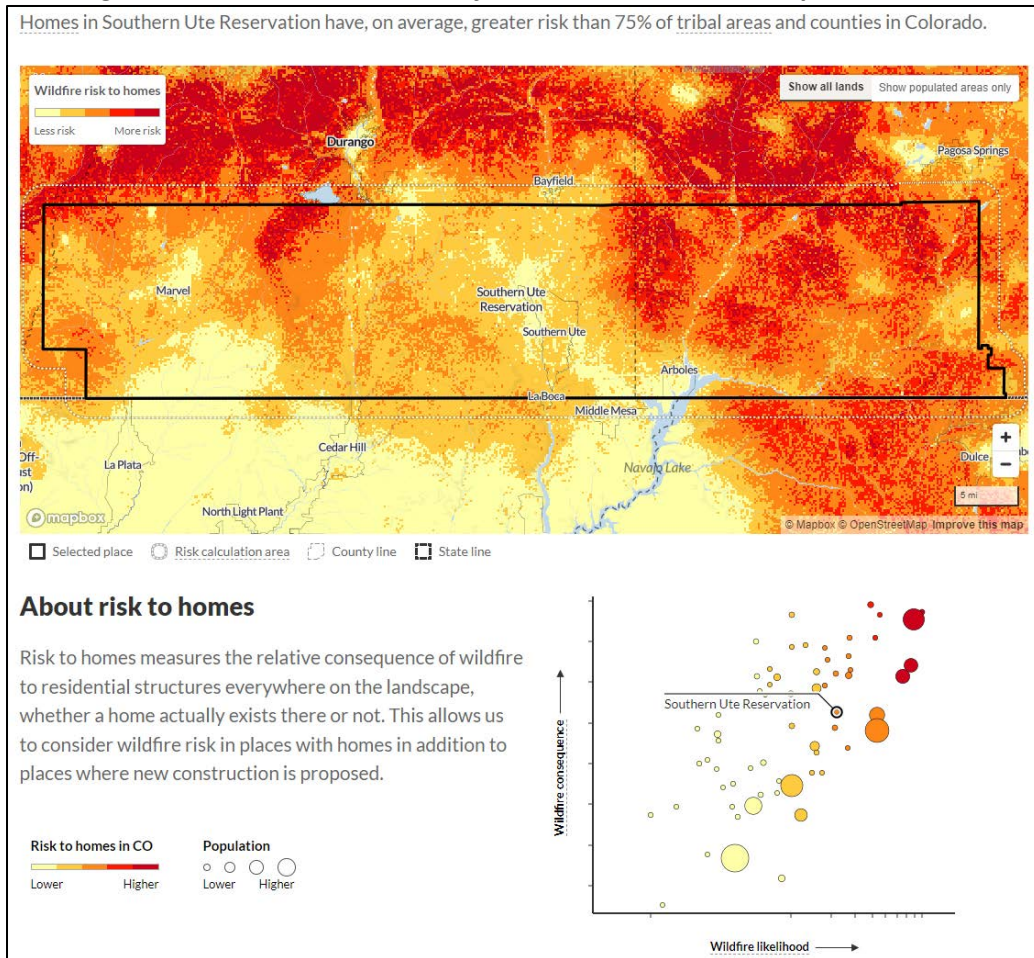
Table 51: Wildfire Risk Factors for Southern Ute Reservation

RISK FACTOR	SUIT	STATE OF COLORADO
FAMILIES IN POVERTY	231 (6.7%)	84,990 (6%)
PEOPLE WITH DISABILITIES	1,667 (12.4%)	625,448 (11%)
POPULATION OVER 65	2,856 (21.1%)	855,353 (14.8%)
DIFFICULTY WITH ENGLISH	46 (0.4%)	137,687 (2.5%)
HOUSEHOLDS WITH NO VEHICLE	91 (1.8%)	113,738 (5%)
MOBILE HOMES	1,444 (28.2%)	82,511 (3.6%)

Source: USDA/USFS, *Wildfire Risk to Communities, 2024*¹⁰⁸

Note: Data is from 2022 US Census American Community Survey 5-yr survey

Figure 74: SUIT Reservation Wildfire Risk – All Lands and Populated Areas

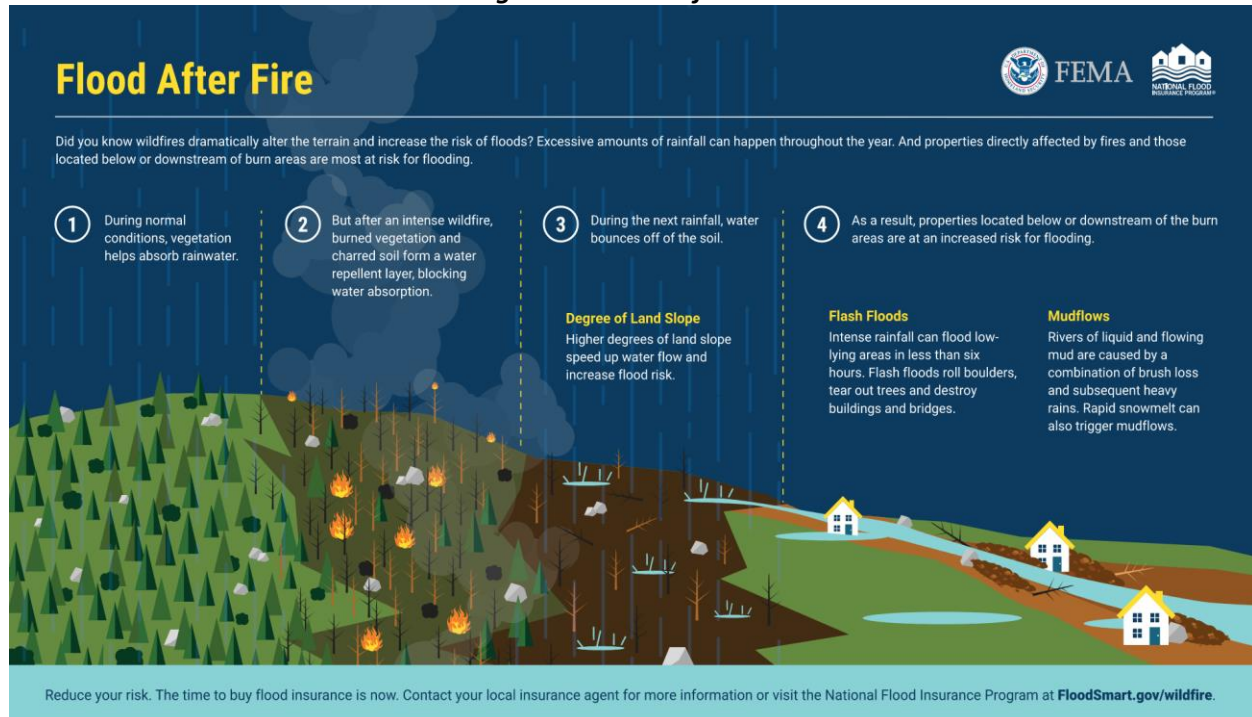


108 USDA/USFS. 2024. "Wildfire Risk to Communities: Risk to Homes – Southern Ute Reservation". <https://wildfirerisk.org/explore/vulnerable-populations/08/0803925/>.

109 USDA/USFS. 2024. "Wildfire Risk to Communities: Risk to Homes – Southern Ute Reservation". <https://wildfirerisk.org/explore/risk-to-homes/08/0803925/>.

Wildfire also contributes to an increased risk from other hazard events, compounding damages and straining resources. FEMA has provided additional information in recent years detailing the relationship between wildfire and flooding (Figure 75). Wildfire events remove vegetation and harden soil, reducing infiltration capabilities during heavy rain events. Subsequent severe storms that bring heavy precipitation can then escalate into flash flooding, dealing additional damage to jurisdictions.

Figure 75: Flood After Fire



Source: FEMA, 2020¹¹⁰

Probability

The probability of wildfire occurrence is based on the historical record provided by the NIFC Wildland Fire Incidents Locations database. Based on the record of reported incidents, there is a 100 percent probability (11 out of 11 years with an occurrence) that a wildfire event will occur annually in the planning area. Thus, the annual probability of wildfire occurring in the future is *Highly Likely*.

Overall Vulnerabilities

Wildfire poses a threat to a range of demographic groups. Wildfire, wildfire within the WUI, and urban fire could result in major evacuations of residents in impacted and threatened areas. Groups and individuals lacking reliable transportation could be trapped in dangerous locations. Lack of transportation is common among the elderly, low-income individuals, and racial minorities, including on tribal reservation lands. Wildfires can cause extensive damage to both urban and rural building stock and properties including critical facilities and infrastructure, as well as agricultural producers which support the local industry and economy. Damaged homes can reduce available housing stock for residents, causing

110 FEMA and NFIP. 2020. "Flood After Fire." Accessed September 2020. https://www.fema.gov/media-library-data/1573670012259-3908ab0344ff8bf5d537ee0c6fb531d/101844-019_FEMA_FAF_Infographic-ENG-web_v8_508.pdf

them to leave the area. Additionally, fire events threaten the health and safety of residents and emergency response personnel. Recreation areas, timber and grazing land, wildlife habitat, and scenic views can also be threatened by wildfires. Several oil and gas companies have drilling operations in wildfire interface areas.

In unpopulated areas, topography, slope, and vegetation can prevent fire suppression equipment from accessing fires. Existing roads in rural areas may have steep grades or other conditions that make them impassable for heavy fire-fighting equipment. Outside of the public water systems, water is available directly from creeks, rivers, and reservoirs. Drought can affect reservoir levels, reducing or in some cases totally eliminating potential water sources for fire suppression. Drought can also affect the flow in the streams and rivers.

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

CHAPTER 5: MITIGATION STRATEGY AND IMPLEMENTATION

The primary focus of the mitigation strategy is to identify specific and actionable strategies and projects that will reduce the effects and impacts from the identified hazards of concern described in this Hazard Mitigation Plan. These action items should help reduce impacts on both existing and future infrastructure and property in a cost effective and technically feasible manner.

These projects are the core of a hazard mitigation plan. Each alternative must be directly related to the goals of the plan and identified hazards of top concern, concise, and implementable. Actions were evaluated based on referencing the risk assessment and capability assessment, as well as the various problem statements. The Tribe was encouraged to choose mitigation actions that were realistic and relevant to the concerns identified.

Methodology

Mitigation alternatives were updated, identified, and prioritized by the Tribal Planning Committee using interactive online engagement tools such as Mentimeter and Miro. The alternatives considered included: the mitigation actions identified by the Tribe in the previous plan; additional mitigation actions discussed during the planning process (such as during the risk assessment); and recommendations from the TPC or public through the survey.

C4 Element and Requirements
§201.7(c)(3)(ii): Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure?

- a. The plan shall include a mitigation strategy that 1) analyzes actions and/or projects that the tribal government considered to reduce the impacts of hazards identified in the risk assessment, and 2) identifies the actions and/or projects that the tribal government intends to implement.
- b. The plan shall include actions and/or projects that reduce risk to existing buildings and infrastructure as well as to new buildings and infrastructure.

Figure 76: Mentimeter Exercise to Update Mitigation Actions



Figure 77: Miro Exercise to Identify Additional Mitigation Actions by Hazard



A final list of alternatives was established including the following information: action title and description of the action; which hazard(s) the action mitigated; responsible party; priority; cost estimate; priority level, potential funding sources; and estimated timeline. The listed priority does not indicate which actions will be implemented first but will serve as a guide in determining the order in which each action should be implemented.

It is important to note that not all of the mitigation actions identified by the Southern Ute Indian Tribe may ultimately be implemented due to limited capabilities, prohibitive costs, low benefit-cost ratio, or other concerns. These factors may not be identified during the planning process. The Tribe has not committed to undertaking all of the identified mitigation actions in this plan. The cost estimates, priority ranking, potential funding, and identified agencies are used to provide an overall framework of which actions may be the most feasible to implement over the next five years. This information will serve as a guide for the Tribe to assist in further mitigating the hazards for the future. Additionally, the Tribe may identify and pursue additional mitigation actions not yet identified in this HMP. Such actions should be discussed and added into the HMP during the annual plan maintenance process.

Finally, not all mitigation actions may be eligible for funding through the Hazard Mitigation Assistance programs (HMGP, BRIC, or FMA). Ineligibility for these grant programs should not preclude the Tribe from identifying or pursuing a mitigation action. Numerous funding sources have been identified across Tribal nations, the State of Colorado, and the federal government to assist tribes in funding projects. FEMA's funding is but one source and is not always the best fit for certain mitigation actions.

Mitigation Action Descriptions

Mitigation actions identified by the Southern Ute Indian Tribe are found in the tables below. Each action addresses the following:

- Mitigation Action – general title of the action item.
- Description – brief summary of what the action item(s) will accomplish or what the project means.
- Hazard(s) Addressed – which hazard the mitigation action aims to address.
- Estimated Cost – a general cost estimate for implementing the mitigation action for the appropriate jurisdiction. Cost was broken down into three categories – Low (less than \$10,000), Medium (\$10,000 to \$50,000), and High (more than \$50,000). Specific costs affiliated to each project should be identified during project scoping or during the grant application process.
- Potential funding – a list of any potential funding mechanisms to fund the action.
- Timeline – a general timeline as established by planning team members noting when the project will begin.
- Priority – a general description of the importance and workability in which an action may be implemented (high/medium/low); priority may vary between respective lead agencies or departments with multiple actions identified – implementation may be dependent on funding capabilities and staffing. Priority level may vary due to other applicable factors. For example, political will, community support, or ability to accomplish a project quickly may make projects a high priority.
- Lead agency – listing of agencies or tribal departments which may lead or oversee the implementation of the action item.
- Status – for continued mitigation actions from previous HMP a description of what has been done, if anything, to implement the action item is included. For new mitigation actions any additional key information to aid in implementation is also listed.

Implementation of the actions will vary between individual departments based upon the availability of existing information; funding opportunities and limitations; and administrative capabilities of the Tribe. Establishment of a cost-benefit analysis is beyond the scope of this plan and could potentially be completed prior to submitting a project grant application or as part of a five-year update. Completed, removed, and continued mitigation actions from the previously approved Southern Ute Indian Tribe Hazard Mitigation Plan are included in the section below.

Mitigation Strategy Action Plan

The identified mitigation strategies are how the Southern Ute Indian Tribe intends to become more disaster resistant. Accomplishing the projects will be dependent on funding, staffing, and technical resources from a variety of sources including the Tribe, local or federal government, non-profit organizations, and the business community. Some projects can be undertaken by the Tribe within existing resources, such as the development and sharing of education programs to provide information on how to prepare for various types of disasters.

The Tribe understands that many federal grants, including HMA grants, may require matching funds to support the projects. There are several options to fulfill local cost-share requirements, including in-kind labor match or other non-federal funding resources which may be used. Additionally, as a federally recognized Indian Tribe, the match requirement may be reduced or in some cases waived depending on the circumstances.

Public-private-tribal partnerships are required to build large scale redundancies or tools such as hazardous fuels mapping or mapping efforts. Projects will be accomplished as resources become available. Those projects with a higher priority ranking will be considered first. Project implementation also depends on the willingness of tribal departments (e.g., public health, housing), public entities (e.g., cities and counties), private businesses, and non-profit organizations (such as the American Red Cross) to participate in specific mitigation actions and projects.

C5 Element and Requirements §201.7(c)(3)(iii): Does the plan contain an action plan that describes how the actions identified will be prioritized, implemented, and administered by the tribal government?

- a. The plan shall describe the criteria used for prioritizing implementation of the actions.
- b. The plan shall identify the position, office, department, or agency responsible for implementing and administering each action.

Prioritization and Timeline

Actions were prioritized during the TPC meetings. During the TPC meeting, an introduction to the STAPLEE method was provided to use in discussing, evaluating, and prioritizing mitigation actions. STAPLEE stands for:

- Social: Does the measure treat people fairly? (e.g., different groups, different generations)
- Technical: Is the action technically feasible? Does it solve the problem?
- Administrative: Is there adequate staffing, funding, and other capabilities to implement the project?
- Political: Will there be adequate political and public support for the project?
- Legal: Does the jurisdiction have the legal authority to implement the action? Is it legal?
- Economic: Is the action cost-beneficial? Is there funding available? Will the action contribute to the local economy?
- Environmental: Does the action comply with environmental regulations? Will there be negative environmental consequences from the action?

Additionally, actions were considered for if there were adequate resources to implement the project in-house, if the action would be able to address the root problem or need for the Tribe, and how it would reduce risk to natural and cultural resources. It is important to note that the prioritization process is qualitative and open to interpretation for TPC. The lead agency as identified in each mitigation action is responsible for implementing the identified mitigation action and providing status updates to the Tribal Risk and Emergency Manager, Department Leadership, and Tribal Council as milestones are met.

D2 Element and Requirements §201.7(d)(3) and 201.7(c)(4)(iii): Was the plan revised to reflect progress in tribal mitigation efforts?

- a. The plan shall describe the status of each mitigation action and/or project identified in the previous plan. For those actions not completed, the plan shall provide a narrative describing the status (for example, a description of why the action is no longer relevant).
- b. The plan shall describe how the tribal government incorporated the previous mitigation plan into other planning mechanisms, as applicable.

D3 Element and Requirements §201.7(d)(3): Was the plan revised to reflect changes in priorities?

- a. The plan shall describe if and how any priorities changed (for example, due to disaster events or changes in leadership) since the plan was previously approved. If no changes in priorities are necessary, plan updates shall validate the information in the previously approved plan.

Mitigation Actions and Capacity Building Strategies

ACTION	BACKUP GENERATOR
Analysis	Provide a portable or stationary source of backup power to redundant power supplies, wells, lift stations, and other critical facilities and shelters/tribal members.
Hazard(s) Addressed	Tornadoes and High Winds, Extreme Temperatures, Severe Winter Storms, Severe Thunderstorms
Estimated Cost	General Fund
Potential Funding	\$25,000 - \$100,000 per generator
Timeline	1-2 years
Priority	High
Lead Agency	Emergency Management and
Status	Some backup generators are in place like the Casino and Water Treatment Plant. Some tribal members are reliant on medical devices that require power where portable generators would be needed. Critical facilities in need of redundant power or generators in need of replacement yet to be identified.

ACTION	CULTURAL RESOURCES ASSESSMENT
Analysis	Develop an assessment of risks to culturally significant sites. A more thorough inventory and assessment in a risk context will help ensure the long-term protection of cultural sites. Part of the output is an inventory of cultural sites in a GIS format.
Hazard(s) Addressed	Animal and Plant Disease, Drought, Extreme Temperatures, Flood/Erosion/Washout,
Estimated Cost	\$10,000 - \$50,000
Potential Funding	Staff time; General Fund
Timeline	5+ years
Priority	High
Lead Agency	Cultural Preservation
Status	Cultural surveys on reservation are mapped in GIS. Data is limited to viewing by key Tribal members and the State Historical Preservation Organization (SHPO). Any survey older than 10 years is redone. SHPO working with SUIT to fund a staff position with the Tribe to update SHPO data that is SUIT. Next step is to hire staff member and begin updating database with SUIT values.

ACTION	PUBLIC WARNING SYSTEM PLAN
Analysis	Develop a multi-hazard warning system plan. Consider connecting with existing reverse 911. Address tornado, dam failure, and flood.
Hazard(s) Addressed	Dam Failure, Flood/Erosion/Washout, Severe Thunderstorms, Tornado/Windstorm
Estimated Cost	\$50,000 - \$100,000
Potential Funding	General Fund
Timeline	2 – 5 years
Priority	Medium
Lead Agency	Emergency Management
Status	LPC has an emergency notification system. Looking to provide a warning system for those working outside. Quotes from companies have been provided in the past but cost is prohibitive at this time. Looking for funding opportunities.

ACTION	HAZARD EDUCATION
Analysis	Develop education programs for senior populations, school populations, and large employers with goal of improving knowledge of hazards and public safety response.
Hazard(s) Addressed	Animal and Plant Disease, Dam Failure, Drought, Earthquake, Expansive Soils, Extreme Temperatures, Flood/Erosion/Washout, Hazardous Materials Release,

ACTION	HAZARD EDUCATION
	Landslide/Rockfall, Severe Thunderstorms, Severe Winter Storms, Terrorism, Tornado/Windstorm, Wildfire
Estimated Cost	<\$10,000
Potential Funding	Staff Time, General Fund
Timeline	2 – 5 years
Priority	Medium
Lead Agency	Emergency Management
Status	Targeted hazard education campaigns will be developed for Tribal members. Hazards identified to target include Drought, Dam Failure, Hazardous Materials Release, and Wildfire.

ACTION	IMPROVE DATA RESOURCES
Analysis	Seek and sign MOU's concerning the exchange of information by agencies. An accurate inventory of all assets, their location and value is of use in a multitude of planning and response activities.
Hazard(s) Addressed	Dam Failure, Flood/Erosion/Washout, Hazardous Materials Release, Terrorism/Cyber Attack/Active Shooter, Wildfire
Estimated Cost	<\$10,000
Potential Funding	Staff Time
Timeline	2 – 5 years
Priority	Medium
Lead Agency	Emergency Management
Status	Ongoing

ACTION	DEVELOP/UPDATE COG/COOP
Analysis	Develop Continuity of Government (COG) and Continuity of Operations (COOP) plans.
Hazard(s) Addressed	All hazards
Estimated Cost	\$10,000 - \$50,000
Potential Funding	General Fund
Timeline	2 – 5 years
Priority	Medium
Lead Agency	Emergency Management
Status	The health center has both plans in place. Emergency Management working to update the EOP in early 2025. COOP/COG will be addressed at that time.

ACTION	IMPLEMENT WATER BEST MANAGEMENT PRACTICES
Analysis	Limit outdoor watering to specific times of the day, limit watering days per week, require car washes to install water recycling technology and /or best management practices.
Hazard(s) Addressed	Drought
Estimated Cost	<\$10,000
Potential Funding	General Fund
Timeline	5+ years
Priority	Low
Lead Agency	Natural Resources and Planning
Status	Program yet to be formally developed and implemented. The Tribe has senior water rights. Most water is used for agriculture.

ACTION	IDENTIFY HIGH FLOOD RISK AREAS
Analysis	Identify risk areas for flash floods in GIS format (small watersheds). The acquisition of DFIRM data will not help identify many areas of the reservation prone to flash flooding.
Hazard(s) Addressed	Flood/Erosion/Washout
Estimated Cost	\$10,000 - \$50,000
Potential Funding	General Fund
Timeline	2 – 5 years

ACTION	IDENTIFY HIGH FLOOD RISK AREAS
Priority	Medium
Lead Agency	Natural Resources
Status	Washouts occur on the eastern side and on the western end of the reservation. Continue to identify and map flood risk areas to reduce impacts to reservation.
ACTION	WATERSHED INFRASTRUCTURE IMPACT
Analysis	Determine small watershed infrastructure impact. Small washes, arroyos and creeks that are prone to flooding need to be identified as well as at-risk infrastructure and properties.
Hazard(s) Addressed	Flood/Erosion/Washout
Estimated Cost	Unknown
Potential Funding	General Fund
Timeline	2 – 5 years
Priority	Low
Lead Agency	Natural Resources
Status	Not yet started. Pine River is the starting point and a lot of areas are at risk of washing out.
ACTION	VEGETATION MANAGEMENT
Analysis	Includes removal of diseased wood; removal of non-native species
Hazard(s) Addressed	Severe Thunderstorms, Tornadoes and High Winds, Wildfire
Estimated Cost	\$10,000 - \$50,000
Potential Funding	General Fund, CWDG
Timeline	2-5 years
Priority	Medium
Lead Agency	Forestry
Status	Not started.
ACTION	DOCUMENT AND MAP RISK AREAS FOR EXPANSIVE SOILS
Analysis	Identify, document, and map potential and known risk areas for expansive soils.
Hazard(s) Addressed	Expansive Soils
Estimated Cost	\$10,000
Potential Funding	General Fund
Timeline	5 years
Priority	Medium
Lead Agency	GIS
Status	Some areas are known to have expansive soils, but need to be documented in GIS.
ACTION	IDENTIFY WARMING/COOLING SHELTERS
Analysis	Identify facilities that can be utilized as warming or cooling shelters during periods of power outages and other hazard events
Hazard(s) Addressed	Extreme Temperatures
Estimated Cost	\$10,000 - \$30,000
Potential Funding	General Fund, Staff Time
Timeline	1-3 years
Priority	Medium
Lead Agency	Tribal Services
Status	The Casino is identified as a potential shelter. Additional facilities are needed to be identified and documented.
ACTION	WOOD BURNING STOVES AND SUPPLIES
Analysis	Purchase and provide wood burning stoves, fire wood, and other supplies to tribal members that need the ability to warm their homes during extreme cold.
Hazard(s) Addressed	Extreme Temperatures, Severe Winter Storms
Estimated Cost	Dependent upon the number of stoves needed
Potential Funding	General Fund
Timeline	2-5 years

ACTION		WOOD BURNING STOVES AND SUPPLIES
Priority		Low
Lead Agency		Forestry, Tribal Services
Status		Not started

ACTION		BERM IMPROVEMENTS
Analysis		Determine if berm improvements along and north of the fairgrounds would be feasible and reduce flood risks
Hazard(s) Addressed		Flooding, Levee Failure
Estimated Cost		Unknown
Potential Funding		General Fund
Timeline		1-3 years
Priority		High
Lead Agency		Emergency Management
Status		Not started. A feasibility study is likely needed to determine viability and next steps.

ACTION		BMPS FOR ENERGY ASSETS AND ROADS
Analysis		Identify and implement best management practices for energy assets and roads.
Hazard(s) Addressed		Hazardous Materials Release
Estimated Cost		\$50,000+
Potential Funding		Growth Fund
Timeline		5+ years
Priority		Medium
Lead Agency		DOE, County Roads
Status		Partnerships with County Roads Departments would be needed to move projects forward.

ACTION		FLOOD RISK STUDIES
Analysis		Conduct studies to identify mitigation alternatives to minimize flood risk and washouts to County Roads 151, 314, and 500
Hazard(s) Addressed		Flooding
Estimated Cost		\$50,000+
Potential Funding		General Fund, Staff Time
Timeline		2-5 years
Priority		High
Lead Agency		Planning Department
Status		Not started

ACTION		FLOOD RISK STUDY PROJECTS
Analysis		Implement projects identified in Road Flood Studies to minimize washouts to County Roads
Hazard(s) Addressed		Flooding
Estimated Cost		\$50,000+
Potential Funding		General Fund
Timeline		2-5 years
Priority		Medium
Lead Agency		Planning and County Department of Roads
Status		Not started. Partnerships with County Roads Departments would be needed to move projects forward.

ACTION		RIVER/STREAM BANK STABILIZATION
Analysis		Install rip rap and other stream bank stabilization measures to minimize stream erosion near critical infrastructure
Hazard(s) Addressed		Flooding
Estimated Cost		\$50,000+
Potential Funding		General Fund

ACTION	RIVER/STREAM BANK STABILIZATION
Timeline	5+ years
Priority	Low
Lead Agency	Planning, DNR, Environmental
Status	Not started

ACTION	ROCKFALL PROTECTION
Analysis	Install Rockfall protection devices on County Road 310/318
Hazard(s) Addressed	Landslides
Estimated Cost	\$50,000+
Potential Funding	General Fund
Timeline	5+ years
Priority	Medium
Lead Agency	Planning and County Roads
Status	Partnerships with County Roads Departments needed to move projects forward.

ACTION	DEVELOP PARTNERSHIPS
Analysis	Develop partnerships with County and State on Road Mitigation Projects
Hazard(s) Addressed	Flooding, Landslides, Severe Winter Storms, Severe Thunderstorms, Hazardous Materials Release
Estimated Cost	Staff Time
Potential Funding	Staff Time
Timeline	2-5 years
Priority	Medium
Lead Agency	Planning and County Department of Roads
Status	Not started.

ACTION	SURGE PROTECTION
Analysis	Improve surge protection across the reservation
Hazard(s) Addressed	Severe Thunderstorms, Severe Winter Storms, High Winds and Tornadoes
Estimated Cost	\$50,000+
Potential Funding	General Fund
Timeline	2-5 years
Priority	High
Lead Agency	Property and Facilities
Status	Casino has installed surge protection. Assessment for additional facilities is needed.

ACTION	SNOW FENCES
Analysis	Install snow fences in key locations.
Hazard(s) Addressed	Severe Winter Storms
Estimated Cost	\$10,000
Potential Funding	General Fund
Timeline	5+ years
Priority	Low
Lead Agency	Planning Department
Status	Not started.

ACTION	MUTUAL AID
Analysis	Establish mutual aid agreements
Hazard(s) Addressed	Extreme Temperatures, Severe Winter Storms, Severe Thunderstorms, Tornadoes and High Winds, Wildfire
Estimated Cost	Staff Time
Potential Funding	Staff Time
Timeline	1 year
Priority	High
Lead Agency	Emergency Management
Status	Emergency Management working with neighboring jurisdictions.

ACTION	DEFENSIBLE SPACE RESOURCES
Analysis	Provide resources to renters and owners on defensible space (e.g., guidebook)
Hazard(s) Addressed	Wildfire
Estimated Cost	\$10,000
Potential Funding	General Fund
Timeline	1-3 years
Priority	High
Lead Agency	Emergency Management
Status	Not started

ACTION	RESIDENTIAL HARDENING
Analysis	Harden homes and structures through use of materials resistant to ignition from embers, radiant heat, and direct flame contact. Key measures could include using fire-resistant building materials and installing ember-resistant vents and roofing.
Hazard(s) Addressed	Wildfire
Estimated Cost	\$50,000+
Potential Funding	General Fund; CWDG grant
Timeline	2-5 years
Priority	High
Lead Agency	Planning, Emergency Management
Status	Working to identify funding potentially through CWDG and prepare grant application.

ACTION	IMPROVE INGRESS/EGRESS OF IGNACIO PEAK
Analysis	Ensures safe and efficient evacuation routes while allowing emergency responders to access threatened areas. Strategies include widening roads, creating multiple exit routes, installing clear signage, and reducing roadside vegetation to minimize fire hazards.
Hazard(s) Addressed	Wildfire
Estimated Cost	\$50,000+
Potential Funding	General Fund; CWDG grant
Timeline	2-5 years
Priority	High
Lead Agency	Planning, Emergency Management
Status	Working to identify funding potentially through CWDG and prepare grant application.

Completed Mitigation Actions

ACTION	DROUGHT MITIGATION STUDY
Analysis	Develop a Drought Mitigation Study that addresses at a minimum: cultural impacts, agricultural impacts.
Status	Plan completed.

ACTION	STRENGTHENING INTERGOVERNMENTAL COLLABORATION
Analysis	Conduct intergovernmental training and exercises; develop scenario trainings specific to the hazards of concern.
Status	Training and exercises are conducted regularly with key stakeholders and governmental staff.

ACTION	DAM FAILURE RESPONSE PLAN
Analysis	Develop a dam failure response plan.
Status	Bureau of Reclamation and Bureau of Indian Affairs developed and maintains the EAPs for the dams.

ACTION	WATER RATIONING STUDY
Analysis	Develop a study of water rationing and the development of underground resources, specifically to determine if water from oil and gas activities can be re-utilized. Assess if adequate information exists to quantify useable groundwater resources for the future.
Status	STUDY COMPLETED.

ACTION	IMPROVE WATER STORAGE
Analysis	Build new facilities to enhance water diversion or divert new supplies.
Status	Raw water storage capacity for water treatment plant has quadrupled. Project completed.
ACTION	MECHANICAL TREATMENTS
Analysis	A full range of treatment methods may be applied: hand thinning, hand piling, lopping, pruning, mastication, crushing, extraction, scarification, chipping, seeding, prescribed fire, and hand or mechanized application of herbicides.
Status	Treatments are applied as necessary.
ACTION	PRESCRIBED BURNS
Analysis	The development of prescribed fire treatment proposals is done one-five years in advance of planned treatments. Field reconnaissance and interdisciplinary analysis completed one-two years advance of project implementation. Designed to reduce hazardous fuels accumulations & fire spread.
Status	Prescribed burns are completed regularly.
ACTION	TRIBAL REPRESENTATIVE FOR WILDFIRE
Analysis	Designate a Tribal Representative to be part of the Wildland Fire Incident Management Team.
Status	The SUIT Forestry Division Head is assigned when the Wildland Fire IMT is activated.

Removed Mitigation Actions

ACTION	CLOUD SEEDING
Analysis	Implement a cloud seeding program.
Reason for Removal	Western Colorado Water Conservation Board runs a cloud seeding program. Tribe is unlikely to get involved.
ACTION	COLLABORATE WITH OTHER JURISDICTIONS ON FLOODING ISSUES
Analysis	Coordination on flood response issues to include at a minimum: transportation and emergency services.
Reason for Removal	Collaboration and coordination occurs as needed.
ACTION	PARTICIPATE IN NATIONAL FLOOD INSURANCE PROGRAM (NFIP)
Analysis	Research joining the NFIP.
Reason for Removal	La Plata County is a member of the NFIP, but the Tribe does not have plans to join. It participated in Risk MAP but that's the extent of interest at this time.

Implementation

Implementing projects identified in the Hazard Mitigation Plan is the true test of collaboration efforts throughout the planning process. While a full list of actions and activities the Tribe would like to implement is included in this section, it is reasonable to assume only a limited number of actions will be fully implemented prior to the next plan update. Low priority actions may be the easiest or lowest cost to implement, but High priority actions are the most likely to address the pressing issues identified during risk assessment and by tribal departments.

The Tribe should evaluate other identified planning mechanisms for ways to utilize resources and meet mitigation goals. These can include the Emergency Operations Plan, evacuation plans, Community Wildfire Protection Plans, and Economic Development Plan from which the Tribe already implements projects or policies from. Below are key strategies the SUIT can use to ensure projects are carried forward in an equitable and sustainable fashion:

- Build mitigation into daily workflow practices
- Maintain ongoing list of projects and plan goals in quarterly tribal newsletter
- Provide status summary on all actions within HMP during annual fiscal reporting
- Provide onboarding training and awareness of Tribal plans and programs to new staff
- Provide documentation of all changes in development or permitting procedures to the Tribal Planning Committee to include in the HMP.

It is the responsibility of the elected officials, department staff, and key agencies to implement and monitor progress of the various mitigation measures identified in this plan. During annual reviews, an assessment of each actions regarding implementation, updated costs, status, and timeframe should be developed and added as an annex to this plan to be fully integrated during the five-year update. The Tribal Planning Committee is responsible for ensuring these annual reviews are completed and compiled with the document. The Southern Ute Indian Tribal Council is responsible for ensuring that the HMP is kept current, accurate, and effective. With the adoption of this plan, the Tribal Risk and Emergency Manager has been designated as the primary point of contact in accomplishing this ongoing responsibility.

The established goals and prioritized mitigation actions will be implemented through existing plans, policies, and programs as possible. Implementation of the long-term and short-term objectives/goals will be dependent on securing funding for each of the strategies identified in the plan. The Tribe will actively pursue a variety of funding opportunities identified in the various plans and prioritized by the various departments and programs under the direction of Tribal Council.

A6 Element and Requirements §201.7(c)(4)(i):

Does the plan include a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within the plan update cycle)?

- a. The plan shall identify how, when, and by whom the plan will be monitored. Monitoring means tracking the relevance and implementation of the plan over time and includes all elements of the plan.
- b. The plan shall identify how, when, and by whom the plan will be evaluated. Evaluating means assessing the effectiveness of the plan at achieving its stated purpose and goals.
- c. The plan shall identify how, when, and by whom the plan will be updated. Updating means reviewing and revising the plan at least once every 5 years.
- d. The plan shall include the title of the individual or name of the

Monitoring, Evaluating, and Updating the Plan

The Southern Ute Indian Tribe will be responsible for implementing, monitoring, and maintaining this Hazard Mitigation Plan. Unless otherwise specified, the identified lead agency or tribal department will be responsible for implementation of the identified mitigation actions in this plan. The lead agency or department is responsible for reporting on the status of all projects, including which implementation processes worked well, any difficulties encountered, how coordination efforts are proceeding, and which strategies could be revised. Processes for developing and updating the plan vary according to branch of government (e.g., SUIT Tribal Council) and can also vary depending on direction from the Tribal President and Tribal Council. The Tribal Risk and Emergency Manager will be responsible for staying informed of other relevant plans and working to incorporate pertinent elements into the HMP as appropriate.

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside other planning documents, each fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin. Quarterly or semi-annual performance reports should be utilized by the tribal council or department heads to identify accomplishments or progress made on identified mitigation actions. Additionally, as each recommended project is completed, a timeline and summary of how that project was completed may be written and attached to the plan in a format selected by the tribal council. Information to be included:

- Summary of major events and their impacts,
- a discussion of the work performed for all work plan components,
- project timelines,
- agencies or individuals to be involved in the project,
- discussion of any existing or potential problems and benefits,
- a detailed discussion of budget or funding opportunities, and
- closeout details and paperwork for grant funded projects.

At the discretion of the tribal council, members of the TPC led by the Tribal Risk and Emergency Manager (Emergency Manager) can be used to review the original draft of the mitigation plan and to recommend changes. The Emergency Manager is responsible for ensuring approved revisions are made to this plan as changes occur or after a major hazard event. The Emergency Manager will coordinate with applicable agencies to gather After Action Reports from events. Revisions and comment periods on the HMP will be posted in local newspapers and shared with the public and individuals who participated in the development of this HMP. The Emergency Manager will maintain a file into which comments or input on changes to the plan can be kept.

C7 Element and Requirements §201.7(c)(4)(ii) and 201.7(c)(4)(v): Does the plan describe a system for reviewing progress on achieving goals as well as activities and projects identified in the mitigation strategy, including monitoring implementation of mitigation measures and project closeouts?

- a. The plan shall describe the system for tracking the implementation of the mitigation activities and projects identified in the mitigation strategy. This includes all mitigation activities, not just those funded by FEMA.
- b. The system shall include the following:
 1. A schedule;
 2. Tribal department or tribal office responsible for coordination (or non-tribal entity or agency, if the tribe allows);
 3. Role of the agencies/offices identified in the mitigation strategy as responsible for implementation of actions; and
 4. Project closeout procedures.

Engaging the public in the review and maintenance procedures of the HMP is a key strategy to address local concerns and garner public support on subsequent mitigation strategies. The Tribe will engage the public in the review process by collecting local comments or testimony on local hazard impacts on social media and at tribal council meetings and by posting the approved Hazard Mitigation Plan on the tribal website for public access and comment.

Finally, should federal regulations be significantly changed with which the Reservation must comply, the Emergency Manager will notify and hold a meeting with department heads who participated in this plan update and the Tribal Council. A revised copy of the HMP will then be provided to the Tribal Council and FEMA.

A7 Element and Requirements §201.7(c)(4)(iv): Does the plan include a discussion of how the tribal government will continue public participation in the plan maintenance process?

- a. The plan shall describe how the tribal government will continue to seek public participation after the plan has been approved and during the plan’s maintenance process.

Plan Adoption

The SUIT Tribal Council is responsible for ensuring that the HMP is kept current, accurate, and effective. With the adoption of this plan, the Tribal Risk and Emergency Manager has been designated as the primary point of contact in accomplishing this ongoing responsibility.

The established goals and prioritized mitigation actions will be implemented through existing plans, policies, and programs as possible. Implementation of the long-term and short-term objectives/goals will be dependent on securing funding for each of the strategies identified in the plan. The Tribe will actively pursue a variety of funding opportunities identified in the various plans and prioritized by the various departments and programs under the direction of Tribal Council.

Regulatory Plan Update

Reviews and updates of this plan will occur at a minimum every five years, as part of FEMA regulations for approved Hazard Mitigation Plans. At the discretion of the tribal council, updates may be incorporated more frequently, especially in the event of a major hazard. The Emergency Manager will oversee the evaluation process and will review the goals and identified mitigation strategies of this previous plan and evaluate them to determine whether they are still pertinent and current.

Agencies to be included in the 5-year update include all those involved in this 2024 plan and any newly formed departments, committees, or stakeholder groups which contribute or guide to the overall governance and services provided to residents by the Tribe. Various improvements or changes may be considered during the five-year update of the HMP, such as:

- Whether any potential natural hazards have developed that were not addressed in the plan,
- Whether any disasters have occurred which were not addressed in the plan,
- Whether any unanticipated development has occurred that could be vulnerable to any natural disasters, and
- Whether any additional project ideas have been developed.

Appendix A: Core Planning Team Meetings

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SOUTHERN UTE INDIAN TRIBE

EXECUTIVE SITE VISIT SUMMARY

MAY 23 - 24, 2024

PURPOSE:

FEMA Region 8 staff made a two-day site visit to the Southern Ute Indian Reservation in May 2024. They brought staff from *Resilience Action Partners*, which supports FEMA's Community Engagement and Risk Communication (CERC) contract. They were also joined by staff from JEO, which is contracted to support the hazard mitigation plan (HMP) update. The visit had two purposes:

- To gain insight on the unique needs of an HMP to support the Southern Ute Indian Tribe (SUIT).
- To allow the BRIC DTA support team to gain a better understanding of the tribe's priorities, geography and needs.

The visit also coincided with the tribe's annual Bear Dance, an event that provided a unique opportunity to meet tribal members and learn about their history and culture. Findings from this visit will help inform priorities for the update and development of the tribe's HMP, as well as future Building Resilient Infrastructure and Communities (BRIC) grant applications.

OUTCOMES:

- 1) SUIT is working with different departments to gather data and existing plans to deliver to JEO for support and additional information.
- 2) FEMA and JEO met with SUIT following the site visit to review the roles and responsibilities of SUIT and the contractors during the planning process.
- 3) FEMA and JEO are coordinating with SUIT and their core planning team to establish recurring meetings throughout the plan update process.
- 4) FEMA is finalizing a public engagement strategy and timeline based on feedback and input from the site visit.
- 5) JEO has identified a division of roles and responsibilities for the HMP update. This has been shared with the Tribe and BRIC DTA support team for review and feedback.
- 6) JEO is finalizing the project schedule to align with the public engagement timeline. They will provide this timeline to SUIT and FEMA for review.

SOUTHERN UTE INDIAN TRIBE

EXECUTIVE SITE VISIT SUMMARY

THURSDAY, MAY 23, 2024: SUMMARY

ATTENDEES Day 1:

ORGANIZATION/ AGENCY	PARTICIPANT NAME	ROLE/TITLE
FEMA Region 8	Kyle McCormick	Hazard Mitigation Specialist, BRIC DTA Facilitator
FEMA Region 8	Felicity Selvoski	Community Planner (Tribal)
FEMA Region 8	Patricia Gavelda	Grants Management Specialist
JEO (HMTAP Contractor)	Becky Appleford	Hazard Mitigation and Emergency Senior Planner
<i>Resilience Action Partners (CERC Contractor)</i>	Lucy Duffy	Communications Specialist
Southern Ute Indian Tribe	Lindsay Box	Executive Officer
	Don Brockus	Risk and Emergency Manager
	Andrew Frost	Lands Director
	Devin Frost	Security Manager – Sky Ute Casino
	Shelly Riddle	GIS Manager
	Doug Krueger	Senior Environmental Compliance Specialist – Growth Fund
	Andy Wetherell	Department of Energy, Manager – Growth Fund
	Amy Barry	Tribal Information Services Director
	Summer Begay	Communications Specialist
	Chris Mimmack	Justice and Regulatory
	Brad Egger	Fire Marshal
Tyson Thompson	Property and Facilities Director	
Edward Box, III	Southern Ute Culture Director	

SOUTHERN UTE INDIAN TRIBE

EXECUTIVE SITE VISIT SUMMARY

ORGANIZATION/ AGENCY	PARTICIPANT NAME	ROLE/TITLE
	Elizabeth Edwards	Southern Ute Growth Fund
	Hayes Briskey	Utilities Manager
State of Colorado	Tom McNamara	Colorado Division of Homeland Security and Emergency Management, Field Manager
Bureau of Indian Affairs (BIA)	Richard Gustafon	BIA, Fire Management
	Priscilla Bancroft	BIA, Office of the Superintendent
Los Pinos Fire Protection District	Jim Owens	Deputy Fire Chief
	Joshua Lorenzen	Los Pinos Fire Chief

THURSDAY MORNING MEETING:

- The site visit began at the Leonard C. Burch building on the Southern Ute Indian Reservation with Don Brockus. Don provided an overview on what hazards are a concern for the reservation and tribe, as well as disaster history and cultural context.
- In 2002, there were three wildfires that took place: the Missionary Ridge Fire, the Valley Fire, and the Million Fire. None of the fires burned on the reservation, but debris destroyed the water treatment plant.
 - There is a water resources division within the tribe.
 - The tribe has a drought response plan.
- The old HMP contains a lot of information about flooding. There is only one structure on the reservation that is below the 100-year floodplain level. Don mentioned that the new plan has less of an emphasis on flooding.
- The bison herd is symbolic and spiritually important to the tribe. The tribe also distributes the meat from the herd to tribal members.
 - There are about 120 bison in the herd.
- Cattle are a much larger economic interest. A lot of alfalfa is grown on the reservation, which can be used for grazing.
- The agriculture division has about 12 employees.
 - This division manages lands controlled by the tribe. It also reduces prices and helps members with land allocation.
- The reservation is made up of approximately 1,064 square miles (681,000 acres).
 - In 1895 the Hunter Act was passed, opening the Ute strip to homesteading and sale to non-tribal members. The Southern Utes agreed to take land into ownership under the allotment process, and many allotments were either sold to non-Indians or the tribe. Pieces of land were held by railroads. Each tribal member received 160 acres. The rest was sold to non-members.
 - The tribe controls tribal trust land. Within its land are allotments which are privately owned. Assignments are for tribal families to use. Fee land is land owned as fee

SOUTHERN UTE INDIAN TRIBE

EXECUTIVE SITE VISIT SUMMARY

simple within the exterior boundaries of the SUIT reservation. It is not owned by the tribe or the federal government.

- The tribe recently deployed a new alert system.
- BP controlled a lot of oil and gas.
- There are also a lot of privately owned oil wells.
- Coalbed methane is a type of natural gas. The tribe has mineral rights.
- There are about 1,450 tribal members. About 1,100 live on the reservation or nearby.
- The executive officer is Lindsay Box. She liaises between the administration and the tribal council.
- The tribe is working hard to preserve the Ute language. Summer programs teach the language, as does the Southern Ute Academy.
 - The community values the school very deeply.
- Bosque mitigation is a project Don has in mind.
 - The Bear Dance fire killed all the cottonwoods; the bosque is dangerous for wildfires.
- Utes believe that any information shared outside the tribe will be used against them.
- The tribe does have a good relationship with the BIA.
 - The current BIA representative is native.
- The tribe does not get along with Indian Health Services (IHS)
- SUIT is working on a residential substance abuse treatment facility. This is something that is lacking in the area.
- People must be mindful about conversations on climate change. The majority of the tribal council is conservative.
- Death is a difficult subject for Utes, especially when talking about mass casualties.

THURSDAY AFTERNOON MEETING:

- In the afternoon, FEMA and JEO were joined by the planning committee Don had invited for a plan kickoff meeting. The goals of this meeting were to help the group better understand what an HMP is, why it is important, and their role in next steps. FEMA also presented ideas for public engagement activities.
- The group was very engaged throughout the meeting. Many agreed they want a plan that will be useful and not just sit on a shelf. They also emphasized the importance of data sovereignty and privacy in terms of cultural assets.
- Lindsay Box had concerns about culturally significant sites. Information on the location of sites, as well as what is at the sites, is incredibly private to specific tribal members. If an activity is created to protect these sites in the HMP, the tribe will need to discuss what information can or cannot be shared publicly.
- Public engagement strategy notes:
 - There is a requirement to provide a period for public comment during the plan update.
 - The focus should be on engaging tribal members, but the general public will also need to be included.
 - Incentives and food can support participation and attendance at events.
 - The tribal fair and general meeting are in September. It could be beneficial to meet tribal members where they are and attend these events (if we have permission).
 - Open houses and meetings will be the easiest way to engage the community.
 - During the planning committee meetings, FEMA should show progress and what is coming.
 - The best way to contact elders during COVID was through a call center. This could be a good way to get input from them.

SOUTHERN UTE INDIAN TRIBE

EXECUTIVE SITE VISIT SUMMARY

- Surveys do not always get engagement.
- Lindsay provided the contacts for Amy Barry and Summer Begay, who will help with outreach to the community.

ATTENDEES Day 2:

ORGANIZATION/ AGENCY	PARTICIPANT NAME	ROLE/TITLE
FEMA Region 8	Kyle McCormick	Hazard Mitigation Specialist, BRIC DTA Facilitator
	Felicity Selvoski	Community Planner (Tribal)
	Patricia Gavelda	Grants Management Specialist
JEO (HMTAP Contractors)	Becky Appleford	Hazard Mitigation and Emergency Senior Planner
<i>Resilience Action Partners (CERC Contractor)</i>	Lucy Duffy	Communications Specialist
Southern Ute Indian Tribe	Don Brockus	Risk and Emergency Manager
	Crystal Rizzo	Cultural Preservation Director

Site Visit Day 2:

- Day 2 began with a visit to the Southern Ute Cultural Center and Museum. Crystal Rizzo gave attendees a tour through the museum to learn about the tribe’s history and culture in more detail. Crystal informed the group about cultural sites and their significance, as well as the importance of tribal ceremonies and native plants. She also provided input on best practices for public engagement.
 - Crystal suggested putting flyers in the mailboxes of tribal members to inform them of upcoming events or just general HMP updates. Putting this information with the tribal members’ checks would be beneficial as they are extremely likely to open that mail.
 - She also suggested attending events where members are already going to be, especially elders.
- After the museum, the group toured the reservation with Don to see areas of impact from disasters, as well as areas of concern. Don pointed out the water treatment plant and showed the group where most tribal members lived. This tour put into perspective many of the previous discussions of risk and concern for disasters such as wildfire.
- That afternoon, the group attended the SUIT’s Bear Dance. The annual Bear Dance is held every spring; it is a social dance open to both tribal members and the general public. More information on the Bear Dance can be found [here](#).

SOUTHERN UTE INDIAN TRIBE EXECUTIVE SITE VISIT SUMMARY



The Southern Ute Indian Tribe bison herd grazing in the distance.



The team at the Bear Dance. (no photos were allowed inside for non-tribal members)



Images from the visit to the Southern Ute Cultural Center and Museum.

SOUTHERN UTE INDIAN TRIBE EXECUTIVE SITE VISIT SUMMARY

Name	TITLE	Contact
Andrew Frost	Lands Dir.	
Dem Frost	Security Manager Casne	dem.frost@shymtec.state.nm.gov
Shelly Ziddle	GIS MANAGER??	S.ZIDDLE@southernute-nm.gov
Dave Krueger	Si. Env Comp Spcl	dkrueger@sudoe.us
Andy Wetherell	DOE Manager	awetherell@sudoe.us
LUCY DUFFY	CERC	
Felicity Selvoski	FEMA	Felicity.selvoski@fema.dhs.gov
PATRICIA GAVELDA	FEMA Tribal Grants management specialist	patricia.gavelda@ state ^{fema} .dhs.gov
Kyle McCormick	FEMA	kyle.mccormick@fema.dhs.gov
Tom McNamara	CO-DHSEM	thomas.mcnamara@state.co.us
Brad Egger	Fire Marshal	egger@laspinasfire.com
Rich Gurtson	BIA Fire Manager	richard.gurtson@bia.gov
Jim Owens	BE Dept Fire Chief	jowens@laspinasfire.com
CHRIS MIMMACK	Justice Regulatory OUIT	cmimm@southernute-nm.gov
JOSHUA LORENZEN	Las Pinas FIRE CHIEF	jlorenzen@laspinasfire.com

Southern Ute Indian Tribe HMP Update–Public Engagement Strategy

FEMA Region 8 BRIC Technical Assistance Team



FEMA

Today's Outline

- Public Engagement in the HMP process
- Overview of Proposed Key Engagement Tasks
- Proposed Timeline for Input/Concerns
- Key Task Questions
- Digital Survey



FEMA

BRIC Direct Technical Assistance/Tribal Services Team



Kyle McCormick



Felicity Selvoski



Patricia Gavelda

Expertise In...

- Community planning and local planning mechanisms
- Mitigation grants
- Partnership building
- Grants writing and management
- And more...



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BRIC Direct Technical Assistance

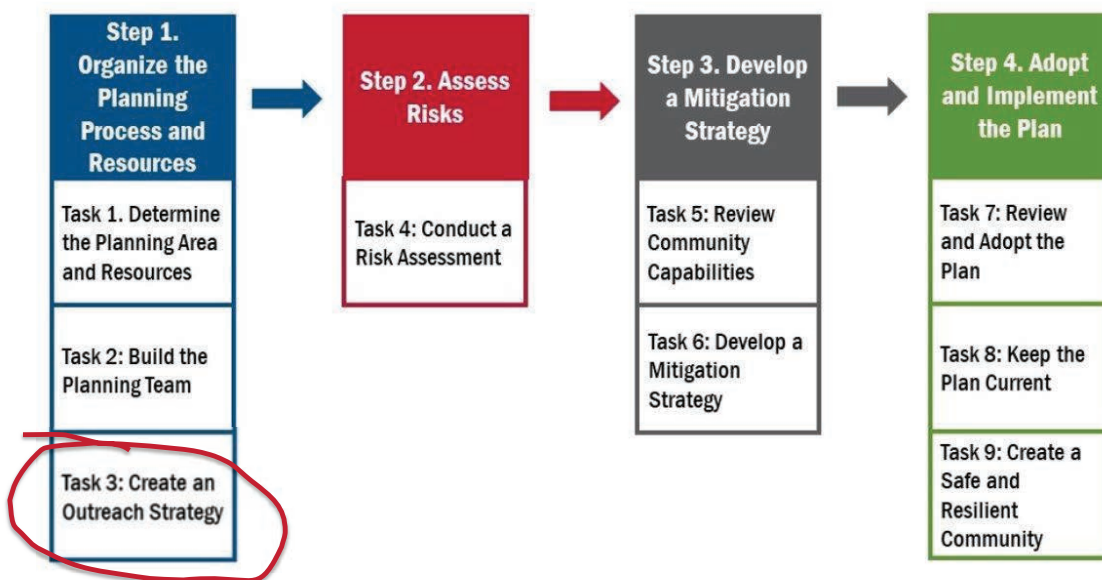
- National program, regionally facilitated
- Your community determines priorities, paces, and partnership!
- 3 years of dedicated community partnership



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Public Engagement in the HMP process

The Mitigation Planning Process



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Overview of Proposed Key Engagement Tasks

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5 Proposed Key Engagement Tasks

Developed via Past Conversations

1. Online Survey
2. Door-to-Door Survey
3. 1:1 Interested Party Interviews
4. SUIT General Meeting/Tribal Fair – Tabling Event
5. Open Houses (x2)



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Online Survey

- **AUDIENCE** (Who are we seeking input from?)
- **WHERE** (Where will the survey "go live"? Website? Where will the survey be "marketed"?)
- **WHO** (Who will lead the communication of the survey? Communications staff?)
- **MATERIALS** (What needs to be developed / by whom)
 - Survey questions
 - "Survey live" and "survey closing" social media & website graphics
 - Survey flyers for community spaces



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Door-to-Door Survey

- **AUDIENCE** (Who are we seeking input from?)
- **WHERE** (What neighborhoods will be targeted? Businesses?)
- **WHO** (Who will perform the survey?)
- **MATERIALS** (What needs to be developed / by whom)
 - 3-5 survey questions for potential different audiences OR
 - Flyer with a link to survey– target getting responses from specific area



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1:1 Interviews

- **AUDIENCE** (Who are we seeking input from? Tribal agencies/depts? Businesses? Community groups?)
- **WHERE** (How will they be hosted? Virtual?)
- **WHO** (Who will facilitate the interviews? Who will take notes?)
- **MATERIALS** (What needs to be developed / by whom)
 - 3-5 questions
 - Notetaking form



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SUIT General Meeting

- **AUDIENCE** (Who are we seeking input from? Who will be attending the event?)
- **WHERE** (Where will the event be? What other events should we plan on having a booth at?)
- **WHO** (Who will be at the table? How will notes be collected?)
- **MATERIALS** (What needs to be developed / by whom)
 - Engagement activity? Incentive attached for feedback?
 - Develop Presentation for Don/Teresa to give at General Meeting (if requested—Tribal member only)



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Open Houses

- **AUDIENCE** (Who are we seeking input from? Who will be attending the event?)
- **WHERE** (Where should the open houses be? Community centers? When?)
 - Museum?
 - Community recreation center? Other gathering places
- **WHO** (Who will lead the presentation? How will notes be collected? Who will notify the public and how?)
- **MATERIALS** (What needs to be developed / by whom)
 - Marketing materials (social media, flyers) announcing the open houses
 - Flyers in annual letters to Tribal Members?
 - Open house formatting
 - Presentation slides



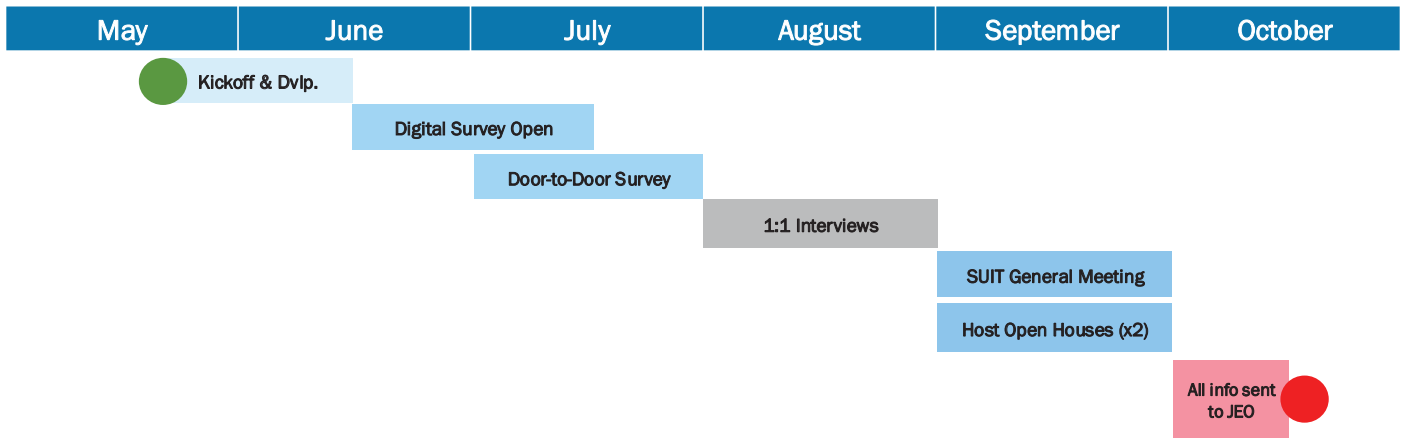
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TIMELINE

Proposed Public Engagement Timeline



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Questions

Thank you!



Hazard Mitigation Plan Update: Core Planning Team Call - Southern Ute Indian Tribe (SUIT)

Thursday, July 25, 2024

Time: 1:30 to 3:00 PM (MST)

Agenda

- General updates:
 - Where is the team in the plan update process?
 - Updates on public engagement activities.
- Review of goals identified in the previous hazard mitigation plan (HMP).
- Discussion of goals and objectives for the updated HMP.
- Questions?



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Hazard Mitigation Plan Update: Core Planning Team Call - Southern Ute Indian Tribe (SUIT)

AGENDA

- General Updates
 - Updates on where we are at in the plan process
 - Updates on the public engagement activities
- Review of Goals Identified in the previous hazard mitigation plan (HMP)
- Discussion of Goals and objectives for the updated HMP
- Questions



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Updates on Public Involvement Strategy

5 Proposed Key Engagement Tasks

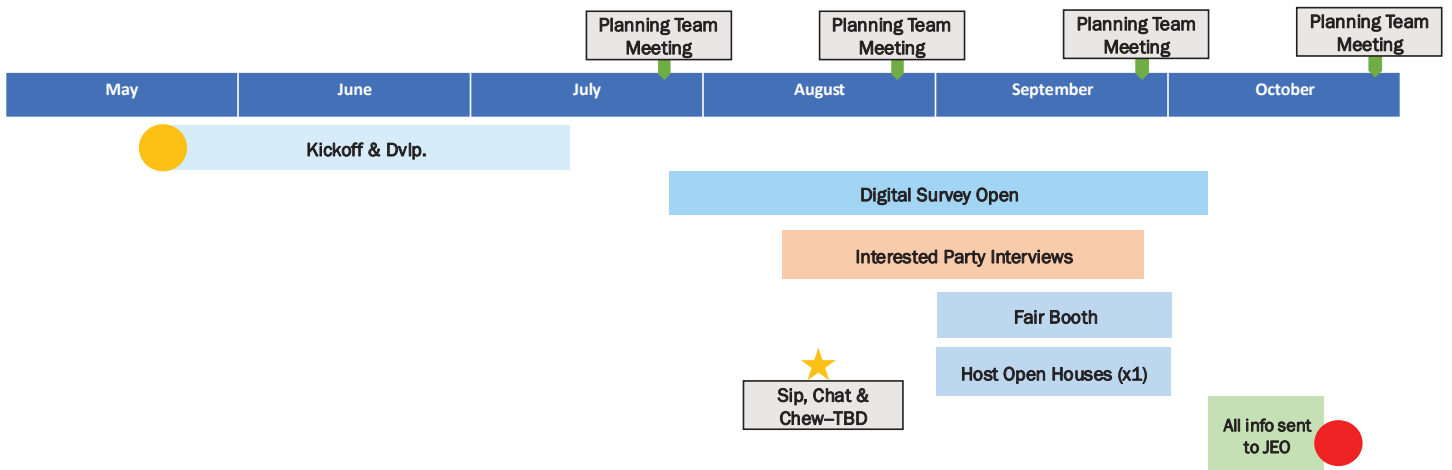
Developed via Past Conversations

1. Online Survey
2. Sip, Chat & Chew Forum for Feedback
3. Interested Party Interviews
4. SUIT Tribal Fair – Tabling Event
5. Open Houses (x1)



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Proposed Public Engagement Timeline



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Public Input Survey

- Purpose: To gather feedback from Southern Ute Indian Tribal members as well as those who live, work and/or represent the SUIT.

Survey will help answer:

- What is the community concerned about and what do they want to do about it?
- This will help inform the Hazard Mitigation Plan risk assessment and mitigation strategy priorities



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Updates on Survey

- The survey is complete, and the next step is to socialize it
 - [Southern Ute Indian Tribe Hazard Mitigation Planning Public Input Survey \(Page 1 of 4\) \(office.com\)](#)
- Targeting middle of next week to release survey to public
 - Social Media (SUIT Facebook, Twitter)
 - Flyer or blurb in Southern Ute Drum (community notices section)
 - Blurb on SUIT Website (under news)
 - Posting Flyers around Campus in high foot traffic areas (With QR code and link)
- Survey will be open until October 1st



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Survey Outreach: Next Steps

- Plan to “open” survey and socialize it next week through coordination with Amy Barry, Don Brockus and Teresa Bagdol
- Once finalized and open, we will share it with this group to share through your networks
- Are there any other methods we could utilize to share the survey?
 - Example (KSUT, Front desk TV)

A poster titled "HAZARD MITIGATION PLAN UPDATE" for the Southern Ute Indian Tribe. The poster includes the tribe's name, a QR code, a survey link, and definitions of hazard mitigation. It also lists examples of hazards: Wildfire, Flood, Drought, Winter Weather, Earthquake, Erosion, Severe Storms, Landslide, and Tornado. The background of the poster shows a landscape with a river and mountains.

HAZARD MITIGATION PLAN UPDATE

THE SOUTHERN UTE INDIAN TRIBE NEEDS YOUR INPUT!

The Southern Ute Indian Tribe is working to update our Hazard Mitigation Plan (HMP) and we are looking for your input! The HMP is a community-driven, living document that prompts communities to address local hazards by carrying out mitigation activities and projects. The plan update will integrate mitigation strategies into daily decision-making. This will reduce risk to human life and property over the long term. It will reflect the Tribe's current priorities and progress in hazard mitigation since the last plan was developed.

TAKE PART TODAY!
SURVEY LINK:
<https://forms.office.com/e/3QtkcSrZCu>

WHAT IS HAZARD MITIGATION?
Hazard mitigation is any action taken to reduce or eliminate long-term risk to people and property from natural disasters. One goal is to reduce the risk posed by future natural disasters. Another is to use structural and nonstructural measures to minimize the damage hazards can cause.

WHY IS HAZARD MITIGATION IMPORTANT?
Hazard mitigation is crucial because it fosters the development of stronger, safer, and more resilient communities. It minimizes future damage in the face of disasters. By taking proactive measures, communities become more effective at mitigating risks.

EXAMPLES OF HAZARDS

- Wildfire
- Flood
- Drought
- Winter Weather
- Earthquake
- Erosion
- Severe Storms
- Landslide
- Tornado

Next steps

1. Survey go live (open starting next week through October 1st)
2. Sip, chat and Chew (August 9th)
3. Interested Party Interviews:
 - a. Build out list of people to do targeted interviews with
4. Design and host an open house (Targeting Thursday, September 5th)
5. Host a booth at Tribal Fair (September 6-8th)



Hazard Mitigation Plan Update Core Planning Team Call – Southern Ute Indian Tribe (SUIT)

DATE: Friday, July 25, 2024

Meeting Notes:

- General updates:
 - JEO is continuing their work on the hazard mitigation plan document. So far they have:
 - Collected the majority of the publicly available data. This includes hazard storm events and disasters declared in the region.
 - Completed initial assessments of the collected data.
 - Drafted an outline of the hazard mitigation plan document itself.
 - Identified maps that will be created.
 - Future work will include:
 - Putting together the demographic analysis, critical facilities, and risk assessment.
 - Identifying mitigation actions in the plan.
 - FEMA has developed materials and identified events to support public engagement for the hazard mitigation plan update. This includes:
 - An online survey.
 - Attending a Sip, Chat, and Chew for feedback on the survey in August.
 - Interviewing interested parties. These will be completed after the survey is available to the public.
 - Hosting a tabling event in September at the SUIT Tribal Fair.
 - Hosting an open house in September.
 - Survey is open until October 1.
- Survey outreach:
 - The survey will be open until October 1.
 - FEMA asked if there are any additional methods that were not mentioned that could be used to share the survey with tribal members?



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- Shane Seibel mentioned that there are many tribal households that are not well-versed with using the tribal portal or the internet.
 - He mentioned that many tribal members prefer physical copies. He suggested mailing out the survey in a paper format.
 - In the past the Growth Fund included a hard copy with a prepaid envelope to mail back or have options for drop off. Options for drop off can include bringing it to Tribal Information Services (TIS) or the Growth Fund front desk.
- Shane also mentioned Including the purpose of the survey at the top of the document so that tribal members are more inclined to fill it out.
- Michael Barrow mentioned another event opportunity. National Night Out is on September 15 and may be a good event for FEMA to have a table at. Michael is the lead for the event and will be the contact for more information.
- Crystal asked if a short video could be created. The video could break down what the update is about and how tribal members could provide their input in 15-20 seconds.
 - She suggested speaking with Lindsey Box, the Executive Officer. She may have more information on the COVID update videos that were created.
 - Amy Barry should also be included in conversation.
- Liz Edwards mentioned sharing the survey information through all the organization communication channels.
- Teresa asked Shane if the General Meeting would be a good opportunity to table at as well.
 - The next meeting is September 12.
- Shane said the tribe does not typically have booths, but SUIT could maybe have the casino make some available. He also said written communications like brochures could be provided at the meeting for tribal members to take.
- Shane asked Teresa to reach out to his assistant to help with coordination on the General Meeting participation.
- Discussion of goals and objectives for the updated HMP:
 - Goal 1: The protection of traditional and cultural sites.
 - Tyson mentioned that the Tribal Council has clear priorities and goals listed on their [webpage](#). He suggested that JEO look at those goals to be consistent in their language.
 - Crystal suggested using resources instead of sites.

- Michael mentioned talking about how law enforcement would help with that goal. This may be more of an objective.
- Goal 2: Promote awareness of and education about hazards.
 - Tyson mentioned that when discussing multi-regional efforts the tribe wants to make sure sovereignty is being exercised.
 - Maintaining internal and external relationships while also maintaining self-identification and sovereignty.
 - Teresa liked the use of the word foster.
- Goal 3: Promote awareness and education about hazards.
 - Becky will work on updating this language offline.
- Goal 4: Reduce impacts to life, property, the environment, and economy.
- Goal 5: Protect critical facilities and infrastructure.
 - Doug thinks this goal should also speak towards promoting future responsible development. This also ties into energy infrastructure.
 - He mentioned that the tribe will be entering an era where there will be more development on tribal land.
- Planning office contact:
 - Colton Black is the Acting Planning Lead. The position is currently vacant.
 - He should be added in future Core Planning Team meetings.
- Objectives:
 - Becky asked if it would be useful to list out some cultural resources? Some of the resources mentioned were:
 - Plants
 - Natural resources (water)
 - Cultural sites. Crystal can provide the definition of traditional cultural sites.
 - Tyson and Seana want to leave the resources open and broad as they are different from family to family and tribe to tribe. They think if there is a question of what it is then it can be defined.

- Cultural resources include materials, locations, landscapes, and natural features that have cultural religious, traditional, or historic value to the tribe.

Core Planning Meeting Attendees: 7.25.2024

Name	Title	Department	Attended?
Tyson Thompson	Director Also attending on behalf of Lindsey Box (Exec Officer)	Property and Facilities	X
Seana Luzar	Head Also attending on behalf of Andrew Frost, Department of Natural Resources (DNR) Director	Lands Division	X
Elizabeth Edwards (Liz)	Risk Manager	Growth Fund	X
Doug Kreuger	Sr. Environmental Compliance Specialist	Southern Ute Department of Energy	X
Teresa Bagdol	SUIT Risk Specialist	Permanent Fund	X
Shelly Riddle	GIS Manager	Permanent Fund	X
Chris Mimmack	Director	Department of Justice and Regulatory	X
Peter Nylander	Division Head	Water Resources	X
Crystal Rizzo	Director	Cultural Preservation Department	X
Shane Seibel	Executive Director	Growth Fund	X
Michael Barrow	Chief of Police	Southern Ute Tribal Police Department (SUPD)	X
Becky Appleford	Hazard Mitigation and Emergency Senior Planner	JEO Consulting Group	X
Kyle McCormick	Hazard Mitigation Specialist	FEMA Region 8	X
Felicity Selvoski	Tribal Community Planner	FEMA Region 8	X
Patricia Gavelda	Grants Management Specialist	FEMA Region 8	X
Lucy Duffy	Communications Specialist	FEMA Contractor, <i>Resilience Action Partners</i>	X

Core Planning Meeting Attendees: 7.25.2024

Donald Brockus	Risk and Emergency Manager	SUIT Risk Management	
Lindsey Box	Executive Officer	SUIT Tribal Council	
Andrew Frost	Lands Director	SUIT	
Michael Ember		SUIT	
Brian Sheffield		SUIT	

Monthly Southern Ute Indian Tribe (SUIT) HMP Core Planning Team Meeting Agenda

Thursday, August 15, 2024

Agenda

- General updates:
 - Updates on public engagement activities.
 - Upcoming events.
 - Where is the JEO Consulting Group in the plan update process?
- Discussion on hazards and impacts.
- Review of updated goals and objectives.
- Questions?

Action Items:

- Core planning team members can send any feedback on the updated hazard mitigation plan goals and objectives to Becky Appleford at rappleford@jeo.com.
- Please share the survey with your networks! Use this link to take the survey online: <https://forms.office.com/e/3QtkcSrZCu>.



FEMA

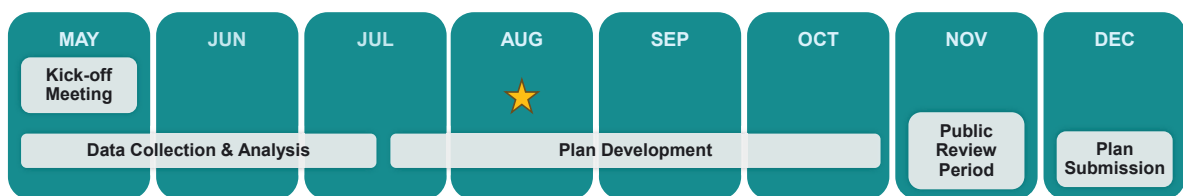
Southern Ute Indian Tribe



Hazard Mitigation Plan Update

August 15, 2024

Plan Update Status



- Majority of data collection and analysis complete
- Plan development underway

- Chapter 1: Introduction – 95%
- Chapter 2: Planning Process – 50%
- Chapter 3: Planning Area Profile – 100%
- Chapter 4: Hazard Profiles – 10%
- Chapter 5: Mitigation Strategy
- Chapter 6: Plan Integration and Capabilities – 10%
- Chapter 7: Action Plan and Maintenance



Hazards and Impacts

Risk Assessment



Hazards Profiled

- Climate Change*
- Dam Failure
- Drought
- Earthquake
- Expansive Soils
- Extreme Temperatures
 - Includes heat and cold
- Flood/Erosion/Wash out
- Hazardous Materials Release/Chemical Spills
 - Includes fixed site & transportation
- Human Trafficking*
- Landslide/Rockfall
- Oil/Gas Explosion*
- Power Grid Failure*
- Severe Thunderstorms
 - Includes hail and lightning
- Severe Winter Storms
- Terrorism/Cyber Attack/Active Shooter
- Tornado/Windstorm
- Wildfire



Mentimeter

Scan the QR code at
right or visit

[menti.com](https://www.menti.com)

Code: 3611 0386



Impacts Discussion



Hazard Data

- Data from publicly available sources
- Need your experiences to fully understand impacts and risks
- Special considerations like oil & gas industry, cultural resources, bison herd, etc.

HAZARD TYPE		Southern Ute Indian Tribe		
		COUNT	PROPERTY	CROP ²
Dam Failure ⁵		0	\$0	\$0
Drought ⁶		661 out of 1552 months	N/A	\$395,047
Earthquakes ¹¹		0	\$0	\$0
Expansive Soils		Unknown	N/A	N/A
Extreme Temperatures ⁷	Extreme Cold (≤10°F)	Avg of 0 days/per year	N/A	\$16,835
	Extreme Heat (≥100°F)	Avg of 0 days/per year	N/A	\$2,528
Flooding ⁸	Flash Flood	70	\$7,133,000	\$0
	Flood	15	\$134,500	\$0
Hazardous Materials Release	Fixed Site ³	12	\$0	N/A
	Transportation ⁴	57	\$0	N/A
Landslide		17 instances	\$195,305.16	\$0.00
Severe Thunderstorms ⁹	Hail Average: 1.20 Range: 0.01 - 2.5	40	\$87,500	\$21,028
	Thunderstorm Wind Average: 68 mph Range: 56 - 100 mph	33	\$1,213,728	\$9,128
	Heavy Rain	72	\$36,000	
	Lightning	26	\$259,250	
Severe Winter Storms ⁹	Blizzard	0	\$0	\$124,483
	Extreme Cold/Wind Chill	0	\$0	
	Heavy Snow	63	\$0	
	Ice Storm	1	\$0	
	Winter Storm	76	\$315,000	
	Winter Weather	215	\$15,000	
Terrorism and Cyber Attack ¹⁰		0	N/A	N/A
Tornadoes and High Wind	High Wind ⁹ Average: 59 Range: 58-60 mph	2	\$0	\$31,323
	Tornadoes ⁹ Average: F1 Range: F0-F1	5	\$86,000	\$2,000
Wildfires ⁹		1268 occurrences	583 acres burned	\$0



How do hazards impact you?

Bear Dance fire burns on the Southern Ute Reservation, forces evacuations

The tribal campus and the Sky Ute Casino and Resort have been evacuated



Colorado River Basin Tribes Address a Historic Drought—and Their Water Rights—Head-On

Their growing inclusion in the region's water management will likely prove priceless.

Southern Ute Indian Tribe reports first COVID-19 case

The person who tested positive does not reside on the reservation and the tribal community.



Lightning sparks 18 fires on Southern Ute Indian Reservation





Homework

- Share pictures
- Damage information
 - Dates
 - Locations
 - Repair costs
- Share plans and studies
- Share the survey with others!
- Email me (or Don):
rappleford@jeo.com



Updated HMP Goals & Objectives



Updated HMP Goals

Goal 1: Protect and preserve traditional and cultural resources

Goal 2: Strengthen Tribal sovereignty by improving Tribal capabilities and relationships

Goal 3: Promote awareness of and education about vulnerability to current and changing hazards

Goal 4: Reduce impacts to life, the environment, and economy

Goal 5: Protect property, community lifelines, energy industry, and infrastructure



Goal 1: Protect and preserve traditional and cultural resources

Objective 1.1: Minimize impacts to traditional and cultural resources from all hazards.

Objective 1.2: Integrate traditional knowledge and practices into hazard mitigation strategies to protect cultural heritage.

Objective 1.3: Create a comprehensive inventory and mapping of traditional and cultural resources to identify those most vulnerable to hazards.



Goal 2: Strengthen Tribal sovereignty by improving Tribal capabilities and relationships

Objective 2.1: Foster local and regional relationships and partnerships

Objective 2.2: Improve warning systems and ability to communicate to residents and businesses during and following a disaster or emergency.

Objective 2.3: Develop or improve Emergency Response Plan, Evacuation Plan, or other planning mechanisms, procedures, and abilities.

Objective 2.4: Develop or improve Continuity of Operations Plan and improve sustainability of Tribal government operations.

Objective 2.5: Enhance the capacity of the Tribe to independently plan, respond to, and recover from hazards through targeted training and resource allocation.



Goal 3: Promote awareness of and education about vulnerability to current and changing hazards

Objective 3.1: Develop and implement community-wide education programs to raise awareness of hazard risks and promote preparedness.

Objective 3.2: Incorporate climate change education into existing outreach programs to highlight emerging risks and adaptive strategies.

Objective 3.3: Engage Tribal youth in educational initiatives to foster a culture of preparedness and resilience within the community.



Goal 4: Reduce impacts to life, the environment, and economy

Objective 4.1: Develop hazard-specific plans and conduct studies or assessments to identify mitigation measures.

Objective 4.2: Implement and enforce land use policies, building codes, and ordinances that reduce exposure to hazards.

Objective 4.3: Enhance natural resource management practices to mitigate environmental impacts from hazards.

Objective 4.4: Promote economic resilience by supporting local businesses in developing continuity plans and hazard mitigation strategies.



Goal 5: Protect property, community lifelines, energy industry, and infrastructure

Objective 5.1: Provide protection for existing structures, future development, community lifelines, services, utilities, and trees to the greatest extent possible.

Objective 5.2: Conduct vulnerability assessments of critical infrastructure and community lifelines to identify and prioritize areas for improvement.

Objective 5.3: Implement infrastructure upgrades that enhance resilience to both current and future hazards.

Objective 5.4: Develop contingency plans to ensure the continuity of essential services, such as power, water, and communications, during hazard events.

Objective 5.5: Foster collaboration with stakeholders to safeguard the energy industry and critical infrastructure from hazards.



Questions



JEO Contacts

Becky Appleford | 217.741.0117
rappleford@jeo.com

Anthony Kohel | 402.474.8753
akohel@jeo.com



THANK YOU!

Hazard Mitigation Plan Update Core Planning Team Call – Southern Ute Indian Tribe (SUIT)

DATE: Thursday, August 15, 2024

Meeting Notes:

- Public engagement updates:
 - The survey is live. It can be taken via the link provided in the meeting chat or the agenda. Please contact Don if you need additional assistance accessing it.
- The Sip, Chat and Chew occurred on Friday, August 9. There was some great feedback and survey response from the event.
 - The survey will also be distributed at the General Meeting in September.
- There is an event on Thursday, September 5 from 9:30 to 11 am at the Hall of Warriors for employees. It will include pastries and coffee.
 - There will be a booth at the fair for tribal members to learn more about the plan update and participate in the survey.
- Crystal has a tent area that Don and FEMA could probably use during the fair; she will speak with Don.
- Updates from JEO Consulting:
 - Most of the data analysis and collection is complete.
 - Plan development is underway.
 - Becky is still uncertain about the mapping and off-reservation values that they may want to be identified in the plan to try to plan and prepare for protecting.
 - Don asked if JEO Consulting has worked out with the tribe what can and cannot be released?
 - No. Don, Crystal, and Andrew will meet and discuss this. They will get back to JEO.
- Hazards discussion:
 - Becky performed a survey and recorded feedback via a poll to discuss how hazards such as climate change, oil/gas explosions, power grid failure, and more should be incorporated into the plan.
 - It was noted that the power grid is fairly reliable where the tribe is located.
 - La Plata electric is the monopoly of the area; if they go down everything does.
 - When a fire gets close to power lines it can destroy them as well as take out homes.



FEMA

- Money from funding would be best used to fund a generator for local homes that could be affected by power outages.
- Consensus was that human trafficking can go into THIRA.
- Is there anything around an additional pandemic?
 - The tribe has a communicable disease response plan.
- The reservation has a higher concentration of deer migration.
 - This may be a hazard for vehicles.
- Crop failure, pests, or irrigation issues should be included in the plan.
 - The tribe has a Bison herd and the local tribal ranchers that have cattle and horses or sheep.
 - A concern may be feeding animals in time of disaster.
 - Diseases spreading as well can put these resources at risk.
- Mountain lions, bears, bob cats, snakes, and spiders
 - Safety from these animals in times of disasters is a concern.
- Air constituents such as a CO2 pipeline and the high amount of radon in soil on reservation land.
 - This will be mentioned in the plan as part of hazardous materials.
- It is important to also think of and discuss potential impacts of a disaster in terms of evacuation needs and considerations for health necessities such as medication supply.
- Does the tribe have a drought contingency plan?
 - Yes.
- Much of the population doesn't have well water. They get water from a central location. This is a concern if they are unable to access it during a disaster.

Core Planning Meeting Attendees: 8.15.2024

Name	Title	Department	Attended?
Tyson Thompson	Director	Property and Facilities	X
Seana Luzar	Head	Lands Division	
Elizabeth Edwards (Liz)	Risk Manager	Growth Fund	X
Doug Kreuger	Sr. Environmental Compliance Specialist	Southern Ute Department of Energy	X
Shelly Riddle	GIS Manager	Permanent Fund	
Chris Mimmack	Director	Department of Justice and Regulatory	X
Peter Nylander	Division Head	Water Resources	X
Crystal Rizzo	Director	Cultural Preservation Department	X
Shane Seibel	Executive Director	Growth Fund	
Michael Barrow	Chief of Police	Southern Ute Tribal Police Department (SUPD)	X
Becky Appleford	Hazard Mitigation and Emergency Senior Planner	JEO Consulting Group	X
Kyle McCormick	Hazard Mitigation Specialist	FEMA Region 8	X
Felicity Selvoski	Tribal Community Planner	FEMA Region 8	X
Patricia Gavelda	Grants Management Specialist	FEMA Region 8	X
Lucy Duffy	Communications Specialist	FEMA Contractor, <i>Resilience Action Partners</i>	X
Donald Brockus	Risk and Emergency Manager	SUIT Risk Management	X
Lindsey Box	Executive Officer	SUIT Tribal Council	
Andrew Frost	Lands Director	SUIT	X
Ember Michel	Director of EHS	Red Willow Production Company	X
Brian Sheffield	HR Director	Permanent Fund	X

Core Planning Meeting Attendees: 8.15.2024

Jim Owens	Deputy Chief	Los Pinos Fire Department	X
Sherri Helton	Emergency Manager	Bureau of Indian Affairs	X
Summer Begay	Communications Specialist	Tribal Council Affairs	X
Cassandra Atencio			
Andy Wetherell			
Joshua Lorenzen			
Thomas McNamara		State of Colorado	

Monthly Southern Ute Indian Tribe (SUIT) HMP Core Planning Team Meeting Agenda

Thursday, September 19, 2024

Agenda

- General updates:
 - Updates on recent engagement events
 - Review survey responses to date.
 - JEO Consulting Group updates on plan update progress
- Discuss asset inventory and vulnerabilities.
- Discuss priority hazards and mitigation strategy development.
- Questions?

Action Items:

- Becky from JEO Consulting will give the team an opportunity to provide additional feedback on mitigation strategies via email.
- Please share the survey with your networks! Use this link to take the survey online:
<https://forms.office.com/e/3QtkcSrZCu>.



FEMA

Appendix Page 42

Hazard Mitigation Plan Update Core Planning Team Call – Southern Ute Indian Tribe (SUIT)

DATE: Thursday, September 19, 2024

Attendees:

- Kyle McCormick, Chief Michael Barrow (Southern Ute Police Dept.), Shelly R., Don Brockus, Lindsey D., Becky Appleford, Ember Michel (Director of Environmental Health and Safety for Red Willow Production Company), Andrew Frost (Director for Dept. of Natural Resources and Tribal Member), Teresa Bagdol (FEMA Tribal Liaison), Patricia Gavelda (FEMA), Felicity Selvoski (FEMA), Megan Main

Action Items:

- Ember will pull a list of critical facilities, including Red Willow and Red Cedar.
- Ember and Don will follow up with the Growth Plan Fund team to see if any berm plan exists.
- This is public information; Ember can gather more information regarding reports and locations on [UIC Class 2 wells](#) after discussing with Lindsey and Don. She can provide an update at the next meeting.

Meeting Notes:

General updates:

- A plane went down on the eastern part of the reservation earlier this week.
- The booth at the annual Southern Ute Tribal Fair earlier this month was successful. The surveys that were distributed gave a lot of great feedback. A lot of engagement also occurred at the reservation bake-off.
- The employee event, where pastries and coffee were provided, was well attended.
- Received 47 survey responses as of Friday, September 13.
 - People's overarching concerns are around wildfire impacts, droughts, and extreme temperatures (heat and cold). After the October 1 deadline, the responses will be reviewed, and an in-depth analysis will be shared.
- Don and Kyle are facilitating one-on-one interviews to gather additional insights from various divisions and departments.



FEMA

Plan Updates

- Please feel welcome to share photos or information on hazard-related damage to Becky or Don.
- Community Assets (people, community lifelines). What are the impact of hazards on people?
 - Traditions and culture are the foundation of the Southern Ute people. The protection and preservation of the cultural and natural resources, as well as the people, are of the greatest importance. They should be the focus of this plan.
 - This Tribal community is very inclusive of others, due to the reservation being checkerboarded. Tribe members are stewards and advocates for the communities around them.
 - Chief Barrow mentioned that it is foundational for the Tribe to care about the people they serve. In the police department, he strives to help the team understand this purpose –they care for the people, in addition to performing a job.”
- Identifying Vulnerable People
 - The list Becky presented on the screen was a good start. It included elders, kids, single women, and pregnant women. However, it should include the entire population.
 - Don mentioned that some people depend upon dialysis. There is a dialysis center in Durango, but transportation is an issue for this population. It’s provided by the Tribal Health Department but can be disrupted by even a routine snowstorm.
- Community Lifelines
 - Andrew mentioned that power outages require members to depend on generators. This means they need access to fuel. Fuel pumps are also impacted by power outages. No backup generators exist to power those.
 - Don said there is no redundant power service at this time. Power grid failure is a concern and comes up in many scenarios. The Tribe has a tremendous generator capacity at the casino, but the wiring is not in place to use that power beyond the casino property. The casino also has a significant fuel storage, capacity (10K gallons), but they generally only keep 2K because it ages out. The generators there are diesel. It would be great to connect that system and establish a storage protocol. That would allow the Tribe to maintain the continuity of the government and other operations. This is a big priority. Currently, the Tribe is 100% on La Plata Electric. There are two primaries in this area now. The casino generators can only run the casino building right now. Transfer switches on all generators on campus failed during Bear Dance, when La Plata lost electric power. This impacted the continuity of government.
 - The casino generator is not connected beyond the casino and the central plant building.
 - The wastewater plant has a generator onsite.
 - Gas stations in town are not backed up.
 - Fuel tanks and dispensers are at the motor pool. These still depend on La Plata Electric.
 - The motor pool will be added as a lifeline.
 - Ember said power is purchased from a local co-op, and the generators are powered by diesel. The communication rooms and centers have backup for critical oil and gas operations.
 - Ember will pull a list of critical facilities, including Red Willow and Red Cedar.

- Hazard Problems:
 - If a wildfire occurred, everyone would be at risk. Folks with access and functional needs comprise 90% of fatalities in a wildfire.
 - Andrew said a lot of tribal members use firewood to heat their homes in the winter. Access to the wood yard (County Road 517 – north of campus) could be reduced by a wildfire. Tribal Forestry has been working through the years to thin the forest to reduce wildfire risk. Wood delivery is available to elders. Deliveries and pick-up are typically on Tuesdays and Thursdays and must be scheduled.
 - Ember mentioned that infrastructure, housing, animals, soil quality, etc. would also be at risk, and fires could increase the chance of landslides, flooding, etc.
 - According to Andrew, a berm prevented the fairgrounds from flooding, protecting campers and animals. The Pine River drainage goes to the south, so the flooding of the fairgrounds is a concern.
 - Feed, such as hay and grain, and clean water for the animals is also a concern.
 - Don mentioned that there was a flood in 2018. He senses that the berm is less secure than we would like it to be. Andrew said the berm seems to work; it was repaired (the Tribe built it up) a while back. It has the potential to wash out, though.
 - There is no known plan for the berm. Ember and Don will follow up with the Growth Plan Fund team to see if anything exists.
 - Kyle mentioned the berm may not be included on the flood maps that FEMA recently completed. The FEMA team can verify this.
 - Don said he understands they did include it. Even then, the water line would be near the exhibit hall.
 - The mobile home park on the north side of town would be at high risk during a 100-year flood event. This is not tribal land, but tribal members live there. They would be inundated.
- Mitigation Strategy:
 - Mentimeter was used to capture feedback.
 - Question 1
 - Shelly said that any cultural surveys being done on a reservation are mapped in GIS. This data is limited to viewing by key tribal people and the State Historical Preservation organization. Any survey older than 10 years is redone. This effort is ongoing.
 - Public Warning System:
 - Needed for those working outside. Don discussed the possibility with companies previously, but the cost was extensive.
 - Shared in chat by Shelly: LPC has an emergency notification system: https://www.lpcgov.org/services/public_safety/emergency_information.php
 - Intergovernmental Collaboration:
 - Trainings and interaction with external governmental agencies occur regularly.
 - Improve Data Resources:
 - Keep as is.
 - Develop COG and COOP:

- The health center has one of each.
- Don will be updating the EOP (this fall) and will be able to address the two plans at that time.
- Don should know the budget soon.
- Drought Mitigation Strategy – COMPLETE.
- Water Rationing Strategy
 - UIC Class 2 wells – This is public information. Ember can gather more information about reports and locations, after talking to Lindsey and Don. She can provide an update at the next meeting.
- Drought Education – Merge with outreach/education priorities.
- Implement Water Best Management Practices (BMPs).
 - A program like this does not currently exist.
 - Ember noted that the city of Durango did this when they were on water restrictions.
 - Don said Ignacio has a great water system. The Tribe has very senior water rights; they may be impacted by the Colorado River Compact, there are but no immediate concerns. Most of the water is used for agriculture. This is a low priority.
- Improve Water Storage
 - Don mentioned raw water storage capacity for the water treatment plan was quadrupled. This project is done.
 - Andrew said the Tribe is doing well on water storage. They do not have a water use plan, and it is not a priority. There is plenty of water to go around.
- Cloud Seeding
 - Don said the Western Colorado Water Conservation Board seeds clouds regularly. The Tribe is unlikely to get involved.
 - This action can be removed.
- Flood Mitigation Actions
 - La Plata County is a member of the National Flood Insurance Program (NFIP), but the Tribe does not have plans to join. It participated in Risk MAP but that's the extent of its interest. Ignacio is not in the NFIP.
 - This action can be removed.
 - Andrew said it would be helpful to identify areas of high flood risk. Washouts occur on the eastern side and on the western end, which is an oil and gas patch. There are eight rivers within the reservation boundaries. Any inflows and outflows will impact areas out there. (2- to 5-year timeframe)
- Watershed Infrastructure Impact
 - The Pine River is the starting point. A lot of areas are at risk of washing out.
- Dam Failure Integration Project
 - A general flood response plan will incorporate this. No additional planning is needed. This can be removed.
 - There is a dam at Lake Capote. The Bureau of Indian Affairs and SUIT have a plan that is complete and has been exercised. Becky will mark this as complete.

- Wildfire Mitigation Actions
 - Andrew mentioned that Tribal Forestry is planning a fall prescribed burn.
 - Becky can mark this as complete.
- Mechanical Treatments
 - Can be marked as complete.
 - The crew maps and marks their mechanical treatments. The projects are contracted out for the companies to perform.
- Additional Actions and Strategies can be added to the Mentimeter. Becky will review and consolidate them.
- Becky will send out a summary; comments are welcome!
- Don: Cultural Values mapping can occur. The annex does not need to be submitted to FEMA. It can be included in the plan to ensure they're grant eligible, but the information will be secure.
- Next meeting will be October 17. It is likely to take two hours.

Andrew shared this photo in the chat: “CR 318/310 rockfall”



Monthly Southern Ute Indian Tribe (SUIT) HMP Core Planning Team Meeting Agenda

Thursday, October 17, 2024

Agenda

- General updates:
 - Updates from FEMA on survey response total and next steps.
- Discuss hazard problem statements and mitigation strategy development.
- Questions?



FEMA



Appendix Page 49

Hazard Mitigation Plan Update Core Planning Team Call – Southern Ute Indian Tribe (SUIT)

DATE: Thursday, October 17, 2024

Attendees:

- Don Brockus, Lindsey Box, Shelly Riddle, Noah A., Tyson Thompson, Elizabeth Edwards, Doug Kreguer, Anthony Kohel, Andrew Frost, Teresa Bagdol (FEMA Tribal Liaison), Patricia Gavelda (FEMA), Felicity Selvoski (FEMA), Lucy Duffy (*Resilience Action Partners*), Becky Appleford (JEO Consulting).

Meeting Notes:

- Updates from FEMA:
 - FEMA and Don conducted a successful interview on October 16 with the Police Chief of Ignacio. An interview still needs to be scheduled for La Plata County.
- Survey updates:
 - FEMA received a total of 79 survey responses. Over half of the respondents identified as Southern Ute Tribal members, while the remainder reside or work within the reservation boundaries.
 - FEMA is currently analyzing the responses to identify trends; this analysis will be presented at the next core planning team meeting.
 - The team is also consolidating names to send a list of the tribal members to Amy for the upcoming raffle drawing.
- Hazard mitigation plan updates:
 - Significant progress has been made on hazard profiles, and they are nearing completion. The primary outstanding component for the plan is the cultural resources, which Don is coordinating with team members on.



FEMA

- Forestry information:
 - Noah from the Forestry Department provided relevant data regarding hazardous fuels reduction treatments. Shelly is also available to assist with this information.
 - Once Shelly shares the polygon data, Becky and her team will follow up if they have any questions.
- Development of problem statements:
 - Problem statements are being developed in the HMP to link vulnerabilities and impacts with potential mitigation solutions.
 - Becky led a brainstorming exercise on Miro to outline problem statements. You can access the Miro board [here](#).
 - Wildfire:
 - Key considerations include safety of people, homes, electricity, Tribal cultural resources, infrastructure, and energy assets.
 - The Tribal Council emphasizes the protection of the east side of the reservation, which is heavily forested.
 - The focus is on defensible space for homes and energy assets.
 - One of Doug’s main goals is identifying what assets are at risk and securing funding for risk mitigation.
 - An assessment may be conducted to evaluate assets at risk from wildfires.
 - The Tribe is aligning building codes with La Plata County standards to address fencing and wood chip issues in town homes.
 - Actions include:
 - Promoting defensible space education and establishing evacuation routes.
 - Developing a homeowner/renter guidebook on defensible space.
 - Defensible space for the Growth Fund and Permanent Fund homes.

- Tornado and windstorm:
 - The recreation center provides underground protection.
 - Power outages from high winds may cause secondary risks such as fires.
 - Ensuring Tribal elders have power for health-related needs (machines, health center, dispatch center) is a concern.
 - The casino is identified as a potential cooling center.
 - Action item: Enhance communication and education regarding cooling center availability and shelters.
- Expansive soils:
 - The whole reservation is at risk due to expansive soils.
- Severe thunderstorms:
 - Major causes of power outages and wildfires, with a high incidence of lightning strikes.
 - There were over 25 wildfires in one day due to severe storms in May.
 - The Tribe received grant funding to update best management practices for electrical infrastructure and grid resiliency. They are installing equipment on top of electrical poles to provide reliable electricity to Tribal homes.
 - Doug will ask about what has been completed so far, and what has been identified to support grid resiliency. He will also find out the grant name.
 - The Shared Services group (the IT service provider internal to the Tribe) may want to be involved in conversations as well.
 - Action item: Include improving surge protection across the reservation.
- Flooding/erosion/washout:
 - These hazards can affect energy facilities similarly to wildfires. Rain events have breached irrigation canals and affect the environment, agriculture and economy.
 - The mobile home park is below the 100-year floodplain and has shown signs of water infiltration.
 - Identified priority roads for maintenance include:

- 44 Canyon.
 - McDermott.
 - County Road 500.
 - County Road 314.
 - Rock Creek.
 - County Road 318/310.
- Shelly mentioned in the chat the Tribal Planning and Transportation department created a GIS layer of tiered priority roads for hunting etc. She will see if the data can be shared with JEO Consulting.
 - Actions:
 - Improve berm for flood protection measures, particularly at the west bank of the river south of the multipurpose facility.
 - Implement BMPs for energy assets and roads. Hunting and forest management roads can get washed out with rain and snow.
 - Tribal members also need to get their grazing animals out during the summer.
- Landslides and rockfall:
 - Assessing the need for rockfall protection on key roads such as County Road 310 and establishing partnerships for the roads with the county and state entities.
- Dam failures:
 - Emergency Action Plans (EAP) are in place for various dams, including Lake Capote, Vallecito, Lemon and Navajo dams.
 - Tribal homes are vulnerable if the Long Hollow and Lake Nighthorse dams were to fail.
- Earthquakes:
 - The probability is low, but there was an earthquake about 4 hours away from the reservation. It may have affected Brunot Treaty hunting rights access to roads.

- There is potential for dam failure and damage to roads and bridges depending on the size of the earthquake.
- Action: awareness (shakeout day).
- Severe winter storms:
 - This will mainly affect roads.
 - The Tribe has snow removal and maintenance.
 - There are no snow fences currently, but these could be beneficial in key locations. The road north of campus on 172 was specifically mentioned.
- Animal and plant diseases:
 - Monitoring for avian flu, potential buffalo herd diseases, and plant species of significance to the Tribe.
 - Chronic wasting disease was also mentioned for deer, elk, moose and caribou. The Brunot Treaty hunting area has moose that Tribal members hunt and harvest.
 - Noting the regional concerns about pine beetle damage, particularly in relation to wildfires.
- Andrew noted that access to firewood for wood stoves is important in winter seasons.
- Additional Notes:
 - Andrew will discuss brush mitigation efforts with Peter Nylander, who is involved in a cultural project related to the river.
 - The link to the Miro board is provided in the notes above for further reference or additions.

Monthly Southern Ute Indian Tribe (SUIT) HMP Core Planning Team Meeting Agenda

Date: Thursday, December 19, 2024

Time: 1:30 – 2:30 PM

Agenda

- Welcome
- Public engagement survey results presentation (FEMA)
- Mitigation strategy prioritization discussion.
- Outstanding information requests and remaining schedule overview.
- Questions?



FEMA



Southern Ute Indian Tribe



Hazard Mitigation Plan Update

December 19, 2024



Last Meeting...

- Develop Hazard Problem Statements
- Complete Mitigation Strategy
- Miro Brainstorming Exercise





Today

- Project Schedule
 - Missing Information
 - Plan Maintenance
 - Prioritize New Mitigation Actions
 - And anticipated start timeframe and cost
- Mentimeter Exercise



Project Schedule

- Friday, January 3rd

 - Draft HMP to Core Planning Team
 - Provide Comments to JEO thru January 16th
- Thursday, January 16th

 - Core Planning Team Meeting
 - Discuss Changes to HMP
- *Tuesday, January 21st
– Monday, February 3rd

 - Public Review and Comment Period
 - Council Begins Plan Adoption Process
- *Monday, February 10th

 - Submit HMP to FEMA for Review & Approval

*Dependent upon timely reviews and provided data



Missing Key Information for Plan

- Chapter 3: Planning Area Profile
 - Complete questions
- Cultural Resources
 - List and location if feasible (high level/generalized)
 - Vulnerabilities to each hazard
- Tier II Data
 - Requested from Department of Energy
- Public Outreach Report with Survey Results
- **Return by December 31st**



Plan Maintenance

- The HMP is a living document
- Update plan regularly to:
 - Ensure effectiveness
 - Reflect changes in hazard events, priorities, and mitigation actions
- Who will be responsible for reviewing/update of plan?
- How frequently will it be reviewed?
- How will you involve the public?



Prioritize New Mitigation Actions



MIRO Exercise >> Prioritize Projects

Mitigation Strategy

LEGEND

Anticipated Start Time

- 1 <1 year
- 2 2-5 years
- 3 >5 years

Priority Level

- 1 Low
- 2 Medium
- 3 High

Anticipated Cost

- 1 <\$10,000
- 2 \$10,000-\$50,000
- 3 >\$50,000

Public Warning System

Anticipated Start Time: 20

Priority Level: 17

Anticipated Cost: 23

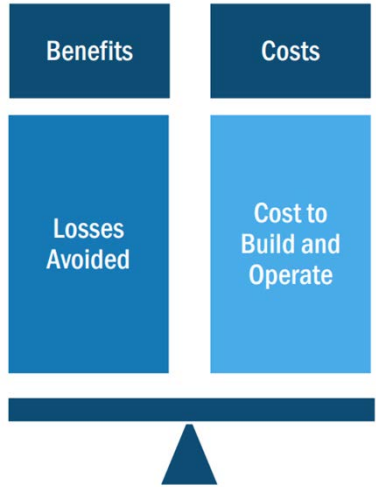


Review and Update Past Actions



Prioritizing Projects: Benefits vs. Costs

- Social Considerations
- Technical Feasibility
- Administrative Capabilities
- Political Will
- Legal Authority
- Environmental Constraints
- Economic



Mentimeter

Scan the QR code at right or visit

[menti.com](https://www.menti.com)

Code: 8242 4455




JEO Contacts

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Anthony Kohel | 402.474.8753
akohel@jeo.com



THANK YOU!



Final Hazards List

- Animal and Plant Disease
- Dam Failure
- Drought
- Earthquake
- Expansive Soils
- Extreme Temperatures
 - Includes heat and cold
- Flood/Erosion/Wash out
- Hazardous Materials Release
 - Includes fixed site, transportation, & gas/oil explosion
- Landslide/Rockfall
- Severe Thunderstorms
 - Includes hail and lightning
- Severe Winter Storms
- Terrorism/Cyber Attack/Active Shooter
- Tornado/Windstorm
- Wildfire

Types of Eligible Projects



Tribal Power Microgrid



Community Storm Shelters



Backup Generators



Drainage Improvements



Hazardous Fuels Reduction



Planning Related Activities and Project Scoping



Warning Sirens



Prioritize New Mitigation Actions

Join at menti.com |

LEGEND

Anticipated Start Time

1 <1 year 2 2-5 years 3 >5 years

Priority Level

1 Low 2 Medium 3 High

Anticipated Cost

1 <\$10,000 2 \$10,000-\$50,000 3 >\$50,000

Multi-Hazard

Backup Generators



LEGEND

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Mentimeter

Anticipated Start Time



Priority Level



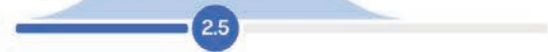
Anticipated Cost



Animal/Plant Disease

Remove Diseased Wood Where Feasible

Anticipated Start Time



Priority Level



Anticipated Cost



Strongly disagree

Strongly agree

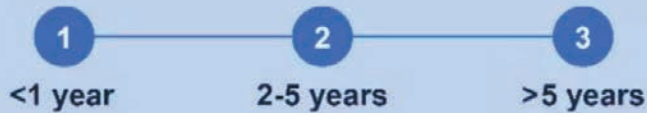


LEGEND

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Mentimeter

Anticipated Start Time



Priority Level



Anticipated Cost



Expansive Soil

Document and Map Risk Areas for Expansive Soils

Anticipated Start Time



Priority Level



Anticipated Cost



Strongly disagree

Strongly agree



LEGEND

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Mentimeter

Anticipated Start Time



Priority Level

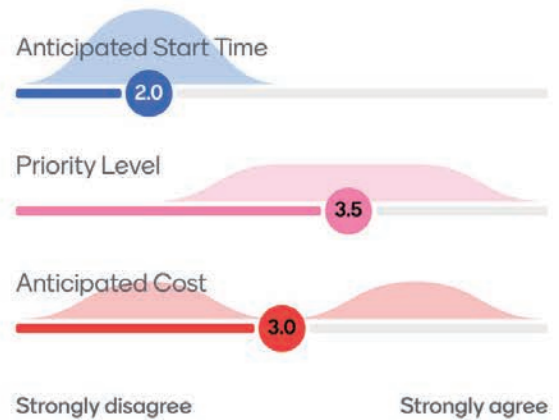


Anticipated Cost



Extreme Temperatures

Identify Warming/Cooling Shelters

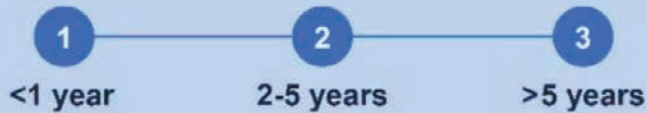


LEGEND

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Anticipated Start Time



Priority Level

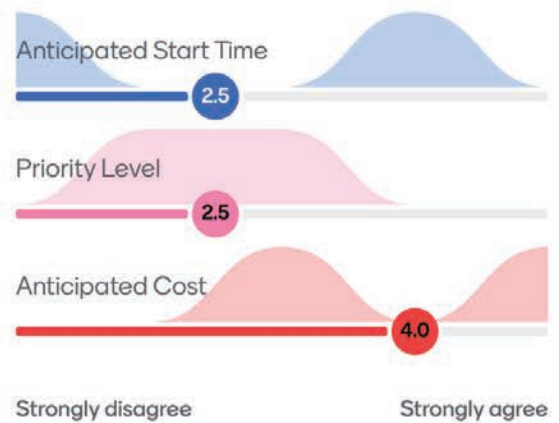


Anticipated Cost



Extreme Temperatures

Provide Access to Wood and Wood Burning Stoves



LEGEND

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Mentimeter

Anticipated Start Time



Priority Level



Anticipated Cost



Flood/Erosion/Wash out

Improve Berm for Flood Protection



LEGEND

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Mentimeter

Anticipated Start Time



Priority Level

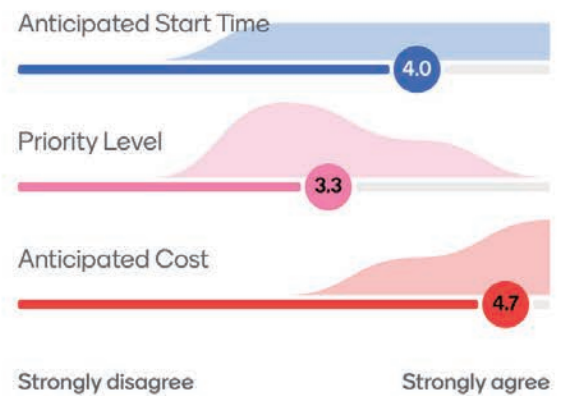


Anticipated Cost



Flood/Erosion/Wash out

Identify and Implement BMPs for Energy Assets and Roads



LEGEND

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Mentimeter

Anticipated Start Time



Priority Level

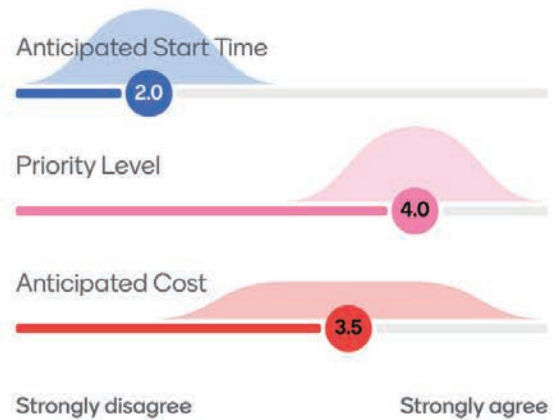


Anticipated Cost



Flood/Erosion/Wash out

Conduct Studies to Identify Mitigation Alternatives to Minimize Flood Risk or Washouts to County Roads 151, 314, and 500



LEGEND

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Mentimeter

Anticipated Start Time



Priority Level



Anticipated Cost



Flood/Erosion/Wash out

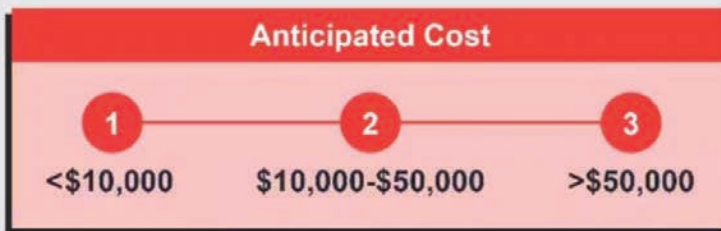
Implement projects identified in Road Flood Studies to Minimize Washouts to County Roads



LEGEND

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Flood/Erosion/Wash out

River/Stream Bank Stabilization



LEGEND

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Landslide/Rockfall

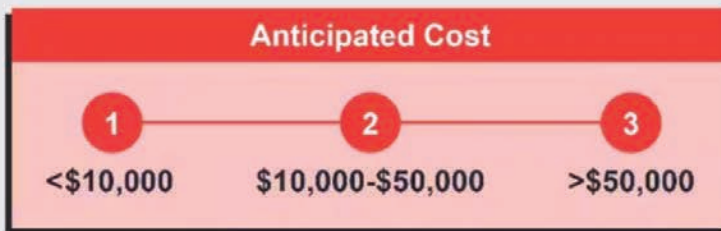
Install Rockfall Protection Devices on County Road 310/318



LEGEND

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Landslide/Rockfall and Flood/Erosion

Develop Partnerships with County and State on Road Mitigation Projects



LEGEND

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Severe Thunderstorm (Lightning)

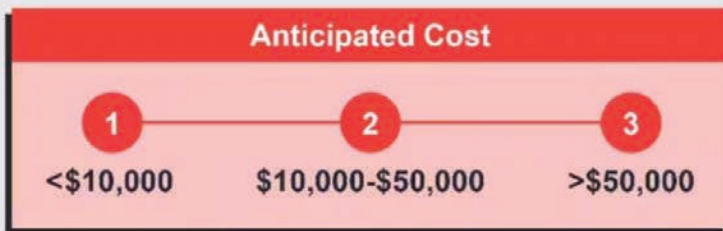
Improve Surge Protection Across the Reservation



LEGEND

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Severe Winter Storms

Install Snow Fencing in Key Locations



LEGEND

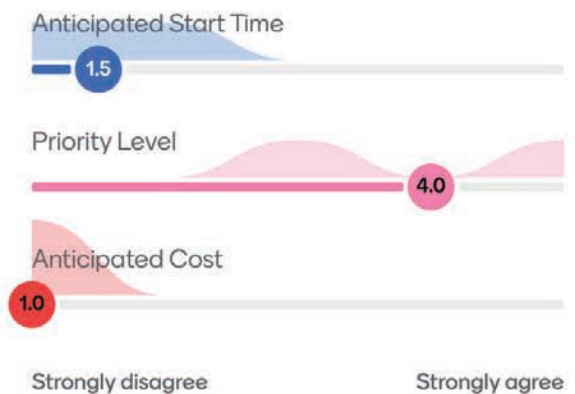
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Wildfire and Others

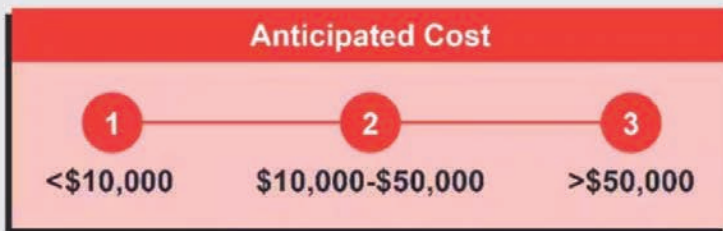
Establish Mutual Aid Agreements



LEGEND

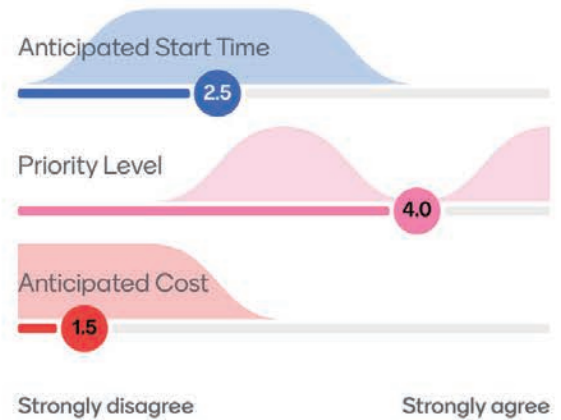
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Wildfire

Provide Resources to Renters and Owners on Defensible Space (e.g., Guidebook)



Mentimeter

How should Hazardous Materials Release be mitigated?



How should Terrorism/Cyber Attack/Active Shooter be mitigated?



Additional Mitigation Projects?



SUIT Meeting 12/19

Thursday, December 19, 2024

2:19 PM

Participant list:

- TB Bagdol, Teresa (External) [Muted]
- Becky Appleford [Muted]
- DB Brockus, Donald (External) Organizer [Active]
- EE Edwards, Elizabeth (External) [Active]
- AF Frost, Andrew (External) [Muted]
- DK Krueger, Doug (External) [Muted]
- EL Lewis, Emmanuel (External) [Muted]
- LD Lucy Duffy (External) [Muted]
- PN Nylander, Peter (External) [Muted]
- SO Ortiz, Sapphire (External) [Muted]
- FS Selvoski, Felicity (External) [Muted]
- TT Thompson, Tyson (External) [Muted]
- PG Gavelda, Patricia (External) [Muted]

Crystal to get cultural resources from state database.

Plan Maintenance:

Who will be responsible for reviewing/ updating the Plan:

- Annual meeting of this group to review the Plan.
-Don to be the champion to get that on the calendar
- Maybe around February

How will involve the public in the process?

- Maybe social media. Need to ask Amy
- Tyson says the SUIT website should host. Talk to Amy and communications for that and doing social media posts.

New Mitigation Actions

Backup Generator:

Anticipated Start Time: Less than one year
Priority Level: High
Anticipated Cost: >\$50,000
Dept: ??

Remove diseased wood where feasible:

Start Time: 2.5
Priority Level: ??
Cost: 10-50k
Dept: Forestry
Funding: Forestry?

Document and Map Risk Areas for Expansive Soils

Dept: GIS
Funded: Staff time

Identify Warming/Cooling Shelters

Dept. Tribal Services
Funded: Staff time

Provide Access to Wood and Wood Burning Stoves

Dept: Forestry
Funding: may need funding for stoves

Improve Berm for Flood Protection:

Dept: Growth Fund?
Funded:

- To be done at fairgrounds, and everything north of there. 151- Bear Dance grounds

Identify and implement BMPs for Energy Asses and Roads (for flood/erosion/washout)

Dept: multiple depts
Funding:

- Historically tribe has only funded small mitigation projects.
- County Road 500 situation is perfect example of knowing a problem is there but no one wants to fund.
- If get grants, then companies might be more likely to assist/pay for.
- La Plata County energy council: advocates, public outreach. They cost-share road maintenance. So maybe they'd help with cost-share.

Conduct Studies to identify mitigation alternatives to minimize flood risk or washouts to county roads 151, 314, and 500.

Dept: Planning, (working with County Dept of Roads)

Implement projects identified in Road flood studies to minimize washouts to county roads:
Dept: Planning

River/Streambank Stabilization:
Dept: Planning, DNR, Water Quality (Multiple Depts)

Install rockfall protection devices on county road 310/318.
Dept: Planning, County Roads Dept

Develop Partnerships with County and State on Road Mitigation Projects
Dept; Planning, county roads dept, etc

Improve Surge Protection Across Reservation (for severe thunderstorms, lighting)
Dept: Property and facilities

Install Snow Fencing in Key Locations
Dept: Planning

Establish Mutual Aid Agreements (for Wildfires, etc)
Dept: EM (Don)

Provide Resources to Renters and Owners on Defensible Space (e.g., Guidebook) [for wildfire]
Dept: EM (Don)

How should Hazard Materials Release be mitigated?
Better established communication b/t tribe, county, and state (CDPHE). Protocol, contact matrix, and when to notify whom.

Hazmat team is managed by state patrol.

How should Terrorism/Cyber Attack/Active Shooter be mitigated?
Midway thru training employees for Run, Hide, Fight programs, etc.
Law Enforcement response training, reunification training, full scale exercise

Training and Education.



Southern Ute Indian Tribe



Hazard Mitigation Plan Update

January 16, 2025



Last Meeting...

- Project Schedule
 - Missing Information
 - Plan Maintenance
 - Prioritize New Mitigation Actions
 - And anticipated start timeframe and cost
- Mentimeter Exercise





Today

- HMP Timeline Update
- HMP Feedback Discussion
 - By Chapter
- Plan Maintenance
 - Roles, responsibilities, and future needs
- Questions
- Thank you!



Project Schedule

- Friday, January 3rd
 - Draft HMP to Core Planning Team
 - Provide Comments to JEO thru January 16th
- Thursday, January 16th
 - Core Planning Team Meeting
 - Discuss Changes to HMP
- *Wednesday, January 29th – Tuesday, February 11th
 - Public Review and Comment Period
 - Council Begins Plan Adoption Process
- *Wednesday, February 19th
 - Submit HMP to FEMA for Review & Approval

*Dependent upon timely reviews and provided data



Addressing Missing Information for Plan

- Chapter 3: Planning Area Profile
 - JEO to meet with Economic Development Manager
- Tier II Data
 - In process between EM, Red Willow, and CDPHE
- Cultural Resources
 - Resolved!
- Public Outreach Report with Survey Results
 - Received!



Plan Maintenance

- The HMP is a *living document*
- Update plan regularly to:
 - Ensure effectiveness
 - Reflect changes in hazard events, priorities, and mitigation actions
- Who will be responsible for reviewing/update of plan?
- How frequently will it be reviewed?
- How will you involve the public?



JEO Contacts

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rappleford@jeo.com

Anthony Kohel | 402.474.8753
akohel@jeo.com

 **THANK YOU!**

7

Appendix B: Public Engagement

Table of Contents:

Public Engagement Overview	1
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Sip, Chat, Chew	16
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Employee Engagement.....	31

SUIT Public Engagement Process Information

This document provides an overview of the community and interested parties' engagement that occurred for the Southern Ute Indian Tribe's Hazard Mitigation Plan Update. This includes the steps taken to receive feedback on hazard mitigation planning from Tribal members and those that live and/or work on the reservation.

Key Tasks for Community Engagement

- **PUBLIC OPINION SURVEY**
 - A public opinion survey was developed that was aimed at gauging level of concern with natural hazards and potential mitigation solutions. The survey had both an online element through a QR code as well as the option to take it in person and deliver it back to the administration building.
 - **The survey was open from August 7th through October 1st.** The survey was open to all Tribal members as well as those that live and/or work on the SUIT reservation.
 - The Southern Ute Indian Tribe offered a raffle prize of to win a night of food, fun and bowling at the Rolling Thunder Lanes and Rolling Thunder Grill in the Sky Ute Casino Resort.
 - In coordination with the Tribe's public information office, the survey was shared through multiple social media channels and events to spread the word about the survey.
 - In total, 79 responses were received. Please see corresponding responses analysis for details on the response.
- **SIP, CHAT AND CHEW EVENT**
 - The Sip, Chat & Chew Event is a monthly event hosted by the Tribe to discuss relevant topics with Tribal members and there is typically a dinner or food served at the event. During August's Sip, Chat and Chew Event, Don Brockus and Teresa Bagdol presented information about the Hazard Mitigation Plan Update and shared the survey with those attendance to get feedback.
 - **The event occurred on August 9th, 2024** at lunch time.
 - The event was open to members of the Tribe.



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- **SOUTHERN UTE INDIAN TRIBE GROWTH FUND GENERAL MEETING**

- During the Southern Ute Indian Tribe Growth Fund General Meeting, the SUIT PIO highlighted the Hazard Mitigation Plan and handed out survey flyers with QR codes as well as physical copies for those that prefer that method.
- The General Meeting is highly attended by Southern Ute Tribal Members.
- The meeting occurred on September 12th, 2024 from 9 AM to 4 PM.

- **SOUTHERN UTE TRIBAL FAIR AND POW-WOW—TABLING EVENT**

- The SUIT Emergency Management Department held a booth at the 2024 Tribal Fair and Pow-wow to discuss the HMP and get feedback through promotion of the survey ([see executive summary for full summary](#)).
- The Booth was held from September 5-8, 2024
- The event was open to the public.
- SUIT received over 30 survey responses during the site visit.

Key Tasks for Interested Parties and Subject Matter Expertise Engagement

- **1:1 INTERESTED PARTY INTERVIEWS**

- To garner specific feedback from interested parties, 1:1 interviews were held with two individuals. Interviews were held with Cassie Atencio, Tribal hazard mitigation officer and Wesley Crume, Town of Ignacio police chief (notes in corresponding folder).
- Questions were asked to get feedback from Tribal departments and organizations that have a direct interest in protecting community assets and infrastructure from natural hazards. The interviewees were identified by the Risk & Emergency Management Team (Don Brockus) as a critical interested party that we'd like to get feedback from.

- **SOUTHERN UTE EMPLOYEE ENGAGEMENT EVENT**

- In attempt to get feedback from Tribal Departments and employees, we hosted a Pastries and Coffee Event during work hours to promote the survey and get feedback directly from employees.
- The event was catered by the SUIT Casino and very well attended by employees.
- Occurred September 5, 2024 in the morning.

- **MONTHLY CORE PLANNING TEAM MEETINGS**

- Monthly meetings were held with subject matter experts from the SUIT . These meetings were intended to guide the development of the HMP and inform the process. Members of the core planning team were asked to provide feedback on , knowledge of natural hazards and identify appropriate mitigation solutions.

- The meetings take place on the third Thursday of each month (July will be held on 4th Thursday), beginning in July from 1:30-3:00 pm MST The dates are:
 - July 25, 2024
 - August 15, 2024
 - September 19, 2024
 - October 17, 2024
 - November 21, 2024
 - TBD if additional meetings are needed

Southern Ute Indian Tribe: Hazard Mitigation Plan Public Input Analysis

December 13, 2024

SUIT Public Survey Results

Tribal hazard mitigation plans form the foundation of a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repetitive damage. As stated in 44 CFR § 201.1(b), “the purpose of mitigation planning is for state, local and Indian tribal governments to identify the natural hazards that impact them, to identify actions and activities to reduce any losses from those hazards, and to establish a coordinated process to implement the plan, taking advantage of a wide range of resources.”

A required element of a Tribal Hazard Mitigation Plan is the planning process. The planning process section of the mitigation plan documents how the plan was developed, who was involved and what data and information were used to build or update the plan. A successful planning effort includes active participation and buy-in from community leaders, interested parties, and the public. The public survey is a tool to both inform the general public of the plan’s development and to gather feedback and input to be integrated into the final plan.

The Southern Ute Indian Tribe conducted a public survey on hazard mitigation and hazards risk from August to October 2024 to inform the Tribal Hazard Mitigation Plan update. From online and in-person surveys, 69 responses were collected. The results of their responses are analyzed below. The full survey responses are attached.

Summary of Key Findings

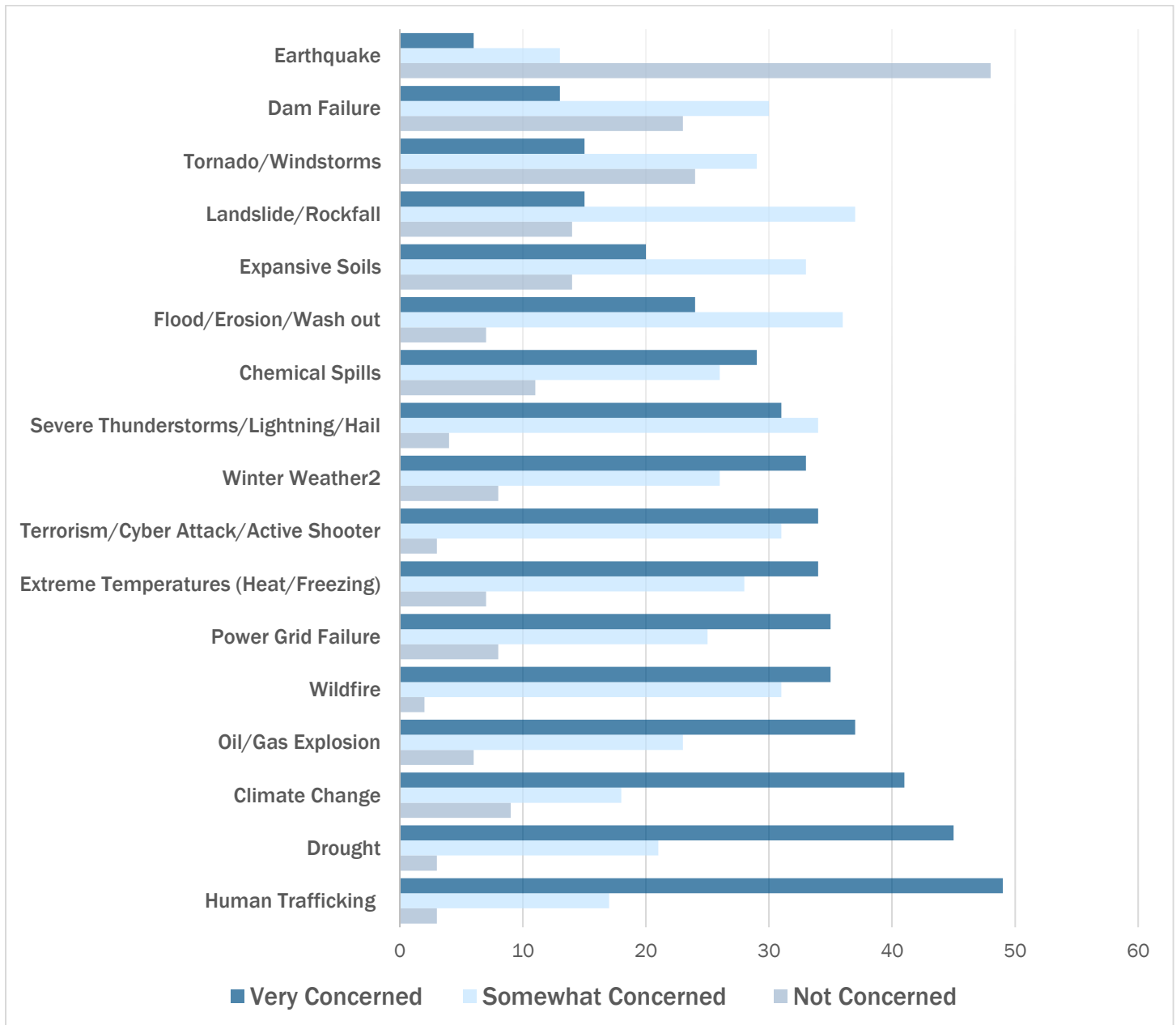
- 67% of respondents reported being impacted by a hazard event in the past 5 years; wildfire was the most common reported hazard.
- The 5 hazards of most concern are: Human Trafficking, Drought, Climate Change, Oil/Gas Explosion, and Wildfire.
- The 5 hazards of least concern are: Expansive Soils, Landslide/Rockfall, Tornado/Windstorms, Dam Failure, and Earthquake.
- Protecting critical facilities, historic & cultural spaces, private property, natural features, community assets, and building teamwork and cooperation are all seen as Pretty Important or Extremely Important by over 87% of respondents.
- 62% of respondents see climate change as a major threat to the SUIT, with another 24% rating it a moderate threat; only 13% see it a minor threat or not a threat at all.
- 20% reported having someone in their household who would require additional assistance during a disaster.
- 14% require electricity for oxygen or other medical devices. Of those 14%, only 44% have a generator in case of an outage.



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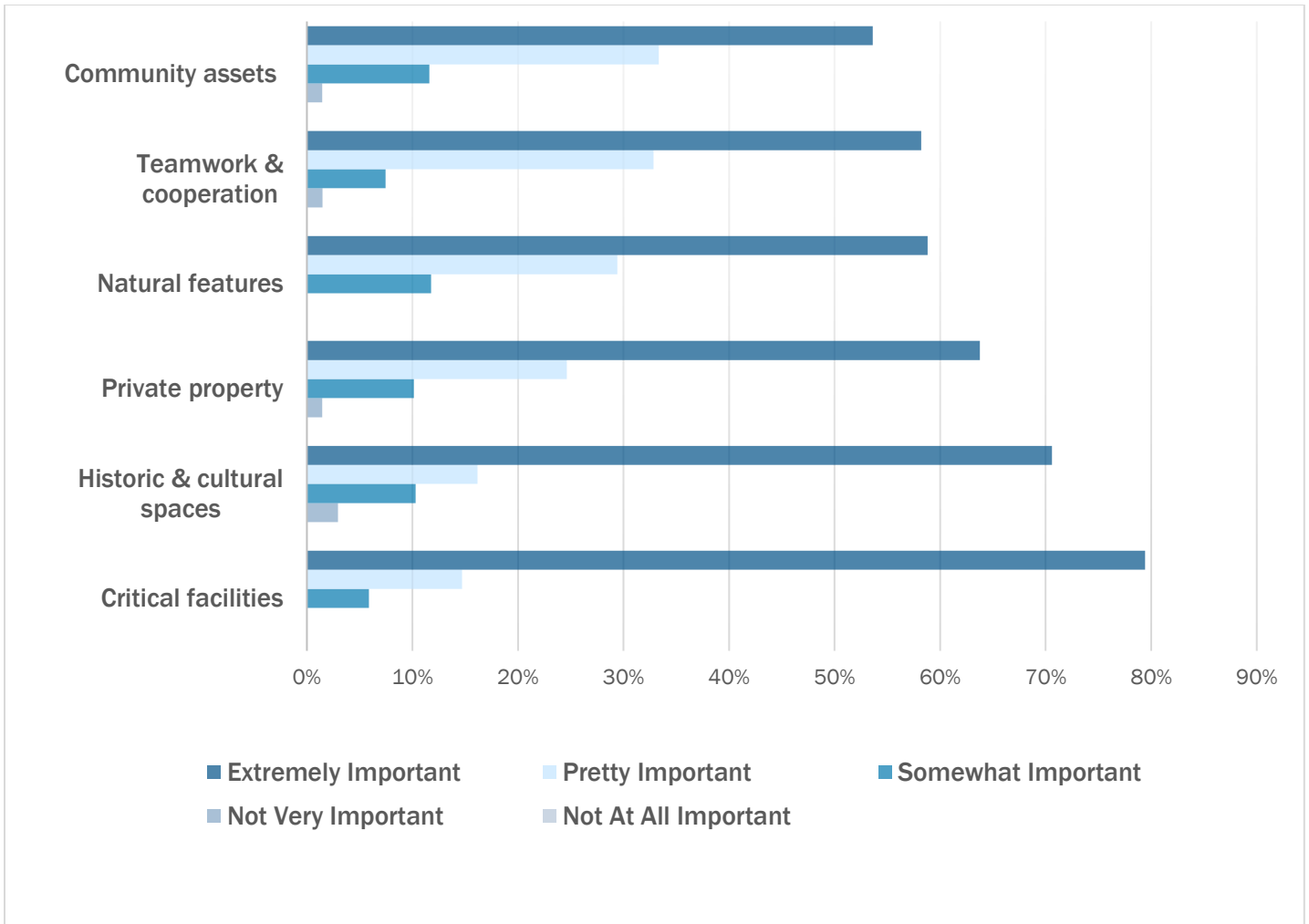


Question 5: How concerned are you about the following hazards?



Question 8: Natural disasters can have a significant impact on the SUIT Reservation but planning for these events can help us to better respond, recover and lessen the overall impact of future events.

The following statements will help us determine community priorities in planning for these hazards. Please tell us how important each is to you.



Question 11: What are the ways you would like to receive information on making your home/business/work and the reservation more resilient to natural hazards?

Method of Communication	No. of Respondents
Southern Ute Drum/Newspaper	52
SUIT Website	43
Southern Ute Indian Tribe Facebook	42
Email	40
Radio – KSUT	37
Information Flyer/Handouts	32
Town Hall Meetings	25
Instagram – Southern Ute Indian Tribe	20
Word of Mouth	18
Southern Ute X/Twitter account	13

Observations & Recommendations

- The public’s perception of hazards in this survey should be compared to the rankings given those hazards in the Tribal Hazard Mitigation Plan to identify alignment and/or disconnects between data analysis and public perception.
- The Tribe should conduct additional planning and outreach for individuals who may require additional assistance during an emergency, particularly those who depend on electricity for medical devices. It may be appropriate to focus mitigation and preparedness strategies toward this population.
- The Tribe may want to conduct additional outreach to younger tribal members, both to gauge their perceptions, and to educate them on the risk from hazards.
- The Tribe should continue to use multiple information channels to deliver hazards information to the public; there is no one method that will reach everyone.

Full Survey Results are attached. Full responses to several text questions that are not easily summarized are broken out as separate tabs, see Q2, Q4, Q7, Q9, and Q12.

Respondents who asked to have their emails entered into the raffle are also listed in Tab Q18 (may contain Personally Identifiable Information).

HAZARD MITIGATION

PLAN UPDATE

THE SOUTHERN UTE INDIAN TRIBE NEEDS YOUR INPUT!



The Southern Ute Indian Tribe is working to update our Hazard Mitigation Plan (HMP) and we are looking for your input! The HMP is a community-driven, living document that prompts communities to address local hazards by carrying out mitigation activities and projects. The plan update will integrate mitigation strategies into daily decision-making. This will reduce risk to human life and property over the long term. It will reflect the Tribe's current priorities and progress in hazard mitigation since the last plan was developed.

TAKE PART TODAY!

SURVEY LINK:

<https://forms.office.com/e/3QtkcSrZCu>



WHAT IS HAZARD MITIGATION?

Hazard mitigation is any action taken to reduce or eliminate long-term risk to people and property from natural disasters. One goal is to reduce the risk posed by future natural disasters. Another is to use structural and nonstructural measures to minimize the damage hazards can cause.

WHY IS HAZARD MITIGATION IMPORTANT?

Hazard mitigation is crucial because it fosters the development of stronger, safer, and more resilient communities. It minimizes future damage in the face of disasters. By taking proactive measures, communities become more effective at mitigating risks.

EXAMPLES OF HAZARDS



Wildfire



Flood



Drought



Winter Weather



Earthquake



Erosion



Severe Storms



Landslide



Tornado

THE SOUTHERN UTE INDIAN TRIBE NATURAL HAZARD PLANNING PUBLIC INPUT SURVEY

The Southern Ute Indian Tribe has begun to update our Tribal Hazard Mitigation Plan. This plan helps us become less vulnerable and more resilient to natural hazards, such as wildfire, flooding, and others. Your participation is important to us!

A hazard mitigation plan helps the Tribe understand where we are exposed to hazards from natural and human-caused disasters. It also includes steps we can take to reduce the negative impact of those hazards. Another important reason the Tribe is updating the plan is so we can continue to receive federal funding for projects that will help us protect against and recover quicker from natural hazards. **By participating in this survey, you give us important insights into how we can best protect our community. Please answer as many questions as you can so we know where we may be vulnerable. Additional comments can be added at the end of the survey.**

Thank you for your time and feedback! **At the end of the survey, you will be given an opportunity to enter our raffle for a chance to win a night of food, fun and bowling at the Rolling Thunder Lanes and Rolling Thunder Grill in the Sky Ute Casino Resort!**

Please complete this survey by October 1 and return it to the front desk of any administration building for Tribal Information Services.

BACKGROUND INFORMATION

1. Please tell us who you are (select all that apply)
 - a. I am a tribal member of the Southern Ute Indian Tribe (SUIT).
 - b. I live on the SUIT Reservation.
 - c. I work on the SUIT Reservation.
 - d. I am a tribal member of another Native American Tribe (non-Southern Ute).
 - e. I represent an organization that serves SUIT and/or its members.

2. If you represent an organization, please list it below.

3. How long have you lived or worked in the Southern Ute community?
 - f. Less than 1 year
 - g. 1-5 years
 - h. 6 -10 years
 - i. More than 10 years
 - j. I do not live in the community but am representing an organization.
 - k. I do not live or work in the community, but I am a tribal member.

4. What do you love about the Southern Ute community?

5. How concerned are you about the following hazards? (Check which applies)

HAZARD	NOT CONCERNED	SOMEWHAT CONCERNED	VERY CONCERNED
Wildfire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drought	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Earthquake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flood/Erosion/Washout	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extreme Temperatures (Heat/Freezing)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expansive Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landslide/Rockfall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tornado/Windstorms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Winter Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severe Thunderstorms/ Lightning/Hail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Climate Change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Power Grid Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Terrorism/Cyber Attack/ Active Shooter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chemical Spills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oil/Gas Explosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Human Trafficking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Building teamwork and cooperation among Tribal entities and outside agencies, residents, businesses and other organizations.

9. What actions can the Tribe take to reduce or eliminate the risk of future natural hazard damage in your community? (e.g., wildfire fuel reduction, drought planning, etc.)

10. How should the Tribe consider climate change and its impacts?

- a. Climate change is not a threat to the reservation, so we don't need to plan for it.
- b. Climate change is a minor threat to the reservation, so it should be a part of general plans.
- c. Climate change is a moderate threat to the reservation, so we should address those threats.
- d. Climate change is a major threat to the reservation, the tribe is and should continue to identify plans to address its impact.

11. What are the ways you would like to receive information on making your home/business/work and the reservation more resilient to natural hazards? (Check all that apply.)

- SUIT Website
- Southern Ute Drum/Newspaper
- Southern Ute Indian Tribe Facebook
- Southern Ute X/Twitter account
- Instagram – Southern Ute Indian Tribe
- Radio – KSUT
- Email
- Word of Mouth
- Information Flyer/Handouts
- Town Hall Meetings
- Other _____

12. Do you have additional comments for the planning team?

OPTIONAL QUESTIONS

Responses to the following demographic questions are optional. We will use them to make sure that all community voices are represented. Again, these questions are completely optional.

13. What is your age? (Optional)

- a. 17 or younger
- b. 18-24
- c. 25-39
- d. 40-55
- e. 56-65
- f. 66 or older

14. What is your gender? (Optional)

- a. Male
- b. Female
- c. Non-Binary
- d. Prefer not to say
- e. Other _____

15. Natural hazards can make it more difficult for certain individuals and households to recover. The following questions will help us better understand community vulnerabilities to inform priorities for the Tribe. Do any of the following apply to you or your household? (Optional)

CONSIDERATION	YES	NO
Do you or anyone in your household require additional assistance because of age or any mental/physical condition (temporary or permanent) that may limit their ability to access basic needs during a disaster?	<input type="checkbox"/>	<input type="checkbox"/>
Do you have any family friends, neighbors, or others to help support your ability to access those basic needs during a disaster?	<input type="checkbox"/>	<input type="checkbox"/>
Do you or anyone in your household have the ability to use a vehicle in times of disasters?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, is your vehicle able to assist those who use a wheelchair/car seat in times of a disaster?	<input type="checkbox"/>	<input type="checkbox"/>
Do you or anyone in your household require oxygen or other electrically powered medical assistance?	<input type="checkbox"/>	<input type="checkbox"/>

Questions? Contact Amy Barry: abarry@southernute-nsn.gov

If yes, do you have a back-up power generator to support your need for powered medical devices during outage disasters?

CONTACT INFORMATION

To stay up to date on plan progress, provide your name and email address. Your information will be kept confidential and only used for the purpose of providing plan updates.

- Full Name:
- Email Address:
- Please include your full name and email address above and check the box below if you'd like to be entered into a raffle for a chance to win a night of food, fun and bowling at the Rolling Thunder Lanes and Rolling Thunder Grill in the Sky Ute Casino Resort!
 - Yes, please enter me in the raffle.
 - No, please do not enter me in the raffle.



MULTI-PURPOSE FACILITY August Sip, Chat & Chew Friday August 9, 2024 11:30 AM - 1:30 PM



**So. Ute Risk Management
will give an update on their projects.**

**The Dinner is open to members of the 3 Ute Tribes,
and their families, all ages are invited.**

Door Prize donations are appreciated.



**Multi-Purpose Facility 256 Ute Road, Ignacio CO
970-563-2640 email: multipurpose@southernute-nsn.gov**



Posts

Replies

Media



SUIT Tribal Council Communica... · 8/9/24 ...

The August Sip, Chat, and Chew is today from 11:30 AM to 1:30 PM at the Multi-Purpose Facility. The Southern Ute Risk Management will be in attendance and will share an update on their projects.

- Summer Begay, Comm. Specialist

MULTI-PURPOSE FACILITY
August Sip, Chat & Chew
Friday August 9, 2024
11:30 AM - 1:30 PM



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Multi-Purpose Facility 256 Ute Road, Ignacio CO
970-563-2640 email: multipurpose@southernute-nsn.gov





Southern Ute Indian Tribe

August 8



Join the Southern Ute Multi-Purpose Facility tomorrow for the Monthly Sip, Chat, and Chew from 11:30 a.m. - 1:30 p.m. Southern Ute Risk Management will be in attendance to brief those in attendance on the upcoming Southern Ute Hazardous Mitigation Plan how the tribal membership can become involved. See you there!

- Tribal Information Services

MULTI-PURPOSE FACILITY
August Sip, Chat & Chew
Friday August 9, 2024
11:30 AM - 1:30 PM



So. Ute Risk Management will give an update on their projects.
The Dinner is open to members of the 3 Ute Tribes, and their families. all ages are invited.

HAZARD MITIGATION PLAN UPDATE

THE SOUTHERN UTE INDIAN TRIBE NEEDS YOUR INPUT!



EXAMPLES OF HAZARDS

- Wildfire
- Flood
- Drought
- Winter Weather
- Earthquake
- Erosion
- Severe Storms

TAKE PART TODAY!
SURVEY LINK:
<https://forms.office.com/e/3Q1tcSr2Cu>



WHAT IS HAZARD MITIGATION?
 Hazard mitigation is any action taken to reduce or eliminate long-term risk to people and property from natural disasters. One goal is to reduce the risk posed by future natural disasters. Another is to use structural and nonstructural measures to minimize the damage from disasters.

2

Like

Comment

Share

SOUTHERN UTE INDIAN TRIBE

EXECUTIVE SITE VISIT SUMMARY

SEPTEMBER 4-8, 2024

PURPOSE:

FEMA Region 8 staff made a three-day site visit to the Southern Ute Indian Reservation in September 2024. They brought staff from *Resilience Action Partners*. This effort supports FEMA's Community Engagement and Risk Communication (CERC) contract. The visit had two purposes:

- To support the Southern Ute Indian Tribe (SUIT) with public engagement and outreach for their Hazard Mitigation Plan (HMP) update.
- To let the Building Resilient Infrastructure and Communities (BRIC) Direct Technical Assistance (DTA) support team learn more about the tribe's priorities and needs for the HMP.

The visit also lined up with the Tribe's yearly fair. This event gave the team a unique chance to meet tribal members and learn about their history and culture. Findings from this visit will help inform priorities for the update of the tribe's HMP. It will also help inform future BRIC grant applications.

OUTCOMES:

- 1) SUIT received over 30 survey responses during the site visit.
- 2) FEMA will continue to work with SUIT and their core planning team to hold recurring meetings throughout the plan update process.
- 3) FEMA will schedule and hold one-on-one interviews with tribal members identified during the site visit to help inform the HMP.

SOUTHERN UTE INDIAN TRIBE EXECUTIVE SITE VISIT SUMMARY

THURSDAY, SEPTEMBER 5, 2024: SUMMARY

ATTENDEES Day 1:

ORGANIZATION/ AGENCY	PARTICIPANT NAME	ROLE/TITLE
FEMA Region 8	Kyle McCormick	Hazard Mitigation Specialist, BRIC DTA Facilitator
FEMA Region 8	Patricia Gavelda	Grants Management Specialist
FEMA Region 8	Lauren Dent	Emergency Management Specialist (Tribal)
<i>Resilience Action Partners (CERC Contractor)</i>	Lucy Duffy	Communications Specialist
Southern Ute Indian Tribe	Don Brockus	Risk and Emergency Manager

THURSDAY MORNING EMPLOYEE EVENT:

SOUTHERN UTE INDIAN TRIBE

EXECUTIVE SITE VISIT SUMMARY

- The site visit began at the Hall of Warriors on the Southern Ute Indian Reservation with Don Brockus. Don, FEMA, and CERC set up for an employee event. This helped the tribe engage the public around the HMP.
- A survey was available at the tables. It gave tribal members and employees a chance to share input on what hazards may concern them and what they want to see in the HMP update.
- Posters were also on display. They helped employees and tribal members understand what hazard mitigation planning is and the value of an HMP update.
- This was an open forum, so tribal members and employees were able to ask FEMA any questions they had about the process and the survey.

THURSDAY AFTERNOON TABLING:

- In the afternoon, Don, FEMA, and CERC attended the Exhibits Check-In at the Tribe’s museum. This gave an extra chance to inform tribal members about the HMP update and encourage them to take part in the survey.
- Many tribal members were coming in and out throughout the afternoon to drop off their exhibit entries. This gave FEMA/SUIT a chance to connect through brief talks with tribal members to hear their hazard concerns and find common themes.
- The Tribal Historic Preservation Officer, Cassie, is also a tribal member. Cassie gave key input about native plants and her concern for their protection. She shared that plants such as willows were destroyed during a wildfire, and they are now reproducing the wrong type of willow that would be used in important tribal ceremonies. With any disaster, there is a risk of losing plants that may have ceremonial or medicinal uses.

FRIDAY, SEPTEMBER 6, 2024: SUMMARY

ATTENDEES Day 2:

ORGANIZATION/ AGENCY	PARTICIPANT NAME	ROLE/TITLE
FEMA Region 8	Kyle McCormick	Hazard Mitigation Specialist, BRIC DTA Facilitator
	Felicity Selvoski	Community Planner (Tribal)
	Patricia Gavelda	Grants Management Specialist
	Lauren Dent	Emergency Management Specialist (Tribal)
<i>Resilience Action Partners (CERC Contractor)</i>	Lucy Duffy	Communications Specialist
Southern Ute Indian Tribe	Don Brockus	Risk and Emergency Manager

SOUTHERN UTE INDIAN TRIBE

EXECUTIVE SITE VISIT SUMMARY

Site Visit Day 2:

- Day 2 focused on tabling at the Tribal fair. The fair is held each year and is open to both tribal members and the general public. The fair includes many vendors, and Don had a table and tent set up for the FEMA team. Throughout the day, the team worked to engage with tribal members and explain the HMP update and the value of tribal members taking part in it.
- The team met Shane Seibel, who is the Executive Director of the SUIT Growth Fund and a tribal member. He gave insights on how FEMA can work with the tribe to protect their business assets. The tribe has spent much on their economic development and new business opportunities. As such, it will be crucial to protect these investments from disaster. He also talked about working together to maintain a strong partnership between the tribe and FEMA to have successful outcomes.

FRIDAY, SEPTEMBER 7, 2024: SUMMARY

ATTENDEES Day 3

ORGANIZATION/ AGENCY	PARTICIPANT NAME	ROLE/TITLE
FEMA Region 8	Kyle McCormick	Hazard Mitigation Specialist, BRIC DTA Facilitator
	Felicity Selvoski	Community Planner (Tribal)
	Patricia Gavelda	Grants Management Specialist
	Lauren Dent	Emergency Management Specialist (Tribal)
Southern Ute Indian Tribe	Don Brockus	Risk and Emergency Manager

Site Visit Day 3:

- Day 3 continued the tabling events from the day before. Don had the table moved next to the tribal council during the fair. This let FEMA engage with the tribal council and learn more about their priorities and desires for the HMP.

SATURDAY, SEPTEMBER 8, 2024: SUMMARY

ATTENDEES Day 4

ORGANIZATION/ AGENCY	PARTICIPANT NAME	ROLE/TITLE
FEMA Region 8	Kyle McCormick	Hazard Mitigation Specialist, BRIC DTA Facilitator
	Felicity Selvoski	Community Planner (Tribal)

SOUTHERN UTE INDIAN TRIBE

EXECUTIVE SITE VISIT SUMMARY

Southern Ute Indian Tribe	Patricia Gavelda	Grants Management Specialist
	Lauren Dent	Emergency Management Specialist (Tribal)
	Don Brockus	Risk and Emergency Manager

Site Visit Day 4:

- Day 4 continued the tabling events from the day before. This let FEMA engage with the tribal council and learn more about their priorities and desires for the HMP.
- During the morning, the Tribal Commission had a booth right next to ours handing out free watermelon. This brought a lot of foot traffic and awareness to our booth on the HMP update.
- Our team was also able to meet with the Tribal Council members briefly to let them know what we were up too.

HAZARD MITIGATION



WHAT IS HAZARD MITIGATION?

Hazard mitigation is any lasting action taken to reduce or remove long-term risk to people and property from hazards.

WHY IS HAZARD MITIGATION IMPORTANT?

Hazard mitigation is a community's investment in its future safety and sustainability. By acting now, before a disaster, the community can reduce losses when a disaster occurs.

TYPES OF HAZARDS



WILDFIRE



SEVERE WINTER WEATHER



FLOOD



DROUGHT



SEVERE SUMMER STORMS



TORNADO

MITIGATION PLANNING PROMOTES:

Cost-effective actions that lower risk.

Building partnerships.



Identifying the most important things to protect

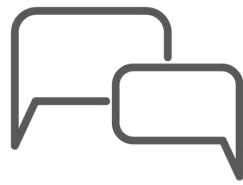
Awareness of hazards and risks.

HOW CAN HAZARD MITIGATION HELP YOU?

- ✓ It protects the public and prevents loss of life or injury.
- ✓ It prevents damage to your community's unique economic, cultural and environmental assets.
- ✓ It lessens downtime, speeds up recovery and reduces the cost of disaster response.

WHAT IS A HAZARD MITIGATION PLAN?

The Hazard Mitigation Plan (HMP) is a community-driven, living document. The planning process is as important as the plan itself. It prompts communities and tribal nations to work mitigation into the choices they make each day. This can include land use planning, floodplain management, site design, and other work.



MITIGATION PLANNING INCLUDES THESE THREE ELEMENTS:

PUBLIC ENGAGEMENT

Planning calls for diverse input. This leads to a safer community that is stronger against disasters. Public involvement is key to community-wide support. It is also vital to invest in carrying out actions.

RISK ASSESSMENT

Hazard mitigation plans assess historical hazards, disaster frequency, and impacts. They also assess potential losses to life and property. This forms the basis of hazard mitigation strategies.

MITIGATION STRATEGY

Communities set mitigation goals and strategies. They base these choices on public input, known risks, and available resources. These strategies focus on cost-effective ways to mitigate hazard-related loss.

YOUR HAZARD MITIGATION PLAN

The Southern Ute Indian Tribe is working to update our HMP and we are looking for your input! The plan update will integrate mitigation strategies into daily decision-making. This will reduce risk to human life and property over the long term. It will reflect the Tribe's current priorities and progress in hazard mitigation since the last plan was developed.



TAKE PART TODAY!

Participate in the survey by scanning the QR code.



Questions?

Contact Don Brockus, Risk and Emergency Manager at dbrockus@southernute-nsn.gov

1. **What is your title and role for Ignacio?**
 - a. Wesley Crume—Town of Ignacio Police Chief--

2. **From your perspective and role in Ignacio-- what natural hazards keep you up at night? What are your concerns in terms of natural hazards?**
 - a. Forest fires
 - b. Dam Breaks
 - c. Lightning strikes

3. **As we know, natural hazards do not follow political boundaries. Are there any areas of shared concern that we could address in the SUIT HMP as an action or risk?**
 - a. We (Town of Ignacio) have a good partnership with SUIT and would support them during a disaster with transportation/evacuation efforts and whatever else may come up.
 - b. Lightning strikes—impacted the Casino in 2017—the power infrastructure/telecommunication. Power outage.
 - i. Blew out the generator at the casino which provides back up power for the SUIT campus.
 - ii. A lot of the SCADA systems were destroyed.
 - c. Rural Electric Cooperative/ The same substation serves Tribal campus and Town of Ignacio
 - i. Bear Dance fire destroyed this substation in 2020. Caused power outage.
 - d. The substation is backed up to the Boske plant along the river—Tribal Council mentioned that the Boske is sacred, and a wildfire fuel reduction mitigation project would not be supported unless it was developed in a culturally sensitive way.
 - e. Meadow Brook Trailer Park is at risk from flooding – they are below the flood elevation and would be heavily impacted. It is Fee land (under Ignacio jurisdiction) but tribal members live there/ private ownership. We would have to coordinate on hazard mitigation projects that could reduce risk to this trailer park. The trailer park is surrounded by Tribal owned land on both sides. A mitigation solution would require coordination.
 - f. Ignacio purchases water from SUIT—population in Ignacio is serviced by the SUIT WWTP and there is mutual interest in making sure it is resilient from natural hazard impacts.

4. **Are you (Town of Ignacio) working on updating your communities HMP?**
 - a. Town Manager is currently working on one—Mark Garcia
 - b. If so, are there any actions listed that would benefit from coordination?
 - i. Will follow up with us on any actions/risks that could benefit from coordination

5. **Once a draft of the HMP for SUIT is complete, would you be willing to look and provide feedback?**
 - a. Wes confirmed that he is willing to look at HMP once it put together and provide feedback

Interested Parties Interview Guide/Notetaking Sheet

Purpose of Interview

This series of questions is meant to get feedback from Tribal departments and organizations that have a direct interest in protecting community assets and infrastructure from natural hazards. You (interviewee) have been identified by the Risk & Emergency Management Team as a critical interested party that we'd like to get feedback from. The information from these interviews will be utilized to inform the mitigation strategies that are developed as a part of the SUIT Hazard Mitigation Plan Update (2024).

This interview guide provides a way to capture feedback and information from interested parties. The guide provides a series of questions we'd like to ask each interested party and a way to capture their feedback through note taking. The questions are meant to be broad open-ended question to guide the conversation. The question should be asked in the order in this guide, but please feel free to stray from these questions on specific follow up questions as needed. This guide can also be sent to each department, and filled out electronically, if scheduling is an issue.

We are not recording the interview, but we will be taking notes. If you want us to stop taking notes at any time, or prefer to be off the record on anything, just let us know.

Key Definitions (highlight begin the interview)

- Hazard Mitigation:** Hazard mitigation is any action taken to reduce or eliminate long-term risk to people and property from **natural disasters**. Examples of hazard mitigation are projects like increasing the size of storm drains to reduce flooding, wildfire fuel management and home defensible space. It could also be items such as updating building codes to ensure buildings are able to withstand wind/storm events.
- Hazard Mitigation Plan:** The Hazard Mitigation Plan is a community driven, living document that serves as the Tribes guide for reducing impacts from **natural hazards**, such as floods and wildfires. The plan identifies the natural hazards that pose a risk to the Tribe and actions that can be taken by the Tribe to reduce the impacts of these hazards to our important places and infrastructure.

Interviewee Information

Name	Title	Department



FEMA

Question 1: What is the mission/role of your department and what community assets or resources do you and your department manage?

Notes

Question 2: What natural hazards do you think will have the biggest impact on your work/mission?

*Note—If filling this out, please describe the potential natural hazard impacts you are concerned with. *

Notes

Question 3: Does your department have any current or planned projects that are aimed at mitigating the natural hazard impacts you're concerned with? (i.e., storm water infrastructure upgrades, capital improvements, other).

*Note: If there are any planning documents your department has that list out the current or potential projects, please list them. (i.e., housing studies, economic development plans, drought plans, transportation studies/plans).

Notes

Question 4 From your perspective and role, what mitigation actions would support the work you are doing that should be added to the HMP?

Notes

Question 5: What would a resilient Southern Ute Indian Tribe look like to you?

Notes

Question 6: What do you think are the barriers to achieve this goal?

Notes

Question 7: Do you have any additional comments you'd like to add?



PASTRIES AND COFFEE

Employees of the Southern Ute Indian Tribe are invited to grab coffee and a pastry with the Risk & Emergency Management Team along with FEMA staff on Thursday, September 5th. This is an opportunity to learn about the Southern Ute Indian Tribe's hazard mitigation plan and our efforts to update it. You will also be able to participate in a brief survey about natural hazards, such as wildfires and drought, impacting our community. Help us enhance our community's safety and resilience. Your feedback is crucial!

Thursday, September 5
9:30 - 11:00 AM

Location: Hall of Warriors,
Leonard C. Burch Building

Contact Don Brockus,
Risk and Emergency Manager, at
dbrockus@southernute-nsn.gov

Appendix C: Hazard Mitigation Project Funding Guidebook

Table of Contents:

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State of Colorado Funding Resources	36
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Overview

The intent of the guidebook is to provide initial guidance on hazard mitigation project funding opportunities and where to find more information on grants. The information included is consistent with established processes for hazard mitigation planning. However, it is important to note the following in terms of the context for this guidebook relative to the overall planning process.

Project identification includes identifying all possible options to address planning objectives; at this stage, all options are viable. At times, the best option may be to work with other stakeholders in the community to design solutions that are in line with community values while reducing risk (e.g., a bike path or ball field that can double as a retention area, or the preservation of an animal habitat that also serves as a natural buffer). These types of solutions can often be funded in very innovative ways, including solutions which increase local industry and revenue. For information on the broad range of mitigation project types and how projects have been implemented in communities across the country, please refer to FEMA's Mitigation Best Practices webpage at <https://www.fema.gov/mitigation-best-practices-portfolio>.

It should be noted that the grant programs listed in this guidebook are not the only ones that could support hazard mitigation project implementation. Additionally, many of these programs are dependent on yearly funding allocations, resulting in fluctuations in the amount available. However, at this point, it is more important to be aware of the potential for various avenues of support for a broad array of project types. As needs and potential hazard mitigation project options are identified, more information can begin to be gathered on the range of programs which might be utilized. It will be more efficient to start with project options and then follow up with the identification of potential matches, working with the full range of available programs and agencies as part of a comprehensive project evaluation process.

While participation in a hazard mitigation plan is required for a jurisdiction to be eligible for FEMA funds, it is not the only funding source available for mitigation actions. Depending on the type of mitigation project being pursued, FEMA funding is not always the best option, so it is increasingly important to look for other opportunities. Opportunities for funding and technical assistance exist in various federal, state, and local agencies. Non-governmental funding opportunities are available at the regional or local level with private sector businesses, private foundations, and other non-governmental organizations. In order to fully map out the range of local and state options, it is necessary to undertake a detailed stakeholder analysis – something which has not been done at this time. The following contains an overview of key federal and state programs that may include opportunities for hazard mitigation project funding, as well as additional information on suggested alternative funding routes.

Federal Funding Resources

Information about federal hazard mitigation project funding opportunities is organized by agency. Under each agency heading, applicable grant programs are listed with a description of the grant and, when available, information on typical funds available, eligibility, examples of past projects funded, and any additional relevant information. Agencies covered in this guidebook include:

- Federal Emergency Management Agency
- National Fish and Wildlife Foundation
- U.S. Army Corps of Engineers
- U.S. Bureau of Reclamation – WaterSMART
- U.S. Department of Agriculture
- U.S. Department of Agriculture Rural Development Funding
- U.S. Department of Energy
- U.S. Department of Housing and Urban Development
- U.S. Economic Development Administration
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Forest Service

Note: This is not a complete list of all federal funding opportunities. These grant programs have been chosen for their applicability to popular mitigation actions. The websites and reference materials used to provide this information are as current as possible; however, it is important to note that funding programs are dynamic and subject to frequent changes. While it is helpful to be familiar with the current information, it is equally as important to engage candidate federal and state agencies in a dialog as soon as possible.

FEMA also has a Recovery and Resilience Resource Library to help navigate the numerous programs available in pre-disaster recovery planning or in the wake of a disaster. Resources can be searched by keyword or filtered by eligibility, topic, intended beneficiary, or resource type. The Recovery and Resilience Resource Library can be found here: <https://www.fema.gov/emergency-managers/practitioners/recovery-resilience-resource-library>.

Federal Emergency Management Agency (FEMA)

Building Resilient Infrastructure and Communities Program	
Description	This FEMA program aims to focus on research-supported, proactive investment in community resilience. Through the Building Resilient Infrastructure and Communities Program, FEMA invests in a variety of mitigation activities with an added focus on infrastructure projects benefitting disadvantaged communities, nature-based solutions, climate resilience and adaption, and adopting hazard resistant building codes.
Funds Available	For Fiscal Year 2022, FEMA will distribute up to \$2.295 billion through the Building Resilient Infrastructure and Communities Program in the following manner.
Eligibility	Eligible states, territories and federally recognized tribal governments can submit applications on behalf of subapplicants for Building Resilient Infrastructure and Communities Program funding. Applicants may have their own priorities or requirements when screening their subapplications. Subapplicants cannot submit these directly to FEMA. Subapplicants must submit them to their applicant for review and submission. Subapplicants are local governments, including cities, townships, counties, special district governments, state agencies and federally recognized tribal governments and must submit a subapplication to their state, territory, or tribal applicant agency.
Examples	The top five types of projects funded in Fiscal Year 2021 included Flood Control, Utility/Infrastructure Protection, Stabilization and Restoration, Mitigation Reconstruction, and Retrofits.
Additional Information	A cost share is required for all subapplications funded under the Building Resilient Infrastructure and Communities Program. The non-federal cost share funding may consist of cash; donated or third-party in-kind services and materials; or any combination thereof. Generally, the cost share for this program is 75% federal cost share funding/25% non-federal cost share funding. Additional information can be found at https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities/before-apply#funding

Fire Management Assistance Grant Program	
Description	The Fire Management Assistance Grant Program is available to states, local and tribal governments, for the mitigation, management, and control of fires on publicly or privately-owned forests or grasslands, which threaten such destruction as would constitute a major disaster.
Funds Available	The individual fire cost threshold is based on total eligible costs for the declared fire. The individual fire cost threshold for a state is the greater of \$100,000 or five percent times the statewide per capita indicator, multiplied by the state population (the statewide per capita indicator is adjusted annually for inflation [e.g., the FY21 indicator is \$1.55]).
Eligibility	Eligible applicants are entities legally responsible for the firefighting activities that reimbursement is being requested for, this includes states, local governments, and tribal governments.
Examples	Eligible firefighting costs may include expenses for field camps, repair and replacement tools, mobilization and demobilization activities, equipment use, materials and supplies.
Additional Information	https://www.fema.gov/assistance/public/fire-management-assistance

Flood Mitigation Assistance Program	
Description	The Flood Mitigation Assistance Program is a competitive program that provides funding for projects that reduce or eliminate the risk of repetitive flood damage to buildings insured by the National Flood Insurance Program. Projects must be cost effective, located in a participating NFIP community in good standing, align with the current hazard mitigation plan, and meet all environmental and historical preservation requirements.
Funds Available	Fiscal Year 2022 had \$800 million available for distribution which was more than five times the amount available for Fiscal Year 2021.
Eligibility	States, territories, and federally recognized tribes are eligible. Local governments are considered sub-applicants and must apply to the State, territory, or tribe.
Examples	Projects include project scoping, technical assistance, community flood mitigation projects, individual structure/property-level flood mitigation projects, and management costs.
Additional Information	Cost share is required for all subapplications funded by the Flood Mitigation Assistance program. Generally, the cost share for this program is 75% federal / 25% non-federal. Contributions of cash, third-party in-kind services, materials, or any combination thereof, may be accepted as part of the non-federal cost share. More information can be found at https://www.fema.gov/grants/mitigation/floods

Hazard Mitigation Grant Program	
Description	FEMA’s Hazard Mitigation Grant Program provides funding to state, local, tribal and territorial governments so they can develop hazard mitigation plans and rebuild in a way that reduces, or mitigates, future disaster losses in their communities. Funding is available when authorized under a Presidential major disaster declaration and in areas of the state requested by the Governor. Federally recognized tribes may also submit a request for a Presidential major disaster declaration within their impacted areas. All state, local, tribal and territorial governments must develop and adopt hazard mitigation plans to receive funding for their hazard mitigation projects.
Funds Available	Amount of funding is based on the estimated total or aggregate cost of disaster assistance: Up to 15% of the first \$2 billion; Up to 10% for amounts between \$2 billion and \$10 billion; Up to 7.5% for amounts between \$10 billion and \$35.333 billion; States with enhanced mitigation plans: Up to 20%, not to exceed \$35.333 billion.
Eligibility	Project eligibility under Hazard Mitigation Grant Program can be limited by the State as part of the Hazard Mitigation Grant Program Administrative Plan developed post-disaster. For example, funding may only be made available for projects that are related to the type of disaster, i.e., Hazard Mitigation Grant Program related to a significant flood disaster declaration may only be designated for flood mitigation projects like acquisitions of repetitively flooded properties.
Examples	Retrofitting existing buildings to make them less susceptible to damage from a variety of natural hazards. Purchasing hazard prone property to remove people and structures from harm’s way. Drainage improvement projects to reduce potential for flood damage. Eligible project types do not have to coincide with the type of disaster declaration, as the state decides funding prioritization accordingly.
Additional Information	In this program, private homeowners and businesses cannot apply for a grant. However, a local community or other public entity may apply for funding on their behalf. Generally, the cost share is 75% federal and 25% non-federal funding. The 25% can come from any non-federal source, such as the state or local government, an individual, private contributions, Increased Cost of Compliance funds from a flood insurance policy, or Small Business Administration loans. Additional information can be found at: https://www.fema.gov/grants/mitigation/hazard-mitigation/before-you-apply .

Hazard Mitigation Grant Program-Post Fire	
Description	This program provides funding to help communities implement hazard mitigation measures focused on reducing the risk of harm from wildfire. It provides hazard mitigation grant funding to state, local, tribal, and territorial governments in areas receiving a Fire Management Assistance Grant declaration. The Fire Management Assistance Grant Program is the Disaster Declaration required and funding amounts are determined by FEMA based on an annual national aggregate calculation of the past 10 year's Fire Management Assistance Grant Program declarations.
Funds Available	Funds available each year are based on an average of historical Fire Management Assistance Grant declarations from the past 10 years. Total funding available for each Fire Management Assistance Grant Program declaration in Fiscal Year 2022 is \$786,552 for applicants with hazard mitigation plans and \$1,048,736 for those with an enhanced hazard mitigation plan. Multiple event funding will be aggregated into one grant under the first declaration.
Eligibility	Eligible projects include defensible space initiatives, ignition-resistant construction, hazardous fuels reduction, erosion control measures, slope failure prevention measures and flash flooding prevention measures.
Examples	Defensible space, reducing hazardous fuels, removing standing burned trees, ignition-resistant construction, installing warning signs, strengthen or harden water systems that were burned and caused contamination, reseeding ground cover, planting grass to prevent noxious weeds, erosion barriers on slopes, modify/remove culverts, drainage dips and emergency spillways.
Additional Information	The application period opens with the state or territory's first Fire Management Assistance Grant Program declaration of the fiscal year and closes six months after the end of that fiscal year. Application extensions may be requested. https://www.fema.gov/grants/mitigation/post-fire .

Pre-Disaster Mitigation	
Description	The Pre-Disaster Mitigation grant program makes federal funds available to state, local, tribal, and territorial governments to plan for and implement sustainable cost-effective measures. These mitigation efforts are designed to reduce the risk to individuals and property from future natural hazards, while also reducing reliance on federal funding from future disasters.
Funds Available	On March 1, 2023, FEMA published a Notice of Funding Opportunity for FY23 Pre-Disaster Mitigation grant program. The total amount of funds that are being made available to 100 congressionally directed projects will be \$233,043,782. Applicants may request up to an additional 5% of project costs for management and administration of the program from a separate pool of funds.
Eligibility	Only states, territories, or federally recognized tribal governments identified by Congress in the Consolidated Appropriations Act and enumerated in the accompanying Joint Explanatory Statement for Division F are identified in this Notice of Funding Opportunity and are eligible to apply. All applicants and subapplicants must have a FEMA-approved Hazard Mitigation Plan by the application deadline
Examples	Storm Shelters, Wildfire Prevention Project, Bridge Rehabilitation, Drainage Improvements, Water Storage Tanks, Flood Mitigation Planning Projects, Evacuation Center, and more.
Additional Information	https://www.fema.gov/grants/mitigation/pre-disaster

Recovery and Resilience Resource Library	
Description	FEMA developed library to navigate the numerous programs available to the United States and its territories to help recover from a disaster. Tool helps users to find and research federal disaster recovery resources that would be beneficial to pre-disaster recovery planning or in the wake of a disaster.
Funds Available	Varies
Eligibility	Resources are intended for state, local, territorial, and tribal governments as well as non-profits, businesses, healthcare institutions, schools, individuals, and households.
Examples	Evidence-based or evidence-informed interventions to strengthen rural and urban communities.
Additional Information	https://www.fema.gov/emergency-managers/practitioners/recovery-resilience-resource-library

State and Local Cybersecurity Grant Program	
Description	Funding to help states, local governments, rural areas, and territories address cybersecurity risks and cybersecurity threats to information systems.
Funds Available	\$183.5 million is available under the State and Local Cybersecurity Grant Program, with varying funding amounts allocated over four years from the Infrastructure Investment and Jobs Act. The recipient contribution can be cash (hard match) or third-party in-kind (soft match).
Eligibility	All U.S. states and territories are eligible to apply. The designated State Administrative Agency for each state and territory is the only entity eligible to apply for SLCGP funding.
Examples	Planning, equipment, exercises, management & administration, organization, and training.
Additional Information	<p>This year, each state and territory will receive a funding allocation as determined by the statutory formula:</p> <ul style="list-style-type: none"> • Allocations for states and territories include a base funding level as defined for each entity: 1% for each state, the District of Columbia, and Puerto Rico. • State allocations include additional funds based on a combination of state population and rural population totals. • 80% of total state allocations must support local entities, while 25% of the total state allocations must support rural entities; these amounts may overlap. • https://www.fema.gov/grants/preparedness/state-local-cybersecurity-grant-program.

Safeguarding Tomorrow through Ongoing Risk Mitigation Revolving Loan Fund	
Description	FEMA is making \$150 million available to fund capitalization grants that enable eligible entities to administer revolving loan funds and provide direct loans to local governments for projects and activities that mitigate the impacts of drought, intense heat, severe storms (including hurricanes, tornados, windstorms, cyclones, and severe winter storms), wildfires, floods, earthquakes, and other natural hazards. FEMA will work closely with participating entities and gather best practices on topics such as entity administrative burden and capacity, achieving resilience and equity goals, and common project and activity types for loans under this program. FEMA’s goal is to increase entity participation with higher funding levels in future grant cycles.
Funds Available	FEMA intends to award \$150 million of the funds available under the new program to address climate change and create a more equitable and resilient nation.
Eligibility	Eligible entities are States, federally recognized tribes that received a major disaster declaration, Territories, and the District of Columbia. State entities must enroll in this program for it to be an option to local public entities.
Examples	This is an opportunity to prioritize low-impact development, wildland-urban interface management, conservation areas, reconnection of floodplain and open space projects. Funding can be utilized for building code adoption and enforcement. Allowable uses include Mitigation Activities, Non-Federal Cost-Share, Local Government Technical Assistance, and Entity Administrative Costs.
Additional Information	https://www.fema.gov/grants/mitigation/storm-rif

National Fish and Wildlife Foundation

America the Beautiful Challenge	
Description	<p>The America the Beautiful Challenge seeks to advance conservation and restoration projects that are consistent with the principles outlined in the Conserving and Restoring America the Beautiful report and that focus on at least one of the following core areas of need:</p> <ul style="list-style-type: none"> • Conserving and restoring rivers, coasts, wetlands, and watersheds • Conserving and restoring forests, grasslands, and other important ecosystems that serve as carbon sinks • Connecting and reconnecting wildlife corridors, large landscapes, watersheds, and seascapes • Improving ecosystem and community resilience to coastal flooding, drought, and other climate-related threats • Expanding access to the outdoors, particularly in underserved communities <p>Applicants are encouraged to develop large landscape scale and/or cross jurisdictional projects that advance existing conservation plans or are informed by Indigenous Traditional Knowledge.</p>
Funds Available	Approximately \$116 million was awarded nationally in 2023.
Eligibility	State government agencies, Indian Tribes, non-profit 501(c) organizations, local governments, municipal governments, and educational institutions.
Examples	Implementation grants, planning grants, sentinel landscape grants, national forest grants, and private forests, rangeland, and farmland grants.
Additional Information	https://www.nfwf.org/programs/america-beautiful-challenge?activeTab=tab-2

Five Star and Urban Water Restoration Grant Program	
Description	The Five Star and Urban Waters Restoration grant program seeks to develop community capacity to sustain local natural resources for future generations by providing modest financial assistance to diverse local partnerships focused on improving water quality, watersheds and the species and habitats they support.
Funds Available	Approximately \$2,650,000 was available in 2022 for nationwide for projects meeting program priorities. There is one round of full proposals annually for this program. Awards range from \$20,000 to \$50,000 with an average size of \$35,000 and about 50 grants awarded per year.
Eligibility	Non-profit 501(c) organizations, state government agencies, local governments, municipal governments, Tribal Governments and Organizations, and educational institutions.
Examples	Projects include a variety of ecological improvements along with targeted community outreach, education and stewardship. Ecological improvements may include one or more of the following: wetland, riparian, forest and coastal habitat restoration; wildlife conservation, community tree canopy enhancement, water quality monitoring and green infrastructure best management practices for managing run-off.
Additional Information	https://www.nfwf.org/programs/five-star-and-urban-waters-restoration-grant-program?activeTab=tab-1

U.S. Army Corps of Engineers

Planning Assistance to States	
Description	Provides assistance in the preparation of comprehensive plans for the development, utilization, and conservation of water and related land resources. Typical studies are only planning level of detail, not design for project construction. The program can encompass many types of studies dealing with water resource issues. The Planning Assistance to States program has two types of efforts-comprehensive plans and technical assistance: Comprehensive Plans and Technical Assistance. Comprehensive Plan Assistance includes planning for the development, utilization, and conservation of the water and related resources of drainage basins, watersheds, or ecosystems located within the boundaries of that State, including plans to comprehensively address water resources challenges such as the state water plan. Comprehensive plans can extend across state boundaries provided both States agree. Technical Assistance provided through the Planning Assistance to States program includes support of planning efforts related to the management of state water resources, including the provision and integration of hydrologic, economic, or environmental data and analysis in support of the State's water resources management and related land resources development plans identified in the state water plan or other water resources management related state planning documents, such as state hazard mitigation, preparedness, response, and recovery plans and plans associated with changing hydrologic conditions, climate change, long-term sustainability, and resilience.
Funds Available	Comprehensive planning activities through the Planning Assistance to States program are cost shared (50 per cent) with the study partner, and voluntarily contributed funds in excess of cost share may be provided by the non-Federal partner. The non-Federal cost share for preparation of a state comprehensive water resources plan may be provided by funds or through the provision of services, materials, supplies, or other in-kind services. Technical assistance activities through the Planning assistance to States program are cost shared (50 per cent) with the study partner, and voluntarily contributed funds in excess of cost share may be provided by the non-Federal partner. The cost-share for technical assistance must be provided by funds (not in-kind).
Eligibility	States, local governments, other non-Federal entities, and eligible Native American Indian tribes.
Examples	Types of studies in recent years include water supply/demand, water conservation, water quality, environmental/conservation, wetlands evaluation/restoration, dam safety/failure, flood damage reduction, coastal zone protection, and harbor planning.
Additional Information	https://www.nae.usace.army.mil/missions/public-services/planning-assistance-to-states/

U.S. Bureau of Reclamation – WaterSMART

Small Scale Water Efficiency Projects	
Description	Funding for small-scale on-the-ground water management projects that conserve, better manage, or otherwise increase efficient use of water supplies. Projects supported by an existing water management and conservation plan, System Optimization Review, or other planning effort led by the applicant are prioritized.
Funds Available	Applicants may request up to \$100,000 in federal funding, with a non-federal cost-share of 50% or more of total project costs for projects with total project costs no more than \$225,000.
Eligibility	Eligible applicants for all WaterSMART Grants funding opportunities include states; tribes; irrigation districts; water districts; state, regional, or local authorities, whose members include one or more organization with water or power delivery authority; other organizations with water or power delivery authority; and nonprofit conservation organizations that are acting in partnership with and with the agreement of an entity previously described. To be eligible, applicants must be located in the Western United States or U.S. Territories. Entities located in Alaska and Hawaii are also eligible to apply.
Examples	Example projects include Canal lining/piping, municipal metering, irrigation flow measurement, Supervisory Control and Data Acquisition and automation, landscape irrigation measures, high-efficiency indoor appliances and fixtures, commercial cooling systems.
Additional Information	https://www.usbr.gov/watersmart/swep/index.html

Water Marketing Strategy Grants	
Description	Financial assistance for the development of water marketing strategies to facilitate water markets as a tool for helping willing buyers and sellers meet water demands efficiently in times of shortage and prevent water conflicts.
Funds Available	Program funding is allocated through a competitive process. Applicants may request federal funding up to \$400,000 for projects to be completed within three years with a non-Federal cost share of 50% or more of the total project cost.
Eligibility	Eligible applicants for all WaterSMART Grants funding opportunities include states; tribes; irrigation districts; water districts; state, regional, or local authorities, whose members include one or more organization with water or power delivery authority; other organizations with water or power delivery authority; and nonprofit conservation organizations that are acting in partnership with and with the agreement of an entity previously described. To be eligible, applicants must be located in the Western United States or U.S. Territories. Entities located in Alaska and Hawaii are also eligible to apply.
Examples	Funding awarded under Water Marketing Strategy Grants can be used for outreach and partnership building, planning activities (e.g., hydrologic, economic, legal and other types of analysis), pilot activities, and the development of a “water marketing strategy” document.
Additional Information	https://www.usbr.gov/watersmart/watermarketing/index.html

Water and Energy Efficiency Grants	
Description	Focuses on projects that result in quantifiable and sustained water savings, including canal lining and piping projects, municipal metering projects, and Supervisory Control and Data Acquisition and automation projects.
Funds Available	Applicants may request federal funding: (I) up to \$500,000 for projects to be completed within two years, (II) up to \$2 million for projects to be completed within three years; and (III) up to \$5 million for projects to be completed within three years, with a non-Federal cost share of 50% or more of the total project cost. No more than \$5,000,000 in total WaterSMART Water and Energy Efficiency Grants funds will be awarded to any single applicant under this Funding Opportunity per fiscal year.
Eligibility	Eligible applicants for all WaterSMART Grants funding opportunities include states; tribes; irrigation districts; water districts; state, regional, or local authorities, whose members include one or more organization with water or power delivery authority; other organizations with water or power delivery authority; and nonprofit conservation organizations that are acting in partnership with and with the agreement of an entity previously described. To be eligible, applicants must be located in the Western United States or U.S. Territories. Entities located in Alaska and Hawaii are also eligible to apply.
Examples	Projects conserve and use water more efficiently; increase the production of hydropower; mitigate conflict risk in areas at a high risk of future water conflict; and accomplish other benefits that contribute to water supply reliability in the western United States.
Additional Information	https://www.usbr.gov/watersmart/weeg/faq.html

U.S. Department of Agriculture

Conservation Innovation Grants	
Description	Competitive program that supports the development of new tools, approaches, practices, and technologies to further natural resource conservation on private lands. Through creative problem solving and innovation, Conservation Innovation Grants partners work to address our nation's water quality, air quality, soil health and wildlife habitat challenges, all while improving agricultural operations. Public and private grantees develop the tools, technologies, and strategies to support next-generation conservation efforts on working lands and develop market-based solutions to resource challenges.
Funds Available	Applications made a Conservation Innovation Grants funding notice is announced each year. Funds for single- or multi-year projects, not to exceed three years, are awarded through a nationwide competitive grants process. Grantees must match the Conservation Innovation Grants investment at least one to one.
Eligibility	The natural resource concerns eligible for funding through Conservation Innovation Grants are identified in the funding announcement and may change annually to focus on new and emerging, high-priority natural resource concerns. National and State Conservation Innovation Grants – all non-Federal entities and individuals are eligible to apply. All Conservation Innovation Grants projects must involve EQIP-eligible producers.
Examples	Projects may be watershed-based, regional, multi-state or nationwide in scope.
Additional Information	https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/cig/

Emergency Watershed Protection Program	
Description	The Emergency Watershed Program offers technical and financial assistance to help local communities relieve imminent threats to life and property caused by floods, fires, windstorms, and other natural disasters that impair a watershed. The Emergency Watershed Protection Program does not require a disaster declaration by federal or state government officials for program assistance to begin.
Funds Available	The Natural Resources Conservation Service may provide technical assistance as services and/or funds to plan, design, and contract the emergency measures, subject to an agreement between the Natural Resources Conservation Service and the Sponsor. Installation/Construction costs are not to exceed 75% or 90% for limited resource areas. Engineering/Technical Assistance is not to exceed 100%. No funds are available for real property rights.
Eligibility	Project criteria requires the project to provide protection from flooding or soil erosion; reduce threats to life and property; restore the hydraulic capacity to the natural environment; and economically and environmentally defensible. Eligible local sponsors for recovery projects include cities, counties, towns, conservation districts, or any federally recognized Native American tribe or tribal organization.
Examples	Removal of debris from stream channels, road culverts, and bridges; reshaping and protection of eroded streambanks; correction of damaged or destroyed drainage facilities; establishing vegetative cover on critically eroding lands; repair of levees and structures; repair of certain conservation practices; and purchase of floodplain easements.
Additional Information	https://www.nrcs.usda.gov/programs-initiatives/ewp-emergency-watershed-protection

Small Business Innovation Research	
Description	The Small Business Innovation Research and Small Business Technology Transfer programs at the U.S. Department of Agriculture offer competitively awarded grants to qualified small businesses to support high quality research related to important scientific problems and opportunities in agriculture that could lead to significant public benefits. This program has two phases, Phase I is open to any small business concern that meets the Small Business Innovation Research and Small Business Technology Transfer programs eligibility requirements and Phase II is open only to previous Phase I awardees.
Funds Available	Funds are offered across 10 topic areas including: Forests and Related Resources, Plant Production and Protection-Biology, Animal Production and Protection, Conservation of Natural Resources, Food Science and Nutrition, Rural and Community Development, Aquaculture, Biofuels and Biobased Products, Small and Mid-size Farms, and Plant Production and Protection-Engineering
Eligibility	The Small Business Innovation Research and Small Business Technology Transfer programs do not make loans and do not award grants for the purpose of helping a business get established. The program seeks to stimulate technological innovation in the private sector, strengthen the role of small businesses in meeting federal research and development needs, increase private sector commercialization of innovations derived from U.S. Department of Agriculture-supported research and development efforts, and foster and encourage participation by women-owned and socially and economically disadvantaged small business firms in technological innovations
Examples	Salary and wages for company employees, associated fringe benefits, materials and supplies, and a number of other direct costs needed to conduct the proposed research and development.
Additional Information	https://www.nifa.usda.gov/grants/programs/small-business-innovation-research-technology-transfer-programs-sbirsttr

Watershed Rehabilitation Program	
Description	The Watershed Rehabilitation Program helps project sponsors rehabilitate aging dams that are reaching the end of their design life and/or no longer meet federal or state standards. The Natural Resources Conservation Service provides technical and financial assistance to local project sponsors to rehabilitate aging dams that protect lives and property, and infrastructure.
Funds Available	Across the Nation, watershed rehabilitation projects provide over \$2.2 billion in reduced flooding and erosion damage while improving wildlife habitat, recreation, water quality and supply for an estimated 47 million people. Costs associated with additional or new water supply storage purposes added to the rehabilitation project may be cost-shared with watershed rehabilitation funds. Eligible project costs are covered 65% Federal/35% Local of total eligible project cost, not to exceed 100% of actual construction cost. No more than 100% of the engineering/Technical Assistance will be covered.
Eligibility	Eligible projects are dams that were originally constructed through a Natural Resources Conservation Service Watershed Program, no longer meet current safety and performance standards, including dams past their evaluated life, and has current operation and maintenance.
Examples	<i>Information not available</i>
Additional Information	https://www.nrcs.usda.gov/programs-initiatives/watershed-rehabilitation

U.S. Department of Agriculture Rural Development Funding

Community Facilities Loans and Grants	
Description	This program provides affordable funding to develop essential community facilities in rural areas, an essential community facility is defined as a facility that provides an essential service to the local community for the orderly development of the community in a primarily rural area, and does not include private, commercial, or business undertakings.
Funds Available	<i>Information not available</i>
Eligibility	Eligible for areas 20,000 or less in population. Applicants are municipalities, non-profits, special purpose districts, and federally recognized Indian tribes. Eligible borrowers include public bodies, community based non-profit corporations, and federally recognized tribes.
Examples	Funds can be used to purchase, construct, and/or improve essential community facilities, purchase equipment, and pay related project expenses
Additional Information	https://www.rd.usda.gov/programs-services/community-facilities/community-facilities-direct-loan-grant-program/co

Community Facility Rural Community Development Initiative Grants	
Description	Community Facility Rural Community Development Initiative grants are awarded to help non-profit housing and community development organizations, low-income rural communities and federally recognized tribes support housing, community facilities, and community and economic development projects in rural areas. Funds may be used to improve housing, community facilities, and community and economic development projects in rural areas.
Funds Available	Grants are awarded with a minimum amount of \$50,000 and maximum of \$250,000. Funds are limited and are awarded through a competitive process. Matching fund requirement equal to amount of grant but in-kind contributions cannot be used as matching funds. Partnerships with other federal, state, local, private, and nonprofit entities are encouraged.
Eligibility	Open to public bodies, non-profit organizations, and qualified private organizations. Rural and rural areas other than a city or town with a population of greater than 50,000 people and the urbanized area contiguous and adjacent to such city or town.
Examples	Community Facility Rural Community Development Initiative grants may be used for but are not limited to training sub-grantees and providing technical assistance to sub-grantees on strategic plan developments, accessing alternative funding sources, board training, developing successful childcare facilities, creating training tools, and effective fundraising techniques.
Additional Information	https://www.rd.usda.gov/programs-services/community-facilities/rural-community-development-initiative-grants#overview

Community Facility Technical Assistance and Training Grant	
Description	Provide associations Technical Assistance and/or training with respect to essential community facilities programs. The Technical Assistance and/or training will help identify and plan for community facility needs that exist in the area. Once those needs have been identified, the Grantee can assist in identifying public and private resources to finance those identified community facility needs.
Funds Available	Maximum grant award of \$150,000. Grant funds are limited and are awarded through a competitive process. Matching funds are not required, in-kind contributions cannot be used as matching funds, partnerships with other entities are encouraged.
Eligibility	Open to public bodies, non-profit organizations, and federally recognized tribes. Rural areas including cities, villages, townships, towns, and Federally Recognized Tribal Lands outside the boundaries of a city of 20,000 or more.
Examples	Webster County purchased a new ambulance and equipment with Rural Development funds (and other sources) and South Sioux City was able to build a new fire station with funding from U.S. Department of Agriculture Rural Development (and other sources).
Additional Information	https://www.rd.usda.gov/programs-services/community-facilities/community-facilities-technical-assistance-and-training-grant#overview

Emergency Community Water Assistance Grants	
Description	This program helps eligible communities prepare for, or recover from, an emergency that threatens the availability of safe, reliable drinking water. A federal disaster declaration is not required, and this grant covers events such as drought or flood, earthquake, tornado or hurricane, disease outbreak, chemical spill, leak, or seepage, or other disasters.
Funds Available	Up to \$150,000 for water transmission line projects. Water Source grants up to \$1,000,000.
Eligibility	Primarily for residential purposes and are eligible for 10,000 or less population areas. Applicants are municipalities, special purpose districts, non-profits, and Recognized Indian Tribes. Applications are accepted year-round online through the Rural Development Apply or through local rural development office
Examples	Construction of waterline extensions, repair breaks or leaks in existing water distribution lines, and address related maintenance necessary to replenish the water supply. Water Source Grants are to construct a water source, intake, or treatment facility.
Additional Information	https://www.rd.usda.gov/programs-services/water-environmental-programs/emergency-community-water-assistance-grants/co

U.S. Department of Energy

Grid Innovation Program	
Description	This program provides support for projects that use innovative approaches to transmission, storage, and distribution infrastructure to enhance grid resilience and reliability. Projects selected under this program will include interregional transmission projects, investments that accelerate interconnection of clean energy generation, and utilization of distribution grid assets to provide backup power and reduce transmission requirements. Innovative approaches can range from use of advanced technologies to innovative partnerships to the deployment of projects identified by innovative planning processes.
Funds Available	The Grid Innovation Program will invest up to \$5 billion (\$1 billion/year for Fiscal Years 2022-2026) in innovation and new approaches to transmission, distribution, storage, and regional resilience. The first funding cycle will include both FY22 and FY23, up to \$2 billion. Projects are subject to a 50% cost share minimum.
Eligibility	Eligible entities include a state, a combination of 2 or more states, an Indian Tribe, a unit of local government, or a public utility commission.
Examples	Transmission, storage, and distribution infrastructure to enhance grid resilience and reliability.
Additional Information	https://www.energy.gov/gdo/grid-innovation-program

Grid Resilience Utility and Industry Grants	
Description	Grants provide funding to support activities that will modernize the electric grid to reduce impacts from extreme weather and natural disasters. This grant program will fund comprehensive transformational transmission and distribution technology solutions that will mitigate weather hazards across a region or within a community that can cause a disruption to the power system. Grants awarded under the program will fund transmission and distribution technology projects that seek to address hazards within a region or a community that can disrupt the power system, such as wildfires, floods or hurricanes.
Funds Available	Funding of \$2.5 Billion over five years from FY 22-26 with \$500 million available per year. Funding is capped at the amount the eligible entity has spent in the previous three years on hardening efforts. There is a 100% cost match for this program. The program includes a small utility set aside for those entities selling no more than 4 million MWh of electricity per year.
Eligibility	This funding opportunity is available to electric grid operators, electricity storage operators, electricity generators, transmission owners or operators, distribution providers, and fuel suppliers.
Examples	Infrastructure upgrades to strengthen and modernize the power grid against natural disasters that are exacerbated by the climate crisis.
Additional Information	https://www.energy.gov/gdo/grid-resilience-utility-and-industry-grants

Smart Grid Grants	
Description	Smart Grid Grants is designed to increase the flexibility, efficiency, and reliability of the electric power system, with particular focus on increasing capacity of the transmission system, preventing faults that may lead to wildfires or other system disturbances, integrating renewable energy at the transmission and distribution levels, and facilitating the integration of increasing electrified vehicles, buildings, and other grid-edge devices. Smart grid technologies funded and deployed at scale through this program must demonstrate a pathway to wider market adoption.
Funds Available	The Smart Grid Grant program will invest up to \$3 billion (\$600 million/year for Fiscal Years 2022-2026) in grid resilience technologies and solutions. The first funding cycle will include both FY22 and FY23, up to \$1.2 billion. Recipients must provide a cost-share of at least 50% of the grant.
Eligibility	This program is open to domestic entities including institutions of higher education; for-profit entities; non-profit entities; and state and local governmental entities, and tribal nations.
Examples	Grid enhancing technologies such as dynamic line rating, flow control devices, advanced conductors, and network topology optimization, to improve system efficiency and reliability. Investments in optical ground wire, dark fiber, operational fiber, and wireless broadband communications networks.
Additional Information	https://www.energy.gov/gdo/grid-innovation-program

U.S. Department of Housing and Urban Development

Community Development Block Grants	
Description	Provides annual grants on a formula basis to states, cities, and counties to develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low- and moderate-income persons.
Funds Available	The U.S. Department of Housing and Urban Development determines the amount of each entitlement grantee's annual funding allocation by a statutory dual formula which uses several objective measures of community needs, including the extent of poverty, population.
Eligibility	Eligible grantees include principal cities of Metropolitan Statistical Areas, Other metropolitan cities with populations of at least 50,000, qualified urban counties with populations of at least 200,000 (excluding the population of entitled cities), States and insular areas. Eligibility for participation as an entitlement community is based on population data provided by Census. Each activity must meet one of the following national objectives for the program: benefit low- and moderate-income persons, prevention or elimination of slums or blight, or address community development needs having a particular urgency because existing conditions pose a serious and immediate threat to the health or welfare of the community for which other funding is not available.
Examples	Community Development Block Grant funds may be used for activities which include, but are not limited to: Acquisition of real property; Relocation and demolition; Rehabilitation of residential and non-residential structures; Construction of public facilities and improvements, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes; Public services, within certain limits; Activities relating to energy conservation and renewable energy resources; Provision of assistance to profit-motivated businesses to carry out economic development and job creation/retention activities
Additional Information	U.S. Department of Housing and Urban Development does not provide Community Development Block Grant assistance directly to individuals, businesses, nonprofit or organizations or other non-governmental entities. https://www.hud.gov/program_offices/comm_planning/cdbg

Community Development Block Grant Disaster Recovery Assistance	
Description	The Community Development Block Grant Program has Disaster Recovery grants to rebuild the affected areas and provide crucial seed money to start the recovery process. These flexible grants help cities, counties, and States recover from Presidentially declared disasters, especially in low-income areas, subject to availability of supplemental appropriations. Since Community Development Block Grant Disaster Recovery assistance may fund a broad range of recovery activities, U.S. Department of Housing and Urban Development can help communities and neighborhoods that otherwise might not recover due to limited resources.
Funds Available	Varies according to the state plan outlined by the state department of economic development.
Eligibility	Community Development Block Grant Disaster Recovery funds are provided to the most impacted and distressed areas for Disaster Relief, Long-Term Recovery, Restoration of Infrastructure, Housing, and Economic Revitalization. U.S. Department of Housing and Urban Development will notify eligible States, cities and counties if they are eligible to receive Community Development Block Grant Disaster Recovery grants. Those who receive grant money include state agencies, non-profit organizations, economic development agencies, citizens and businesses
Examples	Funding can be provided to cover unmet needs such as local cost share funding from public assistance projects or hazard mitigation grant projects.
Additional Information	https://www.hud.gov/program_offices/comm_planning/cdbg-dr

Neighborhood Stabilization Program	
Description	The Neighborhood Stabilization Program was established for the purpose of providing emergency assistance to stabilize communities with high rates of abandoned and foreclosed homes, and to assist households whose annual incomes are up to 120 percent of the area median income. Neighborhood Stabilization Program funds were used for activities which included: Establish financing mechanisms for purchase and redevelopment of foreclosed homes and residential properties; Purchase and rehabilitate homes and residential properties abandoned or foreclosed; Establish land banks for foreclosed homes; Demolish blighted structures; Redevelop demolished or vacant properties.
Funds Available	\$4 billion nationwide
Eligibility	States, certain local governments, and other organizations.
Examples	The NSP provides grants to every state, certain local communities, and other organizations to purchase foreclosed or abandoned homes and to rehabilitate, resell, or redevelop these homes in order to stabilize neighborhoods and stem the decline of house values of neighboring homes.
Additional Information	https://www.hud.gov/program_offices/comm_planning/nsp

U.S. Economic Development Administration

Public Works and Economic Adjustment Assistance	
Description	Economic Adjustment Assistance provides funding to help plan, build, innovate, and put people into quality jobs in hundreds of communities across the nation. The Economic Adjustment Assistance program is U.S. Economic Development Administration’s most flexible program, and grants made under this program will help hundreds of communities across the nation plan, build, innovate, and put people back to work through construction or non-construction projects designed to meet local needs.
Funds Available	Total Program Funding of \$500 Million with an award ceiling of \$10 Million and a floor of \$100,000.
Eligibility	A wide range of technical, planning, workforce development, entrepreneurship, and public works and infrastructure projects are eligible for funding under this program. Eligible applicants for U.S. Economic Development Administration’s Economic Adjustment Assistance program include a(n): District Organization of a U.S. Economic Development Administration -designated Economic Development District; Indian Tribe or a consortium of Indian Tribes; State, county, city, or other political subdivision of a State, including a special purpose unit of a State or local government engaged in economic or infrastructure development activities, or a consortium of political subdivisions; Institution of higher education or a consortium of institutions of higher education; Public or private non-profit organization or association acting in cooperation with officials of a political subdivision of a State. Individuals or for-profit entities are not eligible.
Examples	Public infrastructure related to economic development.
Additional Information	As part of the \$300 million Coal Communities Commitment, the U.S. Economic Development Administration will allocate at least \$200 million of the Economic Adjustment Assistance funding to support coal communities. https://www.eda.gov/funding/programs/economic-adjustment-assistance .

U.S. Environmental Protection Agency

Clean Waters Act Section 319 Grants	
Description	Clean Water Act Section 319(h) funds are provided only to designated state and tribal agencies to implement their approved nonpoint source management programs. State and tribal nonpoint source programs include a variety of components, including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and regulatory programs.
Funds Available	Each year the U.S. Environmental Protection Agency awards Section 319(h) funds to states in accordance with a state-by-state allocation formula that the U.S. Environmental Protection Agency has developed in consultation with the states. Grant totals over the past 5 years have increased from \$155.9 million in 2013 and \$178 million in 2022.
Eligibility	<i>Information not available</i>
Examples	<i>Information not available</i>
Additional Information	https://www.epa.gov/sites/default/files/2015-09/documents/319-guidelines-fy14.pdf

Environmental Justice Collaborative Problem-Solving	
Description	This cooperative agreement program provides financial assistance to eligible organizations working on or planning to work on projects to address local environmental and/or public health issues in their communities. The program assists recipients in building collaborative partnerships with other stakeholders to develop solutions that will significantly address environmental and/or public health issue(s) at the local level. Selected applicants, or recipients, are required to use the U.S. Environmental Protection Agency’s Environmental Justice Collaborative Problem Solving Model as part of their projects.
Funds Available	The Environmental Justice Collaborative Problem-Solving Program anticipates awarding approximately \$30,000,000 of Inflation Reduction Act funding through 83 cooperative agreements, organized in two tracks of funding. \$25,000,000 for community based non-profit organizations proposing projects for up to \$500,000 each. Approximately 50 awards for up to \$500,000 each are anticipated under this track. \$5,000,000 for qualifying small community based non-profit organizations with five or fewer full-time employees proposing projects for up to \$150,000 each. For more details about this opportunity, please review closely the “Small Community-based Nonprofit Set Aside”. Approximately 33 awards for up to \$150,000 each are anticipated under this track. Cooperative agreements will be funded for a three-year performance period.
Eligibility	Eligible entities include incorporated non-profit organizations, U.S. Territories, Tribal government, either federally or state recognized, tribal organizations, and freely associated states.
Examples	In 2003 the Pacific Basin Development Council received this grant to build community resiliency.
Additional Information	https://www.epa.gov/environmentaljustice/environmental-justice-collaborative-problem-solving-cooperative-agreement-5

Urban Waters Small Grants	
Description	The mission of this program is to help local residents and their organizations, particularly those in underserved communities, restore their urban waters in ways that also benefit community and economic revitalization. The program recognizes that healthy and accessible urban waters can help grow local businesses and enhance educational, recreational, social, and employment opportunities in nearby communities. Projects should meet the following four objectives: address local water quality issues related to urban runoff pollution; provide additional community benefits; actively engage underserved communities; and foster partnership.
Funds Available	Urban Waters Small Grants are competed and awarded every two years with individual award amounts of up to \$60,000.
Eligibility	Eligible applicants include States, local governments, Indian Tribes, public and private universities and colleges, public or private nonprofit institutions/organizations, intertribal consortia, and interstate agencies.
Examples	An example of a past grant awarded was the Urban Waters and South Platte Watershed from the Headwaters to the Denver Metropolitan Area.
Additional Information	https://www.epa.gov/urbanwaterspartners/urban-waters-small-grants
Water Infrastructure Finance and Innovation Act of 2014	
Description	The Water Infrastructure Finance and Innovation Act program provides long-term, low-cost supplemental loans for regionally and nationally significant water and wastewater infrastructure projects. Borrowers benefit from a single fixed interest rate that is equal to the U.S. Treasury rate of a similar maturity, an interest rate that is not impacted by the borrower's credit or loan structure, custom long-term repayment schedules with options to defer payment for up to five years.
Funds Available	\$20 million minimum project size for large communities, \$5 million minimum for small communities of 25,000 or less. The Water Infrastructure Finance and Innovation Act can fund a maximum of 49% of eligible project costs.
Eligibility	Eligible borrowers are 1) local, state, tribal, and federal government entities; 2) Partnerships and joint ventures; 3) Corporations and trusts; 4) Clean Water and Drinking Water State Revolving Fund programs.
Examples	Wastewater conveyance and treatment projects. Drinking water treatment and distribution projects. Enhanced energy efficiency projects at drinking water and wastewater facilities.
Additional Information	Total federal assistance may not exceed 80% of a project's eligible costs. https://www.epa.gov/wifia/what-wifia

U.S. Fish and Wildlife Services

North American Wetlands Conservation Standard and Small Grant	
Description	A competitive matching grants program that supports public-private partnerships carrying out projects in the United States that further the goals of the North American Wetlands Conservation Act. These projects must involve long-term protection, restoration, and/or enhancement of wetlands and associated uplands habitat for the benefit of all wetlands-associated migratory birds.
Funds Available	U.S. Small Grants may not exceed \$100,000 and require a 1-to-1 ratio match for awarded grant amount. The US Standard Grant is for grants larger than \$100,000 and requires a 1-to-1 match ratio.
Eligibility	U.S. Small Grants proposals are due in October or else will be considered an early submission for the next Fiscal Year. The US Standard Grant has two deadlines for proposals, one in February and one in July. Proposal submitted after July are considered ineligible unless clearly marked as an early submission for the next Fiscal Year.
Examples	Acquisition of land for the purposes of wetlands conservation, wetland restoration projects, wetland enhancement projects, wetland establishment, or other direct long-term wetland conservation work.
Additional Information	https://www.fws.gov/sites/default/files/documents/north-american-wetlands-conservation-act-us-eligibility-criteria_0.pdf

U.S. Forest Service

Forestry Legacy Program	
Description	Focuses on private forest land that is faced by threats of conversion to non-forest land by urbanization, residential development. Providing economic incentives to landowners to keep forests as forest encourages sustainable forest management and supports strong markets for forest products. Landowners participate in the Forest Legacy Program by either selling property outright or by retaining ownership and selling only a portion of the property's development rights; both are held by state agencies or another unit of government. Use of a conservation easement allows land to remain in private ownership while ensuring that its environmental values are retained. Program funded by Land and Water Conservation Fund, which invests a small percentage of federal offshore drilling fees towards the conservation of important land, water, and recreation areas for all Americans.
Funds Available	Previous year funds for Fiscal Year 2023 totaled \$188,000,000 across 34 projects.
Eligibility	Private Lands
Examples	Funded projects from 2023 in Colorado include the Higher Ground Headwaters Project and Silver Mountain Habitat Connections Project.
Additional Information	https://www.fs.usda.gov/managing-land/private-land/forest-legacy/program

State of Colorado Funding Resources

In addition to federal grants, there are a number of state agencies and programs with potential applicability to supporting funding and implementation of mitigation projects. Many federal hazard mitigation grant programs are administered at the state level by the Colorado Division of Homeland Security and Emergency Management. These agencies will also likely be important in earlier stages of the hazard mitigation planning process by providing current hazard and risk assessment data.

The Colorado Department of Local Affairs has put together a Local Community Funding Guide (<https://lookerstudio.google.com/u/0/reporting/6bf90675-163a-4c84-9eb8-eef9779be136/page/T7j0C>)¹ to help local jurisdictions easily navigate various state and federal funding types. This guide can be filtered by category, award type, agency, program, type of funding, and eligibility.

Similar to federal grant programs, many of these programs are dependent on yearly funding allocations, which results in fluctuations in their availability. While it is helpful to be familiar with the current information, it is equally as important to engage federal and state agencies in a dialog as soon as possible.

Alternative Funding Resources

In recent years, states and communities across the country have sought and developed innovative funding sources as alternatives to traditional government grant programs. These funding sources fall into three main categories: Local Funding Options, Public-Private Partnerships, and Private Foundations. These funding sources will be important for current and future hazard mitigation planning efforts for several reasons including:

- Difficulty receiving pre-disaster mitigation grant and assistance programs at the federal and state level.
- Opportunities to fund projects that might not qualify or align with traditional grant and assistance programs. Funding programs seek solutions that reduce risk for a particular threshold (i.e., 1-percent flood) and meet absolute cost-benefit criteria that the agencies themselves must adhere to. Therefore, these programs are not able to support efforts that may help most of the time but don't meet these thresholds.

Local Funding Options

Local funding options are just what they sound like, using local funds for local mitigation projects. Local funds are also needed as the non-federal share or matching funds for federal grant programs but can also be used independently to fund a range of project types. Local funding options include the following:

Capital Improvement Programs

Ongoing civic improvements can include prioritized hazard mitigation projects or mitigation can be included as one aspect of a larger project. For example, improving the hydraulic capacity of a culvert or bridge to prevent upstream flooding while undertaking periodic replacements for end of

¹ Colorado Department of Local Affairs. 2024. "Local Community Funding Guide". <https://lookerstudio.google.com/u/0/reporting/6bf90675-163a-4c84-9eb8-eef9779be136/page/T7j0C>.

service considerations is one example. Replacing windows in a school with shatter resistant glass as part of an overall renovation is another example. Capital improvement programs are generally funded with local tax revenues and municipal bonds.

Permits, Fees, and Developer Contributions

Communities can establish fees, earmark a portion of existing permit and fee structures, and/or establish requirements for developer contributions for new developments in hazard prone areas that can then be used to fund local mitigation projects. The proceeds can be accumulated in what is often referred to as a Mitigation Trust Fund and the uses are typically tied to specific project types or relationships with projects already identified in specific plans or documents such as a hazard mitigation plan.

Force Account / In-Kind Services

Although there is a cost associated with activities of public employees, there are a wide range of activities that can be undertaken by local government staff and officials as well as interested parties on their behalf that would yield significant benefits. An example is public outreach and education for individual property owners, businesses, and institutions to reduce their risk through correspondingly inexpensive or essential activities. This would include tapping into available education resources, promoting individual action, etc.

Property Owners

For a project that directly benefits one or more specific properties, the property owner can be asked to contribute. Through the hazard identification and risk assessment process, property owners can become better aware of their risks and options. Owners that recognize they have a real flood problem may be willing to pay a portion of the cost. In recent years, property owners have voluntarily agreed to pay the non-federal share (up to 25 percent of the total project cost) for FEMA hazard mitigation plan grants in some states. In some cases, the owners have paid even higher percentages of the cost. In addition, after a flood, owners may have cash from insurance claims or disaster assistance that they will be using to repair their homes and properties. By including the right floodproofing and mitigation project components into the repairs, the resilience of the property to future flooding may be improved. Having property owners contribute to the project can help stretch available local funds and gives the property owner an enhanced stake in the outcome of the project and incentive to make sure the property is properly maintained.

Individual Participation

Although mitigation is ultimately intended to benefit individuals, hazard mitigation plans often neglect to integrate participation of potential beneficiaries into the process. The participation by individuals, including small business owners, is important for making sure the resulting hazard mitigation plan reflects community needs and priorities, but it also allows for the local or Eagle County Planning Team to identify measures and options that individuals can take to reduce their own risk at a cost they can afford.

Public-Private Partnerships

Developing a public-private partnership is a phrase used frequently in a wide range of government programs, especially in the context of hazard mitigation. Participation of private sector organizations in solving their own hazard risk situations can be a low-cost and effective method. It also encompasses finding opportunities for public and private sector partners to share costs equitably for larger projects that require substantial funds to implement. Private sector businesses and organizations have their own cost-benefit calculations to perform but joint efforts may make the balance sheets work for both sides.

Private Foundations

Cultivating relationships with local, regional, or even national foundations with interests or missions consistent with hazard mitigation, community sustainability, climate change adaptation, and other related topics can yield successful results in terms of funding and other means of support.

There are many local foundations around the State of Colorado, many of which fund programs that can be utilized for components of hazard mitigation projects. Many of these foundations only support non-profit organizations, so the applicability of these funds to projects depends upon the partners involved.

Appendix F: Guide to Review and Update the Hazard Mitigation Plan

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Evaluate Your Local Planning Team

When reviewing the plan, the planning team should reassess its composition and ask the following questions:

Have there been staffing changes that warrant inviting different members to the planning team?
Yes No

Comments/Proposed Action:

Are there organizations that have been invaluable to the planning process or to the project implementation that should be represented on the planning team?
Yes No

Comments/Proposed Action:

Are there any representatives of essential departments/organizations who have not fully participated in the planning and implementation of actions? If so, can someone from that department/organization commit to the planning team?
Yes No

Comments/Proposed Action:

Are there ways to better include the public?
Yes No

Comments/Proposed Action:

Revisit Hazard Prioritization

During the planning process, your jurisdiction was asked to prioritize hazards of top concern. When reviewing your profile, the planning team should look at the hazards identified along with the associated write-up to ensure the information is still accurate. The table below will help track any changes to your hazard prioritization.

Steps	Questions	Yes	No	Comments
Prioritized Hazards	Have your prioritized hazards changed?			If yes, which hazards should be added/removed?
Hazard Write-Ups	Have any new events taken place?			
Hazard Write-Ups	Are there new high-risk populations, buildings, or infrastructure?			
Hazard Write-Ups	Do any of the write-ups need to be changed?			

Evaluating Mitigation Projects

Updating and evaluating the mitigation projects identified in your plan is an important step in the review process. For each mitigation action identified, the lead agency identified on each action can provide an update by filling out the information listed below.

Project Name:

Does the project description need to be updated? Yes No

Does the estimated cost need to be updated? Yes No

Does the timeline need to be updated? Yes No

Does the priority level need to be updated? Yes No

Does the lead agency need to be changed? Yes No

Was the project implemented?

If yes: What were the results?

If no:

- Why not?

- Was there political support for the actions/projects? Yes No

- Were enough funds available? Yes No

- Was new information discovered about the risks or community that made implementation difficult or no longer sensible? Yes No

- Were sufficient resources (for example staff and technical assistance) available? Yes No

- Is this project still needed? Yes No

Identify New Mitigation Projects

When reviewing your plan, you may determine that new mitigation actions are needed based on changes to hazard prioritization, local capabilities, or risk.

Are there new mitigation projects that need to be added to the plan? Yes No

If yes, fill out a table for each new mitigation action.

Mitigation Action Name			
Description			
Hazard(s) Addressed			
Estimated Cost			
Local Funding			
Timeline	1 Year	2-5 Years	5+ Years
Priority	High	Medium	Low
Lead Agency			
Status			

Mitigation Action Name			
Description			
Hazard(s) Addressed			
Estimated Cost			
Local Funding			
Timeline	1 Year	2-5 Years	5+ Years
Priority	High	Medium	Low
Lead Agency			
Status			

Plan Updates

Most profile updates do not need to be sent to FEMA. Changes to the planning team, hazard prioritization, or updates to current mitigation actions can be tracked internally until the next full plan update.

However, if you are adding a new mitigation action, it will need to be sent to FEMA, so it can potentially be eligible for FEMA hazard mitigation grant funding. The template letter below can be used when notifying the FEMA of an added mitigation action.

[Date]

Federal Emergency Management Agency
 Felicity Selvoski
 FEMA Region 8 – Tribal Community Planner
felicity.selvoski@fema.dhs.gov

To Whom It May Concern:

The Southern Ute Indian Tribe requests the following mitigation action be added to the Southern Ute Indian Tribe Hazard Mitigation Plan 2025. This action will be added to [Section Name], page [#] and is attached.

(Fill Out Table)

Mitigation Action Name	
Description	
Hazard(s) Addressed	
Estimated Cost	
Local Funding	
Timeline	[1 year/2-5 years/ 5+ years]
Priority	[High/Medium/Low]
Lead Agency	
Status	This is a new mitigation action.

For questions, I can be reached by email at [email address] or by phone at [phone number].

Sincerely,

[Name]
 [Title]
 [Jurisdiction]