McKinley County, NM

Hazard Mitigation Plan 2026

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Acronyms and Abbreviations

ACS - American Community Survey
APA - Approval Pending Adoption
AT&SF - Atchison, Topeka, and Santa Fe
BFE - base flood elevations
BIA - Bureau of Indian Affairs
BLM - United States Bureau of Land Management
BIA - Bureau of Indian Affairs
BRIC - Building Resilient Infrastructure and Communities Grant Program
CARP - Climate Adaptation and Resilience Plan
CDBG - Community Development Block Grant Program
CDC - Centers for Disease Control
CEDS - Comprehensive Economic Development Strategy
CFR - Code of Federal Regulations
CRCI - Community Resilience Challenges Index
CRS - Community Rating System
CWPP - Community Wildfire Protection Plan
DOD - United States Department of Defense
DMA - Disaster Mitigation Act of 2000
EAP - Emergency Action Plan
EF - Enhanced Fujita
EO - Executive Order
EOC - Emergency Operations Center
EOP - Emergency Operations Plan
FEMA - Federal Emergency Management Agency
FIRM - Flood Insurance Rate Map
FMA - Flood Mitigation Assistance Grant Program
GIS - Geographic Information Systems
GMCS - Gallup-McKinley County Schools
HHGP - High Hazard Potential Dam Grant Program
HHPD - High Hazard Potential Dam Grant Program
HMGP - Hazard Mitigation Grant Program
HMP - Hazard Mitigation Plan
LAL - Lightning Activity Level
LEPC - Local Emergency Planning Committee
MVFR - McKinley County Fire and Rescue
MCOEM - McKinley County Office of Emergency Management
MOU - Memorandum of Understanding
MPH - miles per hour
NADM - North American Drought Monitor
NCDC - National Climatic Data Center
NCEI - National Centers for Environmental Information
NFHL - National Flood Hazard Layer

NFIP - National Floodplain Insurance Program
NGWSP - Navajo-Gallup Water Supply Project
NID - National Inventory of Dams
NIDIS - National Integrated Drought Information System Act of 2006
NIFC - National Interagency Fire Center
NM DHSEM - New Mexico Department of Homeland Security and Emergency Management
NMOSE - New Mexico Office of State Engineer
NM WRAP- New Mexico Wildfire Risk Assessment Portal
NOAA - National Oceanic and Atmospheric Administration
NRI - National Resources Inventory
NWNMCOG - Northwest New Mexico Council of Governments
NWS - National Weather Service
OEM - Office of Emergency Management
PDM - Pre-Disaster Mitigation Grant Program
PSDI - Palmer Drought Severity Index
PMF - Probable Maximum Flood
PMP - probable maximum precipitation
PRI - Priority Risk Index
RAPT - Resilience Analysis and Planning Tool
SFHA - Special Flood Hazard Area
SME - Subject Matter Expert
SOG - Standard Operating Guidelines
SSSP - Site Specific Safety Plan
STAPLE-E - Social, Technical, Administrative, Political, Legal, and Economic, and Environmental
SWCA- SWCA Environmental Consultants
USACE - United States Army Corps of Engineers
USC - United States Code
USCB - United States Census Bureau
USDA - United States Department of Agriculture
USDM - United States Drought Monitor
USSDO - U.S. Seasonal Drought Outlook
WRCC - Western Regional Climate Center
WUI - Wildland Urban Interface

Section 1 – Plan Development

1.1 - Overview

The 2026 McKinley County Hazard Mitigation Plan (HMP) update provides research and guidance to reduce the impacts of natural hazards and enhance natural hazard resilience. Participating entities are McKinley County, the City of Gallup, and Gallup-McKinley County Schools (GMCS). Having the Federal Emergency Management Agency (FEMA)- approved HMP enables each of the three participating entities to meet the planning requirement for FEMA's Hazard Mitigation Assistance grants.

The HMP has been prepared in accordance with 44 Code of Federal Regulations (CFR) 201.6; Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Stafford Act); 42 United States Code (USC) 5165, as amended by Section 104 of the Disaster Mitigation Act of 2000 (DMA 2000); Public Law 106-390, enacted October 30, 2000; and the FEMA Local Mitigation Planning and Policy Guide (FEMA Policy Guide) (FEMA 2025). Additionally, this DMA 2000 compliant HMP addresses flooding and meets the minimum planning requirements for the Flood Mitigation Assistance program as provided for under 44 CFR §78

The HMP promotes sound public policy and supports other local, regional, and state planning efforts that have the effect of reducing the impact of natural hazards on citizens, critical facilities, infrastructure, private property, and the natural environment. The HMP also provides a guide for local decision-makers to implement actions that will contribute to the reduction of natural hazard impacts. The planning process for the HMP update enhances public awareness of natural hazard risk reduction, incorporates new GIS technologies, improves vulnerability assessment methodologies, and updates mitigation actions to accomplish natural hazard risk reduction.

The HMP update was developed as the result of an ongoing collaborative effort led by the McKinley County Office of Emergency Management (OEM) in coordination with the City of Gallup and GMCS. The planning process was guided by a Planning Team of representatives from participating jurisdictions. The planning process also involved Subject Matter Experts (SMEs), stakeholders, and the public. Each of these collaborative partner roles are described in more detail in Sections 1.3 through 1.6. While the GMCS is not a jurisdiction by definition, for consistency purposes, the use of jurisdiction(s) will be used throughout the plan regarding all participating parties.

Sections of the HMP detail the planning process, describe each participating jurisdiction, assess hazard risks, assess capabilities, identify mitigation goals and actions, plus list steps for keeping the plan active for the coming 5-year planning period. Appendices include detailed information for plan participation, hazard profiles, risk assessment, and mitigation actions.

Financing for the HMP update was provided by FEMA's Hazard Mitigation Grant Program (HMGP), which is administered by the New Mexico Department of Homeland Security and Emergency Management (NM DHSEM). The federal grant provided 75% of the HMP Update cost, while McKinley County contributed the 25% non-federal share.

McKinley County, the City of Gallup, and the GMCS District adopted the Approval Pending Adoption version of the McKinley County HMP. FEMA approved the HMP for the period of March XX, 2026, through March XX, 2031.

1.2 – Planning Process

McKinley County's revision process began in March 2024, when McKinley County was awarded the Hazard Mitigation Grant Program sub-grant to begin the process of updating the 2021 HMP. Following the funding commitment, the McKinley County OEM issued a request for proposals and selected SWCA Environmental Consultants (SWCA) to facilitate the plan's development under a performance contract. It took approximately 12 months from the date of the sub-grant award to complete the procurement process and conduct the first Planning Team meeting.

Participants in the 2026 McKinley County HMP are

- McKinley County
- City of Gallup
- Gallup-McKinley County Schools

Figure 1.1 identifies the general timeline for the HMP update process. Initial research and Planning Team organization began in April 2025. Research, authorship, and Planning Team meetings continued through September 2025. Public Engagement began in June 2025 and continued through February 2026. State and FEMA review occurred from November 2025 through March 2026.

	2025									2026		
McKinley County HMP Schedule	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Task 1: Organize Planning Team and Conduct Meetings		■	■	■		■						
Task 2: Public Involvement												
- Invite/Coordinate with Stakeholders		■	■	■	■	■	■	■	■	■	■	■
- Introductory Presentation to Each Entity			■	■	■							
- Public Comment During Drafting Stage (Open House)							■					
- Public Comment Prior to HMP Approval											■	■
Task 3: Risk Assessment and Mitigation Strategy	■	■	■	■								
- Risk Assessment (hazard profiles, vulnerability)	■	■	■	■								
- Mitigation Strategy (goals, actions, implementation)					■	■						
Task 4: Draft Plan			■	■	■	■						
Task 5: Revise and Facilitate Adoption			■	■	■	■						
- Submit to DHSEM for Review								■				
- Submit for FEMA Review									■			
- Submit Through DHSEM and Obtain FEMA Approval												■

Figure 1.1 – Project Timeline

1.3 - Planning Team

A multi-jurisdictional Planning Team was formed for the HMP update and consisted of representatives from McKinley County, the City of Gallup, and GMCS. Most communication was via email, Zoom meetings, and one in-person Planning Team meeting. Planning Team members participated in the planning process by:

- serving as the liaison for the HMP with their jurisdiction and local community
- attending Planning Team meetings (see Appendix A for more information)
- presenting to the governing body to introduce the HMP update and planning process
- providing relevant plans, data, and other reference material to be integrated into the HMP
- providing input on the hazards to be addressed in the HMP
- providing edits and feedback on the HMP draft, approach, and planning process
- providing recommendations for additional Planning Team members, Subject Matter Experts (SMEs)
- participating in the public review process
- presenting to the governing body and general public for HMP adoption
- integrating the HMP concepts into local plans and programs following adoption

To update the Planning Team listing, the 2021 HMP Planning Team was reviewed by McKinley County OEM and modified to ensure appropriate contacts were listed. The 2026 HMP Planning Team members are identified in **Table 1.1**.

Table 1.1 – Planning Team List

Name	Agency/Organization	Title
Jan Boone	City of Gallup	Water and Wastewater Superintendent
Sathya Ganesan	City of Gallup	Water and Wastewater Staff
Robert Hamblen	City of Gallup	Public Works Director
Charles Nourse	City of Gallup	Electric Department Director
C.B. Strain	City of Gallup	Planning and Development Director
Jon Pairett	Gallup Fire Department	Chief and Emergency Manager
Aaron Cook	Gallup-McKinley County Schools	Director of Facilities
Roderick Joe	Gallup-McKinley County Schools	Coordinator of Transportation Services
Bart Mangum	Gallup-McKinley County Schools	School Safety Officer Lead
Darren Soland	Gallup-McKinley County Schools	Investigator/Safety Lead
Jake Stokes	Gallup McKinley County Schools	Director of Programs
Erin Toadlena-Pablo	Gallup Police Department	Chief
Rich Austin	McKinley County Fire Rescue	Deputy Chief
Tim Berry	McKinley County Fire Rescue	Chief
Adam Berry	McKinley County Office of Emergency Management	Emergency Manager
Doug Watchman	McKinley County Office of Emergency Management	Emergency Management Coordinator
Crystal Willie	McKinley County Office of Emergency Management	Administrative Assistant
Rodney Skersick	McKinley County Road Department	Superintendent
James Maiorano	McKinley County Sheriff's Office	Sheriff

Planning Team Meetings:

Four Planning Team meetings were held from April 2025 to September 2025. The meetings were designed and scheduled to guide the Planning Team through the plan update process, establishing a baseline understanding of the planning process, building on previous meetings, and focusing on a specific section of the HMP. At each meeting, assignments were delegated based on the planning stage to ensure that the most up-to-date information was used in the planning process. Throughout the planning process, data deficiencies were identified based on feedback from the Planning Team and SMEs. The four Planning Team meetings are described below, and notes are provided in Appendix B.

Planning Team Meeting #1

Planning Team Meeting #1 was held in person on Wednesday, May 7, 2025, from 2:00 to 4:00 p.m. at the McKinley County OEM in Gallup. There were 15 participants from McKinley County, the City of Gallup, and GMCS. The primary objectives of the meeting were the introductions of participants, a review of participant roles and responsibilities, a presentation of an overview of the planning process, plus a presentation of the hazard occurrence since the 2021 HMP. Participants were requested to fill out a hazard screening tool survey, update relevant participant listings, and submit reference materials to aid in the planning process.

Planning Team Meeting #2

Planning Team Meeting #2 was held virtually on Monday, June 9, 2025, from 2:00 to 4:00 p.m. using the Zoom meeting platform. There were twelve participants from McKinley County, the City of Gallup, and GMCS. The primary objectives of the meeting were to review the hazard screening results, provide an overview of the hazard profiles, and introduce the vulnerability assessment. Participants were requested to provide input for the vulnerability assessment approach, respond to comments, plus make edits in the hazard profiles.

Planning Team Meeting #3

Planning Team Meeting #3 was held virtually on Thursday, July 24, 2025, from 10:00 a.m. to 12:00 p.m. using the Zoom meeting platform. There were nine participants from McKinley County, the City of Gallup, and GMCS. The primary objectives of the meeting were to review several sections of the HMP draft (Introduction, Planning Process, Community Profiles, Risk Assessment) and introduce the mitigation strategy. Participants were requested to provide input for the mitigation strategy approach, respond to comments, plus make edits in the draft sections.

Planning Team Meeting #4

Planning Team Meeting #4 was held virtually on Wednesday, September 17, 2025, from 10:00 a.m. to 12:00 p.m. using the Zoom meeting platform. There were 13 participants from McKinley County, the City of Gallup, and GMCS. The primary objectives of the meeting were to provide an update on the draft HMP, discuss the PRI rankings, review and discuss portions of the mitigation strategy section, discuss the approach to plan maintenance strategy, and review the project timeline and deadlines. Participants engaged in an interactive exercise to determine mitigation action and strategy prioritization. The Planning Team members were requested to provide edits to the mitigation capabilities, goals, and actions.

1.4 - Subject Matter Experts

After reviewing the 2021 Planning Team listing and contacting individuals about their interest in participating in the planning process, some individuals were more appropriately included as SMEs for the HMP update. Most communication was via email; however, some phone interviews were also conducted. SMEs participated in the planning process by:

- Providing relevant plans, data, and other reference material to be integrated into the HMP
- Providing edits and feedback for specific topics on the HMP draft
- Integrating the HMP concepts into local plans and programs following adoption

SMEs were identified as those interested in participating in the planning process for specific topics of subject matter expertise. SMEs are identified in **Table 1.2**.

Table 1.2 – Subject Matter Experts

Name	Agency/ Organization	Title
Johnson Benally	BIA Branch of Fire Management, Navajo Region-Fort Defiance, AZ	Wildland Fire Mgt. Officer
Darryl Wilson	BIA Branch of Fire Management, Navajo Region-Fort Defiance, AZ	Wildland Fire Prevention Specialist
Troy Cachini	BIA Zuni Agency Wildland Fire Management	Wildland Fire Mgt. Officer
John Lastyona	City of Gallup	Certified Floodplain Manager
Cassey Yazzie	City of Gallup	Gallup GIS Coordinator
Edward Becenti Jr.	McKinley County	County Assessor
Nathan Peters	McKinley County	County GIS Center Manager
Jason John	Navajo Nation Tribe	Department Director, Water Resources Management
Adele McKenzie	NM Environment Department	Drinking Water Bureau Emergency Response Coordinator
George Ducker	NM State Forestry Division- D6	Communications Coordinator
Ryan Carabajal	USFS Cibola NF Mt. Taylor Ranger District	Forest Service Staff
Wade Nez	USFS Cibola NF Mt. Taylor Ranger District	Prevention Tech
Katherine Crisler	Gallup-McKinley County Schools	Assistant Superintendent

1.5 – Stakeholders

Representatives from the following stakeholder categories were invited to participate in the planning process.

- Neighboring Communities
- Local and Regional Agencies
- Agencies that Regulate Development
- Businesses
- Academia
- Other Private and Non-Profit Interests

Most communication was via email to provide updates on milestones and to encourage feedback. Phone outreach was also conducted with stakeholders to confirm contact information and get clarification on feedback. Stakeholders participated in the planning process by:

- Providing input based on local knowledge and community interests
- Participating in the public review process
- Integrating the HMP concepts into local plans and programs following adoption

After reviewing the 2021 contacts listing, the Planning Team determined the agencies, organizations, and individuals that were most appropriate to participate in the HMP update as stakeholders. Stakeholders are identified in **Table 1.3**.

Table 1.3 – Stakeholder List

Name	Organization	Title
Mark Gordon	American Red Cross	Disaster Program Specialist
Jeff Hankins	Burlington Northern Santa Fe Railway	Manager of Hazardous Materials Field Operations and Emergency Response – NM/UT/CO
Ebony Harris	Burlington Northern Santa Fe Railway	Deputy Chief of Police – NM/AZ
Terry Smith	Escalante Generating Station Dams	Senior Generation Engineer, Tri-State Generation & Transmission Association, Inc.
Cesar Soria	Escalante Generating Station Raw Water Storage Dam	Mill Manager, McKinley Paper Company
Edmund Tso	Navajo Nation Dept. of Emergency Management	Emergency Management Coordinator
Martin Romero	New Mexico Construction Industries Division	Bureau Chief
Max Palmer	New Mexico Department of Homeland Security and Emergency Management	Local Emergency Preparedness Coordinator
Kristen Russo	New Mexico Department of Homeland Security and Emergency Management	Mitigation Specialist
Gilbert Lopez	New Mexico Department of Game & Fish	Construction Project Manager (McGaffey Dam Operator)
Michael Sloane	New Mexico Department of Game & Fish	Director (McGaffey Dam Operator)
Jesse Orozco	Pueblo of Zuni Public Safety	Public Safety Director
Lucinda Blea	Ramah Land and Irrigation Co.	Ramah Dam Operator
Dean Bond	Ramah Land and Irrigation Co.	Ramah Dam Operator
Deana Larson	Ramah Land and Irrigation Co.	Ramah Dam Operator
David Burke	University of New Mexico	Emergency Manager

1.6 – Public Involvement

Public involvement in the hazard mitigation planning process is crucial to bringing awareness to the plan update and to also incorporate public feedback into the plan itself. Input provides a greater understanding of local concerns and insight, as community members are directly affected by the various natural hazards and by decisions of public officials related to reducing the impact of the hazards. Residents and others with an interest in natural hazard risk reduction in McKinley County provide community-specific insight based on their experiences and knowledge, plus contribute to community priorities for natural hazard risk reduction.

The public was granted opportunities to provide their input, influence, share knowledge, and be active participants in the plan's development. This was accomplished through several public outreach strategies in the form of a mitigation plan webpage, periodic press releases, an introductory presentation for each participating jurisdiction's governing body, a community Open House, an internet accessible feedback survey, and an adoption presentation at each jurisdiction's governing body. The public was notified of opportunities for involvement using the McKinley County OEM's website, their Facebook page, and a local newspaper.

Comments, questions, and discussions resulting from these activities were given consideration in the development of the HMP update. A summary of the comments along with the Planning Team direction after vetting is provided in the 'Public Input for Draft' section below.

Details and documentation of public outreach efforts are found in Appendix B – Public Involvement.

Mitigation Webpage (McKinley County Hazard Mitigation Plan Update | McKinley County, NM)

McKinley County OEM created a mitigation webpage to share information about the planning process and keep community members informed of the plan update progress. The website launched in June 2025 with periodic updates at the following milestones: introductory press release, public comment period, status of State and FEMA review, Approval Pending Adoption, and Final Approval. For the public comment period, the draft HMP and feedback survey were posted on the website. Throughout the planning process, all participating entities referenced the County's website when sharing press releases, posting on social media sites, or notifying constituents.

Introductory Press Release

On June 3, 2025, the McKinley County OEM distributed a press release informing the public of the HMP update and future opportunities to get involved. The press release stated that the County will post a mitigation planning webpage for updates on the plan process and for document sharing. It also identified several public engagement opportunities, a community Open House for in-person participation, and a draft plan, which will be made available on the web page to provide feedback. The press release was shared on the OEM's website and sent to the Gallup Independent, Gallup Sun, Navajo Times, Millennium Media, and KGLP radio. The press release was also shared with the McKinley County HMP stakeholders.

Introductory Presentation at Governing Body Meetings

A short overview presentation on hazard mitigation planning was prepared and provided to each jurisdiction's governing body to introduce the process and schedule. The primary Planning Team contact arranged for the presentation to be placed on the agenda at their respective governing body's regularly scheduled meeting. The McKinley County and GMCS governing bodies did not ask any questions. The City of Gallup's governing body asked about emergency response and how community members are notified. Dates of the presentations were as follows:

- McKinley County - June 10, 2025
- GMCS - July 21, 2025

- City of Gallup - July 22, 2025

Open House

Advertisements for the online public survey were posted on the McKinley County mitigation plan webpage and Facebook page on X. At the in-person Open House, a presentation was made on the mitigation plan update process and how to provide input to the draft plan. In this meeting, the community was encouraged to ask questions and provide their input. There were X number of attendees at the open house with representation from X jurisdictions. In addition to community members, elected officials, community leaders, and staff participated. (add more info as necessary).

Public Feedback Survey

Advertisements for the online public survey were posted on the McKinley County mitigation plan webpage and Facebook page on X. Many topics noted in the surveys included X. (add more info as necessary).

Public Input of Draft Plan

The draft HMP was uploaded on X to the McKinley County mitigation plan webpage and X for the public to provide feedback and comments. The public comment period was from X to X. Feedback received by X, was incorporated into the HMP final draft after consultation with the Planning Team. In addition to comments received at the Open House, X public feedback surveys were returned and incorporated into the draft plan as necessary. (add more info as necessary).

Adoption Public Meetings Press Release

Adoption Public Hearings at Governing Body Meetings

Advertisements for the online public survey were posted on the McKinley County mitigation plan webpage and Facebook page. The hearing was another opportunity for the community to comment and learn more about the HMP update. (add more info as necessary).

Media Coverage

At several points throughout the planning process, information about the HMP was covered in the Gallup Independent. On June 6, 2025, an article announcing the mitigation plan update was published, which included information from the June 3, 2025, press release. On June 17, 2025, an article was published that included information from the HMP introductory presentation to the McKinley County Commission and additional information based on the County Emergency Manager's comments.

1.7 - Approval & Adoption

The HMP was submitted for review to NM DHSEM on November XX, 2025. After state approval, NM DHSEM submitted the HMP to the FEMA Region VI office for federal review. FEMA Region VI granted "Approval Pending Adoption" (APA) on March XX, 2026. The primary Planning Team contact for each jurisdiction made a presentation to the governing body to summarize the HMP, provide an opportunity for public comment and questions, and adopt the APA version of the HMP.

The HMP was then adopted by McKinley County, the City of Gallup, and the GMCS District on the following dates (respectively) February XX, 2026, February XX, 2026, and February XX, 2026. The HMP was resubmitted to NM DHSEM with all adoptions and approved by FEMA on March XX, 2026.

1.8 - Planning Resources

This plan's content includes and was influenced by numerous documents and technical resources provided by the plan's stakeholders and other relevant entities. The following documents and technical resources were reviewed for applicable information to the development of this plan:

Environmental Assessment: Allison Mine Subsidence Mitigation Project, McKinley County, New Mexico AMLIS Key NM000069-PAD Allison (2022)

The purpose of the proposed action is to mitigate existing and potential hazards to the health, safety, and property of residents within the community of Allison due to ongoing subsidence from previous mining activities.

Asaayi Dam Emergency Action Plan (EAP) (2022)

The Asaayi Dam EAP was reviewed for information as it pertains to potential failure scenarios of the high-hazard dam. This information was used in developing the dam failure hazard profile.

Black Rock, Trapped Rock, and Pescado Dams Emergency Action Plan (EAP) (2021)

The Black Rock, Trapped Rock, and Pescado Dams EAP were reviewed for information as it pertains to potential failure scenarios of the three high-hazard dams. This information was used in developing the dam failure hazard profile.

Escalante Generating Station Evaporation Pond 5 Dam Emergency Action Plan (EAP) (2018)

The Escalante Pond 5 EAP was reviewed for information as it pertains to potential failure scenarios of the high-hazard dam. This information was used in developing the dam failure hazard profile.

FEMA Community Resilience Challenges Index (CRCI)

This data source was used to determine challenges to community resiliency for each community in the 2026 HMP planning period.

FEMA GIS (2022)

FEMA's GIS layers, including the USA Structures dataset, were utilized for the countywide structural inventory.

Gallup Land Development Standards (2023)

The purpose of the City of Gallup Land Development Standards is to implement the Growth Management Master Plan vision and long-range development goals, and coordinate site development, implement the provisions established by the subdivision regulations and related engineering standards, among other goals.

Gallup-McKinley County School District Facility Master Plan (2017-2022)

The latest approved update to this plan was in 2019 and reviewed for demographic and community projection information, and their planning process.

Gallup Transportation Master Plan (2024)

The purpose of the Gallup Transportation Master Plan is to establish a comprehensive, multimodal approach to analyze and improve traffic and circulation within the City of Gallup. Specifically, the Plan seeks to provide alternatives beyond the automobile and allows the City to capitalize on the connection between transportation and economic development opportunities, leading to quality-of-life improvements in Gallup and for area residents.

National Drought Mitigation Center (NMDC) (2025)

This resource was used for the drought hazard profile section.

New Mexico State Hazard Mitigation Plan (2023)

The State of New Mexico's current HMP was reviewed for general guidance in the cases of their comparative statewide risk assessment, their initial selection of at-risk hazards, and local planning technical assistance and development strategy.

New Mexico Wildfire Risk Assessment Portal (NMWRAP)

The NMWRAP was utilized for wildfire risk assessment data in the County and incorporated into the Section 3 Risk Assessment.

McKinley County and Gallup Municipal Codes

Each municipality's local ordinances have been reviewed for provisions relevant to hazard mitigation. This information has been incorporated throughout Section 4 of this plan.

McKinley County Comprehensive Plan (2021)

McKinley County's 2019 Comprehensive Plan (updated in 2021) provides the groundwork for this plan's mitigation strategy. It did so by providing insight into the planning and development direction of the planning area and its local governments.

McKinley County Hazard Mitigation Plan (2021)

McKinley County is currently covered by a FEMA-approved local HMP. The plan was thoroughly reviewed, and components have been updated and incorporated throughout.

McGaffey Lake Dam Emergency Action Plan (EAP) (2012)

The McGaffey Lake Dam EAP was reviewed for information as it pertains to potential failure scenarios of the high-hazard dam. This information was used in developing the dam failure hazard profile.

McKinley County Floodplain Insurance Ordinance

An ordinance regarding the protection of life and property against flood damage; complying with the minimum standards for coverage under the National Flood Insurance Program; and declaring an emergency.

FEMA National Flood Hazard Layer (NFHL)

FEMA's NFHL data was used in mapping floodplain locations and estimating potential flood impacts and loss estimates.

National Center for Environmental Information (NCEI)

This NOAA database was used to gather historical hazard profile data records used for the 2026 HMP planning period and for historical references.

National Inventory of Dams (NID)

The National Inventory of Dams is maintained by the U.S. Army Corps of Engineers (USACE) and was utilized for dam failure hazard data.

National Integrated Drought Information System (NIDIS)

NIDIS was utilized for the drought hazard section and maintains the U.S. Drought Portal, which provides several drought-related resources.

National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC)

Weather data and historical events and their narratives were primarily provided by NOAA's NCDC.

North American Drought Monitor (NADM)

Since 1999, the USDA, NOAA, and the National Drought Mitigation Center at the University of Nebraska-Lincoln have partnered to centralize nationwide drought monitor maps, situation reports, drought status, and publish historical data on drought severity. The NADM was the primary source for historical drought data and drought severity assessment used in this plan.

Palmer Drought Severity Index (PDSI)

This tool was referenced in the drought hazard section.

Red Lake Dam Emergency Action Plan (EAP)

The Red Lake Dam EAP was reviewed for information as it pertains to potential failure scenarios of the high-hazard dam. This information was used in developing the dam failure hazard profile.

USACE National Inventory of Dams (NID)

The USACE NID is a congressionally authorized database that documents dams in the U.S. and its territories. This database attempts to maintain centralized data for all private and public dams. Information from the NID was used in the development of the Dam Failures hazard profile in this plan.

United States Census Bureau (USCB)

The USCB publicly publishes a number of GIS datasets that were used in developing the basemap layers used throughout this plan. The USCB population and American Community Survey data were utilized to gather information for the Community Profiles in Chapter 2.

United States Department of Agriculture (USDA) Statistics Service

The USDA provided GIS data that was used in depicting land cover, and the agricultural statistics used in developing the planning area's risk to droughts, grass, and wildland fires.

U.S. Drought Monitor (USDM)

The USDM was utilized for the drought hazard profile section.

Water Conservation and Drought Management for McKinley County (2007)

The purpose of this Drought Emergency Response Plan is to define the official phases of water supply shortages and to provide for the implementation of voluntary and mandatory water conservation measures throughout McKinley County in the event a shortage is declared. The service area includes all areas in McKinley County within the State of New Mexico's jurisdiction.

Window Rock Emergency Action Plan (EAP)

The Window Rock Dam EAP was reviewed for information as it pertains to potential failure scenarios of the high-hazard dam. This information was used in developing the dam failure hazard profile.

Section 2 – Community Profiles

Overview

This chapter provides an overview of McKinley County, the City of Gallup, and the Gallup-McKinley County Public School District, highlighting key aspects of their history, geography, demographics, and development.

2.1 - McKinley County

McKinley County's economic development is most specific to tourism and the marketing of Indigenous cultural arts, jewelry, and textile works that began decades before the introduction of the railroad. Today, McKinley County is one of the primary tourist destinations in New Mexico, where a number of prehistoric and historic places highlight regional attractions. The County has a deep history in indigenous trading posts and railroads that sparked economic development through mining opportunities within the region. Gallup, New Mexico, was first established in the 1880s as a railroad stop along the Atchison, Topeka, and Santa Fe (AT&SF) rail line (McKinley County Comprehensive Plan, 2020).

Established in 1901 and named in honor of President William McKinley, McKinley County spans approximately 5,451 square miles in northwestern New Mexico (USCB, 2020). The climate in Mckinely County and surrounding areas are identified as arid high desert regions, and the average rainfall is approximately 11 inches (WRCC, 2016). This region is mostly shrouded with varying species of vegetation and small to medium-sized trees.

The County has an overall population density of 13.4 people per square mile, while the City of Gallup (the county seat and largest urban center) has a much higher density of 1,084 people per square mile (USCB, 2020). **Figure 2.1** shows the location of McKinley County within the state of New Mexico, as well as the position of the City of Gallup in the northwestern portion of the state near the Arizona border. **Figure 2.2** illustrates the layout of major transportation corridors, including Interstate 40, key state and U.S. highways, and railroads, along with the distribution of GMCS District properties. Together, these maps help visualize the county's extent, its relationship to neighboring jurisdictions, and the spatial distribution of infrastructure and development that may influence hazard exposure and emergency planning.

McKinley County's population rose modestly throughout the 2010s, growing from 71,492 in 2010 to a peak of 72,897 in 2020, before reversing course and falling to an estimated 68,945 by mid-2024 (USCB, 2024). That recent decline of about 5.4% since 2020 has largely offset the decade's earlier gains, leaving the current total roughly 3.6% below its 2010 level (USCB, 2024).

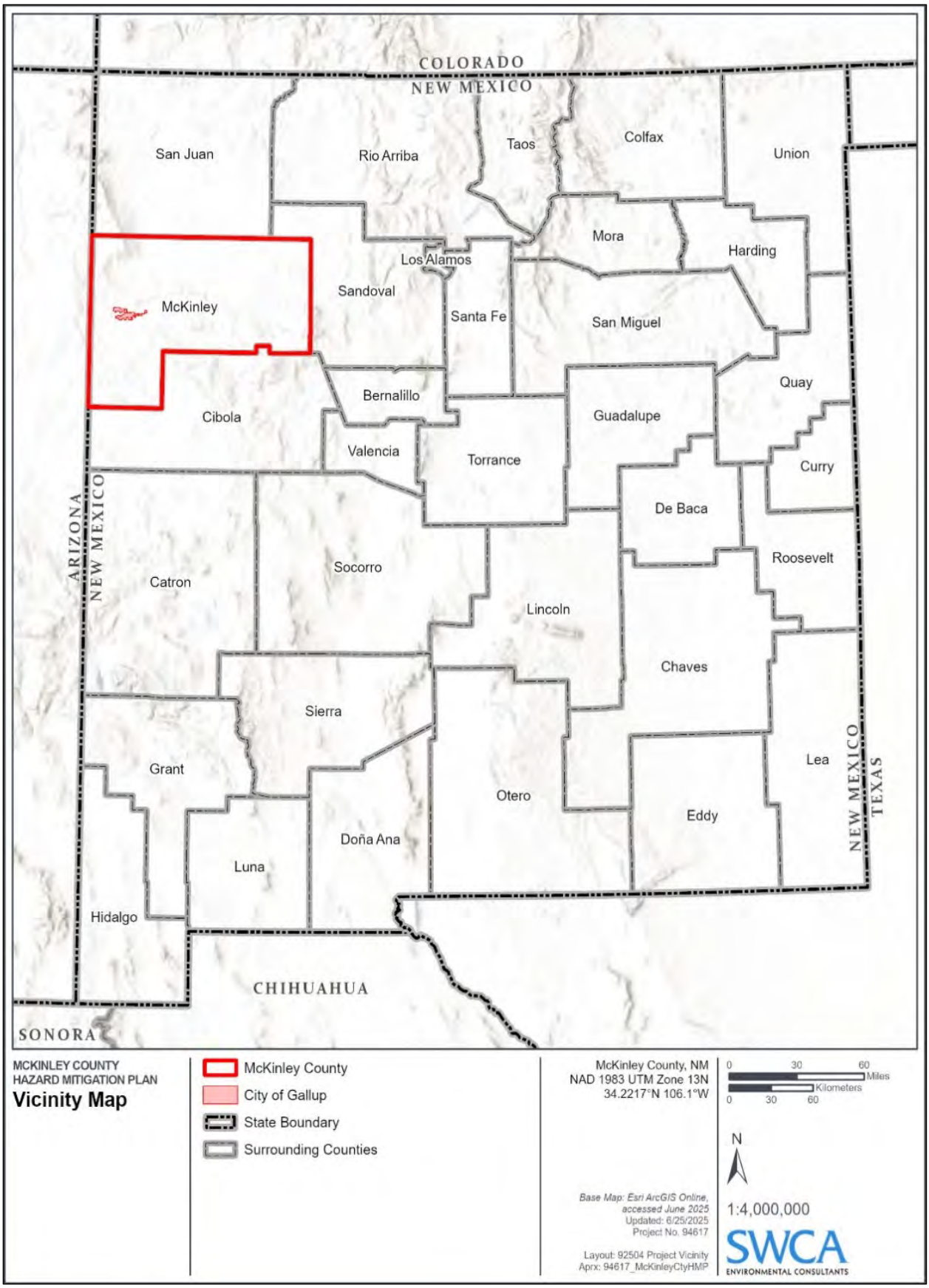


Figure 2.1 – McKinley County, New Mexico Vicinity Map

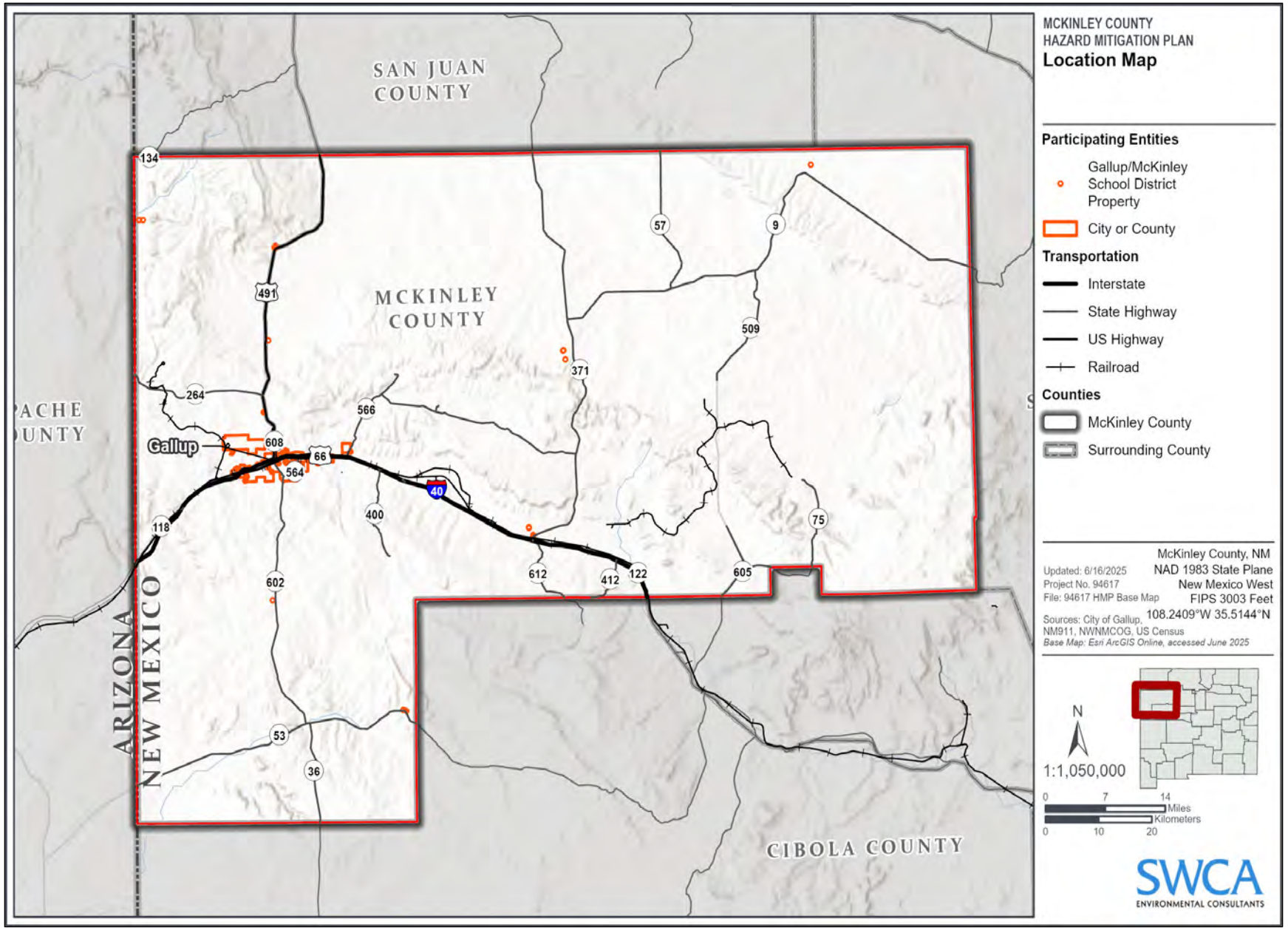


Figure 2.2 – McKinley County, New Mexico Overview

According to the USCB, the county's population was 72,902 in 2020 (USCB, 2024). As of July 1, 2024, the estimated population had declined to 68,945, representing a 5.42% decrease since the 2020 Census (USCB, 2024). The county includes approximately 25,667 residential housing units (USCB, 2024). View **Table 2.1** below to see the population changes from 2010 to 2024.

Table 2.1 – Population Change

Year	Estimated Population	Percent Change from 2010	Percent Change from 2012	Percent Change from 2018	Percent Change from 2020
2010	71,492	-	-		
2012	72,374	1.23%	-		
2018	72,290	1.12%	–0.12%		
2020	72,897	1.96%	0.72%	0.84%	
2024	68,945	–3.56%	–4.74%	–4.63%	–5.42%

Source: USCB 2024.

Land ownership in McKinley County is a mix of US Bureau of Land Management (BLM), US Department of Defense (DOD), USDA Forest Service, Tribal, National Park Service, Private, New Mexico State Land Office, New Mexico State Game and Fish, and New Mexico State Parks, shown in **Figure 2.3**. The majority of land ownership belongs to Tribes. About 80% of the county's land is held by tribes or the federal government and is not subject to property taxes, according to McKinley County. The remaining 20% is taxable, and property taxes are assessed and collected by the county (McKinley County Assessor's Office, 2025).

The countywide structural inventory presented in **Table 2.2** is derived from FEMA's USA Structures dataset, which identifies every known building over 450 square feet in the US using aerial imagery, LiDAR, and authoritative local data sources (FEMA, 2022). The information was derived from the filters presented in the dataset by jurisdiction. In McKinley County, this inventory provides a comprehensive snapshot of development across both tribal and non-tribal lands, capturing all major occupancy types, including agriculture, residential, education, commercial, government, utility, miscellaneous, industrial, and unclassified. The inventory includes a mix of residential, commercial, and other structure types and highlights the dispersed nature of development in these areas. This spatial context is critical for assessing risk to structures from hazards (FEMA, 2022).

Table 2.2 – Structural Inventory, Countywide

Structure Class	Structures
Unclassified	8838
Agriculture	457
Residential	16,803
Education	220
Commercial	2184
Government	161
Utility and Miscellaneous	19
Industrial	93
Total	**28,775**

Source: FEMA USA Structures Data, 2022.

McKinley County and the City of Gallup have not experienced significant new development or population growth since the previous HMP was prepared. In fact, the building stock within the County and in the City of Gallup tends to be older, which can increase risk to hazard impacts, especially if buildings are not renovated to improve structural integrity. The USCB estimates indicate a slight population decline in the county between 2020 and 2024. As a result, there has been no increase in vulnerability or risk associated with new development. Similarly, the GMCS District has not undergone any major expansion during this period and, therefore, does not show increased exposure to the natural hazards identified in this plan due to development-related changes.

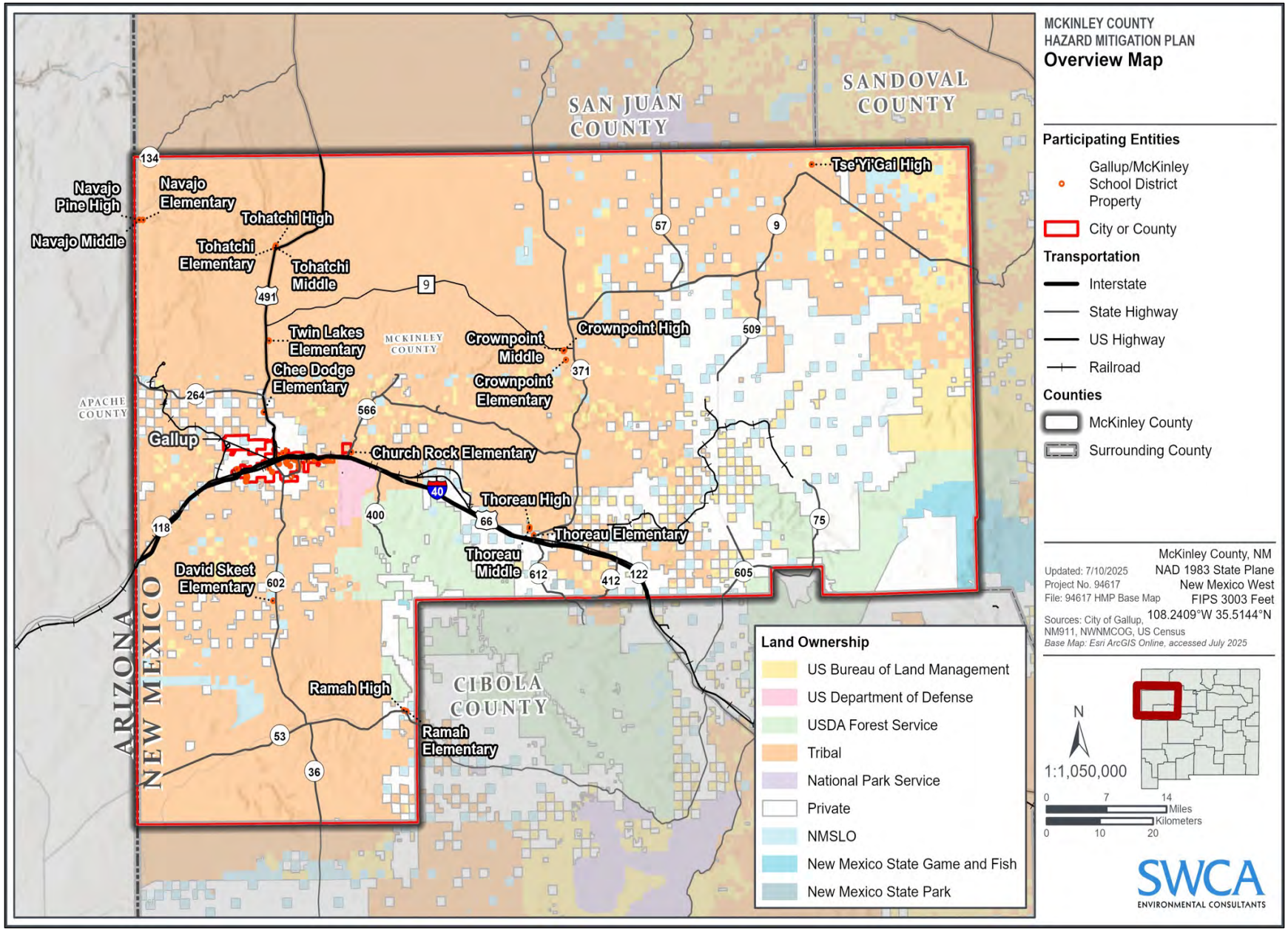


Figure 2.3 – McKinley County Land Ownership

2.2 – McKinley County (Unincorporated)

McKinley County's unincorporated areas encompass all portions outside incorporated municipalities, including lands held by the Pueblo of Zuni and the Navajo Nation, both of which maintain their own hazard mitigation plans.

Since the USCB does not distinguish between tribal and non-tribal areas in its population estimates, the figures provided below in **Table 2.3** reflect total unincorporated population counts, inclusive of tribal lands. These estimates show a modest increase in population from 49,814 in 2010 to a peak of 50,995 in 2020 (2.37% increase), followed by a decline to 48,615 by mid-2024, a 4.67% decrease from 2020 and 2.41% below the 2010 population level (USCB, 2024).

Table 2.3 – Population Change, McKinley County (Unincorporated)

Year	Estimated Population	Percent Change from 2010	Percent Change from 2014	Percent Change from 2018	Percent Change from 2020
2010	49,814	-	-	-	-
2014	50,348	1.01%	-	-	-
2018	50,361	1.01%	0%	-	-
2020	50,995	2.37%	1.29%	1.26%	-
2024	48,615	– 2.41%	– 3.44%	– 3.47%	– 4.67%

Source: USCB, 2024.

Table 2.4 presents the number of structures located in Unincorporated McKinley County based on the FEMA USA Structures dataset. The Unincorporated County has a total of 20,007 structures, mostly residential and commercial structures. This was calculated by subtracting the total County structure counts by the City of Gallup's structure counts. The inventory includes a mix of residential, commercial, and other structure types and highlights the dispersed nature of development in these areas. This spatial context is critical for assessing risk to structures from hazards (FEMA, 2022).

Table 2.4 – Structural Inventory, McKinley County (Unincorporated)

Structure Class	Structures
Residential	10,610
Unclassified	8095
Education	116
Commercial	506
Government	153
Industrial	87
Utility and Misc.	11
Agriculture	429
Total	**20,007**

Source: FEMA USA Structures Data, 2022.

Critical Facilities

Critical facilities are structures vital to the community's function, and if damaged, have the potential to cause adverse impacts. These facilities are critical to the health and welfare of the population and are especially important to hazard events. The methodology for the selection of critical facilities to be analyzed is described in Section 3, Vulnerability Assessment Methodology.

Critical facilities span across the entire County, with the majority being located on the western side near Gallup, the population center. There are 1,866 critical facilities in unincorporated McKinley County. **Table 2.5** shows the type of critical facility and category count. **Figures 2.4** to **2.7** show the locations of the critical facilities across the county.

Table 2.5 – Counts and Types of Unincorporated McKinley County Critical Facilities

Facility Type	Facility Category	Count of Facility Category
Communications Infrastructure	Cell Towers	4
	Radio Towers	1
Gas and Oil Facilities	Oil Well	3
Government Services	City Hall	1
	Community Centers	11
	Court House	2
	Library	3
	Shelter	4
Hospitals	Hospitals	2
Law Enforcement	Police Department	2
	Sheriff's Office	1
Schools	Child Care Center	26
	College/University	2
	Private School	4
	Public School	23
Senior Housing	Assisted Living	2
	Senior Residential	4
Transportation Networks	Airport	1
	Bridges	60
Utilities	Electrical Substation	2
Utility	Power Plant	1
	Total	**159**

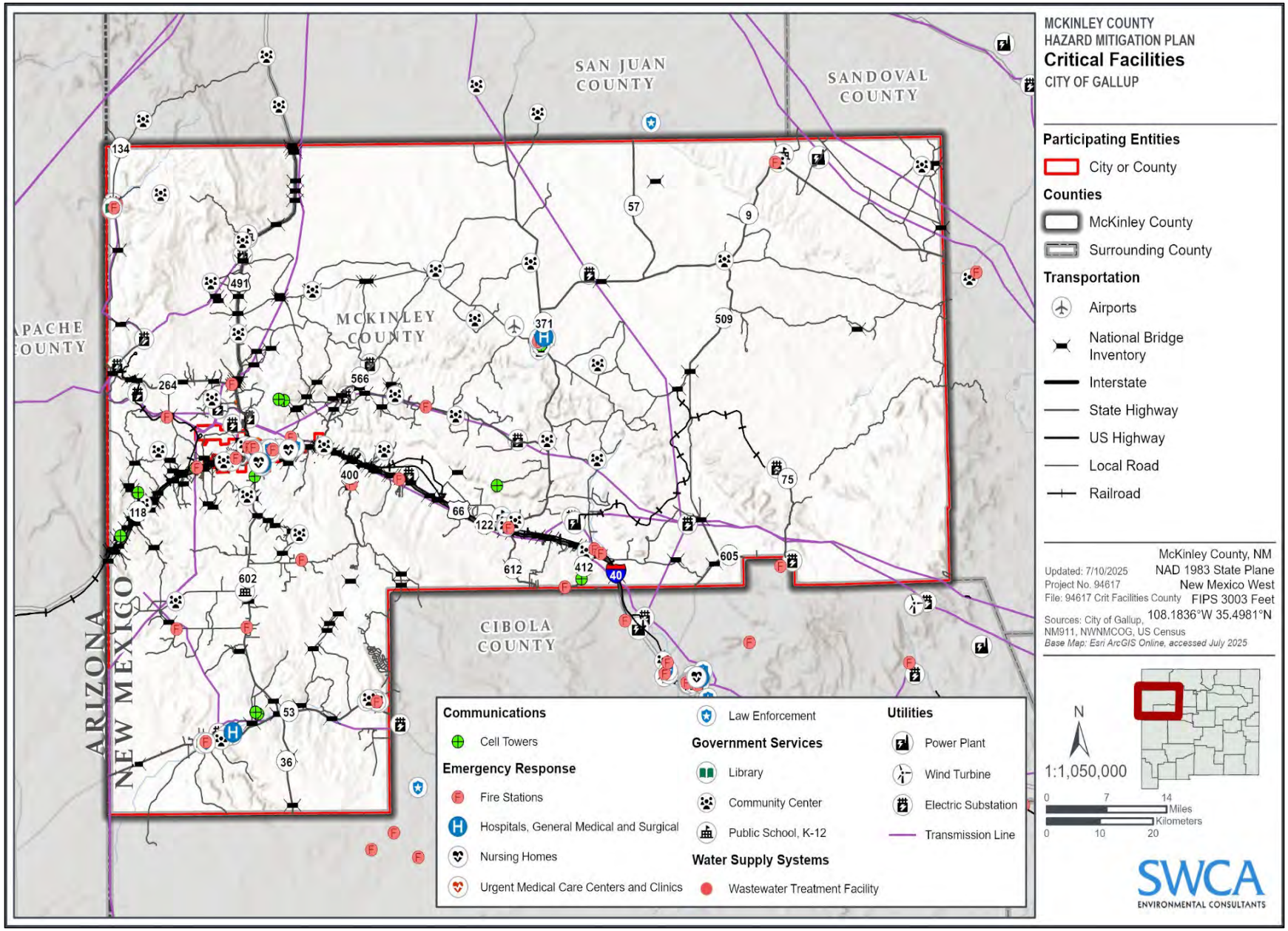


Figure 2.4 – McKinley County Critical Facilities Overview

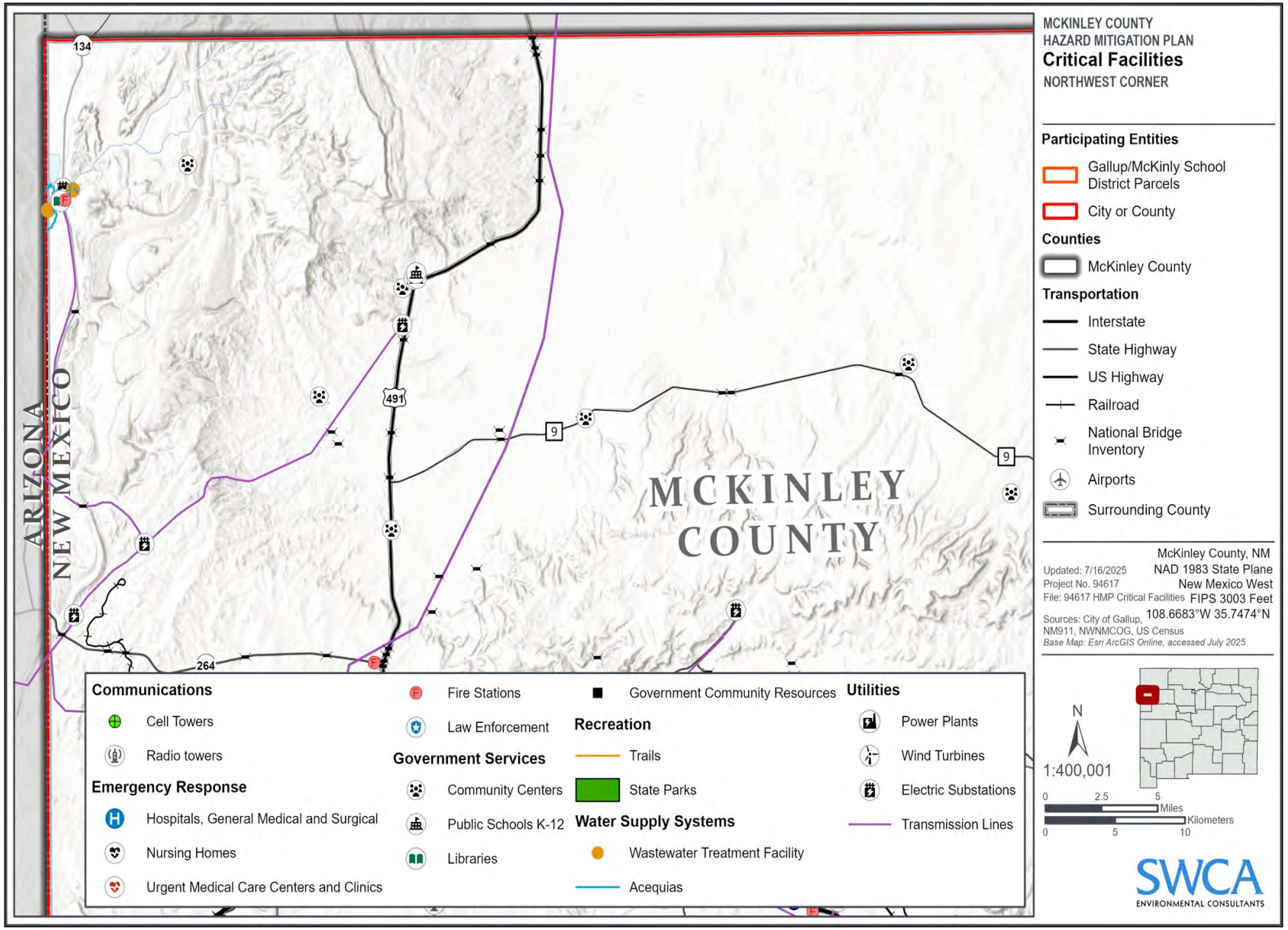


Figure 2.5 – McKinley County Critical Facilities - Northwest

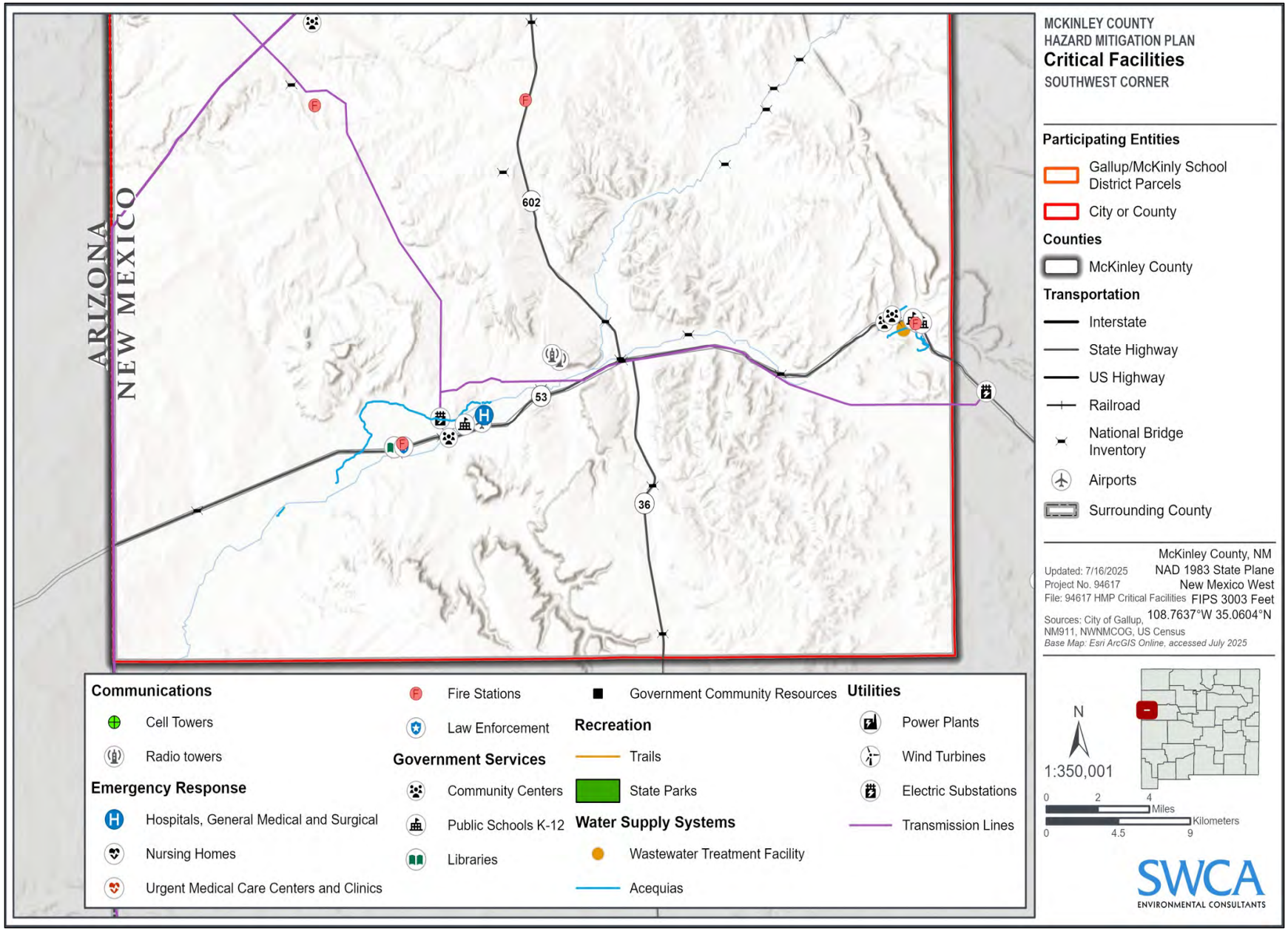


Figure 2.6 – City of Gallup Critical Facilities - Southwest

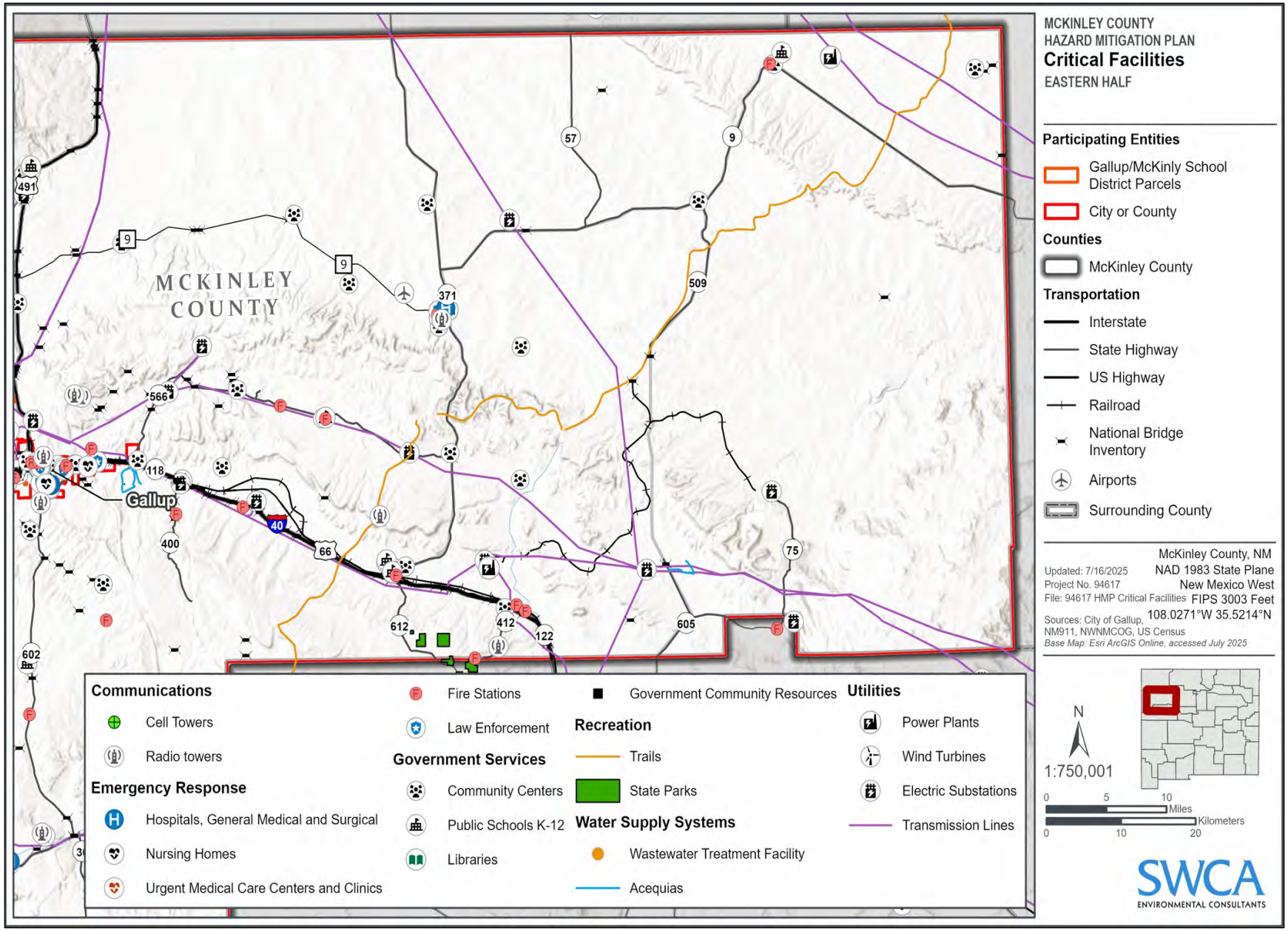


Figure 2.7 – City of Gallup Critical Facilities - Eastern

2.3 – City of Gallup

The City of Gallup's population has largely mirrored countywide demographic trends over the past decade. Following a modest increase from 21,678 residents in 2010 to 22,026 in 2014 (+1.6%), the population began to decline slightly, dropping to 21,902 by 2020. A more significant decline followed, with the population estimated at 20,339 as of July 2024, representing a 7.1% decrease since 2020. Compared to the baseline used in the previous McKinley County Hazard Mitigation Plan, Gallup's current population reflects a 7.7% reduction (USCB, 2024). **Table 2.6** details population changes in the City of Gallup from 2010 to 2024.

As of 2020, the city's roughly 20,339 inhabitants occupy about 8,097 housing units (USCB, 2024). The city's structural footprint is concentrated along major corridors such as Interstate 40, NM-602, NM 118 (Historic Route 66), and NM-491, forming a compact urban core surrounded by varied land ownership, including Tribal, BLM, and private lands. As shown in **Figure 2.8,** Gallup's municipal boundary contains a dense network of residential, commercial, and public buildings, with school properties and critical infrastructure woven throughout the city and immediately adjacent areas. This layout underscores Gallup's role as a service and population hub within the planning area, while also highlighting the spatial constraints and jurisdictional interfaces that shape hazard mitigation efforts.

Table 2.6 – Population Change

Year	Estimated Population	Percent Change from 2010	Percent Change from 2014	Percent Change from 2018	Percent Change from 2020
2010	21,678	-	-	-	-
2014	22,026	1.61%	-	-	-
2018	21,929	1.16%	- 0.44%	-	-
2020	21,902	1.03%	- 0.56%	- 0.12%	
2024	20,339	6.18%	- 7.66 %	- 7.25%	- 7.14%

Source: USCB 2024.

As shown in **Table 2.7**, the City of Gallup's structural inventory includes a dense concentration of buildings within the city limits, as mapped through FEMA's USA Structures dataset. The City of Gallup has a total of 8,768 structures, mostly residential and commercial. This dataset provides detailed counts by occupancy type and reflects the city's role as a regional hub for housing, commerce, and services. The concentration of structures in Gallup elevates the importance of coordinated mitigation planning, emergency preparedness, and outreach efforts tailored to an urban interface context. This spatial context is critical for assessing risk to structures from hazards (FEMA, 2022).

Table 2.7 – Structural Inventory, Gallup

Structure Class	Structures
Unclassified	743
Residential	6193
Education	104
Government	8
Commercial	1678
Agriculture	28
Utility and Misc.	8
Industrial	6
Total	**8,768**

Source: FEMA USA Structures Data, 2022.

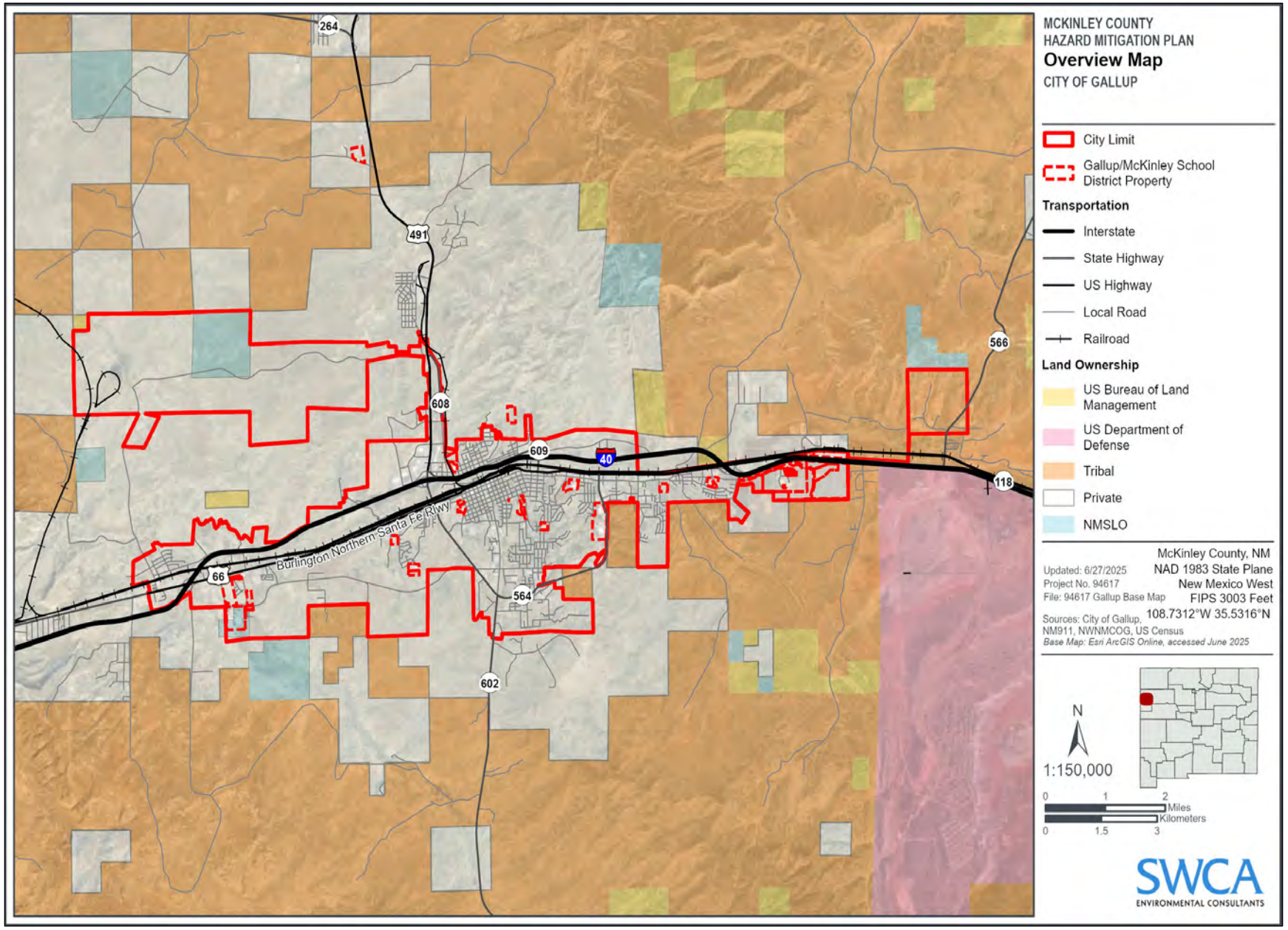


Figure 2.8 – City of Gallup, McKinley County - Overview

Critical Facilities

Critical facilities are structures that are vital to the community's function and, if damaged, have the potential to cause adverse impacts. These facilities are critical to the health and welfare of the population and are especially important to hazard events. The methodology for the selection of critical facilities to be analyzed is described in Section 3, Vulnerability Assessment Methodology.

There are 159 critical facilities in the City of Gallup. **Table 2.8** shows the type of critical facility and category count. **Figures 2.9** to **2.13** show the locations of critical facilities throughout the city.

Table 2.8 – Counts and Type of City of Gallup Critical Facilities

Facility Type	Facility Category	Count of Facility Category
Chemical Sites	Chemical Sites	2
Communications Infrastructure	Broadband Access Sites	4
	Cell Towers	13
Emergency Services	Directional Siren	1
	Fire	19
	Landing Zone	1
	Gas Well	296
	Injection Well	86
	Miscellaneous Well	2
Gas and Oil Facilities	Oil Well	1088
	Pipeline	4
	Refinery Terminal	1
	Salt Water Disposal Well	9
Government Services	Community Centers	28
	Library	4
	Schools	1
	Shelters	4
Hospitals	Hospitals	2
Law Enforcement	Police Department (Non-Tribal)	1
	Police Department (Tribal)	1
Recreation	State Parks	1
	Trail	2
Schools	Child Care Center	16
	College/University	1
	Private School	4
Senior Housing	Senior Residential	3
Transportation Networks	Bridges	172
	Railroad	4
	Road	12
Utilities	Electrical Substation	14
	Transmission Line	20
Utility	Power Plant	2
Water Supply Systems	Acequia	29
	Water Treatment Facility	4
	Water Well	15
	Total	1,866

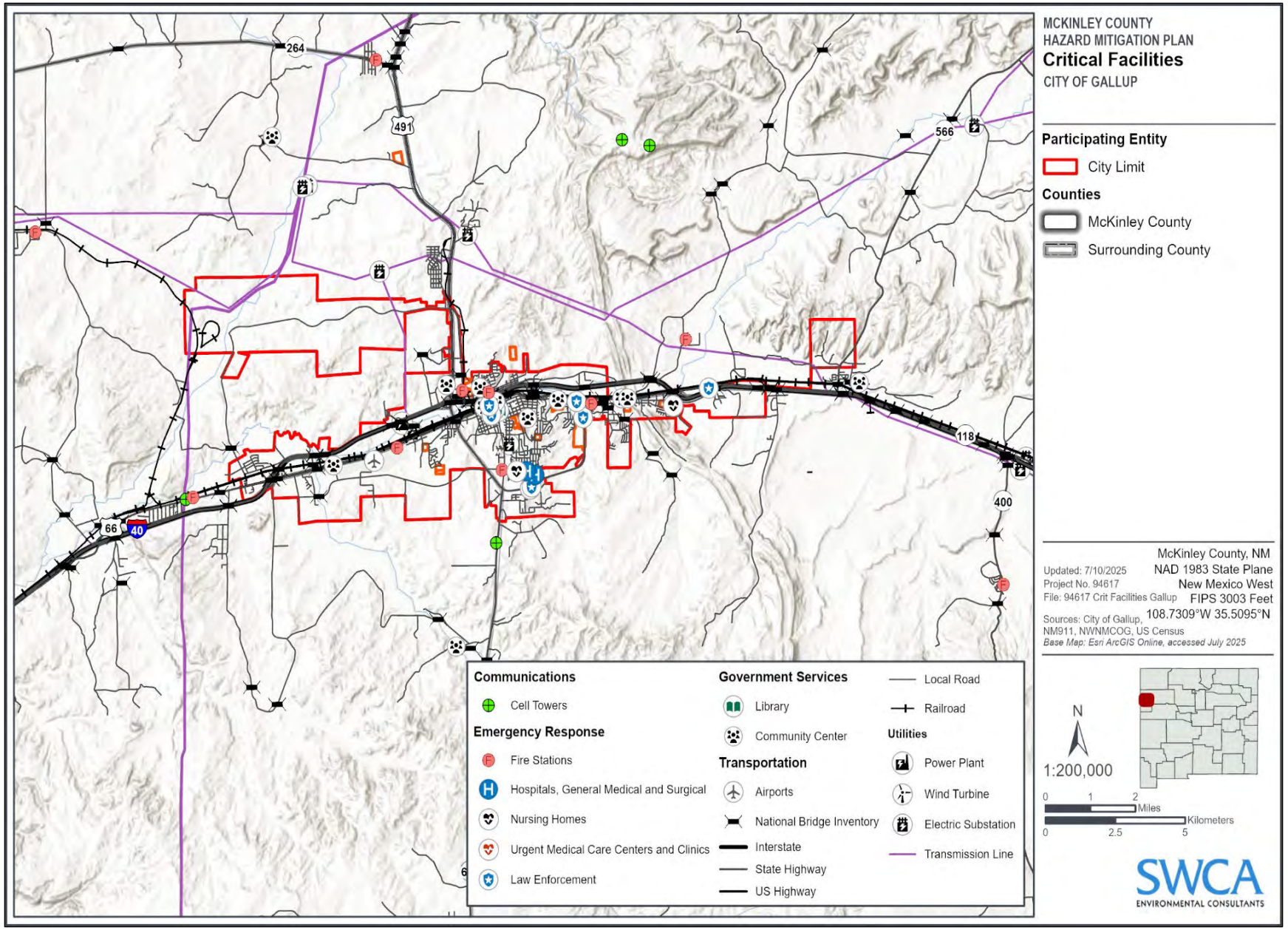


Figure 2.9 – City of Gallup Critical Facilities Overview

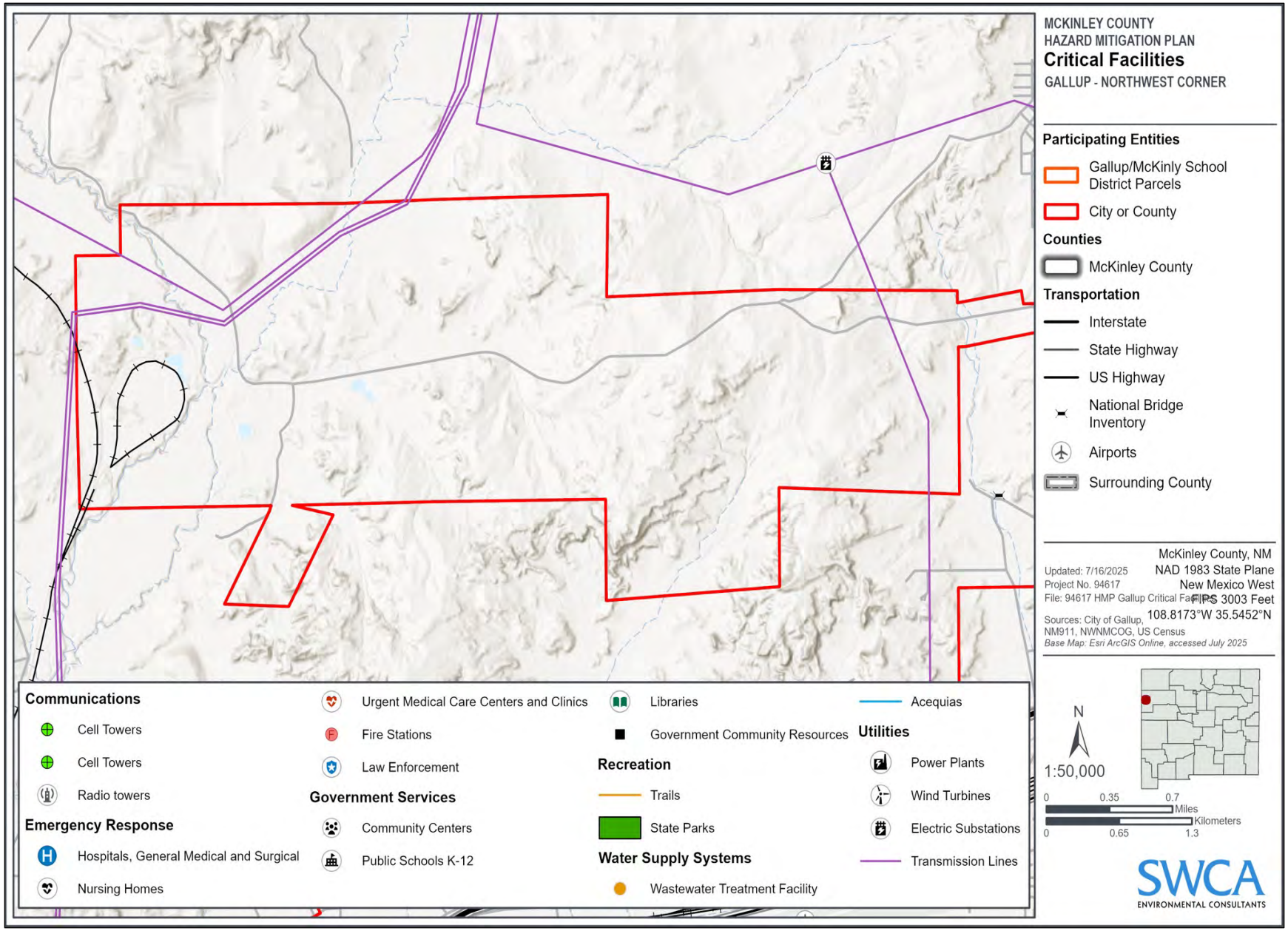


Figure 2.10 – City of Gallup Critical Facilities - Northwest

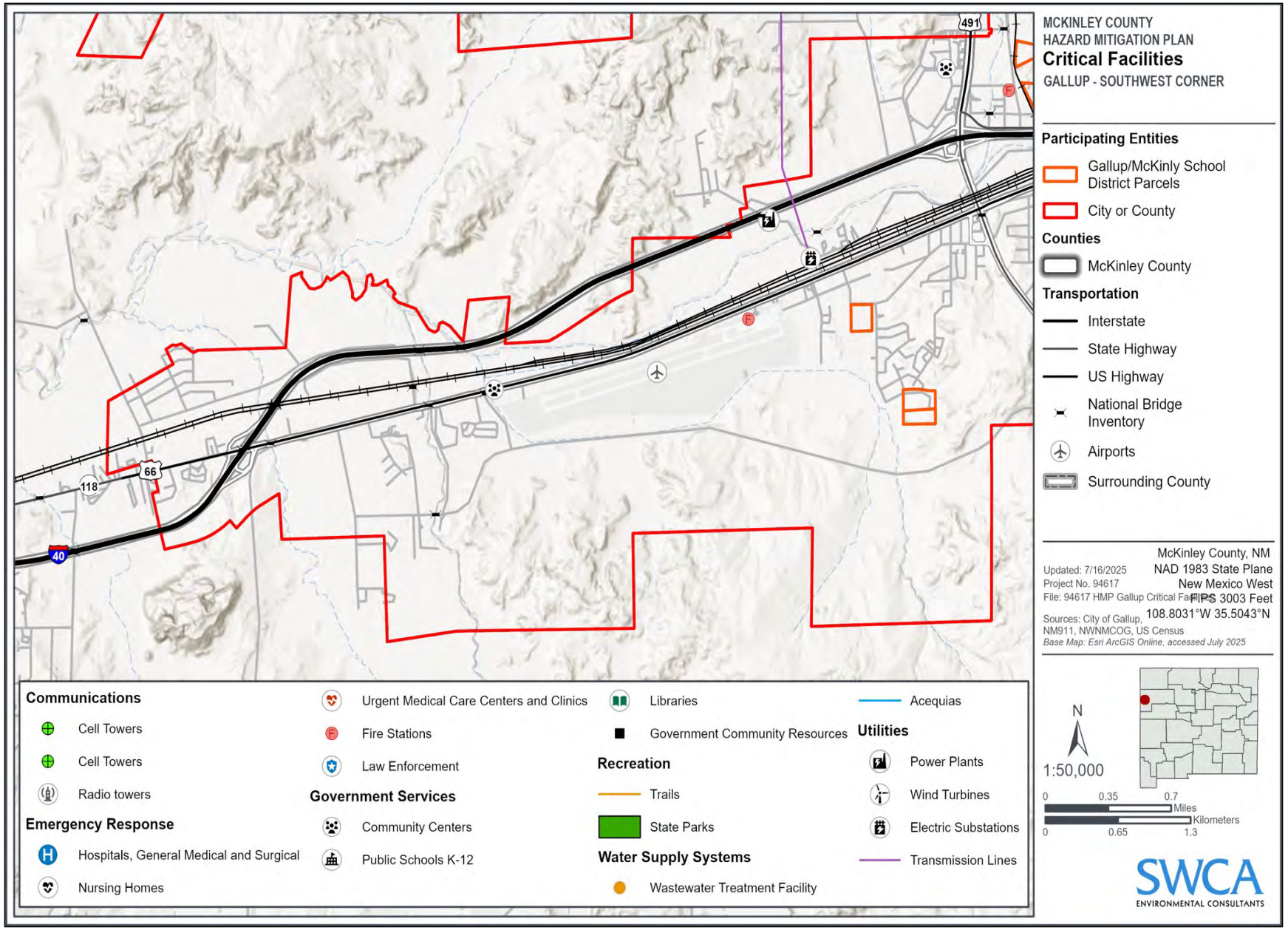


Figure 2.11 – City of Gallup Critical Facilities - Southwest

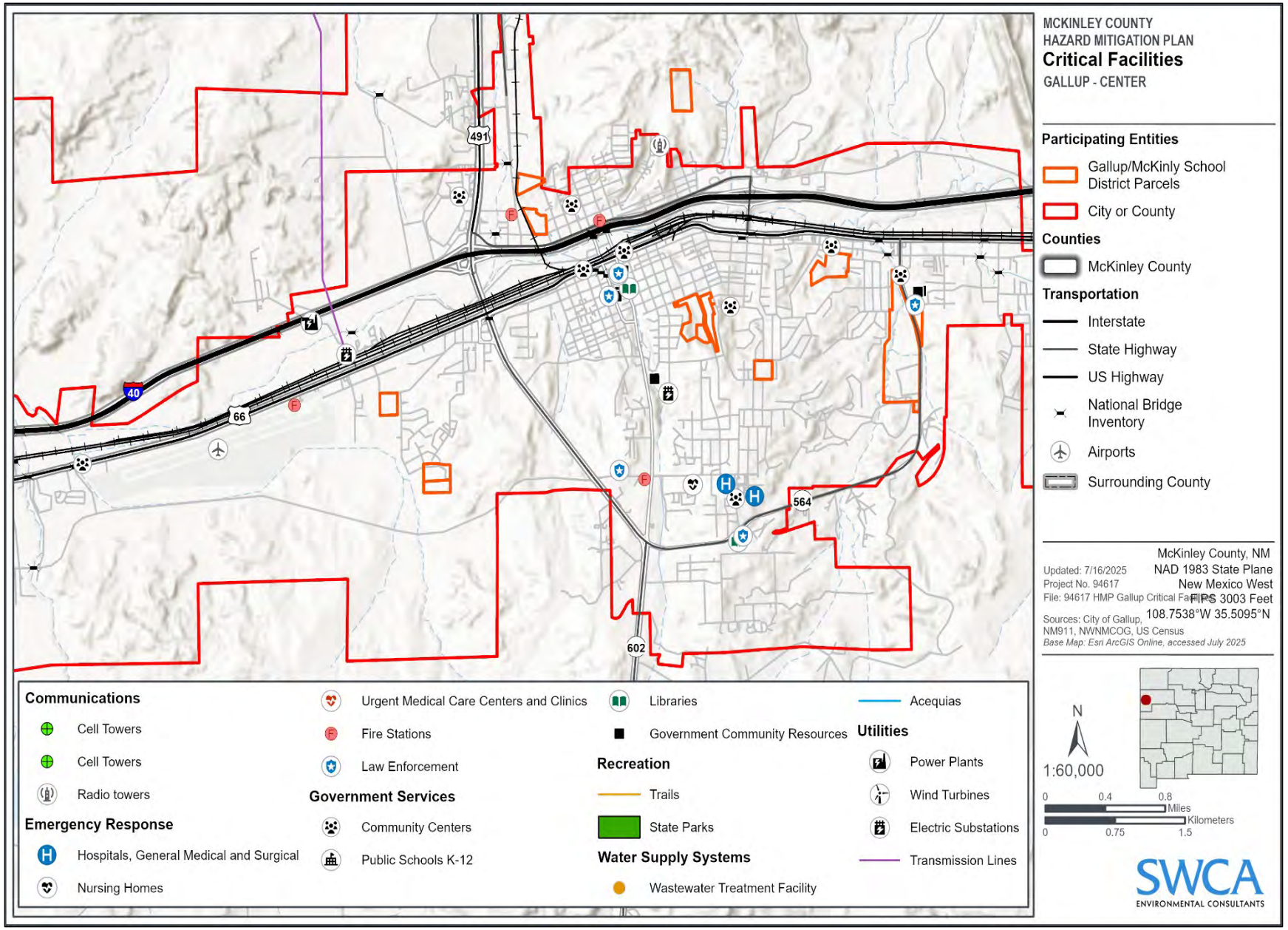


Figure 2.12 – City of Gallup Critical Facilities - Center

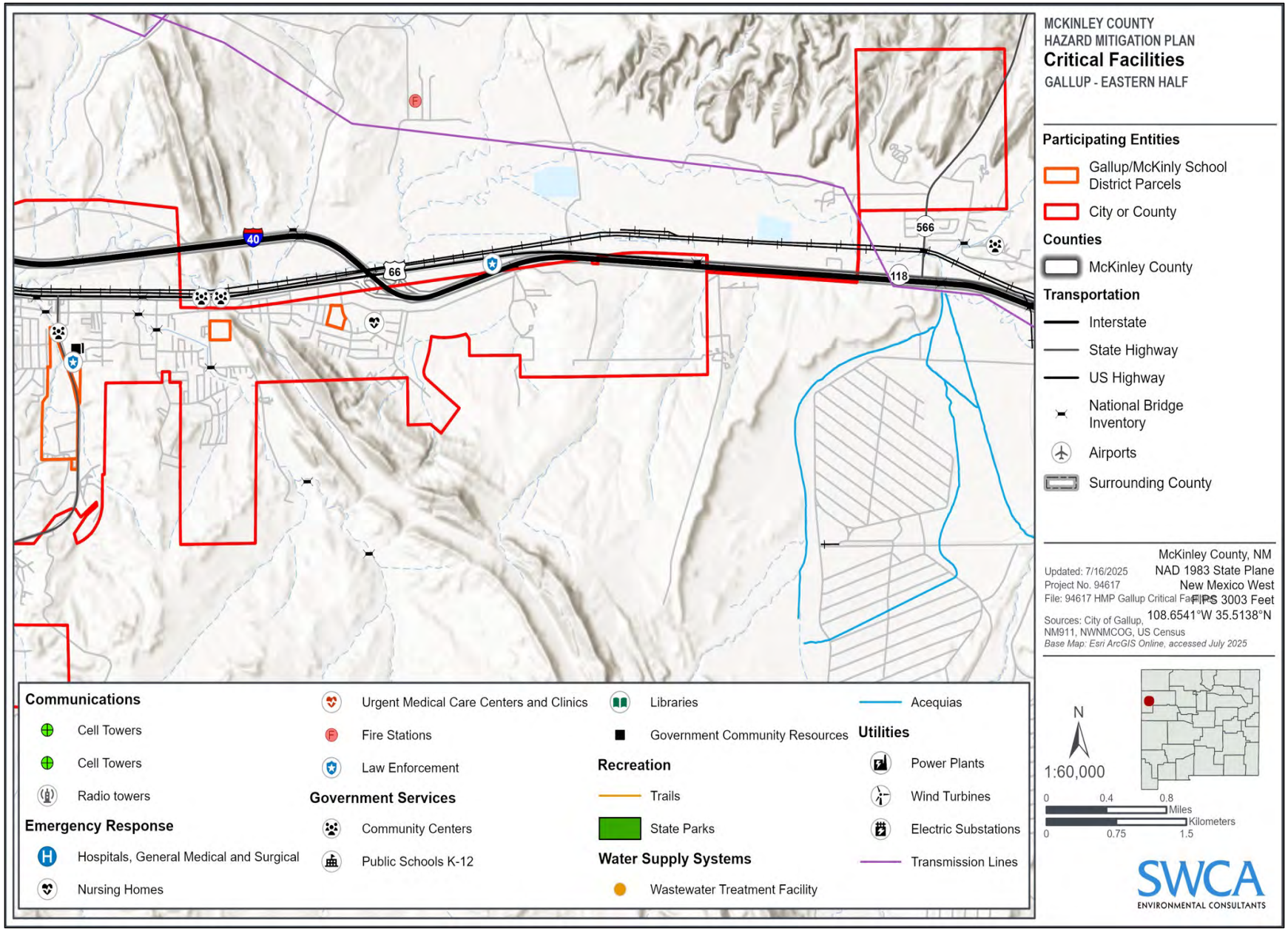
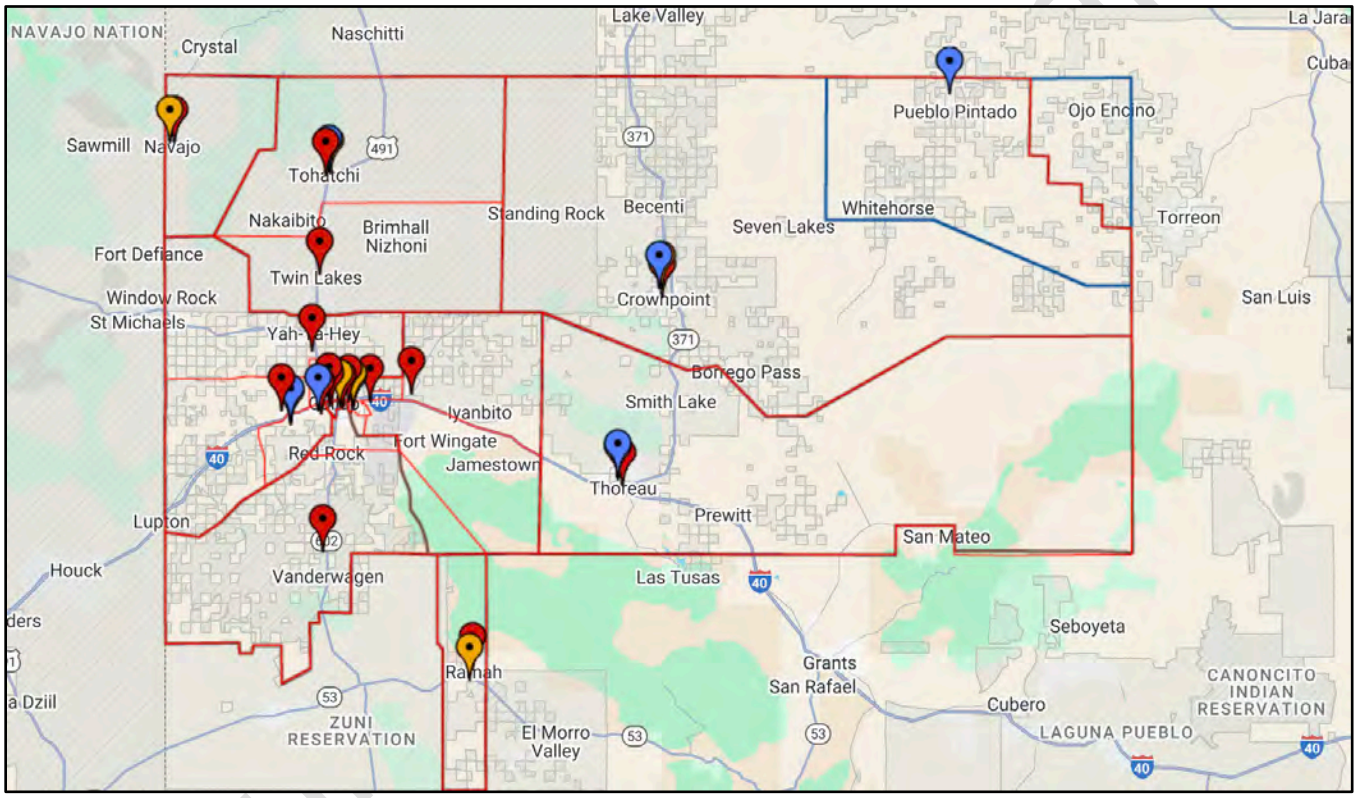


Figure 2.13 – City of Gallup Critical Facilities - Eastern

2.4 - Gallup-McKinley County Schools

The GMCS district serves a large and diverse geographic area, encompassing the City of Gallup, unincorporated portions of McKinley County, and parts of the Navajo Nation located within the planning area. The GMCS have a total of 38 facilities across McKinley County. **Figure 2.14** provides an overview of the locations of GMCS campuses throughout the region, illustrating the district's wide service area and the dispersion of schools across both densely developed and remote rural communities. In the figure, high schools are color-coded in blue, middle schools are yellow, and elementary schools are red. There are 18 schools within the City of Gallup that serve students in the area, shown in **Table 2.9**. As of 2025, the district provides education to 9,288 students, supported by approximately 1,566 teachers, administrators, and staff members.



Source: GMSC

Figure 2.14 – Gallup-McKinley County Schools

The distribution of staff and students across district sites varies widely, from large high schools like Miyamura High (928 total individuals) to small rural campuses like Tse 'Yi 'Gai High (72 total). This underscores the district's need to support both urban and remote communities, which present unique challenges in hazard mitigation, transportation, and facility preparedness. **Table 2.9** summarizes current staffing and student population figures by site, and **Table 2.10** describes the structural data for the schools. This data is important to understanding how many people attending or working at GMCS could be impacted by hazards and what the cost would be of damage to the structures themselves.

Table 2.9 – Gallup-McKinley County Schools Population

District Site	Staff	Students	Total
Catherine A. Miller Elementary School	37	266	303
Central Offices	321	-	321
Chee Dodge Elementary School	37	193	230
Chief Manuelito Middle School	44	454	498
Crownpoint Elementary School	33	212	245
Crownpoint High School	32	213	245
Crownpoint Middle School	24	126	150
David Skeet Elementary School	27	161	188
Del Norte Elementary School	49	355	404
Education Development Center	50	145	195
Gallup Central High School	20	40	60
Gallup High School	75	556	631
Gallup Middle School	35	344	379
Indian Hills Elementary School	38	225	263
Jefferson Elementary School	54	386	440
John F. Kennedy Middle School	45	493	538
Lincoln Elementary School	46	340	386
McKinley Academy	19	529	548
Miyamura High School	89	839	928
Navajo Elementary School	33	258	291
Navajo Middle School	21	127	148
Navajo Pine High School	20	119	139
Ramah Elementary School	24	160	184
Ramah High School	26	189	215
Red Rock Elementary School	40	252	292
Stagecoach Elementary School	44	285	329
Thoreau Elementary School	41	282	323
Thoreau High School	38	325	363
Thoreau Middle School	29	260	289
Tohatchi Elementary School	29	185	214
Tohatchi High School	34	207	241
Tohatchi Middle School	23	191	214
Tse 'Yi 'Gai High School	16	56	72
Turpen Elementary School	42	319	361
Twin Lakes Elementary School	31	196	227
Total	**1,566**	**9,288**	**10,854**

Source: Gallup-McKinley County School 2025.

Table 2.10 – Gallup-McKinley County Schools Structural Summary

District Site	Structural Value	Contents Value	Total Value
Catherine A Miller Elementary School	9,652,991	725,340	10,378,331
Central Offices	6,125,941	1,071,106	7,197,047
Chee Dodge Elementary School	12,434,241	1,358,040	13,792,280
Chief Manuelito Middle School	26,590,371	1,960,425	28,550,796
Crownpoint Elementary School	12,449,211	1,668,317	14,117,528
Crownpoint High School	30,578,156	1,953,569	32,531,726
Crownpoint Middle School	9,676,729	860,686	10,537,415
David Skeet Elementary School	11,782,174	1,109,004	12,891,178
Del Norte Elementary School	13,456,496	1,616,704	15,073,199
Educational Development Center	9,075,830	1,185,161	10,260,992
Gallup Bus Storage	682,606	259,988	942,593
Gallup Central High School	9,606,063	952,753	10,558,816
Gallup High School	63,105,532	6,775,773	69,881,305
Gallup Middle School	23,359,024	2,237,015	25,596,040
Gallup Motor Pool	1,263,945	628,611	1,892,556
Indian Hills Elementary School	10,545,232	1,487,012	12,032,244
Jefferson Elementary School	13,644,195	1,636,916	15,281,111
Kennedy Middle School	29,194,164	2,376,091	31,570,256
Lincoln Elementary School	24,363,134	438,317	24,801,451
Maintenance	1,152,756	365,509	1,518,266
Miyamura High School	54,733,364	5,877,603	60,610,967
Navajo Elementary School	11,391,484	1,267,328	12,658,813
Navajo Middle School	10,911,683	903,155	11,814,838
Navajo Pine High School	22,495,895	1,949,117	24,445,012
Ramah Elementary School	6,523,486	770,493	7,293,978
Ramah Middle/High School	29,021,268	2,109,398	31,130,666
Red Rock Elementary School	48,857,887	1,167,277	50,025,164
Stage Coach Elementary	12,103,654	1,631,046	13,734,700
Student Support Center	10,371,999	1,486,704	11,858,703
Thoreau Elementary School	24,162,645	378,067	24,540,713
Thoreau High School	29,749,059	3,355,619	33,104,677
Thoreau Middle School	12,151,515	1,252,635	13,404,150
Tobe Turpen Elementary School	10,842,746	1,263,827	12,106,572
Tohatchi Elementary School	67,430,708	1,373,536	70,377,952
Tohatchi High School	34,616,580	2,947,244	37,563,823
Tohatchi Middle School	14,905,699	822,725	15,728,423
Tse' Yi' Gai' High School	21,406,106	1,845,431	23,251,537
Twin Lakes Elementary School	9,180,226	1,076,882	10,257,108

Source: Gallup-McKinley County Schools 2025

Section 3 – Risk Assessment

Purpose

This hazard mitigation plan's risk assessment identifies the risk of each participating jurisdiction to the profiled hazards. These calculated risks serve as the justifying basis for the proposed mitigation actions found in Section 4. Additionally, this risk assessment can further serve McKinley County and the plan's participating jurisdiction (Unincorporated County, City of Gallup, and Gallup-McKinley County Schools) by aiding in decision-making processes of other planning initiatives.

3.1 – Methodology

To properly and accurately depict the overall risk from hazards to McKinley County, each hazard profile describes the hazard type, location, previous occurrence, probability of future occurrence, and extent (magnitude or severity). The vulnerability assessment section for each hazard analyzes the potential hazard risk to structures, critical facilities, people, and systems.

The risk assessment for McKinley County and participating jurisdiction was performed using a county-wide, multi-jurisdictional perspective. Information and data were collected and compiled from publicly available and internal sources to profile the hazards and to assess vulnerability to structures, critical facilities, people, and systems.

Additional analyses are provided for structures, critical facilities, and people, that overlap defined hazards areas if data was available. For example, flooding has defined hazard areas that impact a certain geographical area called flood zones. To understand how many people live in the flood zone, data can be extracted and overlayed. In regard to vulnerability to structures for flood and wildfire, building data included actual building values. Actual building values include all structures on the property. For hazards that do not have a defined hazard area, generalized risk descriptions are provided on how hazards could potentially impact structures, critical facilities, people, and systems. Systems include critical infrastructure such as the electrical grid, communications, and transportation systems, as well as the environment. More information on the method for analyzing each vulnerability assessment category is further detailed below.

Vulnerability Assessment Methodology

Structures

For hazards that have defined hazard areas such as wildfires and floods, an analysis was completed, using ArcGIS, to identify how many structures are within the hazard area boundaries and the estimated property value. This information is helpful to understand how many structures are at risk to hazard impacts and the possible estimated damage cost. Information on structure data was gathered from the FEMA USA Structure dataset. The dataset is a comprehensive inventory of all structures larger than 450 square feet.

Critical Facilities

For geographically mapped hazards such as wildfires and floods, an analysis was completed, using ArcGIS, to identify how many critical facilities are within the hazard area boundaries. This information is helpful to understand how many critical facilities are at risk to hazard impacts. The list of critical facility categories was determined through commonly used categories in hazard mitigation planning, publicly available data sets, and input from the Planning Team. Data on critical facilities such as counts and locations was gathered through publicly accessible datasets and the County Assessor's office. Some critical facilities were excluded in the vulnerability assessment maps due to the sensitive nature of the critical facilities themselves and due to

potential security risk were excluded from any visual products. However, all critical facilities listed in Community Profiles (Section 2) were included in the analysis for flood and wildfire to understand how many and which ones were at risk to hazard impacts. See sections 2.2 and 2.3 for additional information. Please note that due to the format of available data for linear features (i.e. acequias, roads, telephone lines, etc.), some features may have been counted in a different manner depending on their intersection with the derived hazard area.

Population

For hazards that have defined hazard areas such as wildfires and floods, an analysis was completed, using ArcGIS, to identify how many people reside within the hazard area boundaries. This information is helpful to understand how many people are at risk to hazard impacts. Information on population data was gathered from the American Community Survey (ACS) 2023 1-Year Estimates, which is collected by the U.S. Census Bureau. The dataset provides social, economic, housing, and demographic data for a single geographic area.

Systems

An analysis was not conducted for systems. Instead, narrative was provided on generalized impacts to community systems.

3.2 – Hazard Selection

The nine hazards profiled within this section were identified and selected based on their ability to reasonably affect the entire planning area or portions of McKinley County and its communities. The hazards profiled in the risk assessment include the following:

- Dam Failure
- Drought
- Extreme Temperatures (Heat and Cold)
- Flood/Flash Flood
- High Wind (Microbursts)
- Severe Winter Storms
- Thunderstorms (Lightning and Hail)
- Tornadoes
- Wildfire/WUI Fire

If a hazard has been removed from the previous plan update or excluded from the hazards profiled in the 2023 New Mexico State Hazard Mitigation Plan, justification is provided, as shown in **Table 3.1**. Such hazards were not included as they did not have recorded damages or occurrences. Hazards removed or excluded from this plan update include the following:

- Earthquakes
- Expansive Soils
- Landslides
- Land Subsidence
- Volcanoes

Appropriately identifying and selecting which natural hazards will be profiled is the first step in developing a risk assessment. A hazard screening tool was used by the Planning Team to evaluate and identify hazards to profile in the hazard mitigation plan update. Planning Team members used the tool to rank hazards that pose the most risk to the planning area. The tool enabled the Planning Team to identify hazards that pose a reasonable risk to the planning area, thereby maximizing McKinley County's capabilities and resources to effectively reduce the risk to the community.

The results of the tool determined that three hazards (Extreme Heat, Extreme Cold, and Microbursts) should be included in this plan update, as they pose a reasonable risk to the planning area. The Planning Team decided to combine Extreme Heat and Extreme Cold into Extreme Temperatures, and Microbursts as a sub-hazard in the High Wind hazard profile. Additionally, the tool concluded that four hazards (Earthquake, Expansive Soils, Landslide, and Land Subsidence) should be excluded from the plan update as they pose a minimal risk to the planning area. The results of the Hazard Screening Tool are described in **Figure 3.1.**

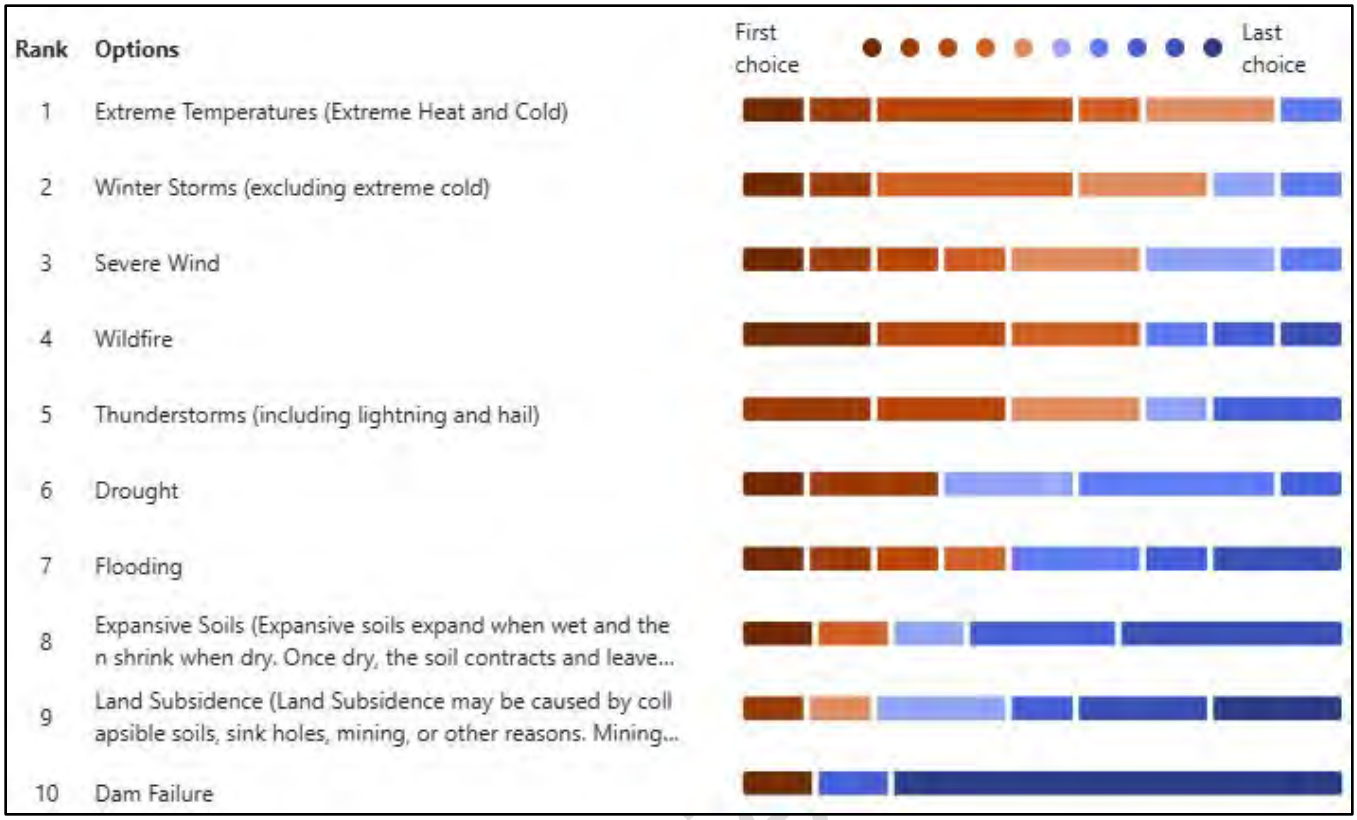


Figure 3.1 – The Hazard Screening Tool Results

The McKinley County HMP profiles nine of the 14 total hazards from the 2023 State of New Mexico HMP. Without concrete historical information on occurrences, damages, or impacts to the community, the Planning Team determined not to profile Earthquakes, Expansive Soils, Landslides, Land Subsidence, and Volcanoes. These hazards will be monitored for potential inclusion in the next plan update, scheduled for 2031. **Table 3.1** lists all of the natural hazards from the State of New Mexico State HMP and whether or not they are included or excluded in this plan update. Further explanations on why these hazards have been excluded from the plan are listed in the paragraphs below.

Table 3.1 – Hazard Inclusion

Hazard	Included/Excluded	Summary Justification
Dam Failure	Included	High Hazard Dams Present
Drought	Included	Historical Records
Extreme Temperatures (Heat and Cold)	Included	Historical Records
Flood/Flash Floods	Included	Historical Data, Hazard Areas Identified
High Wind	Included	Historical Records
Severe Winter Storms	Included	Historical Records
Thunderstorms (Lightning and Hail)	Included	Historical Records
Tornadoes	Included	Historical Records
Wildfire/WUI Fire	Included	Historical Records, Hazard Areas Identified
Earthquakes*	Excluded*	No Recorded Damages/Occurrences

Hazard	Included/Excluded	Summary Justification
Expansive Soils	Excluded	No Recorded Damages/Occurrences
Landslide	Excluded	No Recorded Damages/Occurrences
Land Subsidence	Excluded	No Recorded Damages/Occurrences
Volcanoes	Excluded	No Recorded Damages/Occurrences

Source: Hazard Screening Tool

*Earthquakes have not been profiled in previous McKinley County hazard mitigation plans

Excluded Hazards

Earthquake

Although central and western New Mexico experience earthquakes, these are of low magnitude and intensity, rarely reaching above 4.0 and only once reaching above 5.0 to 5.1. However, earthquakes approaching these higher magnitudes can occur in the county. For instance, the San Mateo Earthquake, which occurred on May 17, 2023, reached a magnitude of 3.8 and resulted in weak to light shaking that was strong enough to be felt without resulting in damage (USGS, 2023). The San Mateo Earthquake was fairly high in magnitude relative to what the county tends to experience but did not result in notable damage. Earthquakes in the county are only anticipated to have these minor impacts. Therefore, the Planning Team determined the earthquake hazard would not be profiled.

Expansive Soils

Expansive soils, also locally called adobe or clay, are fine-grained soils generally found in areas that historically were a floodplain or lake areas. Expansive soils swell when wet and shrink when dry. According to the State of New Mexico HMP, expansive soils pose a low risk, as McKinley County is primarily in an area where less than 50% of soils have high swelling potential. Therefore, the Planning Team determined not to profile the hazard for this plan update but may consider profiling it in future plan updates.

Landslide

Landslides are the downward and outward movement of rock or soil on slopes. Although generally associated with mountainous regions, sometimes they can occur in low-relief areas. According to the State of New Mexico HMP, landslides pose a low risk, and there are no recorded instances of damage. Therefore, the Planning Team determined not to profile landslides for this plan update. However, there have been previously reported landslides in the county, and Preparedness Area 4 is susceptible to deep-seated landslides and rockfall. Since McKinley County has sizable areas with relatively high potential for deep-seated landslides or rockfall, the Planning Team may consider profiling this hazard in future plan updates.

Land Subsidence

Land subsidence is the loss of surface elevation due to the removal of water, oil, natural gas, or mineral resources from the ground by pumping, fracking, or mining activities. According to the State of New Mexico HMP, the Preparedness Area 4 region is highly to extremely susceptible to collapsible soils in Central McKinley County along the I-40 corridor. These highly susceptible regions are associated with badlands, broad ephemeral streams, clay-rich sedimentary rocks, and extensive eolian deposits. Additionally, historic mining in the County is known to cause land subsidence. Allison, New Mexico, is one of the historic mining communities that are faced with hazards associated with underground mining, causing multiple sinkholes and tension cracks. The state HMP identifies land subsidence as posing a low risk to McKinley County; therefore, the Planning Team decided not to profile Land Subsidence. However, the Planning Team expressed concern for land subsidence caused by

historical mining and may consider profiling this specific concern in future plan updates (Environmental Assessment: Allison Mine Subsidence Mitigation Project, 2022).

Volcano

Although there are suspected subterranean lava flows near the planning area, there is no modern recorded activity that would reasonably demand mitigation activities counter to them. Therefore, the Planning Team determined that volcanoes would not be profiled

Disaster Declarations

McKinley County has been designated as an affected area by federal declarations ten times. These declarations show a broad picture of which hazards pose the greatest threat to the planning area. Flooding and severe storms pose the greatest threat to the planning area as they have caused disaster declarations six times since 1972. **Table 3.2** lists each federal disaster declaration number, declaration date, the hazards type, and the dates of the events.

Table 3.2 – Disaster Declarations

Designation	Declaration	Hazards	Start Date	End Date
DR-346	08/01/1972	Flooding, Severe Storms	08/01/1972	08/01/1972
DR-380	05/11/1973	Flooding, Severe Storms	05/11/1973	05/11/1973
DR-992	06/07/1993	Flooding, Severe Storms	01/05/1993	02/27/1993
EM-3154	05/10/2000	Wildfires	05/05/2000	07/07/2000
EM-3229	09/07/2005	Hurricane Katrina	08/29/2005	10/01/2005
DR-1659	08/30/2006	Flooding, Severe Storms	07/26/2006	09/18/2006
DR-1936	09/13/2010	Flooding, Severe Storms	07/25/2010	08/09/2010
DR-4152	10/29/2013	Flooding, Mudslides, Severe Storms	09/09/2013	09/22/2013
DR-4529	04/05/2020	COVID-19 Pandemic	01/20/2020	05/11/2023

Source: FEMA - Disasters and Other Declarations

3.3 – Dam Failure

A dam is a barrier across flowing water that obstructs, directs or slows down the flow, often creating a reservoir, lake or impoundment. Most dams have a section called a spillway or weir, over or through which water flows, either intermittently or continuously.

Dams can fail in a number of ways. A rainy day failure occurs when heavy rain exceeds the storage capacity of the dam and overflows the dam. A sunny day (or piping) failure occurs due to slope failure, smaller structural faults, or a controlled spillway release done to prevent full failure of overflowing water. Sunny day failures release a dam's water over a period of time based on the size of the leak. In these scenarios, it is assumed the dam is holding its normal water volume. A full or sudden failure caused by a major structural integrity issue is classified as a percentage of the probable maximum precipitation (PMP), 50% PMP Breach. A 50% PMP Breach means there was a sudden release of water while the dam is holding 50% of its maximum volume. In each instance, an overwhelming amount of water and potentially debris is released.

Common causes for dam failure include:

- Sub-standard construction materials/techniques
- Spillway design error
- Geological instability caused by changes to water levels during filling or poor surveying
- Sliding of a mountain into the reservoir
- Poor maintenance, especially of outlet pipes
- Human, computer, or design error
- Internal erosion, especially in earthen dams
- Earthquakes

Responding to a dam failure would be extensive and require a wide-ranging response and recovery efforts for reconstruction of the original flood control structures, and any damaged property, as well as medical care to attend to any injuries or fatalities. There is usually little to no warning in the event of a dam failure, and depending on what lies below a dam, the damage can be minimal or catastrophic.

High Hazard Potential Dam (HHGP) Grant Program

The High Hazard Potential Dam grant program focuses on reducing risks associated with high-hazard dams and provides financial assistance for rehabilitation projects aimed at addressing structural issues, enhancing safety, and ensuring compliance with current dam safety standards. The New Mexico State Office of Dam Safety is working with FEMA to offer this program, which is anticipated to be available by the end of 2025. Non-federally owned dams with high-hazard potential are eligible for the program if they have an EAP in place and are part of the state dam safety program. Contact was made with the two non-federally operated dams, McGaffey Lake Dam and Ramah Dam, to provide information on the program. The McGaffey Lake Dam expressed interest in participating, and a point of contact for the Ramah Dam said they would pass the information to the current dam board members.

Location

Information on locations for dam failures are broken down by jurisdiction below.

McKinley County

According to the USACE NID, the planning area contains 19 total dams. Of the 19 total, eight are high-hazard potential, seven are low hazard potential, three are undetermined, and one is significant.

The eight high-hazard classified dams include:

- Asaayi
- Black Rock
- McGaffey Lake
- Pescado
- Ramah
- Red Lake
- Trapped Rock
- Window Rock

Of the eight high-hazard dams in McKinley County, six are federally regulated and owned by the Bureau of Indian Affairs (BIA). The federally regulated dams include Asaayi, Black Rock, Pescado, Red Lake, Trapped Rock, and Window Rock. The McGaffey Lake Dam and Ramah Dam are both state regulated by the New Mexico Office of the State Engineer (NMOSE) Dam Safety Bureau. The McGaffey Lake Dam is owned by the New Mexico Department of Game and Fish, and the Ramah Dam is owned by the Ramah Land and Irrigation Company. Federal dams, like those owned by BIA, are not regulated by the NMOSE Dam Safety Bureau but are maintained and inspected by the constructing agency. More information on the high-hazard dams, such as dam volume, storage capacity, and condition, is detailed in **Table 3.3**. **Figure 3.2** on the following page depicts the location of the eight high-hazard dams in McKinley County.

According to the NID, of the eight high-hazard potential dams, seven have an EAP prepared. EAPs are available for Asaayi, Black Rock, McGaffey Lake, Pescado, Red Lake, Trapped Rock, and Window Rock Dam. These plans outline procedures for dam owners and emergency responders to follow, including notification systems, evacuation strategies, and inundation maps. Inundation maps show which areas are expected to be impacted in the event of a dam failure. Dam inundation areas are available as part of the EAPs developed for high-hazard dams. Mapping for inundation areas is discussed below in the Extent section, and inundation maps are included in Appendix H.

Table 3.3 – Dam Volume, Normal Storage Capacity, and Condition

Dam	Dam Owner	Storage (Acre-Feet)	Hazard Rating	Condition Assessment	EAP
Asaayi	BIA	1,060	High	Not available	Yes
Black Rock	BIA	2,300	High	Not available	Yes
Escalante Generating Station Evaporation Pond 5	Tri-State Generation and Transmission Association	194	Significant	Satisfactory	Yes
McGaffey Lake Dam	NM Department of Game and Fish	216	High	Poor	Yes
Pescado	BIA	720	High	Not available	Yes
Ramah Dam	Ramah Land and Irrigation Company	9,620	High	Poor	No
Red Lake	BIA	11,340	High	Not available	Yes
Trapped Rock	BIA	450	High	Not available	Yes
Window Rock	BIA	210	High	Not available	Yes

Source: USACE National Inventory of Dams.

City of Gallup

The Little Puerco Wash Flood Control Structure is owned and maintained by the City of Gallup. It is a detention basin for the temporary collection and release of stormwater. Little Puerco is a flood control structure, not a dam. Although it is typically dry, it fills with water when storm events impact the 2.12 square mile drainage above the dam. The Flood Control Structure is located southeast of the intersection of NM610 ('South Second Street') and Apache Circle.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

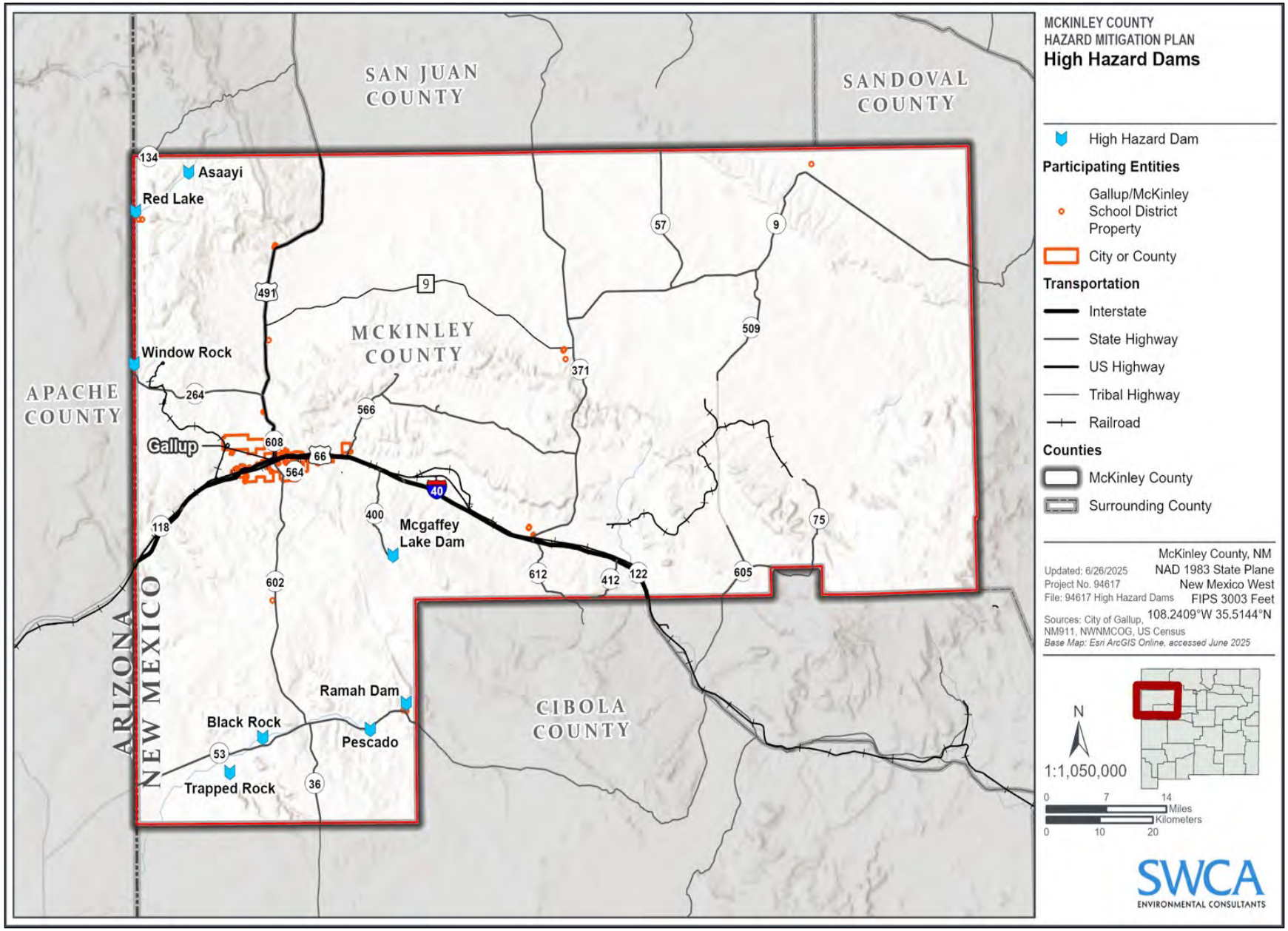


Figure 3.2 – High Hazard Dam Location

Previous Occurrences

Information on previous occurrences of dam failures are broken down by jurisdiction below.

McKinley County

There have been three historical failures of high-hazard dams in the planning area. The Black Rock Dam had two seepage incidents classified as dam failures: one in 1909 due to seepage and one in 1936 due to seepage. The Ramah Dam had one dam failure in 1937 (State of New Mexico HMP, 2023).

The inspection schedule below shows the last recorded major inspections for each dam as well as the intended intervals for the inspections. It is likely that any major structural problems would be uncovered during these inspections. **Table 3.4** shows the last inspection dates ranging from 2019 to 2024, based on the most recent information available from the NID and the State OEM. Four of the high-hazard dams are in poor condition, three are satisfactory, one is fair, and one is unsatisfactory.

Table 3.4 – Dam Inspection History

Dam	Inspection Frequency	Inspection Date	Inspection Results
Asaayi Dam	5 Years	01/25/2022	Poor
Black Rock Dam	5 Years	9/30/2020	Fair
Escalante Generating Station Evaporation Pond 5	3 Years	11/21/2024	Satisfactory
McGaffey Lake Dam	1 Year	06/13/2022*	Poor
Pescado Dam	5 Years	11/12/2019	Unsatisfactory
Ramah Dam	1 Year	06/13/2022	Poor
Red Lake Dam	5 Years	06/25/2024	Satisfactory
Trapped Rock Dam	5 Years	08/05/2020	Poor
Window Rock Dam	5 Years	10/13/2023	Satisfactory

Source: USACE National Inventory of Dams.

*According to the dam point of contact, the McGaffey Lake Dam was inspected in 2025, but the paperwork has not been returned to the dam yet.

City of Gallup

No additional information is provided for the Little Puerco Wash Flood Control Structure.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Probability

Information on the probability of dam failures are broken down by jurisdiction below.

McKinley County

Since 1909, there have been two seepages and one dam failure in McKinley County. Based on this information, the probability of the county experiencing a dam failure in the coming years is near zero. Based on the Planning Team input, 'near zero' is used to take into consideration the four dams listed in poor condition. This probability is consistent for the unincorporated county, the City of Gallup, and GMCS. However, while the probability is near zero, the impact of a dam failure would be devastating to the planning area and should continue to be prioritized in planning efforts to mitigate potential risk.

The probability of a dam failure is difficult to quantify due to numerous factors that may cause a dam to fail. Factors impacting the probability and extent of dam failure are directly influenced by the type and age of the dam, its operational purpose, storage capacity and height, downstream conditions, hydrologic conditions at the time of failure, and many other factors. The presence of high-hazard potential dams without EAPs or in poor condition in the county can increase the threats associated with dam failure. The lack of an EAP reduces the communities' ability to prepare for and mitigate the impacts of a potential dam failure. Dams in poor condition may increase the probability of future dam failure events.

City of Gallup

No additional information is provided for the Little Puerco Wash Flood Control Structure.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Extent

There are numerous dams in the county, especially high-hazard dams that will inundate communities with floodwaters if they were to fail. Inundation maps, provided by the dam's EAP, for high-hazard dams are included in Appendix H and were used to analyze the extent of impacts to communities.

The magnitude of impacts due to dam failure is usually summarized in the dam's EAP, wherein downstream inundation limits are mapped based on an assumed dam failure scenario(s). The magnitude of the assumed failure event is usually based on a dam's hazard classification and size and often reflects worst-case hydrologic scenarios such as Probable Maximum Flood (PMF) conditions.

Dam failures are rare, but when they occur, they can cause loss of life and immense damage to infrastructure and the environment. According to the Interagency Committee on Dam Safety, definitions for the hazard potential of dams include the following categories:

- **Low Hazard Potential:** Dams assigned the low hazard potential classification are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.
- **Significant Hazard Potential:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas, but could be located in areas with population and significant infrastructure.
- **High Hazard Potential:** Dams assigned the high-hazard potential classification are those where failure or misoperation will probably cause loss of human life.

The extent of dam failures is broken down by jurisdiction below.

McKinley County

To obtain the most up-to-date EAPs, including inundation maps, all high-hazard dam owners were contacted. As of July 2025, specific sections of the EAPs were provided, including hard copy inundation maps from Asaayi Dam, Black Rock Dam, Escalante Pond 5, McGaffey Lake Dam, Pescado Dam, Red Lake Dam, Trapped Rock Dam, and Window Rock Dam. After repeated attempts, the EAP for Ramah Dam was not provided. Therefore, inundation maps for the Ramah Dam are not included in Appendix H. The inundation maps are located in Appendix H. A brief summary of the inundation extent, according to the inundation map for each dam, is provided below.

- **Asaayi (High Hazard)**: The Asaayi Dam inundation area extends roughly thirty-five miles from the dam. The inundation zone includes downstream structures in Fort Defiance and Indian Service Roads. The maximum water depth at peak flow is 24.7 feet.
- **Black Rock (High Hazard)**: The Black Rock Dam inundation area extends roughly over sixty miles downstream from the dam. There are hundreds of downstream structures within the Pueblo of Zuni that are within the dam inundation zone, as well as portions of NM State Road 53, which runs through the center of town and Indian Service Routes to the main roads. The maximum water depth at peak flow is 36.7 feet.
- **Escalante Evaporation Pond 5 (Significant)** The Escalante Evaporation Pond 5 inundation area extends roughly six miles southeast of the dam. The Dam is classified as Significant due to the lack of habitable structures, recreational facilities, and roadways in the potentially legal flood zones that could result in probable loss of life. There are a few potentially occupied buildings in the inundation area, as well as a few local roads and the Escalante and Western Railroad. The maximum water depth at peak flow is 3.6 feet.
- **McGaffey Lake Dam (High Hazard)**: The McGaffey Lake Dam inundation area extends roughly eight miles southwest from the dam, south of Gallup and north of Zuni Pueblo. The maximum water depth at peak flow is 10.9 feet.
- **Pescado (High Hazard)**: The Pescado Dam inundation area extends roughly 12 miles from the dam. Portions of NM State Road 53 are in the inundation area, as well as Indian Service Routes and other local roads. There are not a large number of downstream structures within the inundation zone, though there are what appear to be some residential structures within the zone south of Black Rock. The maximum water depth at peak flow is 20.9 feet.
- **Red Lake (High Hazard)**: The Red Lake inundation area extends roughly 76 miles from the dam. There are potentially inundated structures in the Fort Defiance area, as well as many local and BIA roads. The maximum water depth is 21.6 feet.
- **Trapped Rock (High Hazard)**: The Trapped Rock Dam inundation area extends roughly nine miles from the dam. The inundation area impacts the southern area of the Pueblo of Zuni, including some downstream structures and roads and Indian Service Routes, but does not reach NM State Road 53. The maximum water depth at peak flow is 11.1 feet.
- **Window Rock (High Hazard)**: The Window Rock inundation area extends roughly 12 miles southwest of the dam. The inundation area includes potentially occupied structures and impacts a portion of the NM State Road 264, local roads, and Indian Service Routes. The maximum water depth at peak flow is 8.7 feet.

City of Gallup

While the Little Puerco Wash Flood Control Structure is located within City limits, the dam is usually dry; it fills with water when storm events impact the 2.12-square-mile drainage area above the flood control structure.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability Assessment

Vulnerability is a description of which assets, as defined by the community, within locations identified to be hazard-prone, are at risk from the effects of identified hazard(s). In this section, structures, critical facilities, population, and systems are evaluated to better understand vulnerabilities to such assets in order to effectively

mitigate risk from hazards. **Table 3.5** details how each of the jurisdictions ranked Dam Failure. The City of Gallup had the highest PRI ranking while GMCS has the lowest PRI ranking comparatively.

Due to a lack of data, including current inundation map shapefiles, the vulnerability assessment was conducted qualitatively using the EAPs. Without the shapefiles of the inundation areas, SWCA was unable to accurately assess which specific structures and corresponding class value, number of populations and housing units, and specific impact on systems that a dam failure would have. The still inundation maps provided in the EAPs are not sufficient to do a complete analysis. Mapping to assess which critical facilities would be impacted by a dam failure is not complete due to a lack of data. Since the six BIA-owned dams within the County are focused on preparedness and response, a summary of impacts to structures, critical facilities, and population or systems was not included in their EAPs and could not be used for this vulnerability assessment. Any information available for specific dams in this vulnerability assessment is provided.

Table 3.5 – Summary of PRI for Dam Failure

Jurisdiction	PRI Ranking
McKinley County	2.20
City of Gallup	3.20
GMCS	1.40

Vulnerability of and Impact on Structures

The planning area's structural vulnerability and impact from high-hazard dam failure could not be analyzed in detail due to a lack of inundation mapping data and shapefiles. Although efforts were taken to obtain shapefiles, successful results were not achieved by the established deadlines. Vulnerability of and impacts to structures were informed by the EAPs and generalized knowledge of impacts from dam failures. Vulnerability of and impacts on structures are broken down by jurisdiction below.

McKinley County

Structures within a dam failure inundation area are typically at extreme risk. The water level of a dam failure can range from inches, causing damage similar to small floods, to completely submerging or clearing a structure, depending on the anticipated inundation depths. The speed of the water release can also cause variations in the impact. A slow flow will cause damage similar to a riverine flood. However, a fast-moving flow has the potential to completely destroy a structure. Additionally, dams retain sediment and debris behind them, which, when a dam ruptures, is released and carried with the water. Severity of impacts is also influenced by weather and reservoir level at the time of failure. During lower-level times, inundation will generally be lower than if the reservoir is full or has been receiving high amounts of precipitation and stormwater conditions.

The McGaffey Lake Dam EAP states that a breach could inundate multiple residential structures, commercial structures, and local roads. Structures within or near the inundation limits of Nutria Creek (immediately downstream of the dam) and Rio Nutria are at risk. Similarly, an Escalante Generating Station Pond 5 dam breach could inundate multiple residential structures and local roads. Structures within or near the inundation limits of Casamero Draw and Mitchell Draw are at risk (Escalante Generating Station Pond 5 EAP).

Although the Ramah Dam does not have an updated EAP, the community of Ramah, which contains many residential and commercial structures, is downstream from the Dam and is at risk of flooding and damage from a dam failure.

City of Gallup

While the Little Puerco Wash Flood Control Structure is located within City limits, the dam is usually dry and poses minimal risk to structures.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability of and Impact on Critical Facilities

Vulnerability of and impacts on critical facilities are broken down by jurisdiction below.

McKinley County

Based on a desktop evaluation of the hard copy inundation map and mapped critical facilities for the Ramah Dam, the following are at risk should a dam failure occur:

- Ramah Elementary
- Ramah Middle
- Ramah High School
- The water system
- NM State Road 53
- Other nearby roadways

City of Gallup

While the Little Puerco Wash Flood Control Structure is located within City limits, the dam is usually dry and poses minimal to no risk to critical facilities.

Gallup-McKinley County Schools

The majority of County Schools' structures are not threatened by the planning area's high-hazard dams, except for the three schools noted above in Ramah.

Additional evaluation is needed to fully understand the risk to critical facilities if a dam failure were to occur. Future planning efforts should prioritize obtaining the geographic boundaries of the dam inundation areas to identify which fall within the boundary.

Vulnerability of and Impact on Population

Vulnerability of and impacts on the population are broken down by jurisdiction below.

McKinley County

Populations within a dam failure inundation area are at high risk, exposed, and vulnerable. According to the FEMA Community Resilience Challenges Index (CRCI), McKinley County is rated as experiencing the highest challenges to community resiliency. Depending on the speed of the water's arrival, a community's population may not have time, awareness, or the ability to evacuate, depending on different factors such as lack of access to transportation or disability. Populations that are at higher risk in the event of a dam failure, primarily individuals with disabilities or who are over 65, may have more difficulty evacuating or gathering supplies prior to a failure. Additionally, evacuation routes can be blocked by the dam waters, impeding evacuation efforts and trapping residents. These barriers have the potential to exacerbate conditions and cause loss of life. Depending

on the elevation of the water, a community's population may not have any available shelter to avoid the flood waters (FEMA CRCI, 2025).

- **McGaffey Lake Dam**: Based on the McGaffey Lake Dam EAP, the identified housing units threatened by a failure of the McGaffey Lake Dam are classified as secondary and seasonal properties. Therefore, no known permanent residents live in these structures, leaving an unknown number of temporary or seasonal residents at risk.
- **Escalante Generating Station Pond 5 Dam**: Based on the Escalante Generating Station Pond 5 Dam EAP, the identified residential structures do not have a known permanent number of residents that live in these structures, leaving an unknown number of temporary or seasonal residents at risk.
- **Ramah Dam**: Although the Ramah Dam does not have an updated EAP, a desktop evaluation was conducted of the hard copy inundation map. This assessment shows that the inundation zone covers the community of Ramah. Damage to structures and critical facilities, particularly the water and roads, could cause a significant impact to the community members.

City of Gallup

While the Little Puerco Wash Flood Control Structure is located within City limits, the dam is usually dry and poses minimal risk to the population.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability of and Impact on Systems

Vulnerability of and impacts on systems are broken down by jurisdiction below.

McKinley County

Dam failure flooding presents a threat to life and property, including buildings, their contents, and their use. Large flood events can affect crops and livestock as well as lifeline utilities (e.g., water, sewage, and power), transportation, jobs, tourism, the environment, and the local and regional economies.

- **McGaffey Lake Dam**: In the event that the McGaffey Lake Dam fails, multiple residential and commercial structures, as well as local roads, would be impacted. Transportation systems would be impacted, including State Highway 400, just downstream of the dam, and Nutria Road along the Diversion Reservoir. It is not anticipated that other areas' systems would be impacted by the failure of the McGaffey Lake Dam.
- **Escalante Generating State Evaporation Pond #5**: While the Escalante Generating Station is no longer operational, failure of any dam classified as 'significant hazard' could cause "economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns" within the planning area. However, without additional information, more details cannot be provided.
- **Ramah Dam**: As described above, in the event that the Ramah Dam fails, the community of Ramah, structures, and critical infrastructure would be impacted. Regarding systems, water and transportation would be impacted. Impacts to New Mexico State Road 53 may affect evacuation and those traveling to the southern portion of McKinley County. Failure of the Ramah Dam does not pose a major threat to the remainder of the planning area.

City of Gallup

While the Little Puerco Wash Flood Control Structure is located within City limits, the dam is usually dry and poses minimal risk to systems.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Key Considerations

Since inundation maps and data were not provided for all high-hazard dams, an analysis assessing structural and population vulnerability was not conducted. Therefore, there are limitations in completely understanding the county's vulnerability to dam failures. It is advised that future plan updates prioritize early and persistent communication with the dams' point of contacts to ensure all available data is retrieved and a thorough vulnerability assessment is completed.

3.4 – Droughts

Drought is defined as a precipitation deficiency over an extended period of time that results in a water shortage (FEMA, 2025). Drought can often be difficult to define and determine a precise moment of its impacts due to varying geographic location, longevity, and severity. This hazard may have a slow onset and may impact different resources and community assets differently over time. To account for this variation in impacts and residency, drought is often categorized into four types based on geographic location and area of impact (SNAPP, 2025):

- **Meteorological:** defined by a period of substantially diminished precipitation duration and/or intensity. The commonly used definition of meteorological drought is an interval of time, generally on the order of months or years, during which the actual moisture supply at a given place consistently falls below the climatically appropriate moisture supply.
- **Hydrological:** refers to deficiencies in surface and subsurface water supplies. It is measured as stream flow, snowpack, and as lake, reservoir, and groundwater levels. There is usually a delay between a lack of rain or snow and less measurable water in streams, lakes, and reservoirs. Therefore, hydrological measurements tend to lag behind other drought indicators.
- **Agricultural:** occurs when there is inadequate soil moisture to meet the needs of a particular crop at a particular time. Agricultural drought usually occurs after or during meteorological drought, but before hydrological drought, and can affect livestock and other dry-land agricultural operations.
- **Socioeconomic**: occurs when physical water shortages start to affect the health, well-being, and quality of life of the people, or when the drought starts to affect the supply and demand of an economic product.

Drought monitoring is conducted and reported by multiple agencies in the U.S. using a variety of indices related to the above drought types. Indicators and metrics used to track drought severity conditions and extent include the percentage of normal precipitation, the number of days with no precipitation, soil moisture, stream flow, groundwater well levels, and vegetative health. To support these measurement metrics, multiple specific indices have been developed to standardize drought monitoring. These include the following indices:

- **Palmer Drought Severity Index (PDSI):** This tool incorporates rainfall, temperature, and historic conditions data into a formula that outputs a value ranging from -10 (dry) to +10 (wet). This tool has been effective in quantifying long-term drought in the U.S. (UCAR, 2025).
- **Drought Monitor (USDM):** The USDM is a map released every Thursday, showing where drought is and how bad it is across the U.S. and its territories. The map uses six classifications: normal conditions, abnormally dry (D0), showing areas that may be going into or are coming out of drought, and four levels of drought: moderate (D1), severe (D2), extreme (D3), and exceptional (D4).

The USDM measures drought conditions through data and maps produced weekly that depict the current status of drought. The USDM is developed and maintained by the National Drought Mitigation Center. The presence and severity of drought conditions in the county are recorded weekly.

The NIDIS Act of 2006 (Public Law 109-430) prescribes an interagency approach for drought monitoring, forecasting, and early warning (NIDIS, 2007). The NIDIS maintains the U.S. Drought Portal, which is a centralized, web-based access point to several drought-related resources, including the USDM and the U.S. Seasonal Drought Outlook (USSDO). These tools show the location of drought conditions at a given point in time.

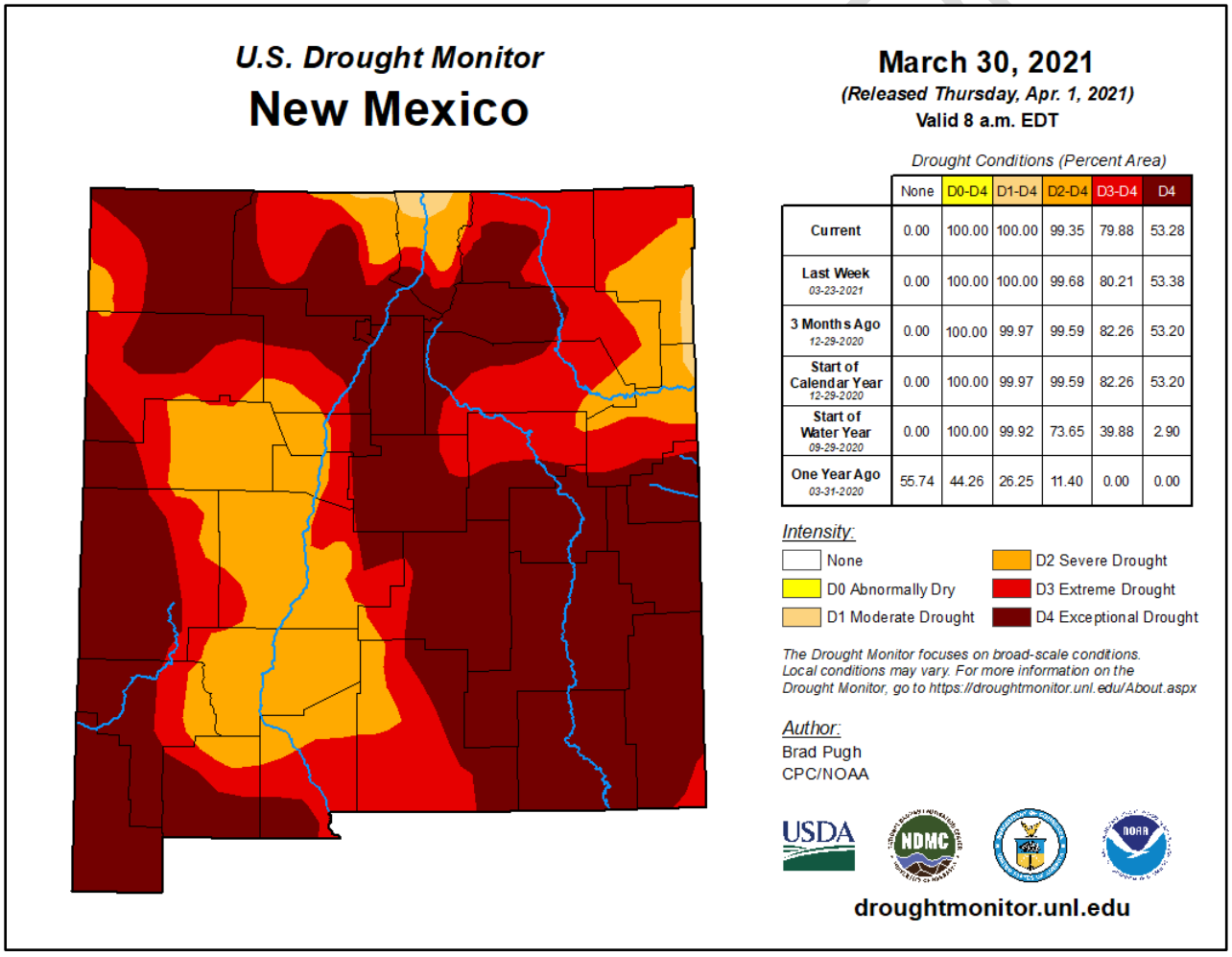
Location

Information on drought location is broken down by jurisdiction below.

McKinley County

Drought conditions may occur anywhere within McKinley County. According to drought severity mapping from the USDM, the central through northeast portion of the county tends to experience more severe drought when compared to the southwest portion of the county. Generally, areas north and east of Pinedale have more frequent occurrences and longer lasting periods of severe to exceptional drought. Though there is not a specific spatial extent associated with drought conditions, drought conditions may vary within the County at a given point in time.

Figure 3.3 shows the greatest percentage area of the county in exceptional drought that was recorded during the planning period, which occurred in March of 2021 (USDM, 2025). The figure shows the southwest corner and northeast through north central portions of the county in exceptional drought, the majority of the County in extreme drought, and the southeast corner and south-central border in severe drought.



Source: USDM

Figure 3.3 – U.S. Drought Monitor Map

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Previous Occurrences

Information on previous occurrences of drought is broken down by jurisdiction below.

McKinley County

Drought is a regular occurrence in McKinley County. Since the previous plan update, no deaths, injuries, property damage, or crop damage were listed in the USDA secretarial disaster declarations, the National Centers for Environmental Information (NCEI) database, or the USDM for recorded drought events.

The USDA monitors drought conditions and issues secretarial disaster declarations for extreme drought events. Six instances of drought became severe enough to warrant a secretarial disaster declaration from the USDA during this period, shown in **Table 3.6**. There was at least one drought disaster declaration every year, with the exception of 2021, for McKinley County. The 2023 State of New Mexico Hazard Mitigation Plan discusses exceptional drought conditions throughout the state in 2021 and states that one statewide USDA drought designation was issued. However, this entry was not listed in the USDA database, which may constitute a data entry error. During the summer of 2025, when this plan was written, and after data collection for drought was completed, the governor of New Mexico signed an executive order (EO) declaring drought and severe fire conditions throughout the state and urging municipal and county governments to impose water use restrictions.

Table 3.6 – USDA Secretarial Drought Declarations for McKinley County

Crop Disaster Year	Designation Number
2020	S4646
2020	S4651
2020	S4779
2022	S5145
2022	S5154
2023	S5378
2023	S5597
2024	S5668
2024	S5678

Source: USDA

There have been no presidential disaster declarations for drought since the previous plan update. However, there have been several EOs issued by the Office of the Governor for drought during this time. These EOs are summarized in **Table 3.7** and were issued statewide.

Table 3.7 – State Executive Orders (EO) for Drought Conditions

Executive Order Number	Date Issued	Event Description	Area Covered by Executive Order
#2024-016	5/15/2024	An EO was issued for drought and severe fire conditions. The EO urged counties and municipalities to enact firework bans. Around 97% of the state was experiencing drought conditions.	Statewide

Executive Order Number	Date Issued	Event Description	Area Covered by Executive Order
#2023-060	5/17/2023	An EO was issued for drought and severe fire conditions. The EO urged counties and municipalities to enact firework bans. Around 55% of the state was experiencing drought conditions.	Statewide
#2022-022	4/25/2022	An EO was issued for severe drought and fire conditions. The EO urged counties and municipalities to enact firework bans. Around 93% of the state was experiencing severe drought conditions or worse.	Statewide
#2021-028	6/14/2021	An EO was issued for drought and severe fire conditions. The EO urged counties and municipalities to enact firework bans. Around 88% of the state was experiencing severe drought conditions.	Statewide
#2020-084	12/9/2020	An EO was issued to declare a drought. Around 85% of the state was experiencing severe drought conditions or worse.	Statewide

Source: Office of the Governor

The metrics for determining past drought events are generally recorded at a county or regional scale. The nature of the drought hazard can make it difficult to assess where drought conditions start and stop both spatially and temporally. As such, past drought events are not specific to individual jurisdictions. It is also recognized that drought conditions may vary within the county at a given time, even when conditions are assessed on a county scale.

Since 2021, the National Drought Mitigation Center has recorded 210 weeks of drought conditions in the county, shown in **Table 3.8**. The majority of droughts have been D0 or D1, following D2 lasting 149 weeks, D3 at 101 weeks, and D4 at 37 weeks.

Table 3.8 – Number of Weeks Experiencing each Drought Severity Level

Drought Severity	Number of Weeks
D0	210
D1	210
D2	149
D3	101
D4	37

Source: USDM

The table above illustrates the total number of weeks in each drought category. In addition to this metric, it is important to consider consecutive weeks of drought experienced. Extended drought periods are likely to have a more dramatic and long-term impact on water resources, economic activity, and human health. Since the last plan update in 2021, McKinley County has experienced multiple periods with consecutive weeks of drought. Extended periods in the D4 severity level will have the highest impact and longest recovery time. **Table 3.9** below lists the longest consecutive weeks in each drought category.

Table 3.9 – Longest Consecutive Weeks in Each Drought Severity Level

Drought Severity	Number of Consecutive Weeks	Time Period
D0	210	12/29/20 – 1/6/2025
D1	210	12/29/20 – 1/6/2025

Drought Severity	Number of Consecutive Weeks	Time Period
D2	113	12/29/20 – 2/27/2023
D3	80	12/29/20 – 7/11/2022
D4	30	12/29/20 – 8/9/2021

Source: USDM

According to USDM, there have been three drought events throughout the county since the last plan update. These events ranged in duration from twelve weeks to 100 weeks, with an average event duration of 45.6 weeks. Drought events from the USDM were determined to begin when more than 50% of the county was classified as being under severe drought conditions or worse (which is the D2 category in the USDM). A drought event was considered to have ended when less than 50% of the county was under severe drought conditions or worse again. The Drought Task Force at the state level is initiated when 50% of the state enters severe drought conditions or worse, which is why these metrics were used to determine drought events. This approach was also based on the advice of a Drought SME.

According to NOAA's NCEI Storm Events database, there have been approximately 41.7 drought events per year since the last plan update. A total of 188 drought events were recorded by NCEI in the weather zones that include McKinley County.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Probability

Information on the probability of drought is broken down by jurisdiction below.

McKinley County

Based on historical events, it is likely that drought conditions will persist in the future, including severe drought conditions that may warrant state or federal declarations for additional assistance to respond to the event.

It is difficult to predict the frequency of drought conditions, partly due to uncertainty about when a drought begins and ends. Current technology does not exist to predict whether drought conditions will persist for more than a couple of months into the future. There are also no commonly accepted return periods or non-exceedance probabilities for defining the risk from drought (such as the 100-year or 1% annual chance of flood). Despite difficulty in predicting drought conditions in the future, resources can project drought conditions several months ahead. The USSDO, shown in **Figure 3.4**, is an approximately three-month projection of potential drought conditions developed by the National Weather Service's Climate Prediction Center. The USSDO reflects current capabilities to predict drought conditions only in the short-term. The USSDO released at the end of February 2025 showed drought conditions likely to develop or persist for the County.

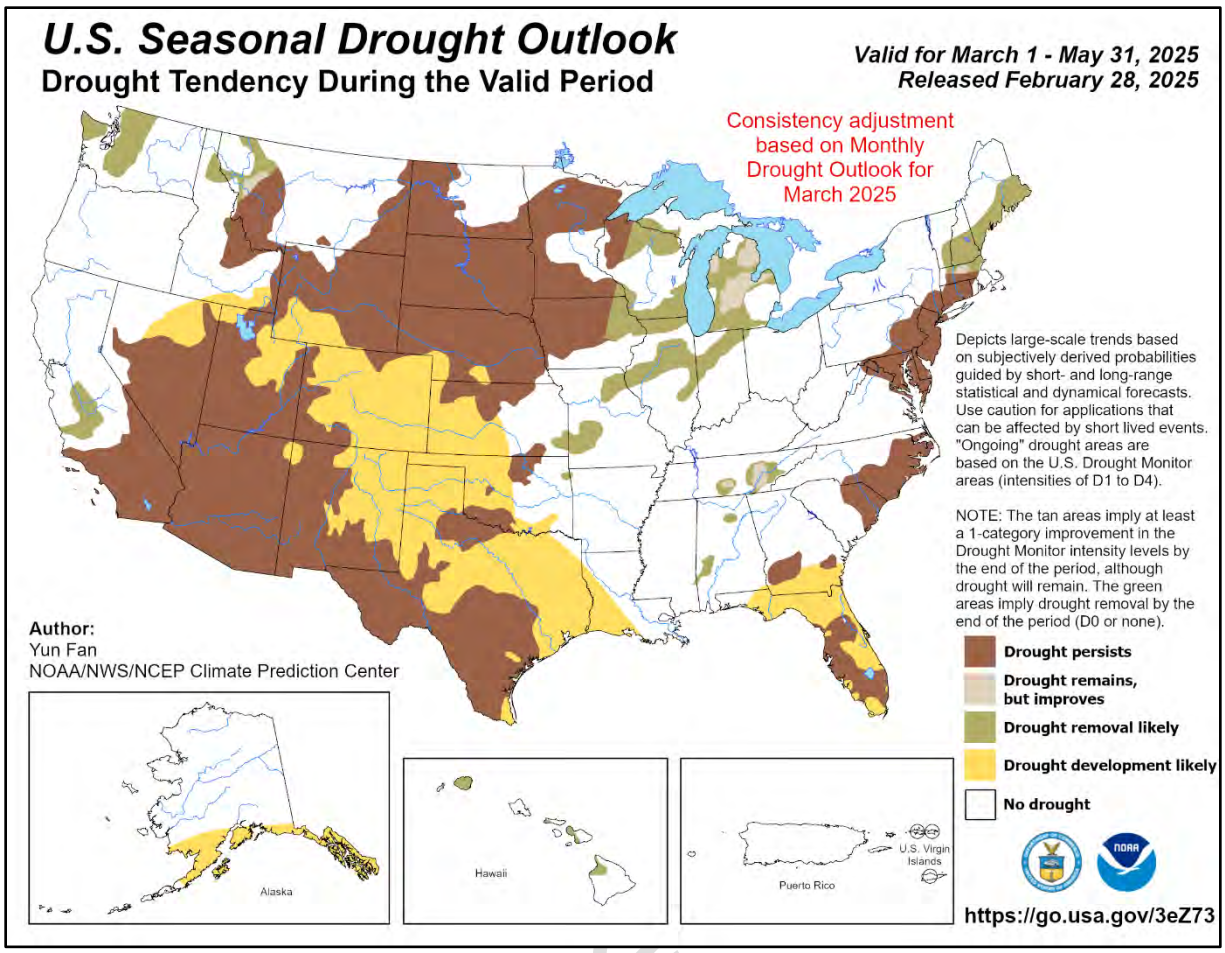


Figure 3.4 – U.S. Seasonal Drought Outlook Map

The probability of drought events is not readily available at a scale small enough to present probability by jurisdiction.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Extent

Drought conditions usually span the majority of the county when they occur. Drought severity can vary across the county depending on different factors and conditions. Information on the extent of drought is broken down by jurisdiction below.

McKinley County

Drought in Mckinely County can encompass the entire county and range from abnormally dry to exceptional drought for most of the year. The magnitude of drought is usually measured in time and the severity of the hydrologic deficit. The U.S. Drought Monitor (USDM) scale, shown in **Table 3.10**, is a commonly used categorization for drought severity. This tool incorporates climate conditions and indicators over multiple time scales to provide the best assessment of current conditions.

Table 3.10 – Drought Monitor Scale

Category	Description
None (Gray)	Normal or wet conditions
D0 (Light Yellow)	Abnormally Dry
D1 (Light Orange)	Moderate Drought
D2 (Orange)	Severe Drought
D3 (Red)	Extreme Drought
D4 (Dark Red)	Exceptional Drought

Source: USDM

The USDM shows the severity of drought conditions in the county at a given point in time, along with the percentage of area under different levels of drought. **Figure 3.5** shows the magnitude of drought conditions that have occurred in the county since the last plan update and the length of time they persisted. McKinley County experienced an exceptional drought period (D4) with the most extreme conditions occurring between November 2020 and July 2021, when at least 40% of the county experienced exceptional drought conditions consistently. During this period, the entire county had been under extreme drought conditions or higher (D3) for close to eight months.

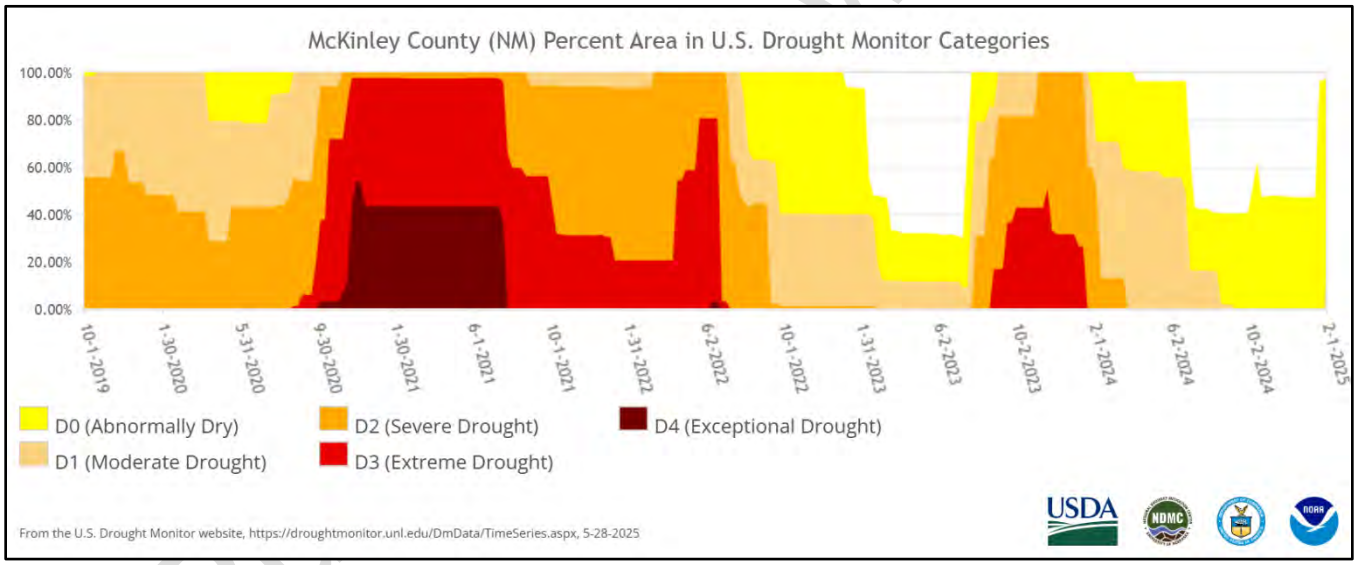


Figure 3.5 – McKinley County Percent Area in U.S. Drought Monitor Categories

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability Assessment

Vulnerability is a description of which assets, as defined by the community, within locations identified to be hazard-prone, are at risk from the effects of identified hazard(s). In this section, facilities, critical facilities, population, and systems are evaluated to better understand the vulnerabilities to such assets in order to

effectively mitigate risk from hazards. **Table 3.11** details how each of the jurisdictions ranked Drought. The City of Gallup had the highest PRI ranking while GMCS has the lowest PRI ranking comparatively.

Table 3.11 – Summary of PRI for Drought

Jurisdiction	PRI Ranking
McKinley County	3.10
City of Gallup	3.40
GMCS	2.30

Vulnerability of and Impact on Structures

Vulnerability of and impacts on structures are broken down by jurisdiction below.

McKinley County

Drought generally has a smaller impact on buildings than many of the other hazards discussed in this plan. However, drought may still impact structures in several ways. Under extreme or extended drought conditions, soil will dry and can often subside, or sink. This can create issues with the foundation of facilities and structures. Although this may not cause immediate concern, over time, it may require actions to fix foundations and stabilize structures. Soil dryness and subsidence are also related to cascading impacts of other hazards that can pose a risk to structures. The State of New Mexico HMP suggests soil in McKinley County is primarily composed of 50% or less clays with high swelling potential, indicating low risk from soil expansion and shrinking. Drought may also have secondary or cascading impacts on structures. Notably, under extended drought conditions, dried soil will lose its capacity to absorb water, becoming hydrophobic. This can increase the likelihood of debris flows and excess sediment transport if the drought period is followed by a significant precipitation event. This can pose a risk to structures, especially if vegetation has been lost due to drought.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability of and Impact on Critical Facilities

Vulnerability of critical facilities to drought is similar to that of structures in terms of the integrity of the structures themselves. Communication towers, hospitals, water treatment plants, dams, and other infrastructure are instrumental to county function, and the stability of their foundation should be considered with regard to cascading drought impacts. Water systems are largely impacted during droughts and may mandate water restrictions due to a low supply of water. Limited water could adversely impact hospitals and medical facilities. Maintaining operations and services provided by critical facilities is crucial to community safety and resilience. Vulnerability of and impacts on critical facilities are broken down by jurisdiction below.

McKinley County

The McKinley County Water Conservation Plan states that nonrenewable groundwater wells are the primary source of water for most of the county and identifies a need for increased surface water use, technology, and conservation measures. Drought puts additional stress on surface water and could reduce the ability of the county to augment groundwater extraction (McKinley County Water Conservation and Drought Management Plan, 2007).

City of Gallup

According to the 2018 Gallup/Navajo-Gallup Water Supply Project (NGWSP) Water Commons Drought Contingency Plan, the City is entirely reliant on groundwater and mined at a higher rate than it recharges. Climate conditions are expected to slow the recharge further. Additionally, the City's groundwater levels have dropped and are expected not to meet water demands. To combat these water concerns, the City has outlined response actions to implement during drought conditions and mitigation measures to prevent risks and impacts.

Drought has two major impacts on a water system: water supply is reduced (surface water and groundwater), and water demand increases. In 2017, the City was awarded a grant to establish a drought planning task force, conduct a vulnerability assessment, and develop a framework to mitigate drought impacts. For the City of Gallup, surface water supplies are being developed through the NGWSP to provide a sustainable supply and to reduce the strain on its overtaxed groundwater resources. Protection of this resource is important today to ensure that these supplies are still viable as backup supplies in the future and, once the NGWSP is online, to ensure supply for generations to come (NGWSP, 2018).

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability of and Impact on Population

Due to existing and persistent water supply issues and lack of water availability to rural communities in McKinley County, drought poses a high risk to the population, as these issues will only continue to worsen due to changing weather patterns. Vulnerability of and impacts on population are broken down by jurisdiction below.

McKinley County

According to the FEMA CRCI, McKinley County is rated as experiencing the highest challenges to community resiliency. A primary driver of this rating is poverty rates in the county. Persons in poverty are often disproportionately affected by social and economic drought impacts, such as increased water prices, reduced working hours, specifically around agricultural operations, and decreased food access and increased prices. While these factors impact all community members, low-income individuals are more heavily impacted. Additionally, CRCI notes that the county has a low medical professional capacity and a high rate of population without medical insurance. These factors threaten the resilience of the population to health-related effects from long-term drought, such as increased dust storms. The National Risk Index report for McKinley County indicates a high level of social vulnerability to drought, but does not expect any annual loss of building value, population, or agricultural value from the hazard.

Short- and long-term drought impacts can affect the economy and the environment, and can cause both mental and physical health reductions. As drought conditions persist and impact vegetation and soil health, the likelihood of dust storms and reduced air quality increases. This is of greatest concern for residents with existing health conditions and respiratory issues. Mental health can decline during extreme drought conditions, especially for agricultural producers whose livelihood is tied to the well-being of the land and crops. Stress can also be increased, especially if water supplies are heavily impacted by a persistent drought. Additionally, the County Water Conservation Plan notes that 40% of Navajo households are reliant on water hauling to meet daily needs. Drought puts additional stress on this reliance, and accessibility can be greatly hindered by rising gas prices.

The City of Gallup

The City historically has chronic poverty and numerous low-income communities, as well as throughout the county. The City's water supply is a staple for many city and county residents, as it is common for rural residents to haul water from water stations. Since the City relies heavily on groundwater, droughts can significantly dry up groundwater supplies and potentially lead to social and economic impacts (NGWSP, 2018).

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability of and Impact on Systems

Drought has the potential to impact multiple systems that are important to the county, including agriculture, tourism, and ecological systems. McKinley County has an arid to desert climate with a monsoon season that generally lasts from July through September. The limited precipitation and snowpack reliance of the county means groundwater serves as the primary water source. Groundwater sources often lag behind surface sources in presenting drought signs and will be delayed in recovering from an extended drought period, as more time is needed for normalized precipitation to show up in well depths. Vulnerability of and impacts on systems are broken down by jurisdiction below.

McKinley County

The Environment

Similarly, many natural systems, such as forests, have a delayed response to drought. Extended dry periods or extreme periods of drought will reduce the health of forest stands, which has implications for wildfire risk. As trees dry and die, they increase the fuel load and reduce stand resilience to fire. The impacts of drought felt by communities can generally be assigned to the categories of economic, environmental, and social impacts (NIDIS).

Water Systems

While there are overlaps within these categories in the way a drought impacts resources and communities. These impacts are primarily the result of reductions in water system function, causing cascading impacts to other critical systems. During drought, all water resources may be reduced and depleted, including stream base flow, reservoir levels, and groundwater levels. Additionally, some water infrastructure may be structurally impacted by drought, especially in flood-prone areas and near drainages. Increased sediment transport may overwhelm water treatment facilities, culverts, and other small water conveyance infrastructures. Additionally, drought reduces groundwater and reservoir levels, which can result in lower-quality water needing to be treated, which can strain water treatment capacity.

Agriculture

Agricultural impacts can be difficult to predict as the severity of impacts is heavily reliant on both drought severity and plant growth stage. Early season crops are often the most vulnerable to drought, as a lack of water can kill young plants or significantly stunt yields. Soil can dry, resulting in plant stress and death, as well as soil health reductions from reduced microbial activity and nutrient cycling. This will negatively impact agricultural operations as well as the function of ecological systems. The planning area hosts 2,441 farms and ranches across 2,569,810 acres of land. Primary crops include grain, vegetables, melons, potatoes, and forage, although specific quantities on annual yield were not available (NMDA, 2022; USDA, 2022). This also includes 54,700 head of cattle, sheep, and lambs. The USDA estimates that the total value of products from these farms to be approximately $8,139,000 per year (USDA, 2022). All of them are considered vulnerable to droughts.

Ecological Systems

Wetland and forested regions are also vulnerable to extended drought periods. These systems will see a reduction in healthy vegetation, and, over time, this may result in range shifts where the vegetation composition of an area changes. Examples of this are a wetland drying, losing the ability to support species, and transitioning to grass or shrub species, or a pinon-juniper forest losing trees due to extended dry periods. Reduction of base stream flow due to drought can impact ecosystem health, particularly stream, riparian, and wetland species, which are more reliant on a consistent water supply. More broadly, drought reduces vegetative health and increases the likelihood of wildfire, even in areas that do not typically experience fires, but which may have increased fuel loading from dry or dead vegetation. Within McKinley County, 13 federally endangered, threatened, or proposed endangered species have the potential to occur, including Mexican wolf, Mexican spotted owl, Southwest willow flycatcher, Yellow-billed cuckoo, Colorado Pikeminnow, Razorback sucker, Zuni Bluehead sucker, Monarch butterfly, Suckley's cuckoo bumble bee, Mesa Verde cactus, Navajo sedge, Pecos sunflower, and Zuni Fleabane. All of these species can be impacted by habitat decline caused by extended drought and cascading events.

The City of Gallup

Water Systems

Reduced groundwater and reservoir levels are a particular concern for the City of Gallup, as the City primarily relies on groundwater supply from several aquifers, which continue to be progressively mined with little recharge. These reductions impact water availability for community, agriculture, and ecological system use with potentially long-lasting effects (NGWSP, 2018).

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Key Considerations

As discussed above, drought impacts may have a delayed onset depending on the time of year and industry or value. Drought can have many short and long-term impacts on communities, ecosystems, and economic prosperity. Onset and recovery from drought periods are highly dependent on local climatic conditions and the water use of local communities. Human activities, such as excessive irrigation, land use changes, poor erosion controls, and poorly planned municipal water use, can exacerbate a drought's effects (Williams et al. 2024).

The entire county is at risk of drought, and at least a portion of the county has been experiencing abnormally dry conditions since 2021. Agriculture, ecosystems, and water resources are the areas most likely to be affected and show signs of drought. Socioeconomic barriers to resilience in communities should also be considered, as water availability and possible increased costs for low-income community members are a primary concern. Other considerations include secondary hazards and impacts due to prolonged drought conditions, such as increased risk to wildfires and extreme heat, as these events could potentially occur at the same time, and land subsidence from excessive pumping of groundwater and sinking ground surface. The McKinley County Water Conservation Plan outlines multiple water-saving goals that may be effective in reducing vulnerability to drought, specifically impacts on populations, ecological systems, and water infrastructure. Goals outlined in the plan that may be effective for drought include implementing community-based conservation programs, reducing overall water use, and reducing annual water withdrawals.

3.5 – Extreme Temperatures: Heat and Cold

Extreme temperatures include both extreme heat and extreme cold. The primary concern with both extreme temperatures is the impact on human health. These extremes can also impact economic activities, such as agriculture and water resources, as well as damage infrastructure to roads and structures. Extreme temperatures differ from seasonal temperature anomalies in that extreme events begin to influence human activity and bodily function, negatively impact system function like plant growth and evaporation rates, and will often reach or break existing temperature records.

Extreme Heat Overview

Extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks (State of New Mexico HMP, 2023). Extreme heat is often accompanied by higher humidity rates, which influences how people experience the temperature. The higher the temperature and relative humidity, the more dangerous the conditions are for the population. The heat index, shown in **Figure 3.7**, measures the actual temperature and relative humidity to understand how the population will be affected and the likelihood of heat-related illnesses, such as heat stroke or heat exhaustion. Humidity rates at or above 40% will often increase the heat index (what the temperature feels like to the human body). As humidity increases, people lose the ability to regulate temperature through evaporative cooling (sweating), and body temperature continues to increase. This is especially problematic for people with existing conditions such as cardiovascular and respiratory issues, as extreme heat increases stress on the body. Tools such as the Heat Index and others are used to reduce potential risk from extreme heat events. Groups that are heat-sensitive or heat vulnerable face a higher risk of heat-related illnesses and adverse impacts than others. These groups include the elderly, youth, individuals taking certain medications and pre-existing conditions, outdoor workers, temporary workers, individuals without adequate cooling mechanisms, and those living in low-income communities.

Extreme heat is often exacerbated in urban settings where the presence of impermeable surfaces and lack of vegetative canopy cover create “heat islands” or urban areas with temperatures between two and ten degrees higher than the surrounding rural landscape (EPA, 2025). As changing weather patterns continue to influence global climate behavior, the occurrence of extreme or unseasonable heat will continue to increase, and heat waves will be longer (EPA, 2016).

Extreme Cold Overview

Extreme cold, like heat, is defined as unseasonably cold temperatures for a specific location. Whereas extreme heat is influenced by humidity, extreme cold is influenced by wind chill. Increased winds during cold periods will influence how our bodies experience the temperature by drawing heat from our bodies (NWS, 2025). Extreme cold can cause hypothermia, frostbite, trench foot, and severely impact the way communities function during prolonged periods. In addition to the human health impacts, extreme cold can cause damage to infrastructure by freezing or bursting pipes and can make travel dangerous when moisture freezes on the roads. Extreme cold impacts, such as travel danger, are often compounded by other hazards, most often winter storms. Extreme cold events can negatively impact the economy. For example, outdoor work may be delayed to protect workers, homes and buildings will have additional heating costs, crops can die off or have their growth negatively influenced, and transportation can be delayed or halted.

Location

Information on the location for extreme temperatures is broken down by jurisdiction below.

Extreme Heat

McKinley County

Extreme temperature events are difficult to define geographically. Similar to drought, these hazards can cover large areas with various ranges of impact over time. It is important to consider seasonal averages and prepare for extreme heat conditions during the months when they are most likely to occur.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Extreme Cold

Mckinley County

As discussed above, for extreme heat, extreme cold events are difficult to define temporally and geographically. Because of this, the entire county is susceptible to experiencing extreme cold events. It is likely that the occurrence of each extreme will correlate with seasonal temperature shifts.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

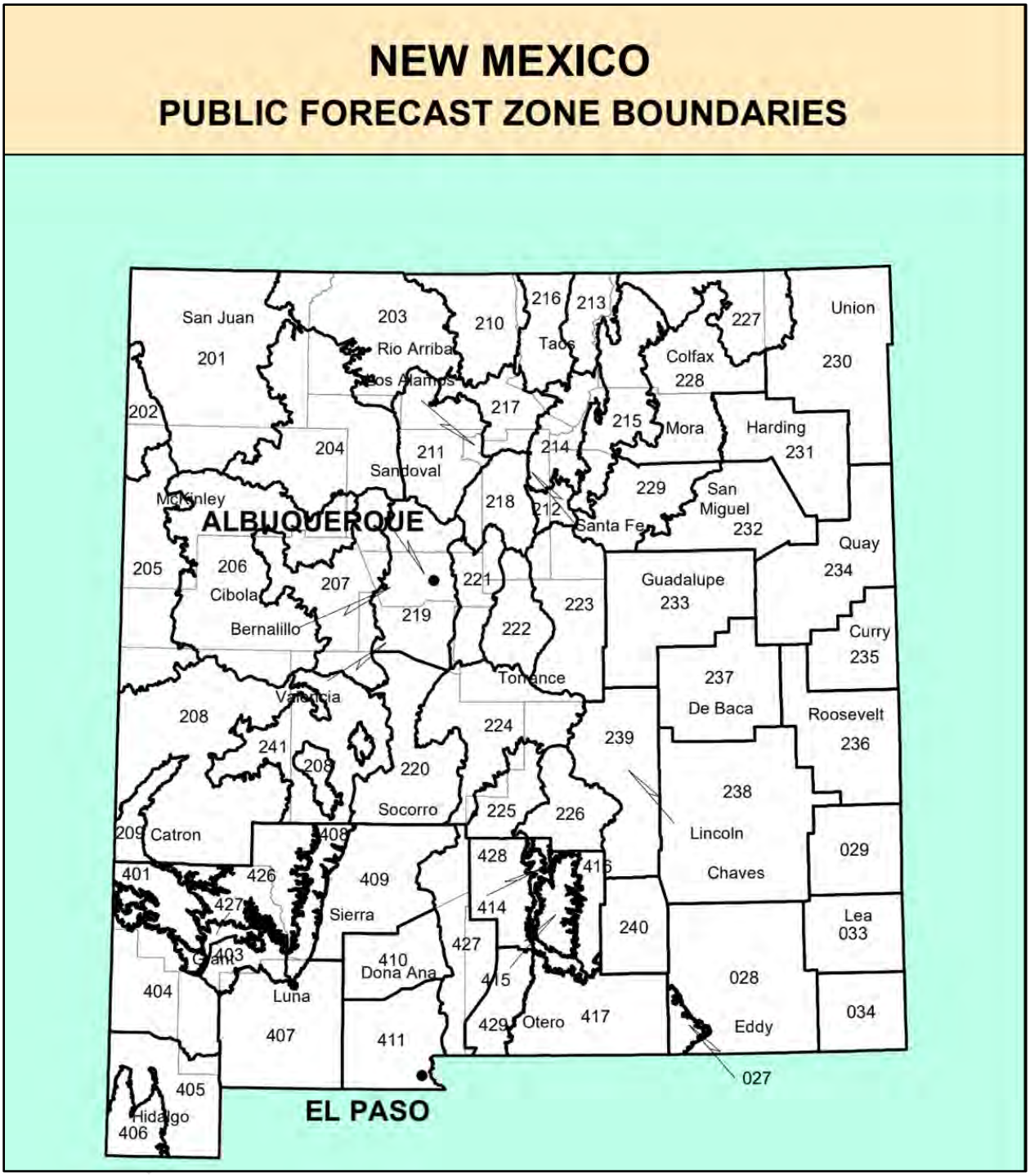
No additional information is provided for GMCS.

Previous Occurrences

To determine the number of previous occurrences that have occurred in McKinley County, the NOAA NCEI Storm Events Database was used. The Storm Events Database categorizes storm events by county and specific National Weather Service (NWS) forecast zones. There are five forecast zones in McKinley County shown in **Figure 3.6** below. Information on previous occurrences of extreme temperatures is broken down by jurisdiction below.

The forecast zone includes:

- 201: Northwest Plateau - City: Farmington
- 202: Chuska Mountains - City: Navajo
- 204: Northwest Highlands - City: Cuba
- 205: West Central Plateau - City: Gallup
- 206: West Central Mountains - City: El Morro National Monument- Thoreau
- 207: West Central Highlands - City: Grants (NWS, 2025)



Source: NWS

Figure 3.6 – New Mexico Public Forecast Zone Boundaries

Extreme Heat

McKinley County

According to the NCEI, McKinley County experienced one extreme heat event during the 2026 HMP planning period. The extreme heat event occurred on July 9, 2022, and carried through July 10, 2022. During this time, temperatures reached 106 degrees and were at least 105 degrees for sustained periods on both days. No injuries, deaths, or property damage were reported as a result of this were reported from this event (NCEI, 2025).

There are limitations in reporting extreme heat events. First, as previously discussed, temperatures do not have to reach an extreme or excessive heat classification to cause adverse human health impacts. Extreme or excessive heat conditions can cause negative health outcomes, as hot temperatures are pervasive. However, dangerous conditions can occur without reaching this severity, and as demonstrated by the lack of entries in the NCEI database, records of these conditions can be lost. Second, fatalities from heat events are notoriously underrepresented due to the way that deaths are determined and recorded. Heat can worsen pre-existing health conditions and place strain on the body, resulting in fatalities with a primary and secondary cause of death. In some cases, the fatality would likely not have occurred without the high temperatures. Heat is not always recorded as an underlying or secondary cause of death in these circumstances, which leads to substantial undercounting (Centers for Disease Control and Prevention [CDC], 2024). Extreme heat events in McKinley County that have occurred since the previous plan update are listed in **Table 3.12** below.

Table 3.12 – Extreme Heat Previous Occurrences (January 2020 - December 2024)

Region	Date	Hazard	Damages
Northwestern Plateau	7/10/2021	Extreme Heat	NA

Sources: NCEI Storm Event Database, 2024

According to the State of New Mexico HMP, seven heat-related fatalities were reported among residents of McKinley County between 2018 and 2021. Five heat events and zero extreme heat events were reported between 1980 and 2022 for Preparedness Area 4, which includes Cibola, McKinley, and San Juan Counties. These events are not representative of dangerous heat conditions, as temperatures above 90 degrees Fahrenheit can be dangerous for vulnerable groups, and these temperatures commonly occur in the summer (NCEI, 2025; State of New Mexico HMP, 2023). Additional data on heat-related illnesses and fatalities can be found at the State of New Mexico Department of Health's heat tracker dashboard (NMDOH Heat Tracker Dashboard).

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Extreme Cold

McKinley County

According to the NCEI, McKinley County experienced one extreme cold event since the last plan update. The extreme cold event lasted from February 3rd through February 4th, 2022. The event followed a winter storm that moved through the county in the previous days, which was followed by a backdoor cold front that brought arctic air from the north. The event primarily impacted the eastern portion of the county and created very dangerous travel conditions due to icy, frozen roads. No deaths or injuries were reported during this time, but many vehicle accidents were recorded. Extreme cold events since the last plan update are recorded below in **Table 3.13**.

Table 3.13 – Extreme Cold Events in McKinley County (January 2020 - December 2024)

Region	Date	Hazard	Damages
Santa Fe Metro Area	2/3/2022	Extreme Cold	NA

Sources: NCEI Storm Event Database, 2024

City of Gallup

The Gallup Police Department collects records of deaths from exposure and hypothermia which gives additional insight into extreme cold events. Since the previous plan update, a total of 13 exposure or hypothermia deaths were recorded by the City. Deaths related to extreme cold exposure are listed below in **Table 3.14**.

Table 3.14 – Cold Exposure Deaths in the City of Gallup from January 2020 through December 2024.

Date of Incident	Number of Deaths	Cause
01/17/2020	2	Cold Exposure/ Hypothermia
01/26/2020	1	Cold Exposure/ Hypothermia
02/06/2020	1	Cold Exposure/ Hypothermia
11/15/2020	1	Cold Exposure/ Hypothermia
01/07/2021	1	Cold Exposure/ Hypothermia
02/14/2021	1	Cold Exposure/ Hypothermia
02/21/2021	1	Cold Exposure/ Hypothermia
11/26/2021	1	Cold Exposure/ Hypothermia
11/27/2021	1	Cold Exposure/ Hypothermia
12/19/2021	1	Cold Exposure/ Hypothermia
12/31/2021	1	Cold Exposure/ Hypothermia
12/31/2021	1	Cold Exposure/ Hypothermia
01/02/2022	2	Cold Exposure/ Hypothermia
12/16/2023	1	Cold Exposure/ Hypothermia
01/12/2024	1	Cold Exposure/ Hypothermia
01/30/2024	1	Cold Exposure/ Hypothermia
12/22/2024	1	Cold Exposure/ Hypothermia
Total	**19**	

Source: Gallup Police Department

As discussed with extreme heat, there are limitations in defining an extreme cold "event" as temperatures do not necessarily need to reach extreme cold classification to cause adverse effects, especially when coupled with other hazards such as blizzards. Additionally, wind plays a significant role in how cold is physically experienced, and temperature records alone may not tell the full story.

According to the State of New Mexico HMP, five extreme cold or wind chill events have occurred between 1997 and 2022 in Preparedness Area 4, which includes Cibola, McKinley, and San Juan Counties. These events did not cause any recorded deaths, injuries, property damage, or crop damage.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Probability

Information on probability for extreme temperatures is broken down by jurisdiction below.

Extreme Heat

McKinley County

The NCEI records include three total extreme heat or heat events, ranging from 2017 to 2022. This indicates an average of.37 extreme heat events per year. Since the last plan update, only one event was recorded, indicating an average of.25 extreme heat events per year. As discussed above, this calculation is based on event records that may not accurately reflect impacts in the county from heat events. More generally, the County can expect to experience numerous days with dangerous high temperature conditions each year, particularly during the summer months.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Extreme Cold

McKinley County

The NCEI records include seven total extreme cold or wind chill events between 1997 and 2022. This indicates an average of.28 extreme cold events per year. During the 2026 HMP planning period, only one event was recorded, indicating an average of.25 extreme cold events per year. As discussed above, this calculation, based on event records, may not accurately reflect impacts in the county from cold events or the compounding effects of cold and winter storms. More generally, the County can expect to experience numerous days with dangerously low-temperature conditions each year, particularly during the winter months.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

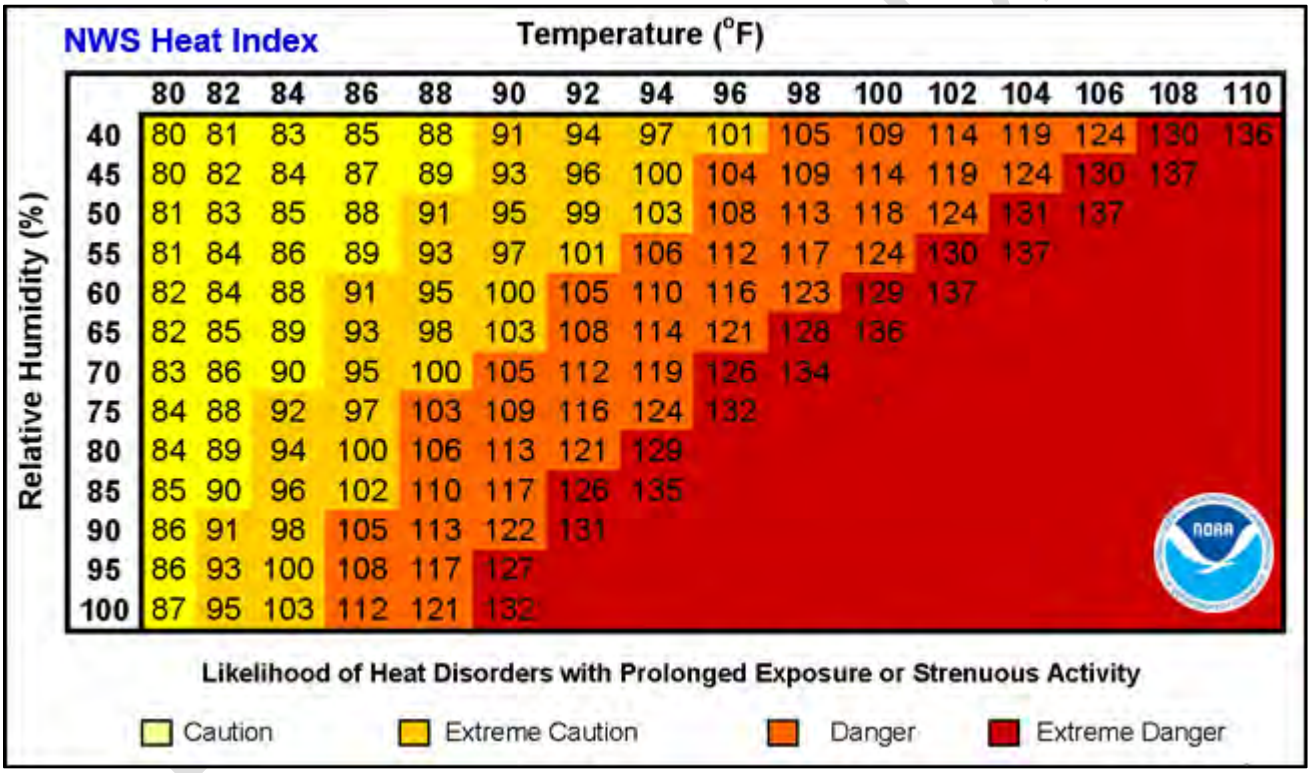
Extent

Similar to drought, extreme heat and cold can cover large areas with various levels of severity. Information on extent for extreme temperatures is broken down by jurisdiction below.

Extreme Heat

McKinley County

As previously discussed, humidity plays a large role in how heat impacts our bodies and our ability to regulate temperature. The NWS heat index is a useful tool for approximating the experienced temperature and at what thresholds exposure becomes dangerous for the human body. **Figure 3.7** below illustrates the heat index at each temperature with various relative humidity rates. According to the World Health Organization, heat stress is the leading cause of weather-related deaths. Extreme heat conditions are especially important to consider for outdoor workers and the unhoused population, as they will be the most susceptible to this hazard. One consideration for outdoor workers is adjusting working hours for outdoor work during the warmest months and ceasing work when the heat index crosses a dangerous threshold.



Source: NOAA, NWS

Figure 3.7 – Heat Index Calculation Table

According to data from the Western Regional Climate Center (WRCC) and NOAA, McKinley County experiences its highest average temperatures in June and July. Since the last plan update, the average temperature in these months was between 72 and 95 degrees Fahrenheit, and the highest temperature was 101 degrees Fahrenheit. These months do not have the highest average humidity but can experience relative humidity rates high enough to create a dangerous heat index. According to WRCC, since the last plan update, the average relative humidity during June and July ranged from 22% to 61% with a max of 99% humidity. This temperature range and timing can be experienced across the full county. (NOAA Online Weather Data; WRCC, 2025).

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Extreme Cold

Figure 3.8 below includes a wind chill chart that shows the experienced temperature for various temperatures with differing wind speed rates.

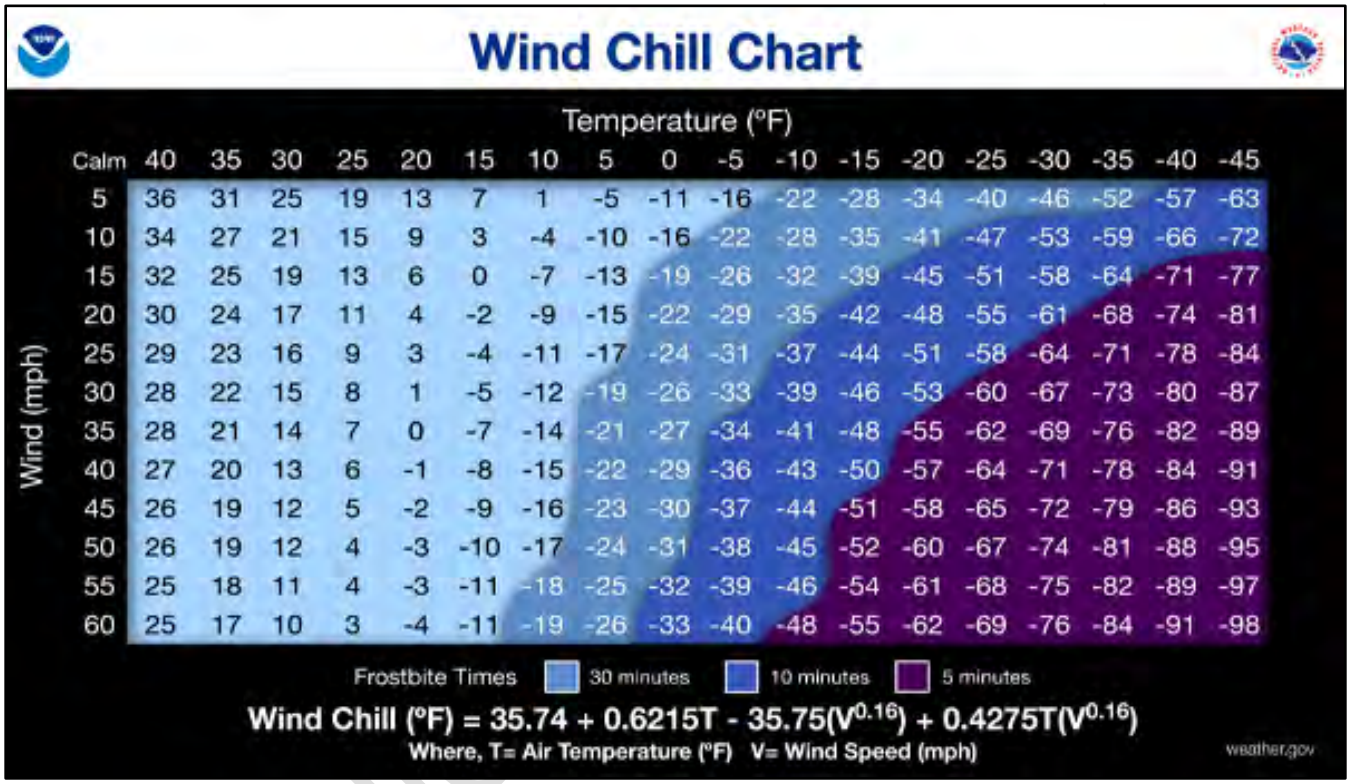


Figure 3.8 – Wind Chill Chart

McKinley County

According to WRCC and NWS, McKinley County experiences its lowest average temperatures in January and February. Since the last plan update, average temperatures in these months ranged from 19 to 27 degrees Fahrenheit, and the lowest recorded temperature was -6 degrees Fahrenheit. As discussed above, wind is also a critical factor to consider for extreme cold. During the planning period, the average recorded wind speed during January and February was between four and six miles per hour (MPH), with gusts up to 53 MPH recorded. Based on the NWS wind chill chart, the combined temperatures and wind speed could result in frostbite symptoms being experienced in 10 to 30 minutes, depending on exact conditions and exposure (NOAA Online Weather Data; WRCC 2025).

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability Assessment

Vulnerability is a description of which assets, including structures, systems, populations, and other assets as defined by the community, within locations identified to be hazard prone, are at risk from the effects of identified hazard(s) In this section, facilities, critical facilities, population, and systems are evaluated to better understand vulnerabilities to such assets in order to effectively mitigate risk from hazards. **Table 3.15** details how each of the jurisdictions ranked Extreme Temperatures. The City of Gallup had the highest PRI ranking while GMCS has the lowest PRI ranking comparatively.

Table 3.15 – Summary of PRI for Extreme Temperatures

Jurisdiction	PRI Ranking Extreme Temperatures
McKinley County	3.00
City of Gallup	3.20
GMCS	2.20

Vulnerability of and Impact on Structures

Vulnerability of and impacts on structures are broken down by jurisdiction below.

McKinley County

Structures and facilities are generally resilient to extreme temperatures, both hot and cold. However, in very extreme conditions, they can lead to cracks and warping, altering the integrity of the structures, facilities, and possible services provided. There is no significant difference across the county in anticipated extreme temperature impacts, and all facilities are equally vulnerable to the hazard. Extreme heat impacts are likely to cause materials such as concrete, asphalt, and metal to expand and soil to crack, which can lead to foundation issues. The National Resources Inventory (NRI) report does not predict any annual risk to structures from temperature impacts.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability of and Impact on Critical Facilities

Vulnerability of and impacts on critical facilities are broken down by jurisdiction below.

McKinley County

Extreme heat and extreme cold events can pose significant challenges to critical facilities. Extreme temperatures can strain electrical grids, potentially leading to power outages that can disrupt critical services and affect public safety. Air conditioning, cooling and heat systems, may be pushed to their limits, risking equipment failure and service interruptions. These interruptions can pose a health and safety risk across the county. All critical facilities should be prepared for extreme temperature events as they are very likely to occur, and any interruptions could further exacerbate impacts.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability of and Impact on Population

Vulnerability of and impacts on population are broken down by jurisdiction below.

McKinley County

Impacts on populations from extreme temperatures are the most likely to occur and cause public health and safety concerns. Heat-related illnesses can range from mild conditions like heat cramps to severe, life-threatening conditions, such as heat stroke. During extreme heat events, mortality from all causes can increase, with heat acting as a contributing factor to deaths from cardiovascular, respiratory, and other illnesses, which can lead to undercounts in heat-related deaths. Conversely, extreme cold can lead to an increase in respiratory problems, hypothermia, and frostbite. Unhoused individuals are at particularly high risk for extreme temperatures, as they likely do not have access to warm and cool spaces during extreme temperatures.

The CDC has produced a Heat Health Index mapping which ranks community susceptibility to heat-related health impacts based on historic temperature, heat-illness records, and community characteristics. A majority of communities in McKinley County are rated in the 95th to 99th percentile for high susceptibility to heat-related health impacts. This includes the City of Gallup and most Gallup-McKinley School District properties. This rating is primarily driven by historical temperature averages, poverty rates, and uninsured persons rates.

However, with proper planning, preparedness programs, and notification systems, heat and cold-related health impacts can be mitigated. Such mitigation actions should consider social vulnerability factors, such as individuals experiencing homelessness and outdoor workers. These populations may not be notified when extreme temperature events occur due to language or technology barriers, or may not have the resources to mitigate the impacts. Additionally, these communities may not be aware of opportunities to seek shelter, placing them in more vulnerable conditions.

Extreme heat can worsen air quality impacts by creating stagnant air pockets that hold pollutants and ozone. This is important to consider for populations with respiratory issues and pre-existing conditions, especially during co-occurring emergency events such as extreme heat and poor air quality. Notification systems, community education, accessible shelters, and transportation considerations are the most effective ways to mitigate potential temperature impacts on populations, especially for communities that are more socially vulnerable to adverse impacts. Community members, organizations, and local government should be aware of and monitor temperature, humidity, and wind conditions that have the potential to create hazardous conditions.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability of and Impact on Systems

Vulnerability of and impacts on systems are broken down by jurisdiction below.

McKinley County

The impacts on systems vary across the county, depending on many factors and the temperature extremity. According to the 2024 New Mexico Grid Resilience Report, extreme heat days are expected to become more common in New Mexico, contributing to higher levels of utility asset utilization, accelerated degradation, and potential capacity violations, which will further strain and complicate the grid system and adversely impact residents, especially during extreme heat events. For extreme cold events, wind plants in McKinley County face cold exposure that contributes to asset failure and ice throw.

Water Systems

Extreme cold impacts are most likely to impact water related infrastructure, pipes in homes, and facilities. Water resources generally can be strained by extreme heat in particular. Evaporation rates increase during extreme heat periods, reducing water efficiency and increasing water use. Increased water usage can strain the water system due to increased demand and higher costs. Increased water usage also creates ecological impacts as extreme heat can impact streams, wetlands, and riparian system health, increasing water temperature, which can strain certain species. Additionally, forest and vegetation health can be reduced, which may increase the chance of wildfires.

Agriculture

Agriculture systems can be impacted by both extreme cold and extreme heat, as extreme temperatures can kill or severely stunt the growth of plants, which influences yields and revenue that producers can expect. Extreme heat can increase the cost for producers as crops will require more water during extreme heat periods. While there are many threats from extreme temperatures negatively impacting costs on agriculture, the NRI report lists expected annual loss of agricultural value from extreme cold at just $9, while extreme heat is not expected to result in value loss. Please note that the NRI report is limited in its ability to predict vulnerability at a scale smaller than the county. For this reason, estimated loss values are generalized and should not be interpreted as certainty in loss estimates.

Economy

Economic impacts from extreme heat and cold are generally related to lost working time, increased costs for cooling and heating, work delays or cessation, and possible increased healthcare costs due to heat-related illnesses. A major consideration for economic activity and travel is the cascading impacts of extreme cold and winter storms or ice storms. This combination of hazards can create hazardous travel conditions that may close roads or create delays in shipments.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Key Considerations

No additional key considerations to include.

3.6 – Flood

Flooding is among the costliest natural hazards nationwide, occurring when precipitation, rapid snowmelt, dam failure, or stormwater system overloads channel or drainage capacity and inundates the adjacent floodplains or beyond (State of New Mexico HMP, 2023). Most damaging events are flash floods produced by short-duration, high-intensity monsoon thunderstorms between mid-June and late September, while riverine inundation, such as what can occur along the Puerco River, is less common (State of New Mexico HMP, 2023).

Intense rainfall, accompanying large thunderstorms in McKinley County and Gallup, may result in water flowing rapidly from higher elevations and exceeding water channel capacity. It is common for floodwaters to collect in agricultural areas and low-elevation depressions. In urban areas, inadequate municipal stormwater drainage, or depleted soil absorption capacity caused by development and soil alterations, can exacerbate flooding conditions.

National Flood Insurance Program (NFIP)

The NFIP is a federal program administered by FEMA that determines the flood zones in participating communities that require flood insurance and the associated insurance premiums. Community participation in the NFIP is voluntary. Communities are eligible for NFIP participation by adopting and continually enforcing floodplain management regulations with the goal of preventing unsafe development in the floodplain and therefore reducing potential future flood damages.

Joining the NFIP requires the adoption of a floodplain management ordinance that requires jurisdictions to follow established minimum standards set forth by FEMA and the State of New Mexico when developing in the floodplain. These standards require that all new buildings and substantial improvements to existing buildings will be protected from damage by the 1% chance flood event (see Section 3.xx for definition), and that new floodplain development will not aggravate existing flood problems or increase damage to other properties.

A residence or commercial structure in a participating community that is constructed in a Special Flood Hazard Area (SFHA), as shown on the current effective Flood Insurance Rate Map (FIRM), is required to have flood insurance. Any past recipients of federal disaster assistance must maintain flood insurance in order to be eligible for any federal disaster funding in the future (FloodSmart). Any property owner in an NFIP participating community is eligible to purchase flood insurance, even if the property is outside the SFHA. More information on SFHAs is detailed in the Extent section.

According to the FEMA Community Status Book (FEMA, 2025), there are 22,726 NFIP participating communities nationwide, with 104 NFIP participating communities in New Mexico. McKinley County and the City of Gallup participate in the NFIP.

Table 3.16 below includes NFIP statistics for the County and City. The Community Identification Number, Initial Flood Hazard Boundary Map, Current Effective FIRM, and Entry date into the Regular Phase of the NFIP were taken from the Community Status Book (FEMA, 2025). Emergency NFIP entry date, number of policies, amount of coverage, and claim payout were provided by the State Floodplain Program.

Table 3.16 – NFIP and CRS Community Status

Jurisdiction	CID	CRS Rating	Initial FHBM Identified	Initial FIRM Identified (Emergency Phase of NFIP)	Current Effective Map Date	Registration Entry Date
McKinley County	350039	N/A	07/04/1978	02/17/2010	02/17/2010	10/19/2010
Gallup	350042	N/A	03/01/1974	03/01/1978	02/17/2010	3/1/1978

As a school district, GMCS is not eligible to participate as a community in the NFIP. However, GMCS is eligible to purchase NFIP insurance on any structures within the unincorporated county (floodplain ordinance administered by the County) or within the City of Gallup (floodplain ordinance administered by the City).

Community Rating System

The NFIP Community Rating System (CRS) was implemented in 1990 as a program to recognize and encourage community floodplain management activities to go beyond minimum NFIP standards. The National Flood Insurance Reform Act of 1994 codified the CRS in the NFIP. Under the CRS, flood insurance premium rates are adjusted to reflect the reduced flood risk resulting from community activities that meet the three goals of the CRS: (1) reduce flood losses; (2) facilitate accurate insurance rating; and (3) promote the awareness of flood insurance. NFIP policy-holders in a CRS participating communities receive a percentage discount on premiums based on the number and type of floodplain management activities that are implemented. NFIP policy-holders in a Class 9 CRS community receive a 5% discount on NFIP premiums. The premium discount increases to a maximum of 45% for a Class 1 CRS community.

As of April 2025, there is one CRS community in the nation (Tulsa, Oklahoma) and seven Class 2 communities represented in the following states: Florida, Illinois, North Carolina, South Carolina, and Washington. There are 10 CRS communities in New Mexico, ranging from Class 7 (15% premium discount) to Class 9 (5% premium discount). Currently, neither McKinley County nor the City of Gallup participates in the CRS Program. This information is taken from the FEMA CRS Participating Communities web page (FEMA, 2025).

Location

Information on flooding locations is broken down by jurisdiction below.

McKinley County

Flooding in McKinley County occurs in two distinct forms, rapid-onset flash floods and slower riverine over-bank flows, but nearly every damaging incident on record stems from the monsoon season, which brings short-duration, high-intensity thunderstorms from June through September; roughly 60% of all flash floods in New Mexico strike during July and August (NCEI, 2024; State of New Mexico HMP, 2023). Flash flooding is sometimes unpredictable and typically occurs in low-lying areas or areas of poor drainage. **Figure 3.9** shows FEMA-designated flood hazard areas throughout McKinley County, including both 1% (100-year floodplain) and 0.2% (500-year floodplain) annual chance flood zones. Flooding can occur in many locations in the county, but is most common near both perennial and ephemeral waterways, including rivers and streams, as well as arroyos and washes. Low-lying areas are also susceptible to flash flooding, especially during drought conditions when the soil's capacity to uptake water has been reduced.

City of Gallup

The City of Gallup, situated in a more urbanized environment with extensive impervious surfaces and limited stormwater capacity in some neighborhoods, is particularly vulnerable to flash flooding during intense rainfall. Gallup has experienced multiple high-profile flooding events in recent years that overwhelmed drainage systems

and disrupted transportation routes and emergency response (NCEI, 2024). Given the city's population density and built environment, even minor flooding can quickly escalate into damaging and hazardous conditions. Storm cells that form over the county's steep, sparsely vegetated mesas funnel runoff into narrow arroyos and culverts, pushing water and debris toward Gallup, Navajo Nation service roads, and the Puerco River, within minutes, long before official warnings can reach motorists or residents (NCEI, 2024). Concentrated flood risk is evident in the City of Gallup and along major drainages, including the Rio Puerco and tributary arroyos.
The majority of Gallup's mapped flood hazard areas are located along the Burlington Northern Santa Fe Railway. The City is surrounded by hills and uneven terrain, which causes flooding in the low areas (Gallup Sun, 2022).

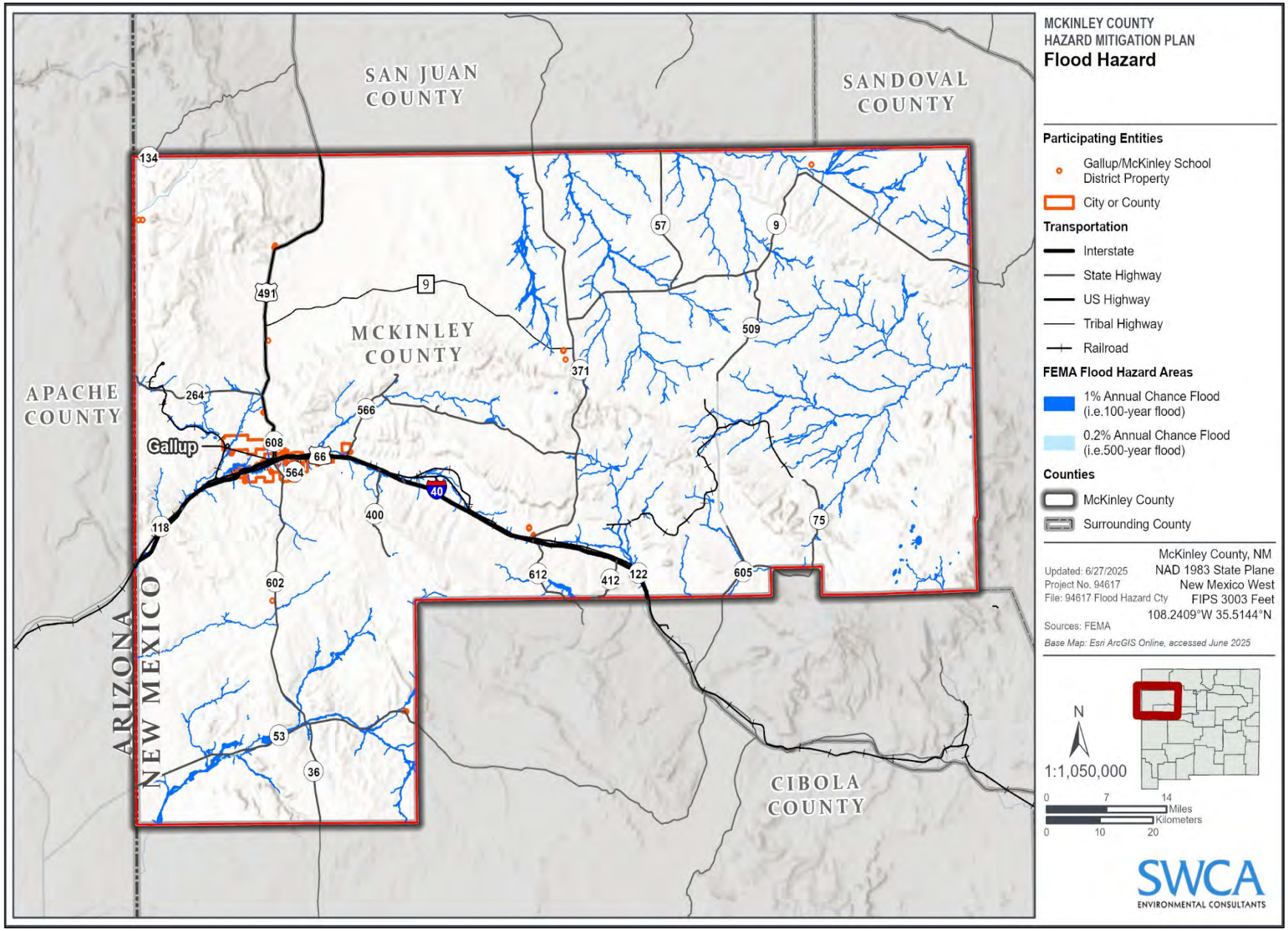


Figure 3.9 – Floodplains, McKinley County

Unincorporated McKinley County

In unincorporated McKinley County, the flood risk profile differs due to its more dispersed development patterns and varied terrain. While lower overall population exposure may reduce the frequency of structure-related damage reports, flood events in these areas often affect critical infrastructure, rural roads, and small communities with limited resources for mitigation and recovery (NCEI, 2024). Drainage is further complicated in areas where traditional stormwater infrastructure is lacking and where arroyos or natural washes serve as the primary drainage pathways (NCEI, 2024).

Gallup-McKinley County Schools

The Gallup-McKinley County School system is directly exposed to flood hazards, particularly where campuses are located in low-lying areas or near mapped flood zones. Even when buildings are inundated, intense rainfall can overwhelm surrounding infrastructure, limiting access to campuses, disrupting transportation routes, and creating dangerous walking conditions for students and staff.

Previous Occurrences

Information on previous flooding occurrences is broken down by jurisdiction below.

McKinley County

Since 1996, the NCEI Storm Events Database has recorded 55 flood events in McKinley County, including 54 flash floods and one riverine overflow along the Puerco River (NCEI, 2024). These events have caused an estimated $4.39 million in property damage, with 11 fatalities and one injury documented over the 29-year period. Gallup-McKinley County Schools account for approximately two-thirds of total recorded damage, primarily from flood impacts to campus infrastructure. (NCEI, 2024). Additionally, it is important to note that there have been additional flood occurrences since 2022. However, the NCEI Storm Events Database appears to have a limitation by listing the last flood event as occurring on August 18, 2022. The NCEI Storm Events Database is likely not a complete historical record of flood events in the County and is a limitation when evaluating previous occurrences and the future probability of flood events in McKinley County.

Floods in McKinley County occur most frequently during the monsoon season, with a notable concentration of events during 2022, which brought repeated flash flooding that closed Interstate 40, U.S. 491, state highways, and Navajo service roads near Mexican Springs (NCEI, 2024). That summer alone resulted in five flash flood events and $110,000 in documented damages (NCEI, 2024). **Table 3.17** details the previous flood occurrences in McKinley County since the previous plan update in 2021. The State of New Mexico issued a flood emergency proclamation for the county in June 2024, washing out the temporary Anni Clanni bridge, underscoring the continuing threat of flood within the County (State of New Mexico, 2024).

Table 3.17 – Flood Previous Occurrences (January 2020 - December 2024)

Flood Events	Jurisdictions Impacted	Event Dates	Damages	Injuries and Fatalities
Flash flood	Unincorporated McKinley County	4 June 2022	$25,000	None
Flash flood	Unincorporated McKinley County	25 June 2022	None	None
Flash flood	Unincorporated McKinley County	27 June 2022	$10,000	None
Flash flood	Gallup, Unincorporated McKinley County	29 June 2022	$25,000	None
Flash flood	Unincorporated McKinley County	16 August 2022	$50,000	None

Source: NCEI, 2024

City of Gallup

Rural headwater arroyos have conveyed storm surges measured at up to four feet of water and mud, while downtown Gallup usually sees minor shallow flooding of one to two inches during a single event (NCEI, 2024). According to NEIC event reports, the transport corridors that tie the region to the rest of the state (Interstate 40, U.S. 491, and State Routes 53, 66, 118, 264, 371 and 602) have all been closed at various times since 1996, and flash floods have twice destroyed critical crossings such as Thompson Bridge at Church Rock and the Tse Bonito Bridge, isolating entire communities.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Probability

Information on flooding probability is broken down by jurisdiction below.

McKinley County

According to data from the NCEI, a total of 56 flood events were documented in the county between 1996 and 2024, equating to an average of two flood events per year (NCEI 2024). Over the most recent five-year period (2020 to 2024), five flood events were reported, an average of one event per year, suggesting a lessening hazard frequency.

Again, this is a lessening of hazard frequency. See **Table 3.18** below for a breakdown of flooding events by planning period.

Table 3.18 – Number of Events and Probability of Flood Events by Planning Period

Time Period	NCEI Documented Flood Event	County Average Events/Year	Gallup Average Events/Year
2020 – 2024	5	1.00	0.4
1996 – 2024	55	1.90	0.2

Source: NCEI, 2024

City of Gallup

According to data from the NCEI, a total of 11 flood events were documented in the City of Gallup between 1996 and 2024, equating to an average of approximately 0.4 flood events per year. Over the most recent five-year

period (2020 to 2024), there was one flood event reported for Gallup in NCEI, an average of approximately 0.2 flood events per year.

Extent

Information on the extent of flooding is broken down by jurisdiction below.

McKinley County

Flood extent in McKinley County varies by location but is generally concentrated in FEMA-designated SFHAs, which include Zones A, AE, AO, and B. These classifications reflect the expected depth, velocity, and likelihood of flooding, and are used to estimate the potential severity across the planning area. Zones A, AE, and AO are considered 100-year floodplains and have a 1% chance of occurring every year, while B zones are considered 500-year floodplains and have a 0.2% chance of occurring every year. **Table 3.19** provides detailed descriptions of the flood zones that exist throughout the planning area. The FEMA flood zones do not reflect the flash flood threat that can overtop roads and low crossings well outside the mapped SFHA.

Table 3.19 – Floodplain Classifications

Zone Class	Description
A	Corresponds to the 1%-annual-chance floodplains that are determined in the FIS report by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base (1% annual chance) flood elevations (BFEs) or depths are shown within this zone.
AE	Corresponds to the 1%-annual-chance floodplains that are determined in the FIS report by detailed methods. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.
AO	Corresponds to areas of 1%-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the detailed hydraulic analyses are shown within this zone.
B	Areas subject to inundation by a 0.02%-annual-chance flood event are generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no BFEs or flood depths are shown.

Source: McKinley County FEMA Flood Insurance Study, 2010

City of Gallup

Figures 3.10 through **3.13** show the FEMA-designated 1% (100-year) and 0.2% (500-year) annual chance flood zones for the unincorporated county and the City of Gallup, based on the current effective FIRMs, updated in 2010. Although major flooding is less frequent than flash events, mapped flood zones align with the Puerco River, tributary washes, and multiple low-lying urban corridors. The city contains extensive, continuous Zone A/AE and Zone AO areas, particularly along drainage paths intersecting key roadways such as Interstate 40, U.S. Highway 66, and NM 491. Several GMCS campuses lie within or adjacent to these flood zones, as shown in **Figures 3.10** through **3.13**.

BFEs are also provided in **Figures 3.10** through **3.13,** where available. The BFE is the height of the surface of the water in the 1% chance flood event. The BFEs indicated in **Figures 3.10** through **3.13** that the floodwaters can reach heights of 6,463 to 6606 feet above sea level. These maps underscore the vulnerability of Gallup's built environment, including its transportation network and public infrastructure, to potentially hazardous flooding.

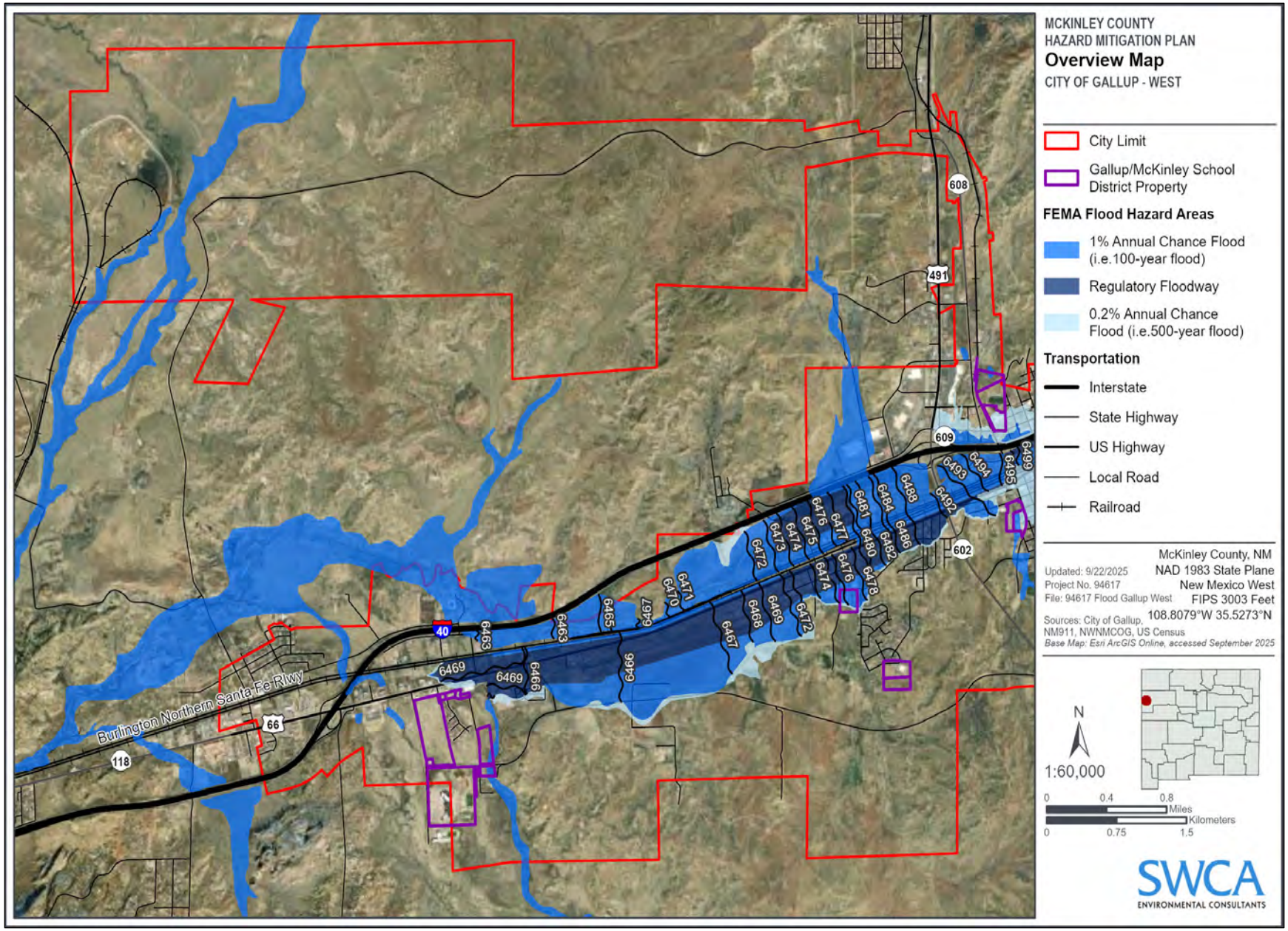


Figure 3.10 – FEMA Flood Hazard Zones and School Exposure, City of Gallup (Western)

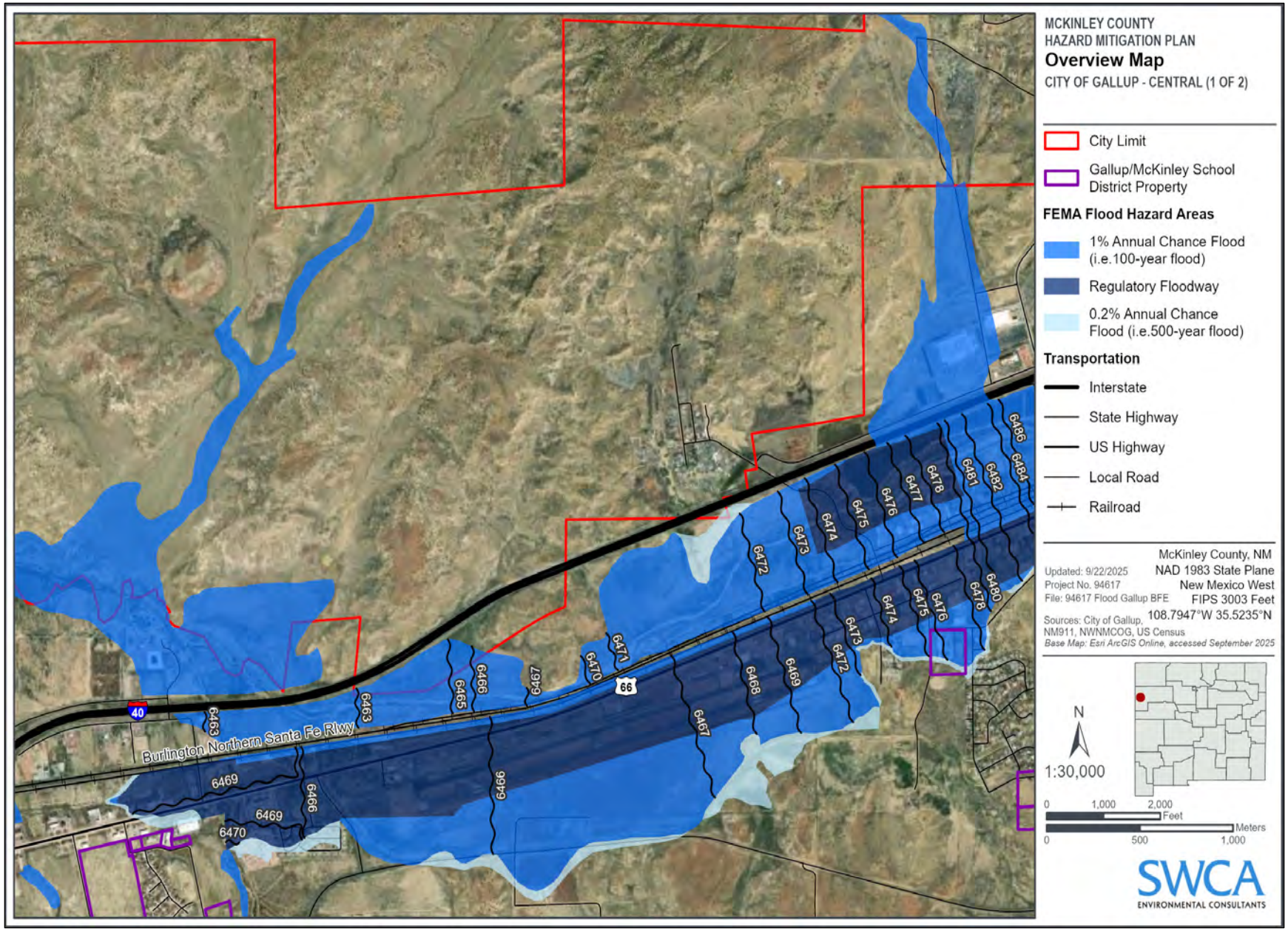


Figure 3.11 – FEMA Flood Hazard Zones and School Exposure, City of Gallup (West Central)

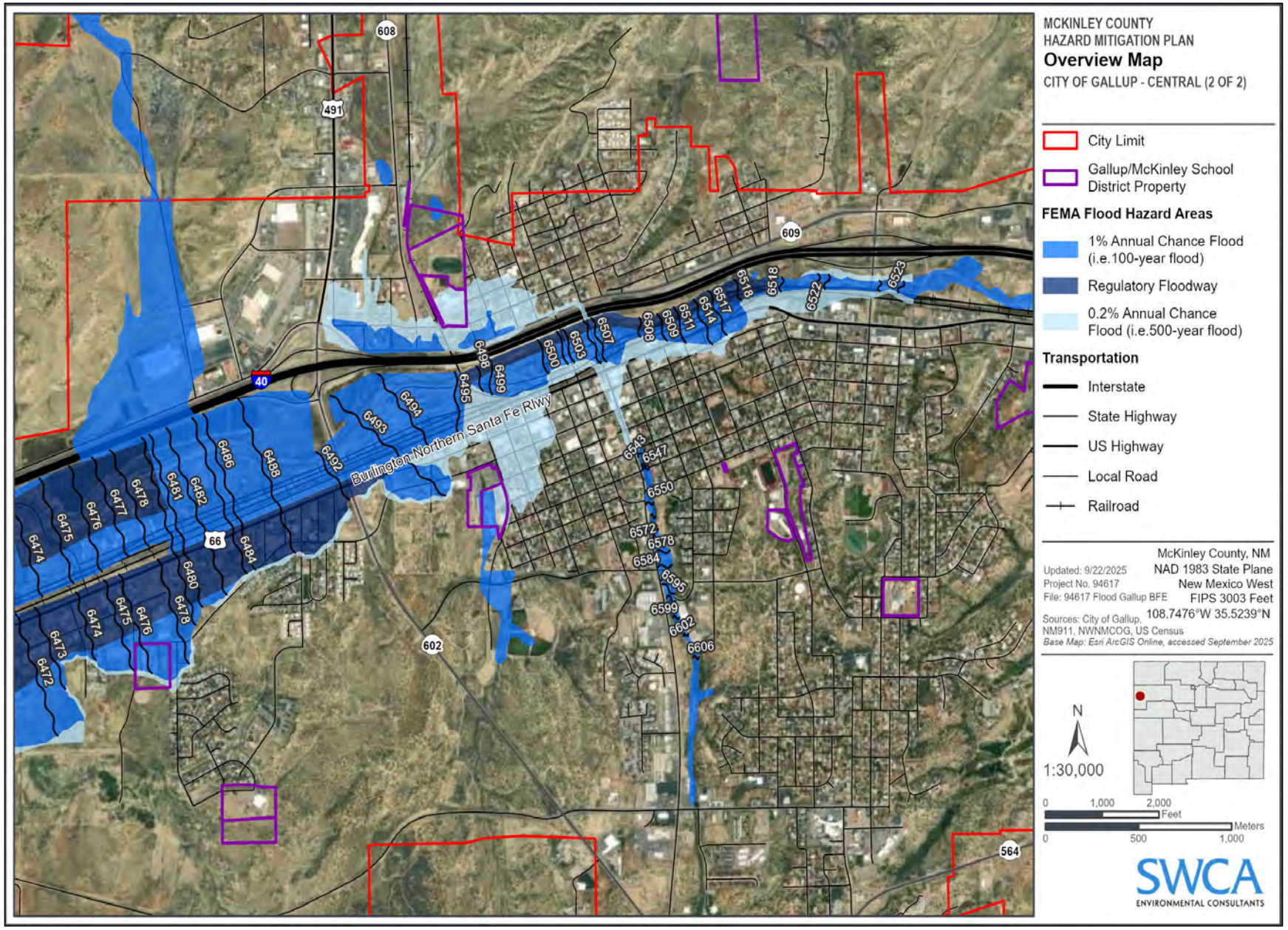


Figure 3.12 – FEMA Flood Hazard Zones and School Exposure, City of Gallup (East-Central)

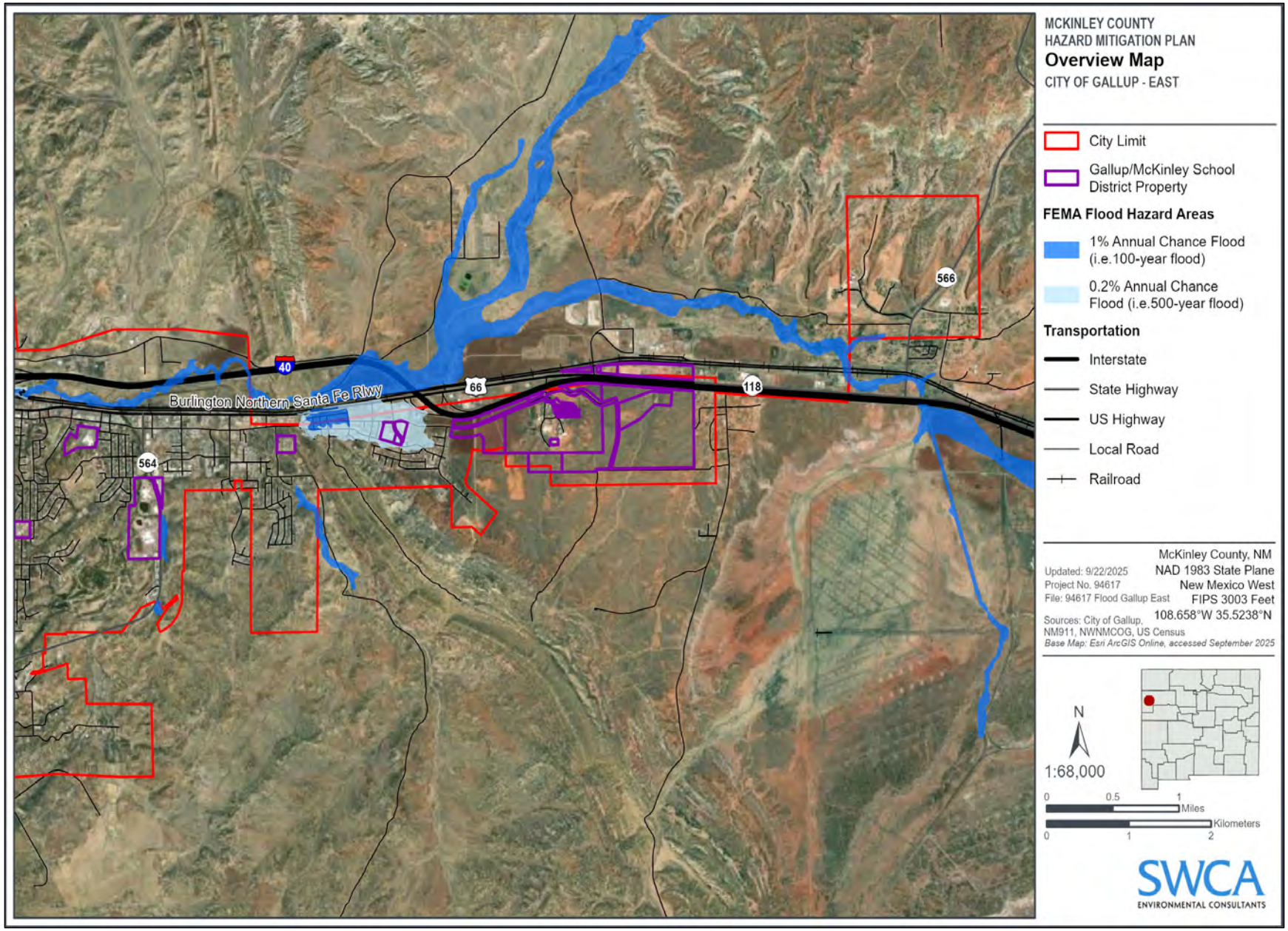


Figure 3.13 – FEMA Flood Hazard Zones and School Exposure, City of Gallup (Eastern)

McKinely-Gallup County Schools

Figures 3.10 through **3.13** illustrate the spatial intersection of school district boundaries (outlined in purple) with FEMA 1% annual chance flood zones and regulatory floodways. BFE lines are shown throughout, offering insight into expected water surface levels during a 100-year event. GMCS facilities within the floodplain include Lincoln Elementary School, Indian Hills Elementary School, Del Norte Elementary School, Turpen Elementary school, and Gallup Central High.

Vulnerability Assessment

Vulnerability is a description of which assets, including structures, systems, populations, and other assets as defined by the community, within locations identified to be hazard prone, are at risk from the effects of identified hazard(s) In this section, facilities, critical facilities, population, and systems are evaluated to better understand vulnerabilities to such assets in order to effectively mitigate risk from hazards. **Table 3.20** details how each of the jurisdictions ranked Flood. The City of Gallup had the highest PRI ranking while GMCS has the lowest PRI ranking comparatively.

Table 3.20 – Summary of PRI for Flood

Jurisdiction	PRI Ranking
McKinley County	3.00
City of Gallup	3.20
GMCS	2.30

Vulnerability of and Impact on Structures and Critical Facilities

Vulnerability of and impacts on structures and critical facilities are broken down by jurisdiction below.

McKinley County

The planning area has commercial, industrial, and residential structures located in floodplains throughout the planning area. There are over 1,647 structures at risk of flooding due to a 100-year and 500-year flood event. Flooding can cause minimal to extreme damage to any of these types of facilities, impeding operations for days to years, depending on the resources available and remediation costs after an event. Since the majority of these structures at risk are residential, the County may consider prioritizing preparedness activities around public education on flood awareness, emergency notification, and flood mitigation. Flood insurance can be purchased if residents are within the 500-year floodplain, but it is generally required for residents living within the 100-year floodplain.

Unincorporated McKinley County and City of Gallup

Currently, there are no repetitive loss or severe repetitive loss properties within the planning area. Additionally, since there is no significant population growth in the county or Gallup, and there are numerous floodplain construction regulations in place, new construction has not occurred in the identified FEMA floodplains.

Gallup-McKinley County Schools

No additional information provided for GMCS.

Vulnerability to Critical Facilities Analysis

An analysis on critical facilities is broken down by jurisdiction below.

McKinley County

Geospatial analyses were conducted to estimate the number of Critical Facilities in the county within the 100-year floodplain and the 500-year floodplain. Within the County, there are 37 critical facilities within the 100-year floodplain and the 500-year floodplain. Fourteen critical facilities are within the 500-year floodplain, 21 are within the floodway, and one is within the 100-year floodplain. The floodway is the channel of a river or stream and the adjacent land area that must be kept open to safely convey floodwaters during a 100-year flood event. These facilities are at particularly high risk for flooding during a flood event with how close they are to a river or stream. These facilities include Pipelines, Transmission Lines, Gallup Airport, Gallup Central High, and other transportation means such as bridges, roads, and railroads. Although no specific damages to these critical facilities were reported in the NCEI, the potential for damage from flooding is high based on the flood zone mapping for these locations. Note that EO 11988 on Floodplain Management requires permitting for critical facilities such as police departments to be protected to the.2% chance flood level. **Table 3.21** below lists the number of critical infrastructure facilities that fall within the FEMA floodway zone.

Table 3.21 – Unincorporated McKinley County Critical Facilities in the FEMA Flood Zone

Critical Facility Type	Critical Facility Category	FEMA Flood Zone	Facility Count
Gas and Oil Facilities	Pipeline	Floodway	2
Transportation Networks	Bridges	Floodway	2
Transportation Networks	Railroad	Floodway	3
Transportation Networks	Roads	Floodway	4
Utilities	Transmission Line	Floodway	1

Source: McKinley County

City of Gallup

Within the City of Gallup, there is one critical facility, Washington Elementary School, that is within the 500-year floodplain. **Table 3.22** below lists the critical facilities that fall within each FEMA flood zone.

Table 3.22 – City of Gallup Critical Facilities in the FEMA Flood Zone

Critical Facility Type	Critical Facility Category	FEMA Flood Zone	Facility Count
Government Services	Community Centers	0.2% Flood Zone	2
Government Services	Community Centers	Floodway	1
Government Services	Library	0.2% Flood Zone	1
Law Enforcement	Police Department	0.2% Flood Zone	1
Schools	Child Care Center	0.2% Flood Zone	3
Schools	Public School	0.2% Flood Zone	3
Senior Housing	Assisted Living	0.2% Flood Zone	1
Transportation Networks	Airport	Floodway	1
Transportation Networks	Bridge	0.2% Flood Zone	3
Transportation Networks	Bridge	Floodway	6
Utility	Power Plant	1% Flood Zone	1

Source: McKinley County

Gallup-McKinley County Schools

There are five schools within the 500-year floodplain. These schools include Lincoln Elementary School, Indian Hills Elementary School, Del Norte Elementary School, Turpen Elementary School, and Gallup Central High. **Table 3.23** below lists the critical facilities that fall within each FEMA flood zone.

Table 3.23 – GMCS in the FEMA Flood Zone

Critical Facility Type	Critical Facility Category	FEMA Flood Zone	Facility Count
Schools	Public Schools	.2% Flood Zone	5

Source: McKinley County, FEMA

Vulnerability to Structures Analysis

An analysis of structures is broken down by jurisdiction below. Within this analysis, building data included actual building values. Actual building values include all structures on the property.

McKinley County

Geospatial analyses were conducted to estimate the number of structures in the county within the 100-year floodplain and the 500-year floodplain. Within the County, 1,647 buildings are within the 100-year floodplain and the 500-year floodplain, shown in **Table 3.24**. The majority of the structures within the floodplain are residential and commercial.

Table 3.24 – McKinley County Vulnerable Structures by Count, 100- and 500-year Floodplain

	Res	Com	Ind	Ag	Rel	Gov	Edu	Avi	Unclass	Total
Unincorporated	310	46	0	10	N/A	0	1	10	224	**601**
City of Gallup	580	374	9	1	N/A	2	21	8	51	**1,046**
Total	890	420	9	11	N/A	2	22	18	275	**1,647**

Source: FEMA, FEMA USA Structures Data

Unincorporated McKinley County

Within McKinley County Unincorporated areas, there are a total of 1,647 estimated exposed buildings in the 100-year and 500-year floodplains with a combined total actual land and improvements actual value of $491,611,285.00, shown in **Table 3.25**.

Table 3.25 – Vulnerable Structures by Value, 100- and 500 Year Floodplain

	Estimated Buildings Exposed	Land Actual Value $	Improvements Actual Value $	Total Actual Value (Land + Improvements) Exposed in $	% of Total Value
100-Year	962	$70,375,927	291,459,837	$361,835,764	20.9%
500-Year	685	$32,686,686	$97,088,835	$129,775,521	7.5%

Source: FEMA, FEMA USA Structures Data

City of Gallup

Within the City of Gallup, there are a total of 1,084 estimated exposed buildings in the 100-year and 500-year floodplains with a combined total actual land and improvements actual value of $266,261,570, shown in **Table 3.26**.

Table 3.26 – Vulnerable Structures by Value, 100- and 500 Year Floodplain

	Estimated Buildings Exposed	Land Actual Value $	Improvements Actual Value $	Total Actual Value (Land + Improvements) Exposed in $	$ of Total Value
100-Year	492	$46,443,450	$80,436,537	$136,486,049	7.3%
500-Year	593	$32,686,686	$97,088,835	$129,775,521	7.5%

Source: FEMA, FEMA USA Structures Data

Gallup-McKinley County Schools

Multiple schools within the Gallup-McKinley School District fall within FEMA-mapped flood zones, including Gallup Central High, Indian Hills Elementary, Lincoln Elementary, Del Norte Elementary, and Tobe Turpen Elementary detailed in **Table 3.27**. The total value of the five schools is $68,813,669.

Table 3.27 – Vulnerable School District Facilities – 100- and 500-year Floodplain

School District Site	Floodplain Class	Location	Value
Gallup Central High	Zone AE & B	Gallup	$9,606,062
Indian Hills Elementary	Zone B	Gallup	$10,545,232
Lincoln Elementary	Zone B	Gallup	$24,363,134
Del Norte Elementary	Zone B	Gallup	$13,456,496
Turpen Elementary	Zone A	Gallup	$10,842,745
		Total =	**$68,813,669**

Source: GMCS, FEMA

GMCS District provided value estimates for their buildings and contents for the above noted schools as it related to loss from flood hazard. Similar estimates were not provided by the City of Gallup or the unincorporated county.

Vulnerability of and Impact on Population

Risk from floods disproportionately impacts socially vulnerable populations. Communities more susceptible to flood risk and impacts include low-lying residential areas, mobile home parks, low-income residents, the elderly population, the unhoused population, and non-English speaking communities due to language barriers. Elderly populations and those with disabilities are the most vulnerable to flood impacts, as they may require increased notice to evacuate or move to a safe location if they are located in a flood zone. Multiple community centers and senior centers are within the FEMA flood zone, including the Zuni Senior Center and human services building in Gallup.

Vulnerability to Population Analysis

Geospatial analyses were conducted to estimate the number of structures in the county within the 100-year floodplain and 500-year floodplain. An estimated 26,026 people reside within the 100-year floodplain and the 500-year floodplain. An analysis on structures is broken down by jurisdiction below.

Unincorporated McKinley County

Within the Unincorporated area of McKinley County, an estimated 22,855 people live within the 100-year and 500-year floodplains, shown in **Table 3.28**. Over 30% of the County population are exposed to the 100-year and 500-year flood events.

Table 3.28 – Population Exposed by 100-year and 500-year Flood

	Estimated Population Exposed	% of Population Exposed
100-Year	18,144	24.8%
500-Year	4,711	6.4%

Source: FEMA, US Census 2020

City of Gallup

Within the City of Gallup, an estimated 13,171 people live within the 100-year and 500-year floodplains, shown in **Table 3.29**. About 18% of the County population are exposed to the 100-year and 500-year flood events.

Table 3.29 – Population Exposed by 100-year and 500-year Flood

	Estimated Population Exposed	% of Population Exposed
100-Year	7,255	9.9%
500-Year	5,916	8.1%

Source: FEMA, US Census 2020

Gallup-McKinley County Schools

Based on historical data, the planning area has experienced one injury and 11 deaths as a result of flash and riverine flooding. GMCS's students, staff, and faculties, shown in **Table 3.30**, are considered vulnerable to flooding. An estimated 568 students and 90 staff and faculty are exposed and at risk to the 100-year and 500-year events.

Table 3.30 – Vulnerable School District Sites – 100- and 500-year Floodplain

School District Site	Floodplain Class	Staff	Students
Gallup Central High	Zone AE & B	36	194
Lincoln Elementary	Zone C	46	340
Del Norte Elementary	Zone C	49	355
Indian Hills Elementary	Zone C	38	255
Turpen Elementary	Zone A	42	319
	Total =	**90**	**586**

Source: Gallup-McKinley County Schools, FEMA

Additionally, floods can have longer-term impacts on populations. Pooled water that is slow to drain can encourage the growth of mold and other bio-hazardous material, rendering a facility unusable until remediation is finished. Extra care, assessment, and sanitization are required before students and staff can re-inhabit a school facility, or they may face serious health concerns. Assisted care facilities housing vulnerable populations can take longer to evacuate. Additionally, the potential presence of mold after a flood requires extra care to be taken before the population can re-inhabit an assisted care facility where the inhabitants are at greater risk of infection.

Vulnerability of and Impact on Systems

Vulnerability of and impacts on systems are broken down by jurisdiction below.

McKinley County

Flooding can cause both short and long-term impacts to systems, including agriculture, transportation, economic, and ecological systems. Pipelines, bridges, and other infrastructure can be damaged when high waters combine with flood debris. Flooding can contaminate water supplies and damage water infrastructure, leading to shortages and health hazards. Transportation infrastructure, including bridges, roads, and rail lines, are the most frequently intersected by anticipated flood zones.

Transportation

Roads, airports, and rail lines that are impacted by flooding can reduce transit or goods for indeterminate amounts of time. The majority of bridges in the county, including those within the City of Gallup, fall within the 100-year floodplain. Additionally, frequent flooding in the city can lead to increased maintenance on drainage systems.

The Burlington Northern rail line and Interstate 40 intersect the floodplain at multiple locations on their path across the county, traveling east-west. This includes sections of the rail line and highway within the Town of Gallup. A large stretch of Navajo Service Route 9 north of Whitehorse, County Road 75 near Laguna Polvadera, and Highway 602 near Black Rock fall within the floodplain, which can impact local and regional travel. State Highway 53 in Zuni Pueblo is intersected multiple times by the floodplain, including west of the pueblo near T-Bird Rd and south of Eustace Lake.

The Crownpoint Airport has a portion of its property within the floodplain, while the Gallup Municipal Airport falls fully within the AE Flood Zone. Multiple overhead transmission lines across the county intersect the floodplain, but may not be impacted depending on the line pole's location relative to the flood zone. Additional critical facilities within the floodplain include a substation, City of Gallup solar power plant, Gallup Fire Station 4, and the McKinley County Fire Rescue Station 61 White Cliffs.

Agriculture

Floods can destroy crops and make fields and facilities inaccessible. According to the NRI report, the expected annual loss of agricultural value from flooding is $19,745, with $2,078,190 in agricultural value exposed to the hazard annually. Please note that the NRI report is limited in its ability to predict vulnerability at a scale smaller than the county. For this reason, estimated loss values are generalized and should not be interpreted as certainty in loss estimates. Crop loss can impact local businesses, reducing local economic activity and residents' ability to buy necessary food and goods.

Additionally, flooding can impact soil health by altering the physical structure, microbial communities, and nutrients. Transportation and economic systems are impacted in the same way by flood events and often experience overlapping impacts. Ecological systems, primarily river systems, can experience channel movement, which can alter the vegetative composition of the area and destabilize soil. This can have far reaching impacts on communities, especially for structures near channels that may shift and change.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Key Considerations

Floods are often associated with other natural hazards, including sedimentation and debris flows. This is most likely to occur following a heavy or prolonged precipitation event and is exacerbated by wildfire, which reduces vegetation cover. Flood severity in the county can be influenced by several interrelated hazards, including post-wildfire runoff, debris flows, slope failures, and landslides. Saturated buttes and plateaus in central and southern McKinley County can generate debris or mudflows that not only destroy infrastructure but also block arroyos and culverts, redirecting floodwater onto roads and developed land. Interstate 40 and Historic Route 66 (NM 122 and NM 118) both traverse mapped landslide-risk zones, illustrating the coupled exposure of transportation lifelines to flood and geologic hazards (State of New Mexico HMP, 2023).

The potential impacts of a flash flood are heavily influenced by post-wildfire and geomorphic conditions. Fresh burn scars develop hydrophobic soils and lose canopy interception, producing 4- to 100-fold increases in runoff and debris flow under otherwise average monsoon rainfall. Sediment plugs that form in these scorched watersheds can dam and then breach arroyo channels, redirecting torrents across highways or into low-lying subdivisions. Likewise, intense rainfall on already saturated buttes can trigger landslides or rockfalls that block culverts, forcing floodwater onto roadways and further amplifying the hazard (State of New Mexico HMP, 2023).

Wildfire-altered watersheds and storm-triggered landslides can amplify flash flood magnitude and expand the footprint of damage, underscoring the need for integrated mitigation that addresses upland fuels, slope stability, and downstream drainage capacity (State of New Mexico HMP, 2023).

3.7 -High Wind

High or strong winds are defined by the NWS as non-convective winds reaching sustained speeds of 40 mph or greater for at least one hour, or gusts of 58 mph or higher for any duration (NWS, 2025). These powerful gusts can arise from thunderstorm downdrafts, mountain-wave "gap" flows funneling through local canyons, or tight synoptic pressure gradients associated with frontal passages (NWS, 2025). High winds are especially dangerous in areas with significant tree stands and areas with exposed property, poorly constructed buildings, manufactured housing units, major infrastructure, and aboveground utility lines. High winds can cause downed trees and power lines, flying debris, and building collapses, which may lead to power outages, transportation disruptions, damage to buildings and vehicles, and injury or death.

Microburst

A microburst is a localized downdraft of air within a thunderstorm that can produce damaging winds, often exceeding 100 mph, and is typically less than 2.5 miles in diameter. These events are often short-lived, lasting only a few minutes, but can cause significant damage, sometimes comparable to that of a tornado.

In McKinley County's high-elevation terrain, springtime mixing of a northward-migrating polar jet with intense surface heating routinely drives westerly gusts of 50 to 65 mph, while summer monsoon outflows and fall cold fronts can also produce dust-laden windstorms that cut visibility to near zero (State of New Mexico HMP, 2023).

Location

Information on locations for high wind is broken down by jurisdiction below.

McKinley County

McKinley County's varied high-elevation terrain amplifies straight-line winds through frequent gap-wind events, where air rushing over mountain "gaps" and ridgelines is funneled into narrow canyon openings, producing some of the county's strongest gusts at mesa rims and valley exits (State of New Mexico HMP, 2023). These conditions are most pronounced in the unincorporated portions of the county, where open, rural landscapes offer little obstruction to accelerating flows.

In New Mexico, Preparedness Area mapping in the state's HMP shows that most of McKinley County (including the City of Gallup and the GMCS District) falls within Wind Zone II (design winds up to 160 mph), while the extreme western mesas lie in Zone I (up to 130 mph). Gap winds accelerate through narrow canyons along the Continental Divide and across the Chuska Mountains, and down-slope mountain-wave flows frequently funnel through passages like Five Mile Hill near Gallup, producing sudden gusts on adjacent valley rims. These wind-zone designations set the minimum three-second gust speeds that structures must be engineered to resist, ensuring that roofs, walls, windows, and critical facilities can withstand the straight-line and gap-flow winds that sweep through the county's high-elevation terrain (State of New Mexico HMP, 2023).

Since high winds can develop under multiple weather scenarios and often with only minutes to hours of warning, the hazard footprint covers the entire planning area, which includes unincorporated McKinley County, City of Gallup, and Gallup-McKinley County Schools.

City of Gallup

In contrast, the City of Gallup sits in a broad valley but contains a far denser concentration of buildings, many of which are mid-century construction and more susceptible to wind damage. Although peak gusts are similar to those in rural areas (50 to 65 mph), Gallup sees more frequent service outages, downed trees onto roadways,

and structural impairments, simply because more assets and critical facilities lie in harm's way (NCEI, 2024; State of New Mexico HMP, 2023).

Gallup-McKinley County Schools

GMCS are woven throughout both rural and urban areas in the planning area and experience both the intensified gap-wind exposures of upland areas and the concentrated infrastructure impacts of the city.

Previous Occurrences

Information on previous occurrences of high wind is broken down by jurisdiction below.

McKinley County

High wind events remain one of the most common and impactful natural hazards across all jurisdictions in McKinley County and the broader northwest New Mexico region (State of New Mexico HMP, 2023). Combining data from NOAA's NCEI storm database with historical events recorded in the 2021 McKinley County HMP, the county has experienced a total of 83 significant high wind events between 1996 and 2024, including an additional 24 wind events since the last planning period (NCEI, 2024). Typical wind speeds for these events range from 50 to 65 mph, often causing structural damage, downed trees, power outages, and disruptions to transportation networks and public services (NCEI, 2024). Between 1996 and 2024, total property damage directly attributed to high wind events in McKinley County reached over $750,000. Previous occurrences of high wind events are detailed in **Table 3.31**. The 2024 New Mexico Climate Adaptation and Resilience Plan (CARP, 2024) notes that extreme wind events are already disrupting infrastructure, intensifying wildfire behavior, and creating cascading public safety and economic risks, particularly in rural and underserved areas (CARP, 2024).

City of Gallup

The strongest recorded event within this period occurred on April 22, 2022, featuring wind gusts reaching 70 mph near Gallup, resulting in approximately $25,000 in property damage, primarily from fallen trees and power outages (NCEI, 2024). While most individual high wind events recorded minimal damage, their high frequency and consistent occurrence represent a significant cumulative risk to infrastructure, public safety, and community resilience.

Gallup-McKinley County Schools

Notably, GMCS alone incurred more than $200,000 in damages, highlighting substantial vulnerability within educational facilities (NCEI, 2024; State of New Mexico HMP, 2023).

Table 3.31 – High Wind Previous Occurrences (January 2020- December 2024)

Severe Storm Events	Jurisdictions Impacted	Event Dates	Damages	Injuries and Fatalities	Peak Wind (mph)
High Wind	Unincorporated McKinley County	Feb 3, 2020	$0	None	56.00
High Wind	Unincorporated McKinley County	May 2, 2020	$0	None	51.00
High Wind	Unincorporated McKinley County	June 5, 2020	$0	None	51
High Wind	Unincorporated McKinley County	June 8, 2020	$0	None	51
High Wind	Unincorporated McKinley County	June 24, 2020	$0	None	54
High Wind	Unincorporated McKinley County	Aug 23, 2020	$10,000	None	50
High Wind	Unincorporated McKinley County	Oct 25, 2020	$0	None	62
High Wind	Unincorporated McKinley County	Oct 12, 2021	$0	None	51
High Wind	Unincorporated McKinley County	Oct 26, 2021	$0	None	50
High Wind	Unincorporated McKinley County	Dec 12, 2021	$0	None	50
High Wind	Unincorporated McKinley County	Dec 15, 2021	$0	None	53
High Wind	Gallup	Feb 21, 2022	$0	None	59
High Wind	Unincorporated McKinley County	Feb 23, 2022	$0	None	61
High Wind	Gallup	Mar 4, 2022	$0	None	63
High Wind	Gallup; Unincorporated McKinley County	Apr 11–12, 2022	$0	None	65
High Wind	Gallup	Apr 19, 2022	$0	None	64
High Wind	Gallup; Unincorporated McKinley County	Apr 22, 2022	$25,000	None	70
Dust Strom	Gallup; Unincorporated McKinley County	Apr 22, 2022	$0	None	70 – 95
High Wind	Gallup; Unincorporated McKinley County	May 8–9, 2022	$0	None	66
High Wind	Gallup	May 20, 2022	$0	None	62
High Wind	Gallup; Unincorporated McKinley County	May 29, 2022	$0	None	63

Severe Storm Events	Jurisdictions Impacted	Event Dates	Damages	Injuries and Fatalities	Peak Wind (mph)
Dust Storm	Gallup; Unincorporated McKinley County	May 30, 2022	$0	None	67
High Wind	Gallup	Jun 13, 2022	$0	None	59
Dust Storm	Unincorporated McKinley County	July 28, 2022	$0	None	N/A
High Wind	Unincorporated McKinley County	Feb 22, 2023	$0	None	62
High Wind	Gallup	Mar 30–31, 2023	$0	None	63
High Wind	Gallup; Unincorporated McKinley County	Apr 3–4, 2023	$0	None	66
High Wind	Gallup; Unincorporated McKinley County	Apr 19, 2023	$10,000	None	61
High Wind	Unincorporated McKinley County	Jul 26, 2023	$0	None	58
High Wind	Gallup	Feb 27, 2024	$0	None	61
High Wind	Gallup	Mar 3, 2024	$0	None	58
High Wind	Gallup; Unincorporated McKinley County	Apr 5, 2024	$0	None	60
High Wind	Gallup	Apr 25, 2024	$0	None	63
High Wind	Unincorporated McKinley County	May 5–6, 2024	$0	None	67
High Wind	Unincorporated McKinley County	May 11, 2024	$0	None	60

Source: NCEI Storm Events Database, 2024

Probability

Information on probability for high wind is broken down by jurisdiction below.

McKinley County

The New Mexico CARP emphasizes that extreme wind events in the Southwest are likely to continue impacting infrastructure and public safety, especially in rural and high-elevation areas like McKinley County (NM EMNRD 2024). Between the previous planning period (1996–2020) and the current planning period (2021–2024), average annual events more than doubled, from roughly two per year to over five per year, a shift driven in part by enhanced reporting and observation networks (NCEI, 2024). Overall, McKinley County can expect approximately three significant high wind events each year (NCEI, 2024). Due to the nature of windstorms, that probability applies equally to the unincorporated county, the City of Gallup, and all GMCS facilities. See **Table 3.32** below, recorded wind events summarized by planning period for the planning area.

Table 3.32 –High Wind Previous Occurrences and Probability by Planning Period

Time Period	NCEI Documented Wind Events	Average Events/Year
2020 – 2024	35	7
1996 – 2024	94	3.76

Source: NCEI Storm Events Database, 2024

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Extent

Information on extent for high wind is broken down by jurisdiction below.

McKinley County

High wind events are capable of affecting all areas within McKinley County, including unincorporated rural areas, the City of Gallup, and GMCS facilities alike (NCEI, 2024). Recorded wind speeds within McKinley County typically range between 50 and 65 mph, corresponding to Beaufort Scale levels of 9 to 10 (NCEI, 2024). Winds in this range regularly cause structural damage, disrupt power and communications networks, and pose safety threats to residents throughout the planning area. The Beaufort Scale, shown below in **Table 3.33**, displays the ranges of wind speed and correlates them with their typical effects. Winds reaching levels 7 and 8 (32 to 46 mph) can break small branches and generate airborne debris, while winds at levels 9 and 10 (47 to 63 mph) result in slight to moderate structural damage, including damage to roofs, siding, and the uprooting or snapping of trees. Such damage can significantly impact residences, commercial structures, schools, and critical infrastructure across McKinley County, with the extent of damage varying depending on specific wind speeds and duration.

Table 3.33 – Beaufort Scale

Beaufort Number	Wind Speed (mph)	Seaman's Term	Effects
0	Under 1	Calm	Calm, smoke rises vertically
1	1 – 3	Light Air	Smoke drift indicates wind direction, but vanes do not move
2	4 – 7	Light Breeze	Wind felt on face, leaves rustle, vanes begin to move
3	8 – 12	Gentle Breeze	Leaves, small twigs in constant motion, light flags extended
4	13 – 18	Moderate Breeze	Dust, leaves, and loose paper raised up, small branches move
5	19 – 24	Fresh Breeze	Small trees begin to sway
6	25 – 31	Strong Breeze	Large branches of trees in motion, whistling heard in wires
7	32 – 38	Moderate Gale	Whole trees in motion, resistance felt in walking against the wind
8	39 – 46	Fresh Gale	Twigs and small branches break off trees
9	47 – 54	Strong Gale	Slight structural damage occurs, slate blown from roofs
10	55 – 63	Whole Gale	Trees broken, structural damage occurs
11	64 – 72	Storm	Widespread damage
12	73 or Higher	Hurricane Force	Violence and destruction

Source: NOAA.

Between 1996 and the most recent plan update, property damage attributed directly to high winds totaled approximately $720,000.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

Notably, GMCS alone sustained over $200,000 of this recorded damage, highlighting significant vulnerability within educational facilities.

Vulnerability Assessment

Vulnerability is a description of which assets, including structures, systems, populations, and other assets as defined by the community, within locations identified to be hazard prone, are at risk from the effects of identified hazard(s) In this section, facilities, critical facilities, population, and systems are evaluated to better understand vulnerabilities to such assets in order to effectively mitigate risk from hazards. **Table 3.34** details how each of the jurisdictions ranked High Wind. The City of Gallup had the highest PRI ranking while GMCS has the lowest PRI ranking comparatively.

Table 3.34 – Summary of PRI for High Wind

Jurisdiction	PRI Ranking
McKinley County	2.90
City of Gallup	3.10
GMCS	2.40

Vulnerability of and Impact on Structures

Vulnerability of and impacts on structures are broken down by jurisdiction below.

McKinley County

Structures across McKinley County face varied vulnerability to high wind events depending on building type, construction quality, and geographic location. The most significant structural risk stems from the high proportion of manufactured and mobile homes, which make up over 30% of the county's housing stock (FEMA NRI, 2024). These structures are particularly susceptible to damage from strong winds, especially when improperly anchored or shielded. Unincorporated areas are especially at risk due to the lack of uniform enforcement of modern building codes.

Historical wind events have generally resulted in minor to moderate structural damage, often isolated to individual buildings or neighborhoods. According to the FEMA NRI, McKinley County has a "Very Low" relative risk rating for high wind (Score: 1.5), indicating that expected annual losses from wind events are low compared to other U.S. counties (FEMA NRI, 2024). Nonetheless, the cumulative impacts of repeated moderate wind events on vulnerable housing stock, particularly in low-income and rural communities, remain a concern.

City of Gallup

Within the City of Gallup, many residential and commercial buildings date to mid-century construction and may not meet contemporary wind-resistant design standards. Flat-roofed buildings and structures with aging materials, such as degraded roofing, unsecured siding, or non-reinforced windows, are at higher risk for damage

during gusts exceeding 60 mph, which are regularly observed in the region. Roofing loss, shattered windows, damaged outbuildings, and collapsed fences have been reported in past events.

Gallup-McKinley County Schools

No additional information is provided for the GMCS.

Vulnerability of and Impact on Critical Facilities

Vulnerability of and impacts on critical facilities are broken down by jurisdiction below.

McKinley County

Critical facilities across McKinley County, including emergency services, utilities, schools, and medical clinics, are exposed to localized but recurring risk from high wind events. Facilities situated in open terrain or near canyon exits, where wind acceleration is most pronounced, are particularly vulnerable. Critical facilities in more rural areas that are older and less fortified may experience roof damage, loss of signage or cladding, and interruptions to power or communication systems.

Utilities

Utility systems, including power substations, transmission lines, and water infrastructure, are also vulnerable, especially where lines are aboveground and exposed to treefall or wind-driven debris. Outages in these systems can result in cascading impacts across both urban and rural zones, as access to heat, water, and communication becomes impaired. Gallup, in particular, frequently experiences power outages and service interruptions during spring and fall windstorms.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

One of the most notable vulnerabilities is within the GMCS system, which spans both urban and remote parts of the county. Over $200,000 in damage has been recorded to school facilities since 1996 due to high wind events (NCEI, 2024), largely involving roof panels, window breakage, and storm debris. This damage can disrupt operations, threaten student safety, and interfere with the use of schools as emergency shelters.

Despite the relatively low number of documented injuries or widespread catastrophic losses, even minor disruptions to critical services can significantly affect public safety, emergency response, and continuity of operations, especially in communities with limited resources or alternate service pathways. As such, mitigation actions that focus on hardening key facilities and increasing structural resilience remain important.

Vulnerability of and Impact on Population

Vulnerability of and impacts on population are broken down by jurisdiction below.

McKinley County

Although high wind events are frequent in McKinley County, the vulnerability of the population to these events is moderate and not as acute as with other hazards, such as wildfire or drought. Certain population characteristics and housing conditions do contribute to elevated sensitivity in some areas, but the overall impact of high winds on the community has historically been limited in scope and severity.

According to the FEMA CRCI, McKinley County ranks in the highest national percentile for potential challenges to resilience, reflecting broad systemic vulnerability across social, economic, and housing indicators. However,

when focusing specifically on high wind hazards, the most significant contributing factor is the high proportion of manufactured and mobile homes in the county. More than 30% of all housing units fall into this category, which is particularly susceptible to damage from straight-line winds and downbursts. These vulnerabilities are more pronounced in unincorporated rural areas, where anchoring practices and wind shielding can vary widely.

Poverty is also a relevant consideration, as over a third of the county's population lives below the federal poverty level. While financial hardship can limit a household's ability to repair damage, install reinforcements, or temporarily relocate after an event, the impacts of past wind events in McKinley County have not resulted in widespread or catastrophic losses. Historical records show that most high wind events have caused little to no property damage and have not resulted in injuries or fatalities. When damage occurs, it tends to affect individual structures or result in localized service disruptions, rather than broad community-wide impacts.

The share of the population living with a disability is slightly elevated, ranging from 18 to 22%, which may affect access to emergency warnings, transportation, and post-event recovery resources. This is particularly important for residents who rely on powered medical equipment or face mobility challenges during outages or sheltering situations. Still, these risks are mitigated by the limited historical severity of wind events in the region.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for the GMCS.

Vulnerability of and Impact on Systems

Vulnerability of and impacts on systems are broken down by jurisdiction below.

McKinley County

High wind events can pose low to moderate but recurring threats to infrastructure systems across McKinley County, with impacts felt in unincorporated areas, the City of Gallup, and throughout the GMCS District. These impacts are most commonly observed in exposed areas where terrain accelerates wind speeds and where older or aboveground infrastructure is more susceptible to failure.

Unincorporated McKinley County

In unincorporated McKinley County, aboveground utility lines and sparsely distributed infrastructure are especially vulnerable to high wind damage. Transmission lines, utility poles, and communication towers may be damaged or blown over by strong gusts, particularly in remote areas where wind is funneled through canyons and across open mesas. McKinley County has a population of over 70,000 and 100-year return value of 86 mph, indicating a high exposure area for long-distance (DX) communication assets (Baringa: New Mexico Grid Resilience Report, 2024). Downed lines have historically resulted in power outages that can affect dispersed rural communities for extended periods due to challenging access conditions and limited redundancy in the grid. Trees weakened by drought or age are prone to falling during high winds, leading to damage or blocked roads near homes, schools, and public buildings. These failures can delay response and prolong outages. Communication systems are also at risk, especially in rural zones where limited network coverage makes reliability critical. Temporary outages in cellular or radio infrastructure can hinder coordination among county, city, and school personnel during emergencies.

City of Gallup

Within the City of Gallup, dense development and older buildings increase the risk of localized structural damage, particularly to roofs, siding, and signage. High winds frequently bring down tree limbs and power lines, causing service disruptions and road blockages. The city also faces risk from windborne debris, which can damage facilities and vehicles.

Gallup-McKinley County Schools

GMCS facilities, distributed across both rural and urban areas, are vulnerable to roof damage, broken windows, and service interruptions during strong wind events. Outages can affect school operations and emergency communication systems, while debris or fallen trees may block access routes or damage school infrastructure.

Key Considerations

McKinley County's vulnerability to high wind events is shaped by both structural characteristics and geographic exposure. Over 30% of housing units are mobile or manufactured homes, which are particularly susceptible to wind damage, especially in unincorporated areas lacking uniform anchoring practices. Critical facilities such as schools, power infrastructure, and medical clinics face recurring risks from wind-driven debris and service interruptions, particularly where structures are aging or located in exposed terrain. While the FEMA National Risk Index assigns McKinley County a "Very Low" relative risk for high wind, the cumulative impacts of frequent wind events on vulnerable populations, dispersed infrastructure, and essential services justify continued mitigation efforts.

3.8 – Thunderstorm

Severe storms encompass hazardous weather events typically associated with intense storm fronts. While often routine and posing minimal risk, severe storms occasionally threaten life, property, and critical infrastructure due to their potential to produce hail, lightning, high winds, and flash flooding (NWS, 2025). Severe storms may present these hazards individually or simultaneously, amplifying their potential impacts (FEMA, 2018; NOAA, 2024; NWS, 2025).

Hazards resulting from severe storms are defined below:

- **Hail:** Ice precipitation formed when thunderstorm updrafts lift raindrops into extremely cold atmospheric regions, causing the drops to freeze into ice pellets. Hailstones vary widely in size, potentially damaging aircraft, vehicles, homes, and posing severe risks to humans and livestock (NOAA, 2024).
- **Lightning:** An electrical discharge visibly occurring within or between clouds, between clouds and air, or between clouds and the ground. Lightning is a significant hazard nationwide, frequently resulting in injuries, fatalities, and structural damage (FEMA, 2018).
- **Thunderstorm Winds*:*** Strong, damaging winds occurring specifically in association with thunderstorms. These winds are characterized by sustained speeds of 40 mph or higher lasting at least one hour, or gusts of 58 mph or greater, and are termed straight-line winds to differentiate them from tornado-associated rotating winds (NOAA, 2024).

For consistency with FEMA and NOAA, high and strong winds are shown separately from thunderstorms when raw, collected data is displayed (FEMA 2018; NOAA 2024; NWS, 2025). Wind associated with severe storms is profiled separately in the High Wind section with detailed wind-specific data and analysis.

Numerous lightning strikes have occurred in the planning area throughout recorded history. However, for the purposes of assessing the planning area's vulnerabilities and risk, only the strikes recorded by the NWS and NOAA are considered. The NWS and NOAA records consist of lightning strikes that have caused a significant impact, that is, they damaged property, infrastructure, or harmed people.

Location

Thunderstorms present a county-wide hazard, affecting unincorporated areas, the City of Gallup, and GMCS facilities alike (NCEI, 2024). These storms can occur throughout McKinley County, with severity often forecasted only shortly before impacts occur (FEMA 2018). The most severe events may generate frequent lightning, hail, and heavy rains, leading to flash flooding (NCEI, 2024). Information on location for thunderstorms is broken down by jurisdiction below.

McKinley County

Lightning activity within McKinley County averages around four lightning events per square kilometer per year, indicating consistent lightning exposure across all areas of the county, posing a regular risk for structures and outdoor activities (Vaisala, 2024). Lightning can strike structures, including residential homes in unincorporated areas, public and commercial properties within Gallup, and school facilities across the GMCS District, potentially resulting in fires or other significant damage.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for the GMCS.

Previous Occurrences

Information on location for thunderstorms is broken down by jurisdiction below.

McKinley County

Thunderstorms are a persistent hazard across the planning area, affecting the City of Gallup, GMCS, and unincorporated areas alike. According to NOAA's NCEI storm events database and historical data compiled in the 2021 McKinley County HMP, the county has experienced a total of 12 significant thunderstorm events between 1996 and 2024 (NCEI, 2024). These events primarily involved strong thunderstorm winds, with six documented hail occurrences, typically producing hailstones measuring less than one inch in diameter, and one recorded lightning strike resulting in two injuries (NCEI, 2024). Since the previous plan update, only one event has occurred. This event is summarized in **Table 3.35**.

Table 3.35 – Severe Thunderstorms Previous Occurrences (January 2020 – December 2024)

Severe Storm Events	Jurisdictions Impacted	Event Dates	Damages	Injuries and Fatalities	Hail Size
Hail	Black Rock Arpt	June 6, 2023	$0	None	.75

Source: NCEI, 2024

No federal disaster declarations related to severe storms have been issued since the previous plan update, though one statewide emergency proclamation was declared in March 2019 (State of New Mexico, 2019).

Increasing atmospheric variability and changing pressure systems statewide are expected to intensify thunderstorm severity, potentially increasing hail frequency and lightning strikes, especially in higher-elevation areas such as those in McKinley County (NM CARP, 2024).

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Probability

Information on the probability for thunderstorms is broken down by jurisdiction below.

McKinley County

Between 1996-2024, McKinley County has averaged a severe storm event resulting in hail and lightning damage once every 4 years (NCEI, 2024). **Table 3.36** summarizes the number of NWS-verified severe thunderstorm events in McKinley County and the resulting average frequency for three time spans.

Table 3.36 – Number of Severe Thunderstorm Events and Probability by Planning Period

Time Period	NCEI Documented Thunderstorm Event	Average Events/Year
2020 – 2024	1	.2
1996 – 2024	7	.24

Source: NCEI, 2024

City of Gallup

No additional information is provided for the City of Gallup

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Extent

Extent for thunderstorms in McKinley County, City of Gallup, and Gallup-McKinley County Schools are described in the paragraphs below for each sub-hazard. Based on the research conducted, McKinley County, City of Gallup, and Gallup-McKinley County Schools are expected to experience hail from non-severe pea-sized hail to larger hailstones up to golf ball size. Hail events historically observed in the county generally produce hailstones up to 1 inch in diameter, consistent with the NWS definition of severe hail, which is any hailstone 1 inch (quarter-sized) or larger. These events are capable of causing damage to crop, vehicles, roofs, and windows. (NCEI, 2024; NOAA 2025). Hail smaller than 1 inch is typically not damaging but can still cause hazardous driving conditions (NOAA, 2025). A summary of hail size classifications and associated damage potential is provided in **Table 3.37** below.

Table 3.37 – NOAA Hail Size Comparison and Impacts

Class	Hail Size (inches)	Size Comparison	Damage Impacts (Typical)
N/A – Non-Severe	< 1.00	Pea to Nickel	Minimal or no damage
Severe	≥ 1.00 – 1.25	Quarter to Half-Dollar	Possible damage to vehicles, roofs, siding, broken glass
Very Large	1.25 – 1.75	Ping-Pong to Golf Ball	Likely roof, vehicle, and window damage; possible risk of personal injury
Giant	1.75 – 2.75	Golf Ball to Baseball	Significant structural damage; high risk of injury outdoors
Extreme	≥ 2.75	Larger than Baseball	Widespread structural damage; severe risk to persons and vehicles

Source: NOAA.

A storm's lightning intensity was historically measured using the Lightning Activity Level (LAL) scale, ranging from LAL 1 to LAL 6. However, as of February 1, 2025, the NWS has discontinued this scale in favor of evaluating lightning risk through thunderstorm coverage, lightning flash density, and probabilistic forecasts, as part of its IDSS framework (NWS, 2025). For the purpose of this plan, understood local risk levels (e.g., isolated to numerous thunderstorms) are mapped to informal LAL-like categories—LAL 2 through LAL 5—to reflect lightning risk common to McKinley County, City of Gallup, and Gallup-McKinley County Schools, outlined in **Table 3.38**. **Figure 3.14** shows where most lightning tends to strike, in the central western, south central, and eastern parts of the State.

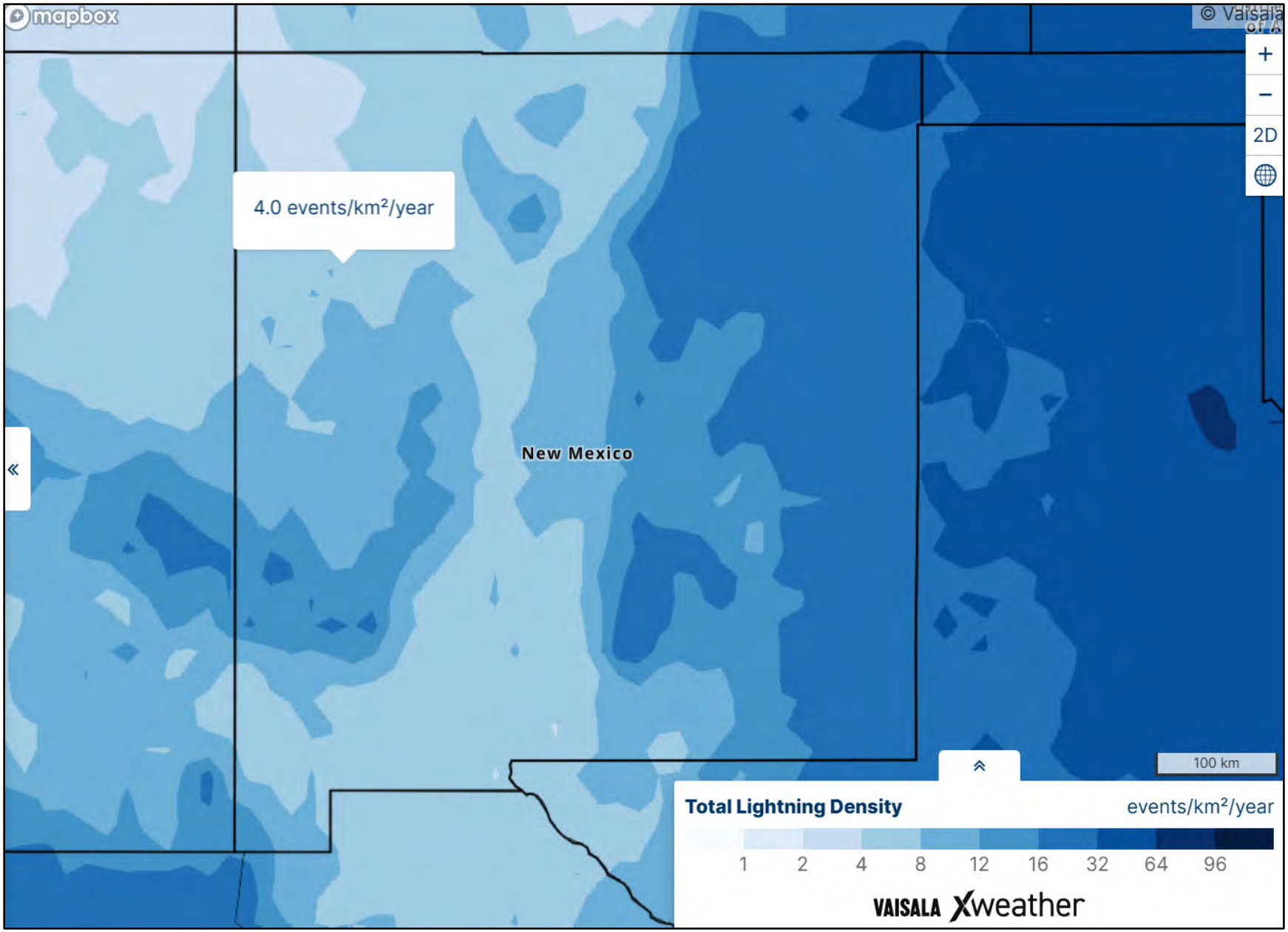
Table 3.38 – Lightning Activity Intensity Scale

Risk Level	Modern NWS Descriptor	Approx. LAL Equivalent	Primary Local Concern
Very Low	No thunderstorms expected	-	No activity
Low	Isolated thunderstorms (< 25 % coverage)	LAL 2	Small chance of isolated lightning; localized structural or landscape strike.

Risk Level	Modern NWS Descriptor	Approx. LAL Equivalent	Primary Local Concern
Moderate	Scattered thunderstorms (25–54 % coverage)	LAL 3	Potential for lightning damage; may require temporary closure of outdoor facilities.
High	Numerous thunderstorms (55–74 % coverage)	LAL 4	High lightning frequency; possible structural strikes, fire risk; likely short-term closures.
Extreme	Widespread storms (≥ 75 % coverage)	LAL 5	Intense lightning, risk of structural fires or significant damage, extended closures, and power interruptions.

Source: NWCG, 2023; NWS, 2025.

A strike could damage structures throughout the planning area and render it unusable for a period of time or cause it to catch fire and damage it beyond repair. Most lightning strikes do not hit structures or people and therefore go unreported. Based on the research conducted, McKinley County, City of Gallup, and GMCS are expected to experience very low to extreme lightning activity (NOAA NSSL, 2025; NCEI, 2024).



Source: Vaisala Weather

Figure 3.14 – Map of the Lightning Strike Density Recorded in New Mexico

Vulnerability Assessment

Vulnerability is a description of which assets, including structures, systems, populations, and other assets as defined by the community, within locations identified to be hazard prone, are at risk from the effects of identified hazard(s) In this section, facilities, critical facilities, population, and systems are evaluated to better understand vulnerabilities to such assets in order to effectively mitigate risk from hazards. **Table 3.39** details how each of the jurisdictions ranked Thunderstorms. McKinley County had the highest PRI ranking while the City of Gallup has the lowest PRI ranking comparatively.

Table 3.39 – Summary of PRI for Thunderstorms

Jurisdiction	PRI Ranking
McKinley County	1.80
City of Gallup	3.20
GMCS	2.40

Vulnerability of and Impact on Structures

The vulnerability of and impacts on structures are broken down by jurisdiction below.

McKinley County

While the impact on structures in McKinley County has been minimal, hail can cause significant damage to buildings, cars, and homes. Homes with aging roofs or those constructed with less resilient materials may be more susceptible to hail damage.

City of Gallup

Areas with older buildings, such as parts of Gallup, could experience higher levels of property damage.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability of and Impact on Critical Facilities

The vulnerability of and impacts on critical facilities are broken down by jurisdiction below.

McKinley County

All critical facilities within the county are vulnerable to thunderstorm-related impacts, specifically hail and lightning. Lightning can strike anything, but tall buildings such as communication towers, substations, and transmission lines are the most vulnerable to lightning strikes. It is also important to consider the cascading impacts of lightning strikes, specifically wildfires. Thunderstorms, especially those that coincide with dry and drought conditions, can spark fires that can spread quickly under the right conditions. Wind events can impact facilities in a number of ways, depending on the severity of the event.

Hail events, although rare in the county and generally limited in impacts, can damage facilities and infrastructure if they occur for a sustained period or if hail size is large enough. All critical facilities in the county are vulnerable to potential impacts of thunderstorm hazards. The NRI report for McKinley County estimates the expected annual loss of buildings from hail to be $8,236; from lightning to be $3,238; and from strong wind to be $1,078.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability of and Impact on Population

Lightning and hail pose a risk to the population, as the speed and size of the hailstones falling on individuals can cause injuries or deaths. While it is rare for lightning to strike individuals, over the last 30 years (1989 to 2018), the U.S. has averaged 43 reported lightning fatalities per year. Only about 10% of people who are struck by lightning are killed, leaving 90% with various degrees of disability. More recently, from 2009 to 2018, the U.S. has averaged 27 lightning fatalities (NWS, 2025). Motorists, outdoor workers, and those experiencing homelessness and unable to seek shelter are among the populations that would be at increased risk and exposure to harm. Additionally, hail can deteriorate roads and create unsafe driving conditions. The vulnerability of and impacts on the population are broken down by each jurisdiction below.

McKinley County

Within McKinley County, there have been two reported injuries and no fatalities; however, those injuries occurred nearly 30 years ago. The NRI report for McKinley County does not estimate that any population losses will result from hail, lightning, or strong wind. Please note that this report is generalized across the county and outlines average expected impacts. There is always the possibility of more severe events occurring, which may place residents at risk.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability of and Impact on Systems

The vulnerability of and impacts on systems are broken down by each jurisdiction below.

McKinley County

All systems in the county, including agricultural, ecological, economic, and infrastructure systems, are potentially vulnerable to thunderstorm impacts, although probability and extent are expected to be low. During thunderstorm conditions, communication and power can be impacted, which reduces the ability to send emergency notifications and alerts. This reduced capacity is a key consideration for cascading events, such as wildfires, where evacuation notices may be limited.

Agriculture

The primary system impact from thunderstorms that should be considered is agricultural impacts. Wind and hail can both cause crop loss and reduced yields, especially during the early season when crops are less resilient. The NRI report for McKinley County indicates that the expected annual loss of agricultural values from hail is $157, and $0 for wind. This shows that impacts from this hazard are generally expected to be minimal, although severe storms are not unheard of in the county. Please also note that the NRI report is limited in its ability to

predict vulnerability at a scale smaller than the county. For this reason, estimated loss values are generalized and should not be interpreted as certainty in loss estimates.

Ecosystem

Ecological systems are generally resilient to wind, hail, and thunderstorm impacts, although cascading events, such as wildfires caused by lightning, are a bigger concern. Particularly during drought periods, lightning ignitions can spread quickly and have short to long-term impacts on soil and vegetation health depending on burn severity. Additionally, following a wildfire, soils may become more erodible, resulting in greater impacts from generally inconspicuous rainfall events.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Key Considerations

Since severe storms strike over large areas indiscriminately, there is no particular portion of the planning area that is more likely than another to experience a severe storm. However, there are portions of the planning area that are more vulnerable to hail and wind-related damage due to the age of a significant portion of their building stock. As previously mentioned, the majority of the planning area's structures were built prior to 1999 and thus are more vulnerable and at risk to severe storms. Most of the aging structures are located in the City of Gallup.

3.9 – Tornadoes

A tornado is a violent, dangerous, rotating column of air that is in contact with both the surface of the earth and a cumulonimbus cloud or, in rare cases, the base of a cumulus cloud. Often referred to as a twister or a cyclone, they can strike anywhere and with little warning. Some touchdowns last only seconds (little more than a swirl of dust) while the longest-lived can stay on the ground for more than an hour, carving paths tens of miles long and more than two miles wide (NOAA, 2023).

Roughly 1,200 tornadoes are recorded across the United States in a normal year, with minimal activity experienced in McKinley County. (NCEI, 2024; NOAA, 2023). Tornado formation can be sudden: a vortex may descend from a fast-moving squall line with virtually no lead time, though modern Doppler radar and storm-spotter networks often allow the NWS to issue watches or warnings minutes in advance (NOAA, 2023).

Tornadoes can inflict severe structural damage. Key mechanisms include:

- **Wind pressure and uplift –** Rapid changes in wind direction and speed around a structure create localized high pressures that can rip roofing, siding, and connections apart (FEMA, 2023).
- **Internal pressurization –** If windows or doors are breached by debris, internal pressures can rise sharply, intensifying uplift forces and leading to partial or total roof failure (FEMA, 2023).
- **Wind-borne debris –** Objects picked up by the vortex (mud, lumber, sheet metal, even vehicles) travel at high speed and can penetrate walls, glazing, and roofs, becoming the primary cause of injuries and fatalities (FEMA, 2023).
- **Progressive structural collapse –** Once the building envelope is breached, cascading failures of load paths (roof-to-wall, wall-to-foundation) can result in complete destruction (FEMA, 2023).

Location

Information on location for tornadoes is broken down by each jurisdiction below.

McKinley County

Tornadoes in McKinley County are almost always weak, short-lived landspouts or funnel clouds that develop along high-based thunderstorms or dryline wind shifts (NCEI, 2024; State of New Mexico HMP, 2023). They typically remain below EF1 strength (< 110 mph), trace narrow paths only a few yards wide, and lift within minutes; a few recent landspouts (Gallup, May 13, 2023, and Crownpoint, Jun 14, 2024) each stayed on the ground for less than three miles and caused no damage (NCEI, 2024).

Although tornadoes are rare in this region, FEMA wind-resistance mapping as Zone II (design wind ≤ 160 mph), with the western mesas classified as Zone I (≤ 130 mph). Those wind zone values set the structural design baseline for each jurisdiction (State of New Mexico HMP, 2023).

Since touchdown points cannot be predicted at the neighborhood scale, each jurisdiction is considered equally exposed. The I-40 corridor and U.S. 491 remain areas of heightened concern, not because tornadoes are more frequent there, but because even a weak vortex can overturn high-profile vehicles or loft debris across heavily traveled lanes (NOAA, 2023).

City of Gallup

Since data collection for previous occurrences halted, two more landspout events occurred, one located near Gallup in early July.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Previous Occurrences

Information on previous occurrences for tornadoes is broken down by each jurisdiction below.

McKinley County

Tornadoes and tornado-like events have occurred infrequently but consistently in McKinley County. The previous hazard mitigation plan documented three tornadoes in the planning area recorded by the NWS between 1954 and 2020. All three were rated EF0 on the Fujita/Enhanced Fujita scale, produced no injuries or fatalities, and caused no verified property damage. Since the previous plan, the NCEI recorded four additional tornado-related events noted in **Table 3.40**. These four recorded tornado events included two funnel clouds and two landspouts (NCEI, 2024). Additionally, as mentioned in the location section above, two more landspout events occurred, one of which occurred near Gallup in early July.

All recorded events have been low-intensity and short-lived, with no reported injuries, fatalities, or property damage (NCEI, 2024). The three tornadoes recorded before 2021 were each rated EF0 on the Enhanced Fujita Scale. The more recent landspouts and funnel clouds were unrated and are assumed to fall below EF1 strength, typical of weak convective systems in western New Mexico (NCEI, 2024).

Tornado activity in McKinley County is infrequent and typically weak, with all documented events classified as EF0 or EF-U, consistent with broader trends across New Mexico's high-elevation western counties (State of New Mexico HMP, 2023). Based on NCEI records, tornadoes and funnel clouds in the county have occurred between May and October, with recent events recorded in May, June, and October (NCEI, 2024). Unlike the eastern plains of New Mexico, where spring dryline storms are the primary driver of tornado activity, McKinley County's events are more likely associated with monsoonal convection and frontal boundaries, reflecting its position west of the state's primary severe weather corridors (NCEI, 2024; State of New Mexico HMP, 2023).

Table 3.40 – Tornado Previous Occurrences (January 2020- December 2024)

Tornado Event	Jurisdictions Impacted	Event Dates	Damages	Injuries and Fatalities	Wind Speeds
Funnel Cloud	Unincorporated McKinley County	Jun 27, 2022	$0	None	N/A
Funnel Cloud	Unincorporated McKinley County	Oct 4, 2022	$0	None	N/A
Tornado (landspout)	City of Gallup; Unincorporated McKinley County	May 13, 2023	$0	None	60 mph
Tornado (landspout)	City of Gallup; Unincorporated McKinley County	Jun 14, 2023	$0	None	N/A

Source: NCEI Storm Events Database, 2024

City of Gallup

There have been two recorded tornado events in the City of Gallup. Neither of the events reported any damages, injuries, or fatalities.

Gallup-McKinley County Schools

No additional information provided for GMCS.

Probability

Information on probability for tornadoes is broken down by each jurisdiction below.

McKinley County

Based on NCEI records, McKinley County has experienced a total of seven documented tornadoes between 1954 and 2024, resulting in a long-term average of approximately 0.10 tornadoes per year, or one event every 10 years (NCEI, 2024). Since the last HMP update, however, two landspouts and two funnel clouds were reported, from 2021 to 2024, an average of one event per year over that shorter period (NCEI, 2024). See **Table 3.41** below for the documented tornado events for each planning period.

Table 3.41 – Number of Occurrences for Tornado Events and Probability by Planning Period

Time Period	NCEI Documented Tornado Event	Average Events/Year
2021 – 2024	4	1.50
1954 – 2024	7	0.13

Source: NCEI Storms Events Database

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Extent

Since 2007 the United States has rated tornadoes with the Enhanced Fujita (EF) Scale rating tornadoes from an EF0 (minor damage) to an EF5 (massive/incredible damage). **Figure 3.15** details the wind speeds expected and damage descriptions for each EF rating (NOAA, 2007):

EF Rating	Wind Speeds	Expected Damage
EF-0	65-85 mph	'Minor' damage: shingles blown off or parts of a roof peeled off, damage to gutters/siding, branches broken off trees, shallow rooted trees toppled.
EF-1	86-110 mph	'Moderate' damage: more significant roof damage, windows broken, exterior doors damaged or lost, mobile homes overturned or badly damaged.
EF-2	111-135 mph	'Considerable' damage: roofs torn off well constructed homes, homes shifted off their foundation, mobile homes completely destroyed, large trees snapped or uprooted, cars can be tossed.
EF-3	136-165 mph	'Severe' damage: entire stories of well constructed homes destroyed, significant damage done to large buildings, homes with weak foundations can be blown away, trees begin to lose their bark.
EF-4	166-200 mph	'Extreme' damage: Well constructed homes are leveled, cars are thrown significant distances, top story exterior walls of masonry buildings would likely collapse.
EF-5	> 200 mph	'Massive/incredible' damage: Well constructed homes are swept away, steel-reinforced concrete structures are critically damaged, high-rise buildings sustain severe structural damage, trees are usually completely debarked, stripped of branches and snapped.

Source: NWS, 2025

Figure 3.15 – Enhanced Fujita Scale

Information on extent for tornadoes is broken down by each jurisdiction below.

McKinley County

All nine events on record for McKinley County between 1994 and 2024 fall at the very low end of this scale (three confirmed EF0s and six unrated landspouts or funnel clouds presumed to be sub-EF1). No tornado stronger than EF0 has been verified, and none has produced documented damage (NCEI 2024). While the historical extent is EF0 (≤ 85 mph), the county's FEMA Wind Zone II designation (design wind ≤ 160 mph) acknowledges that an isolated EF2-strength vortex is possible and underpins building-code requirements (FEMA, 2023).

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability Assessment

Vulnerability is a description of which assets, including structures, systems, populations, and other assets as defined by the community, within locations identified to be hazard prone, are at risk from the effects of identified hazard(s) In this section, facilities, critical facilities, population, and systems are evaluated to better understand vulnerabilities to such assets in order to effectively mitigate risk from hazards. **Table 3.42** details how each of the jurisdictions ranked Tornadoes. The City of Gallup had the highest PRI ranking while GMCS has the lowest PRI ranking comparatively.

Table 3.42 – Summary of PRI for Tornadoes

Jurisdiction	PRI Ranking
McKinley County	1.60
City of Gallup	2.60
GMCS	1.00

Vulnerability of and Impact on Structures

Vulnerability of and impact on structures are broken down by each jurisdiction below.

McKinley County

Most tornadoes in the planning area are EF0 to EF1 class, indicating relatively low wind speeds. Building to modern wind standards and state codes provides significant protection from these hazard events; however, a community in the direct path of a violent, high-scale tornado can do little to prevent significant property damage. Designing buildings to protect against extreme wind speeds, such as those associated with an EF4 or EF5, is extremely challenging and cost-prohibitive. Anything less than a FEMA Code 361-compliant structure is susceptible to significant damage or complete destruction. The annual expected loss value of a building from tornadoes, according to the NRI report, is $1,641. Please note that the NRI report is limited in its ability to predict vulnerability at a scale smaller than the county. For this reason, estimated loss values are generalized and should not be interpreted as certainty in loss estimates. Since the last plan update, four tornado events were recorded, but none have caused any recorded property damage.

City of Gallup

Many structures, especially in the City of Gallup, have been built before 1999 and are more susceptible to wind damage and flying debris.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability of and Impact on Population

Vulnerability of and impact on population are broken down by each jurisdiction below.

McKinley County

The annual expected loss value of a building from tornadoes, according to the NRI report, is $1,641. Please note that the NRI report is limited in its ability to predict vulnerability at a scale smaller than the county. For this reason, estimated loss values are generalized and should not be interpreted as certainty in loss estimates. Since the last plan update, four tornado events were recorded, but none have caused any recorded property damage.

Although it would be unexpected in the planning area, an EF4 or EF5 tornado has the potential to cause complete destruction of towns. An event of this extent could cause many casualties and fatalities, and extensive response and recovery efforts would be needed for months to years. A lesser magnitude tornado, EF0 or EF1, like the ones expected to occur in the planning area, causes minimal to moderate damage. Damage expected includes overturning mobile homes, breaking windows, broken tree branches, and minor damage to roofs. Injuries and fatalities to the population are expected to be minimal for EF0 and EF1. To reduce impacts, in the event of a tornado warning or known touchdown, residents should take shelter and stay clear of windows. Socially vulnerable populations, including the elderly and disabled, are at a heightened risk, as receiving warning notices and seeking shelter may be more difficult and require additional assistance and timing. The NRI report indicates that annually, zero persons are expected to be lost due to tornado impacts. Historically, there have been no fatalities or injuries recorded from tornadoes in the planning area. Please note that historic records and the NRI report are not necessarily predictive of future events. The chance of higher severity tornadoes and tornadoes impacting more populated areas is possible.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability of and Impact on Systems

Vulnerability of and impact on systems are broken down by each jurisdiction below.

McKinley County

All of the planning area's community assets and systems' vulnerability to tornadoes are equal throughout the planning area. A small tornado will not significantly damage a community and its systems, but a larger magnitude tornado can impact a community for weeks, months, or years and even destroy a city completely. Significant damage to any portion of the planning area would heavily impact the community's economy and increase its social vulnerability. Communication and transmission lines and poles are highly susceptible to tornado impacts, which may reduce communications and power for communities.

Environment

Ecological systems are generally resilient to tornado impacts, although tree coverage and health may be reduced by events that knock down trees and remove branches. This can also influence wildfire conditions by creating fuel loading and reducing forest health. Under drought conditions, tornadoes can exacerbate impacts on health from dust and debris related disturbances. This is especially true for vulnerable populations with respiratory issues.

Agriculture

Agricultural systems can be impacted by high-severity tornadoes, but this is unlikely. The NRI report estimates an annual loss of agricultural values to be $5, while exposed values are $9,334,135. Please note that the NRI report is limited in its ability to predict vulnerability at a scale smaller than the county. For this reason, estimated loss values are generalized and should not be interpreted as certainty in loss estimates.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Key Considerations

Since tornadoes strike over large areas and indiscriminately, there is no particular portion of the planning area that is more likely than another to experience a tornado. However, there are portions of the planning area that are more vulnerable to wind-related damage due to the age of a significant portion of their building stock.

As previously mentioned, the majority of the planning area's structures were built prior to 1999 and thus are more vulnerable and at risk to tornadoes. Concentrations of pre-1999 constructed buildings exist in Gallup as well as the community of Ramah (located in the central-south portion of the planning area), southeast of Gallup.

3.10 – Wildfires

The NWS defines a wildfire as a free-burning, uncontainable wildland fire not prescribed for the area, which consumes the natural fuels and spreads in response to its environment (FEMA, 2025). Wildfire ignitions can occur naturally, usually from lightning strikes, accidentally from human sources (equipment and vehicles, powerlines, campfire escapes, etc.), or by arson.

Wildfire risk to communities and infrastructure has increased significantly in the U.S. in recent years, and development has increasingly pushed further into previously uninhabited, naturally vegetated areas. Significant danger to life and property occurs when human development meets and becomes intertwined with wildland vegetation.

Wildfires occurring in grass and shrublands in the county will most likely be wind-driven; that is, their spread is primarily influenced by wind conditions rather than fuels. Grassland fires generally are less severe, although they can pose a substantial risk if communities are within their path, especially from ember intrusion. McKinley County is unique in its landscape composition, containing both flat, open grass and shrublands as well as densely vegetated forested areas with mountainous topography.

Most wildfires occur without warning and spread quickly, but the event depends upon a number of conditions. topography, vegetation, and climate are the most important factors to consider when assessing wildfire risk. Steep, gullied areas often have a higher risk due to the tendency of fires to climb up hill quickly and consume fuels in confined areas; factors influencing wildfire rate of spread. The type and density of vegetation will influence the intensity and spread of a fire. Forested areas with dense understories and fuels that connect the forest floor to the canopy, also known as ladder fuels, will generally have the highest risk, as these areas can ignite quickly, burn very hot, and spread quickly across the canopy and forest floor. Climate is also important to consider, as drier vegetation is more vulnerable to ignition than moist vegetation, and wind conditions influence the rate of spread across the landscape.

Previous Occurrences

Information on previous occurrences for wildfires is broken down by each jurisdiction below.

McKinley County

Since the last HMP was completed in 2021, there have been several wildfire events within McKinley County. Four wildfires have occurred in the counties to the north and south of the county, but were contained before reaching county boundaries. Two of these events originated in the El Malpais National Monument, about 20 miles south of the county. All of these wildfires were wind-driven and occurred in late spring to early summer, and the largest of the fires burned about 2,500 acres south of McKinley County. NCEI records do not generally record smaller wildfires or those that do not cause damage to life and property. Because of this, the National Interagency Fire Center (NIFC) records show a more complete picture of wildfire history in McKinley County.

The 2021 McKinley County HMP included wildfire records from 1981 through June of 2016, noting 655 wildfires that burned one acre or more. For this plan update, the Planning Team chose to include all fire occurrences regardless of size. According to NIFC records, between July 2016 and the end of 2024, there have been 284 wildfires in unincorporated McKinley County, burning a total of 12,458 acres. The average size of recorded fires during this period was 39.6 acres, with the largest fire, the 2019 Triple Nickle fire, burning over 8000 acres. Wildfires over five acres in McKinley County that occurred during the HMP planning period are listed below in **Table 3.43**.

Table 3.43 – Wildfire History for McKinley County from July 2016 through December 2024.

Fire Name	Fire Start Date	Ignition Source	Acres Burned
Frog Rock	7/11/2016	Human	10
Anasazi	7/17/2016	Human	17
Mariposa	7/26/2016	Natural	11
Pueblo Pintado	4/12/2017	Human	6
Lakeside	4/12/2017	Undetermined	5
Bill Morgan	7/6/2017	Natural	9.2
Escondido	9/16/2017	Natural	1200
Mesa Farm 7	3/31/2018	Human	68
Hwy 12 Mp38	4/25/2018	Human	7.5
Antelope	7/18/2018	Natural	270
Mariposa	7/29/2018	Natural	957
Guadalupe	7/29/2018	Natural	76
Azabachi	6/19/2019	Natural	490
Moses	6/27/2019	Natural	95
Chopito	6/30/2019	Natural	250
Triple Nickle	8/4/2019	Natural	8063
Colorado 2	10/5/2020	Human	257
Riverbed	4/8/2021	Human	13
Northwest Plateau Zone	05/02/2021	Natural	422
Northwest Plateau Zone	05/16/2021	Natural	N/A
Rainbow Springs	7/1/2021	Undetermined	19
Trap Rock	12/4/2021	Undetermined	5
Route 2	2/7/2022	Undetermined	34
Silt	6/7/2022	Human	8.79
West Central Highlands Zone	06/09/2022	Natural	939
Cherry	6/23/2022	Undetermined	60
Mitchell	7/8/2023	Undetermined	12
Cottonwood Creek	6/14/2024	Undetermined	38
West Central Highlands Zone	06/15/2024	Lightning	2,499
Gonzales	6/19/2024	Human	50
Merrill	5/23/2025	Human	54
Redtop	6/15/2025	Human	7.9

Source: NIFC; NCEI, 2024

Gallup-McKinely County Schools: During the 2026 HMP planning period, there were no wildfire events that impacted GMCS properties.

Figure 3.16 shows where historical wildfire events have occurred and their perimeters within McKinley and surrounding counties from 1972 to 2025.

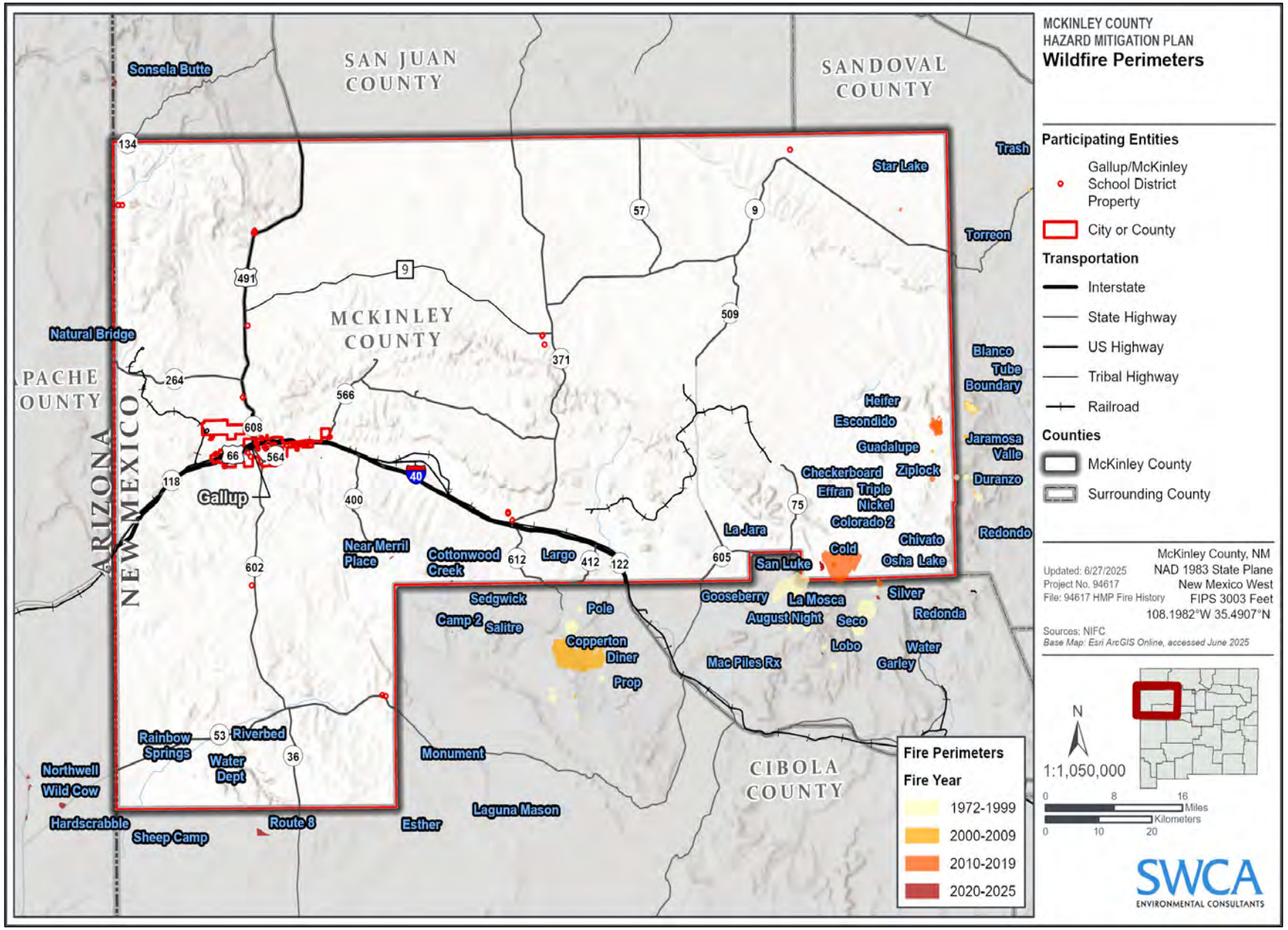


Figure 3.16 – McKinely County Historical Wildfire Perimeters 1972-2025

City of Gallup

Based on the NFIC, there are no records of wildfire events in the City of Gallup. The City of Gallup Fire Department provided a listing of seven wildfires and brush fires that occurred between January 1 and June 30, 2025. All were under one acre. **Figure 3.17** describes the fire incidents that have occurred in the Gallup area.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Probability

Information on the probability for wildfires is broken down by each jurisdiction below.

McKinley County

There have been 26 recorded wildfire events in the past eight years based on the collection dates noted in the previous occurrences section of this hazard profile. The probability of a wildfire event occurring is about 27% each year.

Since the first recorded wildfire in McKinley County in 1981, there have been 727 recorded wildfires of one acre or more. Based on this number, the county can expect to experience an average of 17.7 wildfires per year. Since the last McKinley County HMP, which recorded wildfires up to 2016, there have been 270 wildfires in the county. Based on this information, the county can expect to experience 33.75 wildfires per year. Based on past fire occurrence location data from NIFC, wildfire events are most likely to occur in the southern portion of the county, including on the Zuni Reservation, in the Cibola National Forest south of Fort Wingate, and in the Cibola NF in the eastern portion of the county.

City of Gallup

In 2025, there were seven wildfires reported in the City of Gallup. prior to that, there were no recorded wildfire events in the city during the planning period based on the event records.

Gallup-McKinley School District

Since the previous plan update, there were zero wildfires recorded on GMCS properties. Based on this information, GMCS properties are not expected to experience a wildfire event.

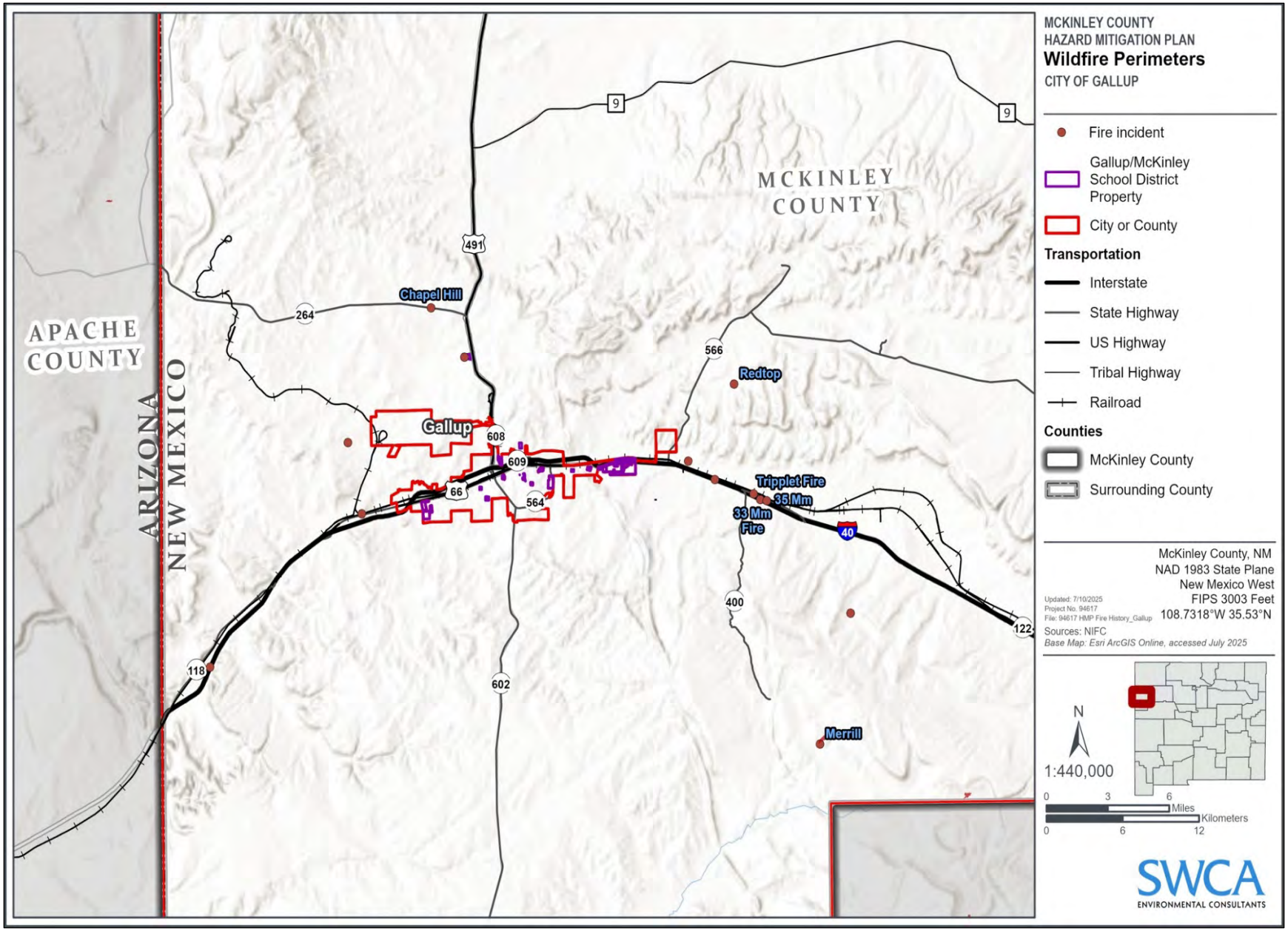


Figure 3.17 – City of Gallup Historical Wildfire Perimeters 1972-2025

Extent

Information on extent for wildfires is broken down by each jurisdiction below.

McKinley County

The NMWRAP maps wildfire hazard potential based on fuels, topography, wildfire history, and other factors. This hazard mapping for McKinley County is shown below in **Figure 3.18**, illustrating the elevated wildfire risk in the southwest, northwest, and southeast portions of the county. The central and northeastern portions of the county generally show low to very low wildfire hazard potential. Although wildfires have the potential to occur anywhere in the county with natural vegetation or naturally vegetated areas near communities and infrastructure, areas with a high wildfire potential rating are more likely to experience this hazard. Additionally, fuel composition and other landscape characteristics play a significant role in how an area is rated.
The NMWRAP has rated a majority of the unincorporated county as very low or low wildfire potential.
The northwest corner and southern portions of the county are rated as moderate to high potential. The only extreme wildfire potential areas in the county are within the Cibola National Forest in the southeast corner of the county.

Fire ignition is an ignition density that reflects historical ignition patterns. Occurrence is determined by modeling historic wildfire ignition locations to create an ignition density map. Historic fire report data were used to create the ignition locations. Ignition locations are located around Gallup, I-40, and the southeastern portion of the County, shown in **Figure 3.19**. McKinley County has more sparse fire ignition locations, while more dense ignition locations are outside of McKinley County.

City of Gallup

According to the NMWRAP Wildfire Hazard Potential modeling, the City of Gallup is generally considered to be at a low risk from wildfire. the wildfire hazard potential for the city is mapped below in **Figure 3.20**. Most of the county is shown as non-burnable due to its urban development. Outside of the city boundaries, wildfire hazard is still generally shown as low to very low.

Gallup-McKinley County Schools

Based on the NMWRAP, GMCS is expected to experience a wildfire potential range of very low to high. Several GMCS facilities are at risk for wildfire and susceptible to hazard impacts.

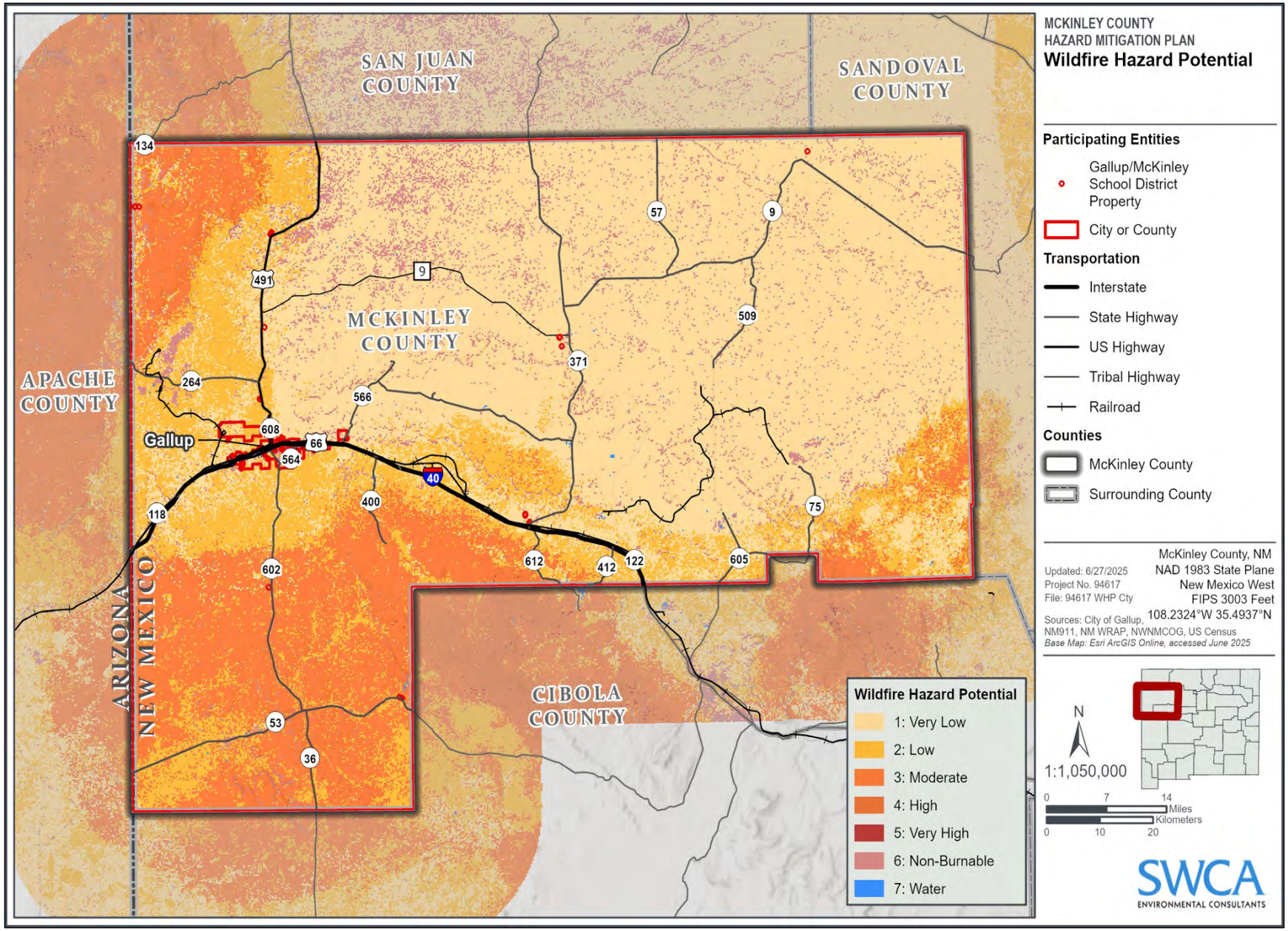


Figure 3.18 – McKinley County Wildfire Hazard Potential

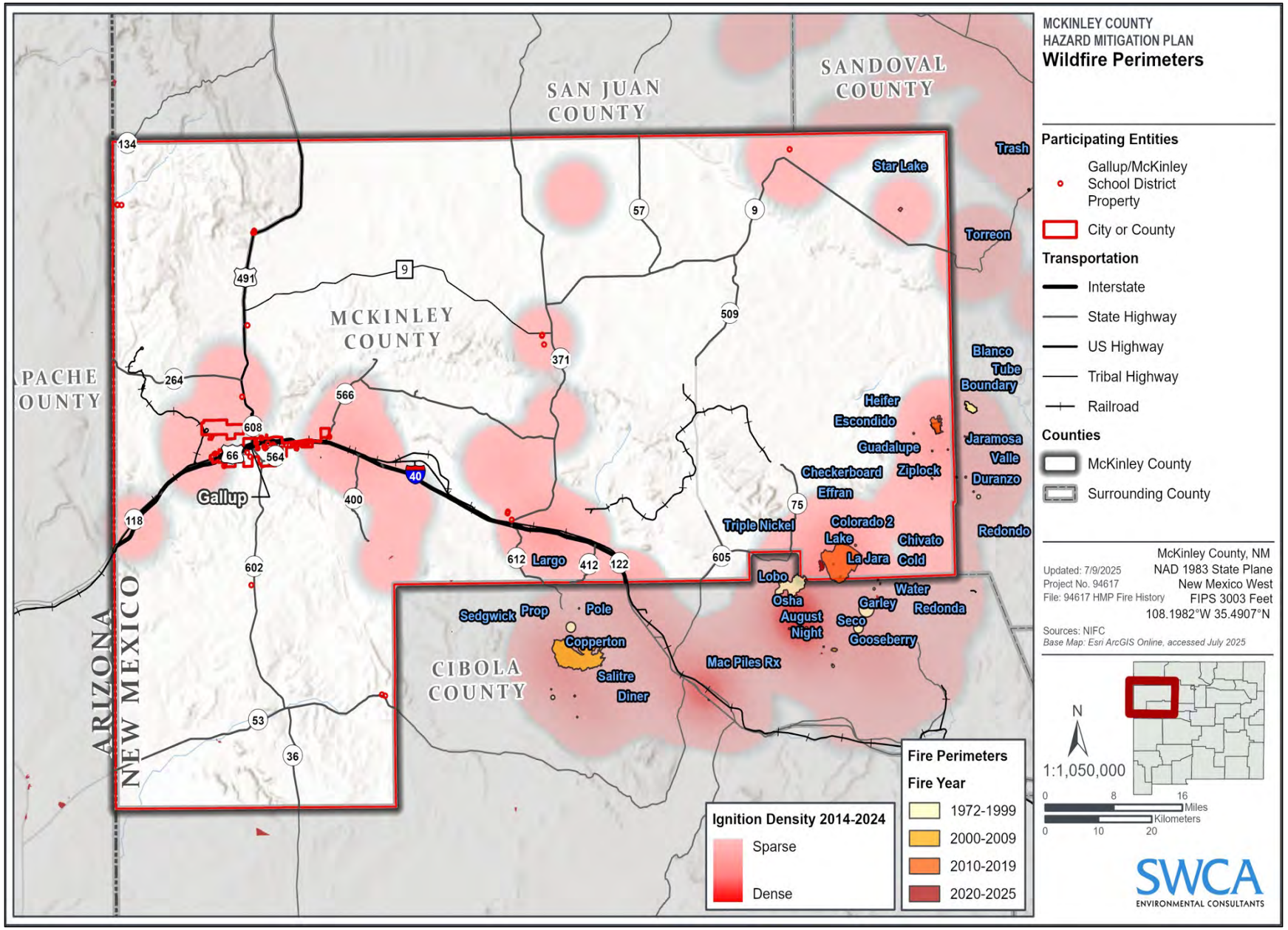


Figure 3.19 – Fire Ignition Locations (Heat Map) and Wildfire Perimeter

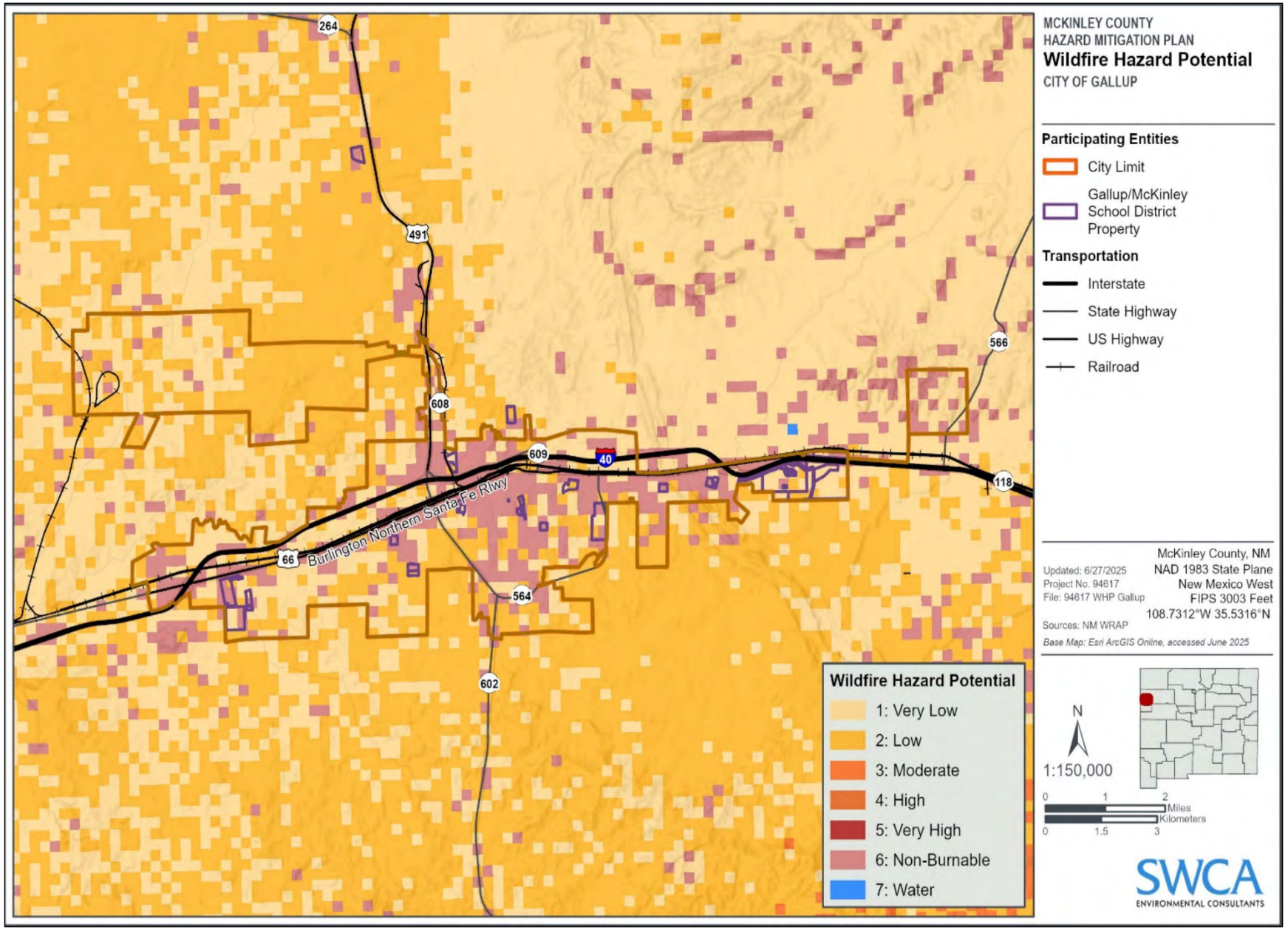


Figure 3.20 – City of Gallup Wildfire Hazard Potential

WUI

As human development in natural areas increases, the area considered the wildland urban interface or WUI increases as well. Across the country, there has been a significant increase in the development of homes and community infrastructure in the WUI, which has drastically increased the risk to these values. The classic interface is where urban sprawl presses up against public and private natural areas, bringing to mind a distinct line between urban and rural areas. By contrast, the intermix is an area undergoing a transition from agricultural and forest uses to urban land uses. This type of interface involves a mixing of rural and urban land uses in the same area (Hermansen-Baez et al., 2025). **Figures 3.21** and **3.22** show the WUI in McKinley County and the City of Gallup, which is largely located in the western part of the County and along major highways such as I-40 and has a mix of interface and intermix WUI areas.

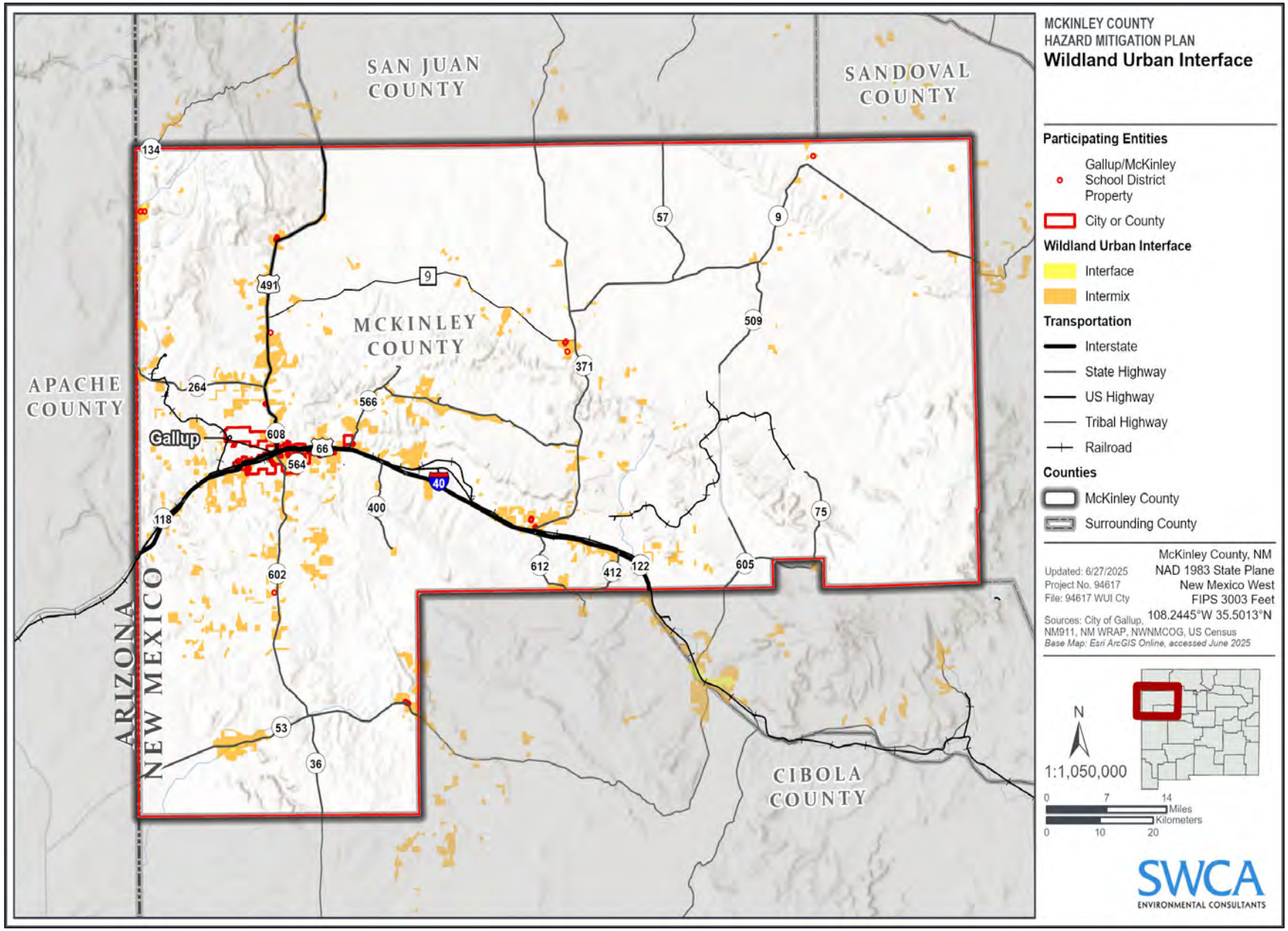


Figure 3.21 – McKinley County WUI Areas

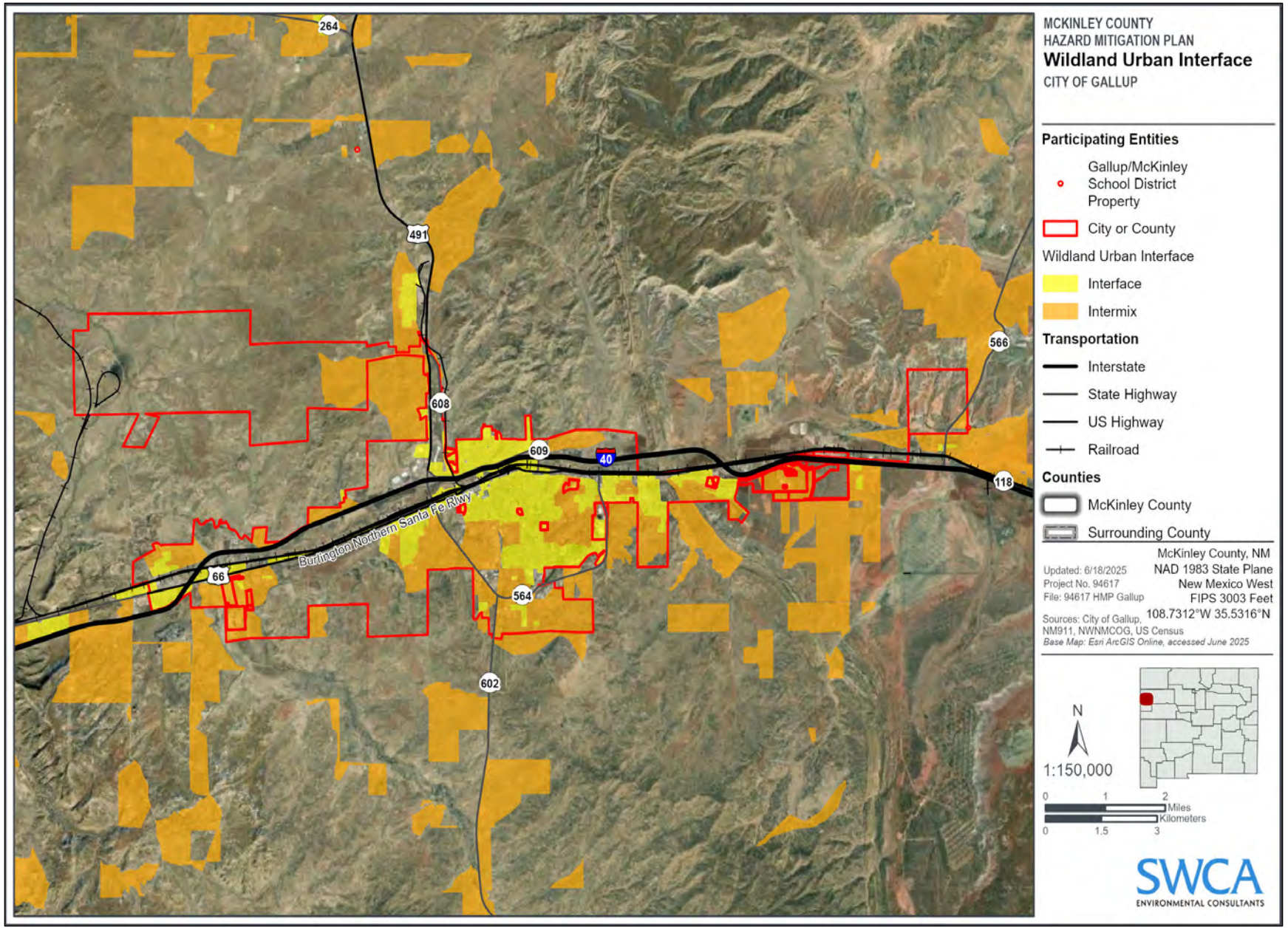


Figure 3.22 – City of Gallup Wildfire Urban Interface (WUI) Areas.

Vulnerability Assessment

Vulnerability is a description of which assets, including structures, systems, populations, and other assets as defined by the community, within locations identified to be hazard prone, are at risk from the effects of identified hazard(s) In this section, facilities, critical facilities, population, and systems are evaluated to better understand vulnerabilities to such assets in order to effectively mitigate risk from hazards. **Table 3.44** details how each of the jurisdictions ranked Wildfires. The City of Gallup had the highest PRI ranking while GMCS has the lowest PRI ranking comparatively.

Table 3.44 – Summary of PRI for Wildfires

Jurisdiction	PRI Ranking
McKinley County	2.90
City of Gallup	3.00
GMCS	1.60

Vulnerability of and Impact on Structures

All structures in McKinley County are potentially vulnerable to wildfire impacts, although fire potential differs across the county. According to the NMWRAP, the southwest, Northwest, and southeast corners of the county generally have a higher wildfire potential than the rest of the county, leaving infrastructure in these areas more vulnerable.

Vulnerability to Structures Analysis

An analysis on vulnerability to structures is broken down by each jurisdiction below. Within this analysis, building data included actual building values. Actual building values include all structures on the property.

McKinley County

A geospatial analysis was conducted to determine the count of structures within each NMWRAP The analysis determined that 2,068 buildings are rated as moderate wildfire potential, with a replacement cost of $101,543,474, 1,027 buildings in the county are rated as high wildfire potential and have a replacement cost of $18,879,837, and 64 buildings are rated as very high with a replacement cost of $115,710. Buildings in this hazard rating should be prioritized for defensible space, fire response, and other mitigation improvements. A summary of the number of structures exposed to wildfire hazard potential areas are shown in **Table 3.45**.

Table 3.45 – Summary: Structural Exposure by NM WRAP Wildfire Hazard Potential

NM WRAP Wildfire Hazard Potential	Count of Total Buildings (FEMA Buildings)	Land Actual Value	Improvements Actual Value	Total Actual Value (Land + Improvements) Exposed in $
1: Very Low	9,838	$165,624,765	$532,921,495	$698,546,260
2: Low	5,728	$118,314,109	$433,538,545	$551,852,654
3: Moderate	2,068	$37,023,023	$64,520,451	$101,543,474
4: High	1,027	$7,512,540	$11,367,297	$8,879,837
5: Very High	64	$115,710	$ -	$115,710
6: Non-Burnable	10,060	$284,095,026	$994,924,245	$1,279,019,271

NM WRAP Wildfire Hazard Potential	Count of Total Buildings (FEMA Buildings)	Land Actual Value	Improvements Actual Value	Total Actual Value (Land + Improvements) Exposed in $
7: Water	6	$1,568,960	$114,046,878	$115,615,838
Total	**28,791**	**$165,624,765**	**$532,921,495**	**$1,250,398,914**

Source: NMWRAP, FEMA USA Structure Data

Unincorporated McKinley County

Within the Unincorporated areas of McKinley County, there are 2,755 with a total actual value and improvements actual value of $373,381,594. **Table 3.46** breaks down the total building count, land actual value, and improvement actual value by Wildfire Hazard Potential. The majority of the structures within the Moderate to Very High Wildfire Hazard Potential rating are residential and unclassified structures. Additional information on structure type at risk to wildfire hazard potential areas are shown in **Table 3.47**. Counts were not provided for Wildfire Hazard Potential ratings lower than Moderate, as they pose a lower risk to the County.

Table 3.46 – Structural Exposure by NM WRAP Wildfire Hazard Potential

NMWRAP Wildfire Hazard Potential	County of Total Buildings (FEMA Buildings)	Land Actual Value	Improvements Actual Value	Total Actual Value (Land + Improvements) Exposed in $
Very High	60	$51,365,099	$220,358,021	$271,723,120.00
High	632	$115,710	$0	$115,000
Moderate	2,063	$37,023,023	$64,520,451	$101,543,474

Source: FEMA USA Structure Data, NMWRAP

Table 3.47 – Number of Structures by Risk Rating Level

TRisk Level	Res	Com	Ind	Ag	Rel	Gov	Edu	Unclass	Utility & Misc	Total
Very High	47	3	0	0		0	2	12	0	64
High	414	29	3	5	0	7	11	163	0	632
Moderate	1066	31	0	31	0	5	3	927	0	2063

Source: FEMA USA Structure Data, NMWRAP

*Res=residential, Com=Commercial, Ind=Industrial, Ag=Agriculture, Rel=Religion, Gov=Government, Edu=Education, UnClass=Unclassified, Utility & Misc=Utility and Miscellaneous

City of Gallup

Within the Unincorporated areas of McKinley County, there are 400 buildings at risk of Moderate to Very High Wildfire Hazard Potential areas, shown in **Table 3.48**. Values were undetermined and therefore not reported for land actual value and improvements actual value. The majority of the structures within the Moderate to Very High Wildfire Hazard Potential rating are residential, commercial, and unclassified structures. Additional information on structure type at risk to Wildfire Hazard Potential areas are shown in **Table 3.49**. Counts were not provided for wildfire hazard potential ratings lower than Moderate, as they pose a lower risk to the County.

Table 3.48 – Structural Exposure by NM WRAP Wildfire Hazard Potential

NMWRAP Wildfire Hazard Potential	County of Total Buildings (FEMA Buildings)	Land Actual Value	Improvements Actual Value	Total Actual Value (Land + Improvements) Exposed in $
Very High	0	$0	$0	$0
High	395	$0	$0	$0
Moderate	5	$0	$0	$0

Source: FEMA USA Structure Data, NMWRAP

Table 3.49 – Number of Structures Risk Rating Level

Risk Level	Res	Com	Ind	Ag	Rel	Gov	Unclass	Utility & Misc	Total
Very High	0	0	0	0	0	0	0	0	0
High	282	86	1	0	0	0	9	13	4
Medium	4	1	0	0	0	0	0	0	0

Source: FEMA USA Structure Data, NMWRAP

*Res=residential, Com=Commercial, Ind=Industrial, Ag=Agriculture, Rel=Religion, Gov=Government, Edu=Education, UnClass=Unclassified, Utility & Misc=Utility and Miscellaneous

Gallup-McKinley County Schools

There are 15 Gallup-McKinley County Schools at risk of moderate wildfire hazard potential areas, shown in **Table 3.50**. Values were undetermined and therefore not reported for land actual value and improvements actual value.

Table 3.50 – Structural Exposure by NM WRAP Wildfire Hazard Potential

NMWRAP Wildfire Hazard Potential	County of Total Buildings (FEMA Buildings)	Land Actual Value	Improvements Actual Value	Total Actual Value (Land + Improvements) Exposed in $
Very High	0	$0	$0	$0
High	15	$0	$0	$0
Moderate	0	$0	$0	$0

Source: FEMA USA Structure Data, NMWRAP

Location relative to fire response resources greatly influences vulnerability as well. Properties located in some rural areas can prove more difficult to reach by first responders. Additionally, many of these rural locations do not have adequate water supplies for first responders to utilize in extinguishing these fires, causing them to spread farther than they normally would. Structures can be protected by creating defensible spaces or buffer zones, maintaining a fuel-free environment, and structural modifications to prevent the growth of a wildland fire.

Vulnerability of and Impact on Critical Facilities

A geospatial analysis was conducted to identify critical facilities within the wildfire hazard areas. The NMWRAP Wildfire Hazard Potential data layer was overlaid with critical infrastructure, and counts of all infrastructure were recorded for those falling within the moderate, high, and very high wildfire hazard zones.

Vulnerability to Critical Facilities Analysis

An analysis of vulnerability to critical facilities is broken down by each jurisdiction below.

McKinley County

Geospatial analyses were conducted to estimate the number of Critical Facilities in the county within the Moderate to Very High Wildfire Hazard Potential areas. Within the County there are 100 critical facilities within the Moderate to Very High Wildfire Hazard Potential areas. **Table 3.51** below lists the number of critical facilities within each hazard zone for the unincorporated McKinley County.

Table 3.51 – Unincorporated McKinley County Critical Infrastructure within each Hazard Zone

Critical Facility Type	Critical Facility Category	Wildfire Hazard Potential	Facility Count
Communications Infrastructure	Broadband Access area	High	2
Communications Infrastructure	Broadband Access area	Moderate	2
Communications Infrastructure	Cell Towers	Moderate	2
Emergency Service	Fire	High	1
Emergency Service	Fire	Moderate	3
Gas and Oil Facilities	Gas Well	Moderate	3
Gas and Oil Facilities	Oil Well	Moderate	4
Gas and Oil Facilities	Pipeline	Moderate	2
Government Services	Community Centers	Moderate	1
Government Services	Shelters	Moderate	1
Recreation	State Park	Moderate	1
Recreation	Trail	Moderate	2
Schools	Child Care Center	Moderate	2
Transportation Networks	Bridges	Moderate	13
Transportation Networks	Railroad	Moderate	1
Transportation Networks	Road	High	4
Transportation Networks	Road	Moderate	18
Water Supply Systems	Acequia	Moderate	29

Source: McKinley County

City of Gallup

Within the City of Gallup, there is one critical facility, Navajo Middle School, that is within the Moderate Wildfire Hazard Potential Area.

Gallup-McKinley County Schools

David Skeet Elementary School and Navajo Middle School are within the Moderate Wildfire Hazard Potential Area, shown in **Table 3.52**.

Table 3.52 – Gallup-McKinley School District Critical Infrastructure within each Hazard Zone

Critical Facility Type	Critical Facility Category	Wildfire Hazard Potential	Facility Count
Schools	Public school	Moderate	2

Source: McKinley County, NMWRAP

Vulnerability of and Impact on Population

Wildfires can ignite and spread quickly, which increases the need for strategic preparedness to ensure residents can be notified of events and know how to properly respond when the need to evacuate arises.

Vulnerability to Population Analysis

An analysis on vulnerability to populations is broken down by each jurisdiction below.

McKinley County

A Geospatial analysis was conducted and determined that 2,414 people in McKinley County are considered vulnerable to Low to Very High Wildfire Hazard Potential areas, which impacts an estimated 33% of the population. **Table 3.53** breaks down the estimated population exposed and the percentage of the total population by NMWRAP Wildfire Hazard Potential.

Table 3.53 – Summary: Population Exposed by NM WRAP Wildfire Hazard Potential

NM WRAP Wildfire Hazard Potential	Estimated Population Exposed	Percent of Total Population
1: Very Low	-	0%
2: Low	235	0%
3: Moderate	14,268	19%
4: High	9585	13%
5: Very High	330	0%
6: Non-Burnable	733	1%
7: Water	-	0%
Total	**25,151**	**34%**

Source: NMWRAP, 2023 ACS 1-Year Estimates

Unincorporated McKinley County

Within McKinley County Unincorporated areas, 16,323 are considered vulnerable to Moderate to Very High Wildfire Hazard Potential areas, which impacts an estimated 22.3% of the population. **Table 3.54** breaks down the estimated population exposed and the percentage of the total population by NMWRAP Wildfire Hazard Potential. Counts were not provided for Wildfire Hazard Potential ratings lower than Moderate, as they pose a lower risk to the County.

Table 3.54 – Population Exposed by NM WRAP Wildfire Hazard Potential

NM WRAP Wildfire Hazard Potential	Estimated Population Exposed	Percent of Total Population
Very High	217	0.3%
High	6155	8.4%
Moderate	9951	13.6%

Source: NMWRAP, 2023 ACS 1-Year Estimates

City of Gallup

Within the City of Gallup, 7,860 are considered vulnerable to Moderate to Very High Wildfire Hazard Potential areas, which impacts an estimated 10.8% of the population. **Table 3.55** breaks down the estimated population exposed and the percentage of the total population by NMWRAP Wildfire Hazard Potential. Counts were not provided for wildfire hazard potential ratings lower than Moderate, as they pose a lower risk to the County.

Table 3.55 – Population Exposed by NM WRAP Wildfire Hazard Potential

NM WRAP Wildfire Hazard Potential	Estimated Population Exposed	Percent of Total Population
Very High	113	0.2%
High	3430	4.7%
Moderate	4317	5.9%

Source: NMWRAP, 2023 ACS 1-Year Estimates

Gallup-McKinley County Schools

There is no data for Gallup-McKinley County Schools population exposure to Wildfire Hazard Potential areas. However, based on **Figure 3.17**, there are two schools that are within the Moderate Wildfire Hazard Potential area, which have potential risk for wildfire impacts and disruption to staff and students.

Community Wildfire Protection Plan: Communities at Risk

The 2018 McKinley County Community Wildfire Protection Plan (CWPP) rated communities in the county based on their wildfire risk, ranging from Low to High. Of the 38 communities rated in the CWPP, eight were rated as high risk, 14 were rated as medium risk, and 16 were rated as low risk (shown in **Table 3.56**). The City of Gallup was given a low risk rating in the CWPP. According to the CWPP, high risk communities include Bluewater Acres, Bluewater Lake/Homer C. Jone Subdivision, McGaffey Lake-Tampico Springs, Ramah, Ramah-Black Rock Corrido, Timberlake, Zuni Pueblo, and Zuni Pueblo WUI-Black Rock.

Populations in and near the Zuni Pueblo, Navajo, Vanderwagen, and McGaffey are at the highest wildfire hazard potential in the county. According to the 2018 Mckinley County CWPP, other at-risk communities include Bluewater Acres, Bluewater Lake/Homer C. Jones Subdivision, Ramah, Ramah – Black Rock Corridor, and Timberlake. Further information on community risk to wildfire is detailed in **Table 3.56**.

Table 3.56 – Communities At Risk to Wildfire

Community	2013 Risk Rating	2018 Risk Rating	Fire Department
Bluewater Acres	Medium	High	MCFR Station #72 - Bluewater Acres
Bluewater Lake/Homer C. Jones Subdivision	Medium	High	MCFR Station #73 - Bluewater Lake Fire
McGaffey Lake – Tampico Springs	High	High	MCFR Station #62 - Fort Wingate (houses/structures) and Cibola National Forest (federal land)
Ramah	Medium/High	High	MCFR Station #54 - Ramah Fire
Ramah – Black Rock Corridor	Medium/High	High	MCFR Station #54 - Ramah Fire and Zuni
Timberlake	High	High	MCFR Station #55 - Timberlake
Zuni Pueblo WUI – Black Rock	Medium/High	High	Zuni
Zuni	Not Assessed	High	Zuni

Community	2013 Risk Rating	2018 Risk Rating	Fire Department
Noble Acres – Skeets Road-Big Galls Road Corridor	Low/Medium	Medium	MCFR Station #51 - Pinehaven
Black Rock – Vanderwagon Corridor	Medium/High	Medium	MCFR Station #52 - Vanderwagenand Zuni
Chichiltah	Low/Medium	Medium	MCFR Station #52 - Chi Chil tah
Fort Wingate	Low/Medium	Medium	MCFR Station #62 - Wingate
Manuelito Area	Low/Medium	Medium	MCFR Station #44 - McKinley West
Navajo Estates (Ya Ta Hey) Tse Bonito Corridor	Medium	Medium	MCFR Station #42 - Navajo Estates
Navajo	Medium/High	Medium	MCFR Station #41 - Navajo Pine
Pinehaven – Bread Springs	Medium	Medium	MCFR Station #51 - Pinehaven
South Navajo – Highway 12 Corridor	Medium	Medium	MCFR Station #41 - Navajo Pine
Tohatchi	Low/Medium	Medium	MCFR Station #42 - Navajo Estates and Navajo BIA
Tse Bonito	Not Assessed	Medium	MCFR Station #42 - Navajo Estates and Navajo BIA
Vanderwagon (Sager Estates)	Medium	Medium	MCFR Station #52 - Vanderwagen
Whispering Cedar	Medium	Medium	MCFR Station #64 - Whispering Cedars
Zuni Pueblo Highway 53 SW Corridor	Medium	Medium	Zuni
Church Rock	Not Assessed	Low	MCFR Station #61 - Thoreau
Continental Divide – Thoreau	Low/Medium	Low	MCFR Station #71 - Thoreau
Coyote Canyon	Not Assessed	Low	MCFR Station #42 - Navajo Estates and Navajo BIA
Crownpoint	Low	Low	MCFR Station #81 - Crownpoint
Gallup	Low	Low	Gallup
Gamerco – Twin Lakes Corridor	Low/Medium	Low	MCFR Station #42 - Navajo Estates
Mentmore Area	Low	Low	MCFR Station #44 - McKinley West and Gallup
Nahodisgish	Low/Medium	Low	MCFR Station #81 - Crownpoint
Nakaibito – Mexican Springs	Medium	Low	MCFR Station #42 - Navajo Estates and Navajo BIA
Pinedale – Mariano Lake	Low/Medium	Low	MCFR Station #63 - Mariano Lake
Prewitt	Low	Low	MCFR Station #74 - Prewitt
Pueblo Pintado Area	Low	Low	MCFR Station #82 - Pueblo Pintado and Navajo BIA
Rehoboth	Low	Low	Gallup and MCFR Station #61 - White Cliffs
Rock Springs	Not Assessed	Low	MCFR Station #42 - Navajo Estates
San Mateo	Low	Low	MCFR Station #83 - San Mateo

Community	2013 Risk Rating	2018 Risk Rating	Fire Department
Standing Rock	Not Assessed	Low	MCFR Station #81 - Crownpoint and Navajo BIA

Source: McKinley County CWPP 2018 Update

*Fire Department names have been updated with the assistance of the Planning Team as the names have changed since the 2018 CWPP.

Additionally, CRCI identifies two primary drivers of social vulnerability: poverty and individuals with limited English proficiency. Residents experiencing these social vulnerabilities may have difficulty receiving emergency notifications and face barriers to safe evacuation, such as transportation limitations. Special consideration should be given to elderly and disabled populations who may require more time to evacuate.

Vulnerability of and Impact on Systems

Vulnerability of and impact on systems are broken down by each jurisdiction below.

McKinley County

It is unlikely that a single wildfire will grow large enough to cause significant or long-lasting damage to McKinley County or Gallup's economies, education services, or hinder the local governments' ability to provide services to their more demographically dense communities. However, a large or severe incident may cause short-term problems for their transportation systems in regard to response operations. Key infrastructure and facilities are also within medium and high wildfire potential areas. This includes 27 transportation facilities (roads, rail systems, airports), 77 safety and security facilities (fire stations, police stations), 22 health and medical facilities, four hazardous material facilities, 181 food, water, and shelter locations, nine energy facilities, and ten communication facilities.

Transportation

In the event a wildfire begins to burn and grow, evacuation routes may become blocked by the fire or by other people attempting to evacuate. According to the McKinley County Emergency Manager, many unincorporated communities in the county have only one way in and out of the communities, increasing entrapment risk for these residents. The impingement of the local transportation system makes appropriate warning and information critical in mitigating McKinley County and Gallup's systems vulnerability to wildfires. Additionally, even a low-level wildfire can provide significant problems for pockets of rural, outlying unincorporated communities.

Agriculture

Agricultural systems are not anticipated to be heavily affected by wildfires. The NRI report lists the expected annual loss of agricultural values from wildfire to be just $7. However, over $2 million is exposed to the hazard, indicating that care should be taken to mitigate this hazard around key agricultural operations. The NRI report may not accurately predict vulnerability and should be considered a generalized valuation.

Environment

Ecological impacts of wildfires are an inherent factor, however these impacts are generally short-term and can provide benefit to the ecosystem under low severity fire conditions. In the event of a high severity fire, impacts may be longer lasting and include soil health impacts, vegetation composition changes, and cascading hazards such as debris flow, heightened erosion, and stream sedimentation. Sedimentation can have much larger impacts of water systems including to conveyance infrastructure and treatment operations.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Key Considerations

The vegetation in McKinley County has evolved alongside fire in the landscape. Wildfire is a naturally occurring event that benefits the landscape and species. Although protecting communities and values from wildfire is a key objective, it is important to note the positive impacts a natural fire regime has on ecosystems rather than attempting to fully exclude fire from the landscape. The threat of wildfire is increased by other naturally occurring hazards, including drought and windstorms, which increase the fuel for fire to consume and increase the spread rate.

When preparing for wildfires and potential long-term impacts, burn severity is important to consider. Higher severity wildfires will have more harmful and longer lasting impacts on communities and the landscape. The first obvious effect of wildfire is the loss of or damage to vegetation. This varies with fire severity, as well as species physiology. Some species are more evolved to handle fire, can handle lower severity fires and recover while other species are intolerant to fire and may die from even low severity events. Soil impacts from a wildfire are often more important to consider as soil healthy directly influences vegetation recovery. Even under low to moderate severity fire conditions, soil will often lose organic matter and microbiota such as bacteria and fungus. As severity increases, as does the severity of soil impact. Soil will become more unstable as severity increase and begin to repel water (USDA 2010). This alteration is associated with other potential hazards in the county such as flooding and associated debris flows; based on the severity of the burn, these cascading hazard events often contribute to extensive impacts following a wildfire.

The planning area is faced with both rural, brush and grassfires, as well as difficult to fight mountainous and hill-based wildfires as discusses in the Location and Extent portion of this hazard profile. Both of these types of wildfires pose a reasonable risk to the planning area and as such, neither can be neglected.

3.11 -Winter Storms

Winter storms combine several weather hazards (heavy snow, sleet, freezing rain, and strong winds) that can immobilize transportation networks, collapse utility systems, and create life-threatening wind chill conditions (State of New Mexico HMP, 2023). Nationwide, these events are the third-leading cause of weather-related fatalities, largely because they can strike rural areas with limited medical or road-maintenance capacity and because forecast confidence in the exact track, snowfall total, or icing corridor often remains low until only hours before impact (NWS 2024; State of New Mexico HMP, 2023).

In McKinley County, winter weather most commonly manifests as heavy snow that blankets high-elevation roads and occasionally strands motorists on I-40 and U.S. 491 (NCEI, 2024). Although no ice storms have been documented locally, warming winter temperatures can raise the freezing level during incoming Pacific systems, making damaging glaze-ice events (≥ ¼ in.) a realistic emerging threat (State of New Mexico HMP, 2023). Resulting hazards from winter storms are defined by the NWS in **Table 3.57**.

Table 3.57 – NWS Winter Storm Hazard Definitions

Storm Component	NWS Definition	Primary Local Concern
Ice Storm	Damaging accumulations of ice expected during freezing rain situations.	Downed lines/trees, long-duration power outages
Heavy Snow	Generally, means snowfall accumulating to 4" or more in depth in 12 hours or less; or snowfall accumulating to 6" or more in depth in 24 hours or less.	Snow-packed roads, roof loading, EMS delays
Winter Storm	Any event with heavy snow, sleet, or freezing rain; may also include high winds and low wind chill.	Multi-hazard impacts across the county
Snow Squall	A brief but intense burst of moderate to heavy snow with strong, gusty winds and sudden whiteout conditions.	Rapid visibility loss, chain-reaction crashes on highways
Blizzard	Sustained winds or frequent gusts ≥35 mph, plus falling or blowing snow reducing visibility to ≤¼ mile for ≥3 hours.	Whiteout conditions, prolonged road closures, extreme wind chills

Source: NWS

Severe winter storms in McKinley County can bring heavy snowfall, whiteout snowsqualls, blizzard-force winds, and extreme cold. These events typically develop when Pacific or polar low-pressure systems cross into the region, often interacting with strong Arctic air masses. The county's elevation and exposure to frontal boundaries create substantial variation in the location of impacts across the landscape. (NMED, 2024).

Location

Information on location for winter storms is broken down by each jurisdiction below.

McKinley County

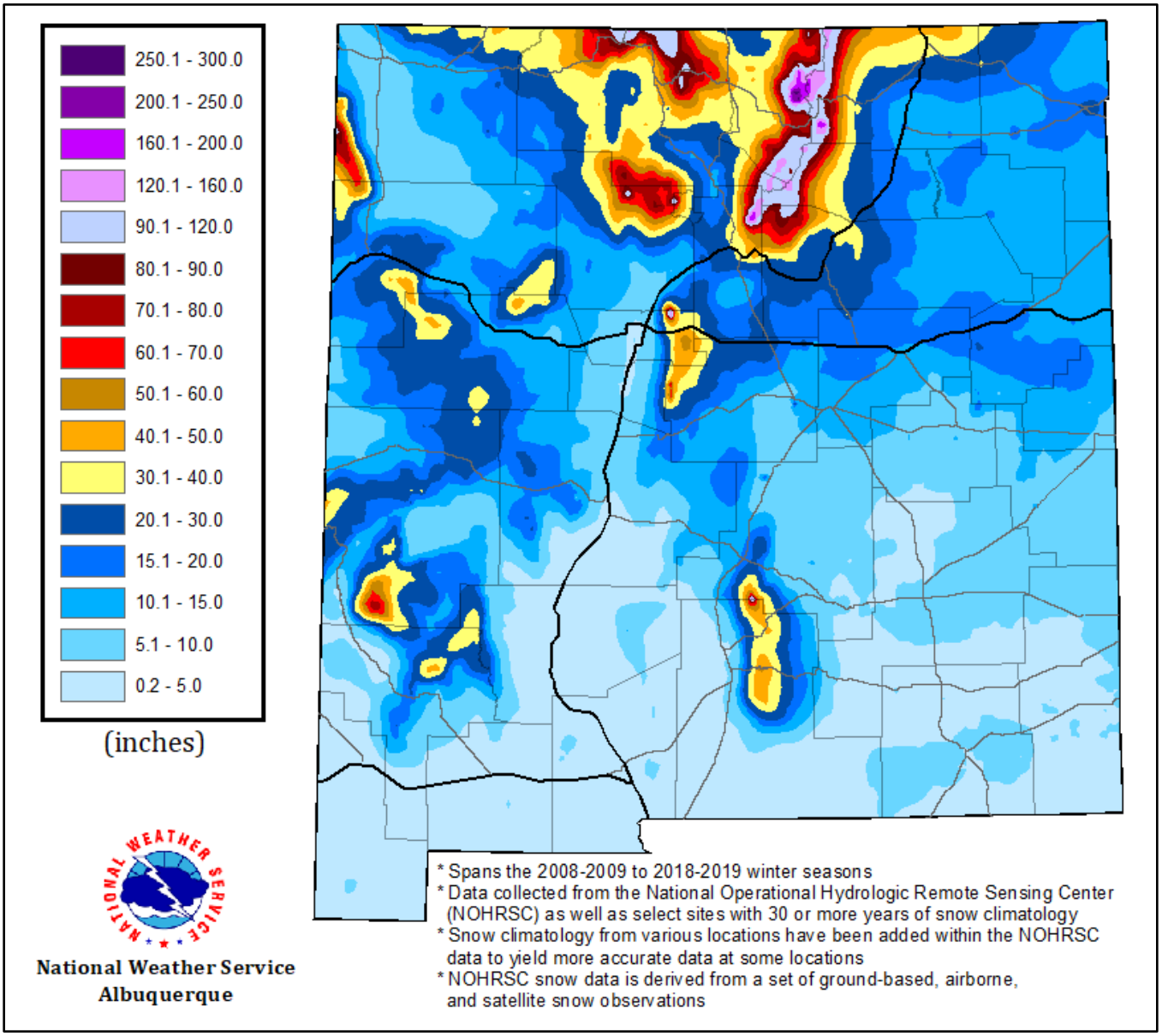
The highest snow accumulations are consistently reported in the upland areas of Unincorporated McKinley County, including the Chuska Mountains, the Continental Divide, and the Mt. Taylor region (NCEI, 2024), shown in **Figure 3.23**. Severe winter storms pose a county-wide hazard in McKinley County, with impacts possible anywhere in the planning area, though snow depths and wind intensities generally increase at higher elevations (NCEI, 2024).

City of Gallup

The City of Gallup and the I-40 corridor, while generally receiving lower totals (often 4 to 12 inches), face some of the most disruptive conditions due to blowing snow, low visibility, and traffic volume.

Gallup-McKinley County Schools

No additional information is provided for GMCS.



Source: NOAA, NWS

Figure 3.23 – NWS Snow Climatology Mapping for New Mexico

Previous Occurrences

Information on previous occurrences for winter storms is broken down by each jurisdiction below.

McKinley County

Severe winter storm events have consistently occurred across McKinley County over the past three decades (NCEI, 2024). A total of 27 unique severe winter storm events were recorded between 1996 and 2024, averaging approximately 0.93 events per year over the 29-year period (NCEI, 2024). This includes all qualifying events recorded as winter storms, heavy snow, snow squalls, or winter weather in the NCEI Storm Events Database. More information on previous occurrences can be found in **Table 3.58**.

Table 3.58 – Winter Storm Previous Occurrences (January 2020 – December 2024)

Severe Winter Storm Event	Jurisdictions Impacted	Event Dates	Damages	Injuries and Fatalities	Snow Depth
Winter Storm	Gallup, Unincorporated McKinley County	Feb 10–12, 2020	None	None	4 – 9 inches and > 24 inches
Heavy Snow	Gallup, Unincorporated McKinley County	April 13 2020	None	None	5 – 10 inches
Heavy Snow	Unincorporated McKinley County	Feb 16–17, 2021	None	None	16 inches
Heavy Snow	Unincorporated McKinley County	Mar 23–24, 2021	None	None	24 inches
Heavy Snow; Winter Storm	Gallup, Unincorporated McKinley County	Jan 1–3, 2022	None	None	12–20 inches
Heavy Snow; Winter Storm	Unincorporated McKinley County	Mar 10–11, 2022	None	None	8–12 inches
Heavy Snow	Gallup	Jan 15–16, 2023	None	None	12–14 inches
Heavy Snow	Unincorporated McKinley County	Jan 20–21, 2023	None	None	10–12 inches
Heavy Snow	Unincorporated McKinley County	Feb 14–15, 2023	None	None	14–15 inches
Winter Storm	Gallup	Feb 22–23, 2023	None	None	10–12 inches
Winter Weather	Unincorporated McKinley County	Feb 22, 2023	None	None	11 inches
Heavy Snow	Gallup, Unincorporated McKinley County	Mar 17–22, 2023	None	None	7–11 inches
Heavy Snow	Gallup	Mar 15–17, 2024	None	None	6–30 inches
Heavy Snow	Gallup	Nov 6–8, 2024	None	None	20–31 inches
Heavy Snow	Unincorporated McKinley County	Jan 4, 2024	$50,000	None	16 inches
Heavy Snow	Unincorporated McKinley County	Jan 7–8, 2024	None	None	13 inches
Heavy Snow	Unincorporated McKinley County	Dec 1, 2023	None	None	13 inches

Source: NCEI Storm Events Database, 2024

The most extreme snowfall during the current planning period occurred between March 15 and 17, 2024, when a prolonged snowstorm deposited an estimated 6 to 30 inches of snow across Gallup and Unincorporated McKinley County (NCEI, 2024). Other major events include the March 23 to 24, 2021 storm, which dropped up to 24 inches in unincorporated areas and contributed to a 39-vehicle pile-up just east of the county line, and a

January 1 to 3, 2022 storm that brought 12 to 20 inches of snow across much of the planning area (NCEI, 2024). Although no federal disaster declarations specific to winter storms have been issued for McKinley County during the current planning period, State EO 2024-159 reflects the recognition of increasing severity and systemic risks statewide (State of New Mexico, 2024).

City of Gallup

Two storms during this period caused notable property damage. On December 15, 2021, a snow squall in Gallup caused roughly $25,000 in damages from vehicle crashes and electrical infrastructure impacts (NCEI 2024). On January 4, 2024, a heavy snow event led to $50,000 in damages, including a multi-semi crash on Interstate 40 (NCEI, 2024).

Gallup-McKinley County Schools

All 27 events impacted unincorporated areas of the county; eight events directly affected the City of Gallup (NCEI, 2024). No storm records explicitly referenced Gallup-McKinley County Schools, but given their proximity to impacted zones and regional infrastructure, schools are considered exposed to similar hazard conditions. Common impacts include school closures and delays, road closures, power outages, whiteout conditions, and dangerous travel across county and state-maintained roadways (NCEI, 2024).

Probability

Information on probability for winter storms is broken down by each jurisdiction below.

McKinley County

Since 1996, the NCEI has logged 27 severe winter storm events in McKinley County (those cataloged as winter storm, heavy snow, snow squall, or winter weather). This yields a long-term mean of roughly 0.93 reportable storms per year (NCEI, 2024). See **Table 3.59** below for a breakdown of winter storm events by planning period. The six-fold jump from 0.4 to 3.75 storms per year since 2020 reflects more than improved reporting as well as an uptick to a confluence of persistent La Niña patterns, regional warming, and shifting Southwest storm tracks, documented in the New Mexico CARP (NMED, 2024). The plan highlights a statewide rise in extreme-weather frequency and calls for enhanced preparedness in transportation-critical corridor. These recommendations underscore McKinley County's high exposure along I-40, U.S. 491, and other high-elevation routes (NMED, 2024).

Table 3.59 – Previous Occurrences Winter Storm Events and Probabilty by Planning Period

Time Period	NCEI Documented Winter Storm Event	Average Events/Year
2021 – 2024	15	3.75
1996 – 2024	27	0.93

Source: NCEI Storm Events Database, 2024

Given the historic average of 0.86 events per year (and the recent surge to roughly three events annually). McKinley County can expect at least one severe winter storm during any single year of the next planning cycle, with multiple events in most years increasingly likely.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Extent

Information on extent for winter storms is broken down by each jurisdiction below.

McKinley County

Severe winter storms in McKinley County have produced everything from light dustings to over two feet of snow that closes interstates and strands rural communities (NCEI, 2024). During the current planning period (2020 to 2024), the most intense event deposited 30 inches of snow across the upland reaches of the unincorporated county, most notably along the Chuska Mountains, the Continental Divide, and the Mt. Taylor highlands, while the same storm left up to a foot, an estimated 12 inches, in the lower-elevation Gallup basin (NCEI, 2024).

Those verified storm-total depths establish the practical upper bound for each jurisdiction:

- **Unincorporated McKinley County**: trace snowfall to roughly 30 inches per storm
- **City of Gallup**: trace snowfall to roughly 12 inches per storm
- **GMCS**: campuses lie within the Gallup elevation band and share the same 0 to 12 inch severity for snowfall.

Storms at the upper end of these ranges have repeatedly forced multi-day closures of I-40 and U.S. 491, triggered multi-vehicle accidents, and interrupted electrical service, underscoring the disruptive potential of even a single high-end event (NCEI, 2024; State of New Mexico HMP, 2023).

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability Assessment

Vulnerability is a description of which assets, including structures, systems, populations, and other assets as defined by the community, within locations identified to be hazard prone, are at risk from the effects of identified hazard(s) In this section, facilities, critical facilities, population, and systems are evaluated to better understand vulnerabilities to such assets in order to effectively mitigate risk from hazards. **Table 3.60** details how each of the jurisdictions ranked Severe Winter Storms. McKinley County had the highest PRI ranking while GMCS has the lowest PRI ranking comparatively. However, it is important to note that GMCS ranks Severe Winter Storms the highest overall compared to the rest of the hazards.

Table 3.60 – Summary of PRI for Winter Storms

Jurisdiction	PRI Ranking
McKinley County	2.70
City of Gallup	3.20
GMCS	2.40

Vulnerability of and Impact on Structures

Vulnerability of and impact on structures are broken down by each jurisdiction below.

McKinley County

Structures across McKinley County are structurally exposed to the effects of winter storms, including heavy snowfall, freezing temperatures, and occasional glaze-ice accumulation. Older or poorly insulated buildings face a disproportionate risk from cold weather. Heavy snow accumulation can exceed roof load capacities, particularly on flat, aging, or poorly maintained roofs, leading to localized collapse hazards. While ice storms are uncommon in McKinley County, warming winter temperatures may increase the risk of freezing rain and ice accretion on infrastructure (NMED, 2024; State of New Mexico HMP, 2023).

Prolonged low temperatures can freeze plumbing systems in unheated or under-insulated buildings (ASHRAE, 2021). As water in pipes freezes and expands, it can cause extensive structural damage through bursting pipes, failed HVAC systems, and interior flooding. These impacts may be amplified in older municipal structures or facilities lacking modern weatherproofing and energy-efficient heating systems (FEMA, 2017).

While many recorded winter storm events in the planning area have reported no property damage, recent data from the NCEI indicate that isolated events have caused financial impacts, such as a snow squall in 2021 resulting in $25,000 in damages and a multi-vehicle accident during a 2024 storm resulting in $50,000 in losses (NCEI, 2024). However, these are likely underestimates, as smaller-scale damages to buildings, such as frozen pipes or roof leaks, may go unreported at the federal level.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools.

No additional information is provided for GMCS.

Vulnerability of and Impact on Critical Facilities

Vulnerability of and impact on critical facilities are broken down by each jurisdiction below.

McKinley County

Critical facilities across McKinley County, including hospitals, fire stations, emergency shelters, law enforcement offices, and utility infrastructure, are exposed to winter storm hazards that can disrupt operations and delay response efforts. While storms can affect any location in the planning area, vulnerabilities vary based on facility location, access, structural condition, and availability of backup systems. Critical facilities in rural and high-elevation areas may face longer periods of isolation or outage due to slower road clearance, downed lines, and poor broadband coverage. Travel impacts are of particular concern as roads can become hazardous or be damaged by storms. An example is the Antelope Pass road, which traverses higher elevations and winding slopes and canyons in the northwestern portion of the county. Another example is NM 400 and CR 50 in the Zuni Mountains between Ft. Wingate and Page. Other smaller roads in McKinley County lead to some year-round homes in the area, but NM 400 and CR 50 are the two major roads that can become hazardous during winter storms.

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

No additional information is provided for GMCS.

Vulnerability of and Impact on Population

Vulnerability of and impact on population are broken down by each jurisdiction below.

McKinley County

Populations across McKinley County, including the City of Gallup and surrounding unincorporated areas, are broadly exposed to the effects of severe winter storms (State of New Mexico HMP, 2023). Residents are at risk of frostbite, hypothermia, or death if left without adequate heating or shelter during prolonged cold weather events, particularly during power outages or transportation disruptions. Many homes in the planning area rely on electric heating, creating significant vulnerability in the event of widespread outages caused by snow, ice, or wind. Additionally, road closures or vehicle immobilization during winter storms, as seen along I-40 and U.S. 491 in past events, can leave residents stranded with limited fuel, supplies, or emergency access (NCEI, 2024; State of New Mexico HMP, 2023).

All residents within the County are considered exposed to winter storm hazards to varying degrees, but vulnerabilities are unevenly distributed. Notably, the FEMA Resilience Analysis and Planning Tool (RAPT) indicates that several census tracts in McKinley County fall within the highest percentile ranges for social vulnerability indicators:

- Many areas also fall within the top 95th to 100th percentile for FEMA's CRCI, signaling systemic barriers to preparation, response, and recovery (FEMA, 2025).
- Mobile homes make up more than 68% of housing units in some tracts, placing those residents at high risk of structural failure, poor insulation, and heating loss during storm events (FEMA, 2025).
- Disability rates exceed 24.5% in some areas, indicating a high proportion of residents who may face challenges evacuating or accessing emergency services if roads become impassable (FEMA, 2025).
- The percentage of residents age 65 and older surpasses 57.9% in certain tracts, increasing susceptibility to cold-related illness and barriers to self-evacuation (FEMA, 2025).
- Broadband access remains limited, with some tracts having over 2,000 unserved broadband serviceable locations, complicating early warning delivery and limiting access to remote services during storm isolation (FEMA, 2025).

Despite the breadth of risk, no direct fatalities from winter storms have been recorded within McKinley County between 1996 and 2024. However, three deaths from cold exposure have been documented, and similar storms in adjacent communities have caused indirect fatalities due to vehicle crashes, power outages, and exposure (NCEI, 2024).

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools (GMCS)

GMCS are considered vulnerable to winter storm impacts when traveling to or from campuses or when school closures disrupt essential access to warm meals, childcare, or community resources. Although no storm records explicitly name GMCS facilities, multiple documented events have directly affected Gallup and surrounding areas (NCEI, 2024).

Vulnerability of and Impact on Systems

Vulnerability of and impact on systems are broken down by each jurisdiction below.

McKinley County

Winter storms significantly impact McKinley County's transportation, electrical, educational, and emergency systems. While all areas are exposed, rural and high-elevation zones, such as the Chuska Mountains and the Continental Divide, face longer disruptions due to terrain and limited access (NCEI, 2024). Recurrent storm events have closed Interstate 40 and U.S. 491, including a March 2024 storm that dropped up to 30 inches of snow across the county (NCEI, 2024). Whiteout conditions and snow squalls have caused multi-vehicle accidents and stranded motorists, disrupting emergency access and supply delivery (NCEI, 2024). When roads are impassable, power restoration, school closures, medical transport, and emergency response are all affected. The U.S. Department of Energy notes that road access is a critical recovery metric in utility resilience, affecting the ability to restore power or reach damaged infrastructure in remote zones (U.S. Department of Energy, 2024).

Electrical systems are similarly vulnerable. Ice buildup and falling trees can damage distribution lines and transformers, particularly in unincorporated areas with long, aboveground spans. Outages interrupt heating, water pumps, and communications, creating cascading consequences in facilities and homes that lack backup power (U.S. Department of Energy, 2024). Older buildings and mobile homes are especially prone to heating loss and pipe freezing during extended outages (NMED, 2024; U.S. Department of Energy, 2024).

City of Gallup

No additional information is provided for the City of Gallup.

Gallup-McKinley County Schools

School systems and emergency services face overlapping challenges. GMCS operates across a large, storm-prone service area where sudden snow squalls or whiteout conditions can disrupt student transportation. Past events have forced closures and stranded students and staff (NCEI, 2024). At the same time, emergency responders may be delayed by road conditions or a lack of real-time communication, particularly in parts of the county with unreliable broadband or cellular coverage.

Key Considerations

Severe winter storms can affect the entire McKinley County planning area, but the severity and consequences of those impacts are not uniform. While it is difficult to predict the exact location or intensity of each event in advance, storm impacts tend to be more severe in rural and high-elevation areas due to limited road access, slower utility restoration, and fewer redundant services (NCEI, 2024; U.S. Department of Energy, 2024).

Residents in these areas may experience longer power outages, reduced access to heating, delayed emergency response, and disruptions to essential needs such as water, food, and shelter. Many of the county's most vulnerable populations (including residents of mobile homes, seniors, individuals with disabilities, and those without reliable transportation) are concentrated in these same tracts, compounding their exposure during severe weather.

3.12 – Risk Summary

Prioritizing hazards plays a crucial role in helping communities establish objectives and mitigation strategies based on their vulnerabilities. As directed by the Planning Team, the overall hazard ranking for each profiled hazard was determined based on the Priority Risk Index (PRI) methodology. The PRI used to assess the perceived overall risk for each of the hazards for each participating jurisdiction. The PRI value is obtained by assigning varying degrees of risk to five categories for each hazard and then calculating an index value based on a weighting approach. The PRI can be used to compare relative importance of each hazard within one community and across all communities. This methodology to ranking risk to hazards underwent evaluation by the Planning Team during the third Planning Team meeting.

There are five categories in the Priority Risk Index: Probability, Impact, Spatial Extent, and Duration. For Impact, only one of the criteria must be met to assign to the particular level (injury, property damage, critical infrastructure loss of service). The Planning Team agreed to define each of the levels and their criteria in the table below. **Table 3.61** serves as an example of how the PRI Value is calculated for each hazard based on the five categories and ranking for each.

Table 3.61 – PRI Methodology

PRI Category	Level	Criteria	Index Value	Assigned Weighting Factor	Index Value	Calculated Value
Probability: What is the likelihood of a hazard event occurring in a given year	Unlikely	No events anticipated for the 5-year planning period, based on recorded events and historic knowledge	1	30%	0.00	0.00
	Possible	One event anticipated for the 5-year planning period, based on recorded events and historic knowledge	2			
	Likely	Between 2 and 4 events anticipated for the 5-year planning period, based on recorded events and historic knowledge	3			
	Highly Likely	5 or more events anticipated for the 5-year planning period, based on recorded events and historic knowledge	4			
Magnitude/ Severity: In terms of injuries, damage, or death	Minor	Very few injuries OR less than 9.9% of property in affected area damaged or destroyed, OR shutdown of critical facilities for less than 1 day.	1	30%	0.00	0.00
	Limited	Minor injuries OR between 10% and 24.9% of property in affected area damaged or destroyed OR complete shutdown of critical facilities for 1 to 6 days.	3			
	Critical	Multiple deaths/injuries possible OR more than 25% to 49.9% of property in affected area damaged or destroyed OR complete shutdown of critical facilities for 7 to 29 days.	3			
	Catastrophic	High number of deaths/injuries possible OR more than 50% of property in affected area damaged or destroyed OR complete	4			

PRI Category	Level	Criteria	Index Value	Assigned Weighting Factor	Index Value	Calculated Value
		shutdown of critical facilities for 30 days or more.				
Spatial Extent: How large is the hazard area	Negligible	Less than.9% of area affected	1	20%	0.00	0.00
	Small	Between 1% and 9.9% of area affected	2			
	Moderate	Between 10% and 49.9% of area affected	3			
	Large	Between 50% and 100% of area affected	4			
Warning Time: Is there usually some lead time associated with the hazard event	More than 24 hours	Amount of time from notification of a potential event of the event occurring in the community	4	10%	0.00	0.00
	12 to 24 hours		3			
	6 to 12 hours		2			
	Less than 6 hours		1			
Duration: How long does the hazard event usually last	Less than 6 hours	Maximum length of time the event could occur based on past events	1	10%	0.00	0.00
	Less than 24 hours		2			
	24 hours to one week		3			
	More than one week		4			
					PRI Value	0.00

All participating jurisdictions rank the profiled hazards differently from one another. A summary of the PRI results for each participating jurisdiction is described in **Table 3.62** below. Hazards that pose a lower risk are outlined in green, hazards that pose a moderate risk are outlined in orange, and hazards that pose a higher risk are outlined in red. **Table 3.63** details the PRI rankings for McKinley County. Tornadoes pose the least risk, and Drought poses the highest risk to the planning area. **Table 3.64** details the Priority Ranking for all participating jurisdictions. Tornadoes are ranked the same at number 9 for all three participating jurisdictions. **Table 3.65** details the PRI rankings for the City of Gallup. Similarly, Tornadoes pose the least risk, and Drought poses the highest risk to the planning area. **Table 3.66** details the PRI rankings for Gallup-McKinley County Schools (GMCS). Tornadoes pose the least risk and Severe Winter Storms pose the highest risk to the school district.

Table 3.62 – PRI Calculated Score Summary

Hazard Type	McKinley County	City of Gallup	GMCS
Dam Failure	**2.20**	**3.20**	**1.40**
Drought	**3.10**	**3.40**	**2.30**
Flood	**3.00**	**3.20**	**2.30**
Extreme Temperatures	**3.00**	**3.20**	**2.20**
High Wind	**2.90**	**3.10**	**2.40**

Thunderstorms	**1.80**	**3.20**	**2.40**
Tornadoes	**1.60**	**2.60**	**1.00**
Severe Winter Storms	**2.70**	**3.20**	**2.40**
Wildfires	**2.90**	**3.00**	**1.60**

Table 3.63 – Priority Ranking Summary

Hazard Type	McKinley County	City of Gallup	GMCS
Dam Failure	**7**	**6**	**8**
Drought	**1**	**1**	**5**
Flood	**2**	**4**	**4**
Extreme Temperatures	**3**	**5**	**6**
High Wind	**5**	**7**	**2**
Thunderstorms	**8**	**3**	**3**
Tornadoes	**9**	**9**	**9**
Severe Winter Storms	**6**	**2**	**1**
Wildfires	**4**	**8**	**7**

Table 3.64 – Unincorporated McKinley County Priority Risk Index Results

Priority	Hazard	Probability	Magnitude/ Severity	Spatial Extent	Warning Time	Duration	Calculated Score
9	**Tornadoes**	Possible	Minor	Negligible	Less than 6 hours	Less than 6 hours	1.60
8	**Thunderstorms**	Possible	Minor	Small	Less than 6 hours	Less than 6 hours	1.80
7	**Dam Failure**	Unlikely	Critical	Small	6 to 12 hours	24 hours to one week	2.20
6	**Severe Winter Storms**	Likely	Limited	Large	More than 24 hours	24 hours to one week	2.70
5	**High Wind**	Highly Likely	Limited	Large	More than 24 hours	Less than 24 hours	2.90
4	**Wildfire**	Highly Likely	Limited	Small	Less than 6 hours	24 hours to one week	2.90
3	**Extreme Temperatures**	Likely	Critical	Large	More than 24 hours	More than one week	3.00
2	**Floods**	Highly Likely	Critical	Small	6 to 12 hours	Less than 24 hours	3.00
1	**Drought**	Highly Likely	Critical	Small	6 to 12 hours	24 hours to one week	3.10

Table 3.65 – City of Gallup Priority Risk Index Results

Priority	Hazard	Probability	Magnitude/ Severity	Spatial Extent	Warning Time	Duration	Calculated Score
9	**Tornadoes**	Possible	Critical	Moderate	Less than 6 hours	Less than 6 hours	2.60
8	**Wildfire**	Highly Likely	Limited	Moderate	Less than 6 hours	Less than 24 hours	3.00
7	**High Wind**	Highly Likely	Limited	Large	6 to 12 hours	Less than 24 hours	3.10
6	**Dam Failure**	Possible	Catastrophic	Large	Less than 6 hours	Less than 24 hours	3.20
5	**Extreme Temperatures**	Highly Likely	Limited	Large	6 to 12 hours	More than one week	3.20
4	**Floods**	Highly Likely	Critical	Moderate	6 to 12 hours	Less than one week	3.20
3	**Thunderstorms**	Highly Likely	Limited	Large	6 to 12 hours	24 hours to one week	3.20
2	**Severe Winter Storms**	Highly Likely	Limited	Large	6 to 12 hours	24 hours to one week	3.20
1	**Drought**	Highly Likely	Critical	Large	Less than 6 hours	Less than 24 hours	3.40

Table 3.66 – McKinley-Gallup County Schools

Priority	Hazard	Probability	Magnitude/ Severity	Spatial Extent	Warning Time	Duration	Calculated Score
9	**Tornadoes**	Unlikely	Minor	Negligible	More than 24 hours	Less than 6 hours	1.00
8	**Dam Failure**	Unlikely	Minor	Negligible	Less than 6 hours	From 6 to 24 hours	1.40
7	**Wildfire**	Possible	Minor	Negligible	Less than 6 hours	Less than 6 hours	1.60
6	**Extreme Temperatures**	Likely	Minor	Large	More than 24 hours	Less than 6 hours	2.20
5	**Drought**	Likely	Minor	Moderate	More than 24 hours	More than 1 week	2.30
4	**Floods**	Likely	Limited	Small	12 to 24 hours	From 6 to 24 hours	2.30
3	**Thunderstorms**	Highly Likely	Minor	Moderate	12 to 24 hours	Less than 6 hours	2.40
2	**High Wind**	Highly Likely	Minor	Moderate	12 to 24 hours	From 6 to 24 hours	2.40
1	**Severe Winter Storms**	Highly Likely	Minor	Moderate	More than 24 hours	From 6 to 24 hours	2.40

Section 4 – Mitigation Strategy

The intent of the mitigation strategy section is to provide participating jurisdictions with the tools to decide which mitigation actions to implement based on the risk assessment and the tools presented later in this section, such as the Capability Assessment and STAPLE-E. The primary components of the mitigation strategy include the Capability Assessment, Mitigation Goals, and Mitigation Actions.

4.1 – Capability Assessment

An important component of the Mitigation Strategy is a review of each jurisdiction's resources in order to identify, evaluate, and enhance the capacity of local resources to mitigate hazards. The strengths, weaknesses, and resources of the participating jurisdictions are identified to evaluate areas to improve upon and reduce overall risk to the planning area. The Capability Assessment includes an assessment of the following topic areas:

- **Planning and Regulatory**: Summarizes the planning and regulatory capabilities, including plans, policies, codes, and ordinances, that address hazard mitigation activities.
- **Administrative and Technical**: Summarizes the administrative and technical capacity of the participating jurisdiction's staff, consultants, partners, and their skills and resources.
- **Financial**: Summarizes each participating jurisdiction's awards for mitigation implementation and eligibility to access funding through the typical financial mechanisms considered in the assessment.
- **Education and Outreach**: Summarizes the programs that are already in place to provide information to the community.
- **NFIP Program Participation**: Although a portion of the NFIP description was included in the flood profile for McKinley County in Chapter 3, an assessment of each floodplain management program is included here to describe the capability to implement the regulations identified in the local ordinance.

The information included in the Capability Assessment was gathered primarily from the Planning Team members and other representatives of the participating jurisdictions. Each jurisdiction had an opportunity to complete the Capability Assessment form to identify resources that the jurisdictions currently have to reduce risk to hazards, gaps, and areas to strengthen.

Summary of Capabilities

Based on the capability assessment, all three jurisdictions assessed well for most of the five capabilities. The fiscal capability was found to be an area of improvement for all jurisdictions which may improve by hiring or cross training staff to support in identifying and applying for grant funding to implement future mitigation projects. GMCS could improve their technical capability by hiring or cross training staff to support their GIS and emergency management functions. Another capability that could use improvement is the outreach capability for McKinley County. Potentially hiring or cross training staff for dissemination of public information may improve this capability overall. More information can be found in the paragraphs below summarizing each capability for all three jurisdictions. **Table 4.1** provides more details of how each jurisdiction assessed themselves across all five capabilities.

Planning Capability

All three jurisdictions indicated "Yes" to most of the capability components. McKinley County does not have a stand-alone Land Use plan, however it is an element of the County's Comprehensive Plan. The City of Gallup and GMCS do not have a CWPP, however they rely on the County's CWPP. Areas to strengthen include the

development of Stormwater Management Plan for McKinley County and the City of Gallup and a Continuity of Operations Plan for the City of Gallup.

Regulatory Capability

All three jurisdictions indicated "Yes" to most of the capability components. While the County does not have their own Building Codes or Standards, the New Mexico Construction Industries Division sets the Building Codes or Standards for the County. Additionally, the County does not have Subdivision Ordinances. However, there is no general zoning ordinance for McKinley County. McKinley County regulates the division of land and development of land through Subdivision Regulations, 1997, and the County Master Plan.

Administrative Capability

All three jurisdictions indicated "Yes" to most of the capability components. Areas to strengthen for McKinley County include hiring or cross training staff to support community planning and the dissemination of public information. Areas to strengthen for GMCS include hiring or cross training staff to support community planning, the dissemination of public information, and grant writing.

Technical Capability

All three jurisdictions indicated "Yes" to most of the capability components. Areas to strengthen for McKinley County include potentially hiring or identifying a building official. A building official is someone who oversees the local building department, responsible for interpreting building codes, approving construction plans, and enforcing building regulations to ensure public safety and welfare. This is important to mitigate risk to structures and the occupants of those structures from hazard events. Areas to strengthen for GMCS include hiring or cross training staff to support GIS functions and Emergency Management. Hiring an Emergency Manager for the school district may improve coordination with the Department of Emergency Management and increase safety and protection of students and staff for school-based emergencies.

Fiscal Capability

The fiscal capability is an area where all three jurisdictions could strengthen to obtain more assistance to fund future hazard mitigation actions to reduce risk to the county. Potentially hiring or cross training staff for grant writing may improve this capability and secure additional funds.

Outreach Capability

All three jurisdictions indicated "Yes" to most of the capability components. Areas to strengthen for McKinley County include more regular outreach to local news stations to share information with the public regarding public education or opportunities for public involvement as well as developing a newsletter to share with residents. Potentially hiring or cross training staff for dissemination of public information may improve this capability overall.

Table 4.1 – Capability Assessment Summary

	McKinley County	City of Gallup	GMCS
Planning Capability			
Comprehensive/Master Plan	Yes	Yes	Yes
Land Use Plan	No	Yes	Yes
Economic Development Plan	Yes	Yes	N/A
Capital Improvement Plan	Yes	Yes	Yes
Community Wildfire Protection Plan	Yes	No	No

	McKinley County	City of Gallup	GMCS
Stormwater Management Plan	No	Unknown	N/A
Transportation Plan	Yes	Yes	Yes
Changing Weather/Adaptation Plan	No	No	N/A
Local Emergency Operations Plan	Yes	Yes	Yes
Continuity of Operations Plan	Yes	No	Yes
Regulatory Capability			
Building Codes/Standards	Yes	Yes	N/A
Subdivision Ordinance	No	Yes	N/A
Zoning Ordinance	Yes	Yes	Yes
Natural hazard-specific policy or code (erosion, stormwater, earthquake)	Yes	Yes	Yes
Floodplain Ordinance	Yes	Yes	Yes
Mutual aid agreements	Yes	Yes	Yes
Administrative Capability			
Community Planner	No	Yes	No
Finance and Grants Administration	Yes	Yes	Yes
Public Information Dissemination	Yes	Yes	Yes
Grant writing	Yes	Yes	No
Public Information Dissemination	No	Yes	No
Technical Capability			
Building Official	No	Yes	Yes
Emergency Manager	Yes	Yes	No
Floodplain Administrator	Yes	Yes	N/A
Civil Engineer	Yes	Yes	N/A
Legal Counsel	Yes	Yes	Yes
GIS Coordinator/Analyst	Yes	Yes	No
Fiscal Capability			
Capital Improvement	Yes	Yes	Yes
Community Development Block Grant	No	Yes	N/A
Impact fees for new development	No	No	No
Fees for water, stormwater, sewer, gas, or electric services	No	Yes	No
State funding programs	Yes	Yes	Yes
Federal funding programs (non- FEMA)	No	Yes	Yes
FEMA Hazard Mitigation Assistance (HMGP, HMGP-PF, BRIC, FMA)	Yes	No	No
Outreach Capability			
Local news stations (radio and television)	None on regular basis	Yes	Yes
Community webpage	Yes	Yes	Yes
Social media	Yes	Yes	Yes

	McKinley County	City of Gallup	GMCS
Community Newsletter	No	Yes	Yes
Hazard awareness campaigns (Storm Ready, Firewise, Ready-Set-Go, ShakeOut!,Severe Weather Awareness Week, school programs, public events)	Yes, to a degree	Yes	Yes
Other- Preparedness and Public Safety Day	Yes	N/A	N/A

Planning and Regulatory Capabilities

Tables 4.2 through **Table 4.7** lists the planning and regulatory tools in McKinley County, the City of Gallup, and GMCS. The list of tools is typically used by local jurisdictions to implement hazard mitigation activities and indicates those that are in place in the planning area. For each of the profiled hazards, several ordinances, regulations, plans, and programs were identified in various communities.

Table 4.2 – Planning Capability: McKinley County

Capability Type	In Place	Description
Comprehensive/ Master Plan	Yes	1) Drought, wildfire, flash flood, severe winds; pg. 88 starts the discussion of mitigation and public safety initiatives 2) Completed July 2019 and updated February 2021 with visual update in Aug 2021. Updates every 5 years 3) https://www.nwnmcog.org/uploads/1/2/8/7/12873976/mck_comp_plan.pdf
Land Use Plan	No	Not a stand-alone plan but an element in the Comprehensive Plan
Economic Development Plan	Yes	1) Northwest New Mexico Council of Governments (NWNMCOG) says anything on natural hazards would start on page 35 2) County contracts with Greater Gallup Economic Development Corporation, not clear on any plan they have, but NWNMCOG has the plan below that was completed in 2020/2021 3) CEDS Plan https://www.co.mckinley.nm.us/213/Economic-Development; https://www.gallupedc.com/
Capital Improvement Plan	Yes	1) No direct hazards addressed, but some road and facility projects could be applicable in the future 2) Updated annually as part of the annual budget 3) No link
Community Wildfire Protection Plan	Yes	1) The plan addresses Wildfire 2) 2018 last update 3) https://www.emnrd.nm.gov/sfd/wp-content/uploads/sites/4/McKinleyCountyCWPPUpdate2018.pdf
Stormwater Management Plan	No	
Transportation Plan	Yes	1) Lists some hazards on page 67 2) 2022 3) https://www.nwnmcog.org/uploads/1/2/8/7/12873976/regional_transportation_plan_2023_update.pdf
Changing Weather/Adaptation Plan	No	

Capability Type	In Place	Description
Local Emergency Operations Plan	Yes	1) Addresses all hazards 2) 2022 full re-write adopted; small updates ongoing, need to work on bigger updates once HMP is complete 3) No link
Continuity of Operations Plan	Yes	Overarching COOP framework is an annex in the Emergency Operations Plan (EOP), but the county does not have a specific COOP for each department yet.
Other:		

Table 4.3 – Regulatory Capability: McKinley County

Capability Type	In Place	Description
Building Codes/Standards	No	Goes through NM Construction Industries Division
Subdivision Ordinance	Yes	1) Floods and fires are mentioned in various places within the plan that ordinances aim to reduce risk from 1997 2) https://www.co.mckinley.nm.us/Faq.aspx?QID=101; https://www.co.mckinley.nm.us/243/Land-Use
Zoning Ordinance	No	
Natural hazard-specific policy or code (erosion, stormwater, earthquake)	Yes	McKinley County Fire and Rescue (MCFR): Open burning and unattended fires ordinance 2025-JUN-002 **1)** Fires **2)** 2025 **3)** https://www.co.mckinley.nm.us/DocumentCenter/View/3422/Open-Burning-and-Unattended-Fires-Ordinance-No-2025-JUN-002
Floodplain Ordinance	Yes	1) Flooding 2) No date 3) No link, McKinley County Flood Damage Prevention Ordinance NO. FEB-10-002, McKinley County OEM; Protect life and property from flooding and comply with minimum standards for NFIP
Mutual aid agreements	Yes	Intrastate Mutual Aid System in State statute. Some county departments have Memorandums of Understanding (MOUs) with other entities. McKinley County Office of Emergency Management (MCOEM) has a MOU with GMCS for the use of facilities; McKinley County and GMCS have a MOU for GMCS to use Red Rock Park as a reunification site; MCOEM has a MOU with Gallup Express for emergency transportation; MCOEM has a MOU with Community Pantry for emergency food assistance. MCFR: Automatic aid with MedStar ambulance through their contract. Mutual Aid with Cibola County Fire Departments.
Other:		

The jurisdiction has identified the following capabilities for improvement:

1. Update Floodplain Ordinance to ensure it meets current National Flood Insurance Program guidance and local needs.
2. Ensure that hazard mitigation topics and actions are reviewed upon the next Comprehensive Plan update.
3. Update CWPP.
4. Look at how mitigation planning and actions can support COOP planning efforts to help the County government be more resilient.

Table 4.4 – Planning Capability: City of Gallup

Capability Type	In Place	Description
Comprehensive/ Master Plan	Yes	1) They have an entire section on hazard mitigation 2) Adopted in 2024 and updated every 5 years 3) https://www.gallupnm.gov/DocumentCenter/View/1211/2016-Growth-Management-Master-Plan-Update-Final?bidId= Above is the 2016 version of the plan. The most recent version is with the Planning and Development Department
Land Use Plan	Yes	1) No hazards addressed in the plan; this is an element within the Comprehensive Plan 2) The Plan was last updated in 2023 and updated every 5 years 3) https://www.gallupnm.gov/DocumentCenter/View/3180/LDS-Final-Document-_MASTER_wAppendices?bidId=
Economic Development Plan	Yes	1) Unknown in the hazards that are addressed in the plan 2) Last date updated was 2022 and is updated every 5 years 3) https://www.gallupnm.gov/DocumentCenter/View/4848/Gallup-Economic-Development-Plan-10-07-22-FINAL?bidId=
Capital Improvement Plan	Yes	1) No hazard addressed 2) CIP/ICIP budgets are done and updated annually
Community Wildfire Protection Plan	No	
Stormwater Management Plan	Unknown	No specific plan for Stormwater Management, but there are sections in the Land Development Standards that address some of these issues
Transportation Plan	Yes	1) Hazards were addressed 2) The last update was in 2023 and updated every 5 years 3) No link, but located within Planning and Development
Changing Weather/Adaptation Plan	No	
Local Emergency Operations Plan	Yes	There is a joint plan for the County and the City that is being updated section by section between Adam Berry and Jon Pairett
Continuity of Operations Plan	No	Fire Chief Jon Pairett is currently working on preparing for the City of Gallup with all departments' input
Other:		

Table 4.5 – Regulatory Capability: City of Gallup

Capability Type	In Place	Description
Building Codes/Standards	Yes	1) 2021 IBC, IFC 2) Planning and Development Department 3) To protect public health, safety, and general welfare in the construction and occupancy of buildings
Subdivision Ordinance	Yes	1) LDS 2018 Updated 2023 2) Planning and Development Department 3) Official zoning code of the City of Gallup for planning, zoning, subdivision, annexation, and related development procedures

Capability Type	In Place	Description
Zoning Ordinance	Yes	1) LDS 2018 Updated 2023 2) Planning and Development Department 3) Official zoning code of the City of Gallup for planning, zoning, subdivision, annexation, and related development procedures
Natural hazard-specific policy or code (erosion, stormwater, earthquake)	Yes	1) HMP 2021 2) County OEM 3) Reduce risk to hazards in the County
Floodplain Ordinance	Yes	1) LDS Floodplain Overlay 2018 2) Planning and Development Department. Also Public Works has a Floodplain Manager 3) Reduce flood-related losses of life, property, and public costs by regulating development in flood-prone areas
Mutual aid agreements	Yes	These are under Fire Department and Police Department
Other:	Yes	Water Department and Wastewater Departments have Emergency Plans in place for specific operations

The jurisdiction has identified the following capabilities for improvement:

1. Working with internal and external stakeholders, the City of Gallup will continue to identify areas of risk and avenues to reduce those risks to our community.

Table 4.6 – Planning Capability: Gallup-McKinley County Schools

Capability Type	In Place	Description
Comprehensive/ Master Plan	Yes	1) N/A 2) Updated annually for all GMCS infrastructure, master planning, personnel, new school construction build out plan 3) N/A
Land Use Plan	Yes	GMCS does have a land use plan in relation to implementing new school builds
Economic Development Plan	N/A	
Capital Improvement Plan	Yes	Plan and implementation depends on funds
Community Wildfire Protection Plan	No	We rely on McKinley County
Stormwater Management Plan	N/A	Unknown, we rely on McKinley County
Transportation Plan	Yes	We have a plan for school buses and agency fleet vehicles. They all comply with DOT protocols
Changing Weather/Adaptation Plan	N/A	
Local Emergency Operations Plan	Yes	We have a Site Specific Safety Plan (SSSP) and follow MCOEM EOP
Continuity of Operations Plan	Yes	Contained with SSSP
Other:		

Table 4.7 – Regulatory Capability: Gallup-McKinley County School

Capability Type	In Place	Description
Building Codes/Standards	Yes	We comply with all codes and regular/routine inspections per NM fire code
Subdivision Ordinance	N/A	We comply with all codes for new school builds
Zoning Ordinance	N/A	We comply with all ordinances for new school builds
Natural hazard-specific policy or code (erosion, stormwater, earthquake)	Yes	1) HMP 2021 2) County OEM 3) Reduce risk to hazards in the County
Floodplain Ordinance	Yes	LDS Floodplain Overlay 2018
Mutual aid agreements	Yes	EOP partnership with MCOEM
Other:	Yes	Water department emergency plan/WW

1. **The jurisdiction has identified the following capabilities for improvement:**
2. Through increased partnerships with local partners, support will lead to better response and mitigation procedures.

Building Codes

Building codes and inspections provide local governments with the means to maintain county structures that are resilient to natural hazards. McKinley County and the City of Gallup are committed to the high standards of building provided through the respective codes and require that the same codes and the same enforcement procedures apply during routine permitting procedures, as well as following a disaster.

The County has not adopted these codes; however, the State of New Mexico has adopted these, and thus, the unincorporated, non-tribal portions of the county are inspected by the state. These codes prescribe minimum standards for building construction, which ensure that new buildings and structures are built to standards that are seismically sound, fire-resistant, and developed within flood-proofing measures. These codes also require appropriate hazard code updating and compliance when certain thresholds are met for remodel and renovation of existing buildings. These codes also authorize local governments to carry out building inspections to ensure local structures adhere to the minimum state building standards.

The City of Gallup has adopted the 2021 International Building and Fire Prevention Codes. Municipal officials have the primary role of enforcing the International Building Code structural regulations. Fire departments also take part in the inspection process for fire and general public safety inspections. They enforce the appropriate codes both at the plan approval stage and the site inspection stage.

Land Use Planning

Through land use regulatory powers granted by the state, local governments can control the location, density, type, and timing of land use and development in the community. Provisions of the land use plans are implemented through regulatory tools that include zoning and subdivision ordinances, and taxation. As of now, neither McKinley County nor the City of Gallup employs strict zoning policies. McKinley County regulates its development through the use of a subdivision ordinance. Expanding the county and city's ability to use land use planning as a mitigation tool is further explained later in Section 4.1.

Taxation

Taxation can be a powerful mitigation tool by providing local governments with a way to guide development. Tax abatements may be used to encourage landowners and developers to integrate mitigation measures into the process of building new developments and retrofitting existing properties in the floodplain. These tools can

be especially effective in encouraging the mitigation of existing structures. Additionally, school districts have the ability to levy revenue through referendums for specific projects, whether or not it is mitigation related.

Administrative and Technical Capabilities

Mitigation is an interdisciplinary effort that requires collaboration across numerous departments and individuals. Existing administrative and technical resources in the participating jurisdictions are summarized in **Tables 4.8** through **4.13** for McKinley County, the City of Gallup, and GMCS.

Table 4.8 – Administrative Capability: McKinley County

Capability Type	In Place	Description
Community Planner	No	
Finance and Grants Administration	Yes	1) Can assist with managing grants addressing natural hazards 2) The Finance Department provides budgetary and overall bookkeeping support. A Grants Manager within the Finance Department keeps track of grants the County has and complete applications and manages some grants. Public Safety agencies write and manage many of their own grants, while the Grants Manager helps with others.
Public Information Dissemination	Yes	1) Public information for all hazards 2) The County Manager is the official spokesperson for McKinley County, along with the Chairperson of the Board of Commissioners. Public Safety Department Heads have some latitude to speak with the media on certain issues related to their department. MCOEM and Metro Dispatch coordinate mass notification alerts and warnings. Public Safety departments have social media accounts that they manage based on the County social media policy and department-level social media Standard Operating Guidelines (SOGs). The Information Annex to the McKinley County EOP does describe the JIS/JIC concept that the County would work to utilize during major emergencies and disasters, which does include a Public Information Officer seat in the EOC.
Grant writing	Yes	1) Assist with grant writing to reduce risk to hazards 2) County Grant Manager and individual county departments.
Other:		

Table 4.9 – Technical Capability: McKinley County

Capability Type	In Place	Description
Building Official	No	1) No building official for the county. 2) Building permits have to be obtained through NM Construction Industries Division.
Emergency Manager	Yes	1) In-house 2) MCOEM; Oversee the emergency management program, which includes all phases of emergency management.
Floodplain Administrator	Yes	1) In-house 2) MCOEM currently is done by the Emergency Management Coordinator that is overseen by the Emergency Manager. It is the purpose of this ordinance to promote public health and safety and to minimize public/ private losses due to flood conditions.

Capability Type	In Place	Description
Civil Engineer	Yes	1) Contract 2) Potentially through working with Road Dept. On ongoing and proposed projects.
Legal Counsel	Yes	1) Contract 2) No tasks at this time other than reviewing any contracts, proposed resolutions, MOUs, ordinances, etc.
GIS Coordinator/Analyst	Yes	1) In-house 2) GIS Center within McKinley County IT Department, as well as a GIS specialist at Metro Dispatch; No direct role in natural hazard risk reduction at this time.
The jurisdiction has identified the following capabilities for improvement: 1. Work with GIS to increase available GIS products to assist in determining areas at risk and visualizing datasets. 2. Increase coordination across County departments for including natural hazard mitigation/risk reduction into as many projects as possible.		

Table 4.10 – Administrative Capability: City of Gallup

Capability Type	In Place	Description
Community Planner	Yes	P&D
Finance and Grants Administration	Yes	Finance
Public Information Dissemination	Yes	Clerks, Police Department, Fire
Grant writing	Yes	City of Gallup contracts with the NW NM Council of Governments for grant writing support
Other:		

Table 4.11 – Technical Capability: City of Gallup

Capability Type	In Place	Description
Building Official	Yes	P&D in-house/CID
Emergency Manager	Yes	The City of Gallup Fire Chief is also the City of Gallup Emergency Manager
Floodplain Administrator	Yes	COG Public Works
Civil Engineer	Yes	On-Call
Legal Counsel	Yes	City of Gallup Attorney
GIS Coordinator/Analyst	Yes	COG IT
1. **The jurisdiction has identified the following capabilities for improvement:**The City of Gallup will work with internal departments and external agencies to reduce the potential risks in our community and develop mitigation strategies to allow the City to be more prepared.		

Table 4.12 – Administrative Capability: Gallup-McKinley County Schools

Capability Type	In Place	Description
Community Planner	No	
Finance and Grants Administration	Yes	Finance and Procurement
Public Information Dissemination	Yes	Superintendent
Grant writing	No	

Capability Type	In Place	Description
Other:		

Table 4.13 – Technical Capability: Gallup-McKinley County Schools

Capability Type	In Place	Description
Building Official	Yes	Principles and Maintenance/Operations Director
Emergency Manager	No	GMCS has delegated assignments within our capacity based upon the emergency type
Floodplain Administrator	N/A	
Civil Engineer	N/A	
Legal Counsel	Yes	GMCS has contracted legal counsel
GIS Coordinator/Analyst	No	
The jurisdiction has identified the following capabilities for improvement: 1. Upon type of incident/emergency, we at GMCS would reach out through our partnerships with LEPC and other partners within New Mexico Public Education Department to support GMCS in mitigating the incident/emergency from expanding.		

Administrative

Furthermore, McKinley County OEM should take steps to begin educating and training government staff through federal and state emergency management programs and federal weather programs. Specifically, working towards NWS StormReady community status and training volunteer SKYWARN storm spotters. By educating and increasing the technical capabilities of its citizens and non-emergency-related county, city, and school staff, indirect incremental changes will happen over time that will spill over into hazard resiliency.

Technical

McKinley County and the City of Gallup have the basic technology needed to mitigate and respond to natural disasters. McKinley County OEM does not have a 24/7 emergency operations center (EOC); however, it does have a cold start EOC as well as a mobile command center. They are connected to the internet, giving them access to various NWS and NOAA alerts and data, which are valuable sources of information on approaching weather and hazards, as well as providing resource coordination, but again, they lack a central information center to assist in the event of a disaster.

McKinley County OEM, the Gallup Fire Department, and the McKinley County Fire Department actively work with the Pueblo of Zuni and the Navajo Nation to proactively prevent wildfires and extinguish them when they occur. They actively maintain buffer zones and engage in other fuel treatment methods throughout tribal lands. The map on the following page depicts their recent prescribed burns, which they have used to decrease the chance and the intensity of wildfires.

Fiscal Capability

Existing financial resources can be used by participating jurisdictions to fund mitigation activities to reduce risk in the County. These resources are summarized in **Table 4.14** through **Table 4.16** for McKinley County, the City of Gallup, GMCS.

Table 4.14 – Fiscal Capability: McKinley County

Capability Type	In Place	Description
Capital Improvement	Yes	Bridge Design, construction, and water diversion. County Manager's Office and Road Department

Capability Type	In Place	Description
Community Development Block Grant	None Received	
Impact fees for new development	No	
Fees for water, stormwater, sewer, gas, or electric services	No	The County does not provide utilities. They are all either other political subdivisions or private utility companies.
State funding programs	Yes	Water diversion projects (bridges)
Federal funding programs (non-FEMA)	No	County gets federal funds, but none have been for mitigation/risk reduction projects.
FEMA Hazard Mitigation Assistance (HMGP, HMGP-PF, BRIC, FMA)	Yes	Funding for this plan update. We have applied for back-up generators for Red Rock Park and the MCFR Fire Administrative Complex.

The jurisdiction has identified the following capabilities for improvement:

1. Grants Management and other County Departments look at how mitigation projects can be implemented into other funding projects or supplemented with various funds.
2. County looks at alternative ways to fund mitigation projects.

Table 4.15 – Fiscal Capability: City of Gallup

Capability Type	In Place	Description
Capital Improvement	Yes	City Manager, and these have included utility projects and curb, gutter, and sidewalk improvements
Community Development Block Grant	Yes	City of Gallup Project Manager, and have worked on drainage improvements
Impact fees for new development	No	
Fees for water, stormwater, sewer, gas, or electric services	Yes	These are city services, but fees are not geared towards Hazard Mitigation, as these are Enterprise funds
State funding programs	Yes	Each city department can apply for grants towards specific hazard mitigation
Federal funding programs (non-FEMA)	Yes	None towards HMP
FEMA Hazard Mitigation Assistance (HMGP, HMGP-PF, BRIC, FMA)	No	

The jurisdiction has identified the following capabilities for improvement:

1. The City of Gallup can search out for external funding opportunities and internal funding sources for hazard mitigation projects throughout our city.

Table 4.16 – Fiscal Capability: Gallup-McKinley County Schools

Capability Type	In Place	Description
Capital Improvement	Yes	NM Legislative Capital Improvement Plan specific to new school buildings
Community Development Block Grant	N/A	

Impact fees for new development	No	
Fees for water, stormwater, sewer, gas, or electric services	No	
State funding programs	Yes	NM Legislature
Federal funding programs (non- FEMA)	Yes	Title 1
FEMA Hazard Mitigation Assistance (HMGP, HMGP-PF, BRIC, FMA)	No	

The jurisdiction has identified the following capabilities for improvement:

1. GMCS requests additional capital improvement/funding to fulfill the needs to service children's education.

Fiscal Capability

McKinley County and the City of Gallup are not unique in the issues felt by small governments to retain the staff and resources necessary to accomplish the strategies necessary to mitigate the hazards in their area. However, they are aware of potential diverse funding sources available to communities for assisting in the fiscal needs required to implement local hazard mitigation plans, including both government and private programs.

While federal and state programs carry out the bulk of disaster relief programs that provide funds for mitigation, local governments are able to search for alternative funding sources to supplement the local hazard mitigation budget. The participants in the mitigation planning process are aware that before effective mitigation strategies can be applied, stable funding sources and effective incentives must be established on a per-project basis to encourage participation by the private and public sectors.

McKinley County and the City of Gallup will seek out FEMA grant funding from the Building Resilient Infrastructure and Communities Grant Program (BRIC), HMGP, the Flood Mitigation Assistance Grant Program (FMA), and the Rehabilitation of High Hazard Potential Dam Grant Program (HHPD). Given the size of the municipalities involved in this plan and the pocketed areas of significant flood risk, municipal governments should have access to the United States Department of Housing and Urban Development's Community Development Block Grant Program (CDBG), which occasionally awards grants to assist with projects that fall under hazard mitigation.

Education and Outreach

McKinley County and the City of Gallup both engage in various public education and outreach capabilities described in **Table 4.17** and **Table 4.19**.

Table 4.17 – Outreach Capability: McKinley County

Capability Type	In Place	Description
Local news stations (radio and television)	None on regular basis	
Community web page	Yes	MCOEM website now has mitigation information.
Social media	Yes	Periodically, MCOEM Facebook makes or shares a post that is mitigation-related. NWS ABQ Facebook posts are shared on a regular basis with weather forecast info. McKinley County Fire Rescue Facebook page about fire safety/fire danger at times

Capability Type	In Place	Description
Community Newsletter	No	
Hazard awareness campaigns (Storm Ready, Firewise, Ready-Set-Go, ShakeOut!,Severe Weather Awareness Week, school programs, public events)	Yes, to a degree	MCOEM and McKinley County Fire Rescue promote Firewise and Ready-Set-Go
Other- Preparedness and Public Safety Day	Yes	Annual community event where public safety and community service providers set up info booths, vehicles, etc., to educate the public on how they serve the community, and how the public can prepare for emergencies and disasters. In 2024, a new format was started that includes a daytime portion for school students in grades 4 to 10, and a community-wide evening portion. In the past, wildfire and flood preparedness/mitigation have been discussed by some of the exhibitors.
The jurisdiction has identified the following capabilities for improvement: 1. Work to increase mitigation/risk reduction public education through social media, info graphs, and/or videos throughout the year based on the highest risk hazards for the upcoming portion of the year.		

Table 4.18 – Outreach Capability: City of Gallup

Capability Type	In Place	Description
Local news stations (radio and television)	Yes	City of Gallup Clerk's Office
Community web page	Yes	City of Gallup Information Technologies Department
Social media	Yes	City of Gallup Information Technologies Department, Gallup Police, and Fire have their own social media pages
Community Newsletter	Yes	In Journey Magazine, the city highlights a department each month
Hazard awareness campaigns (Storm Ready, Firewise, Ready-Set-Go, ShakeOut!, Severe Weather Awareness Week, school programs, public events)	Yes	Fire prevention, risk reduction, and these are mostly done through the Fire and Police Department
Other- Preparedness and Public Safety Day		
The jurisdiction has identified the following capabilities for improvement: 1. The City of Gallup can continue to work on and improve preparedness, mitigation education, and outreach to prepare more of our citizens for the event of an emergency.		

Table 4.19 – Outreach Capability: Gallup-McKinley County Schools

Capability Type	In Place	Description
Local news stations (radio and television)	Yes	Utilize all local media outlets, print paper media, and social media for announcements
Community web page	Yes	HMCS has its own internal Public Relations team

Social media	Yes	GMCS uses all social media platforms (e.g., Facebook, Instagram, etc.)
Community Newsletter	Yes	GMCS Elevate magazine
Hazard awareness campaigns (Storm Ready, Firewise, Ready-Set-Go, ShakeOut!,Severe Weather Awareness Week, school programs, public events)	Yes	GMCS has successfully publicized and internalized the standard response protocol for all GMCS hazard responses at each school site
Other- Preparedness and Public Safety Day		

The jurisdiction has identified the following capabilities for improvement:

1. Through partnerships and continued observations and feedback from local stakeholders, GMCS will strive for timely and pertinent information to the public.

NFIP Program Participation

For general information about the NFIP Program and the CRS, please reference Chapter 3, section 3.5.

NFIP Capabilities Assessment

The narrative below includes a general summary and responses to the 2025 NFIP assessment. Participation in the NFIP is a key element of any community's local floodplain management and flood mitigation strategy.

McKinley County

The County OEM assures compliance with the County Floodplain Ordinance. McKinley County requires all new construction "protects against inadequate drainage to handle flow events equal to a 100-year flood" as a measure to deter flash flooding vulnerability. The drainage construction restriction is enforced through the building permit application process. When an individual or business applies for a construction permit, its location within or outside of an identified floodplain is noted and reviewed, but not restricted.

City of Gallup

The City of Gallup Floodplain Administrator in the Planning and Zoning Department assures compliance with the City's Floodplain Ordinance. In the City of Gallup, new construction projects must be built at or above the identified BFE of the floodplain. The City of Gallup Floodplain Administrator in the Public Works Department assures compliance with City Floodplain Ordinance No. C2010-3 through permitting and inspection during the building permit application process. Residential and Commercial development within the SFHA requires a separate Floodplain Development Permit from the Public Works Department. In the City of Gallup, new or substantially improved construction projects must meet the minimum national standards and be built at or above the identified BFE of the floodplain.

The county and city performed an overall assessment of their participation in the NFIP program by responding to the following questions noted in **Table 4.20**.

Table 4.20 – NFIP McKinley County Assessment

NFIP Question #1: Describe your jurisdiction's current floodplain management/regulation process for construction of new or substantially improved development within your jurisdiction.
A Floodplain Use permit shall be required to ensure conformance with the provisions of this ordinance. Floodplain Use permits shall be issued in letter form by the Floodplain Administrator, concurred by the Emergency Manager. The City of Gallup requires a Floodplain Development Permit for new or substantially improved development projects within the SFHA. Permitting and Inspection of development within the SFHA is conducted by the Floodplain Administrator in the Public Works Department, and can often be associated with the Building Permit Application Process through the Planning and Zoning Department.
NFIP Question #2: Describe the status and/or validity of the current floodplain hazard mapping for your jurisdiction.
The Floodplain mapping and redelineation for this countywide revision were performed by Mapping Alliance Partnership VI. These revisions were completed in May 2008. The City of Gallup's FIRM, with an effective date of February 17, 2010, is the most current floodplain hazard mapping available.
NFIP Question #3: Describe any community assistance activities (e.g., help with obtaining Elevation Certificates, flood hazard identification assistance, flood insurance acquisition guidance, public involvement activities, etc.).
Providing assistance with Interstate 40 road improvement projects that fall within McKinley County jurisdiction. The City of Gallup assists the community by providing basic information, upon request, regarding the identification of flood hazard areas and zoning. The Public Works Department will provide the necessary information for questions from the general public, as well as contractors/developers seeking information about permitting procedures and requirements for new or substantially improved development projects, BFEs for any particular flood zone, etc. The Public Works Department also provides general guidance on obtaining further information via websites such as FEMA Map Service Center, etc.
NFIP Question #4: Describe identified needs in your floodplain management program. This could include things like updating the floodplain management code/regulation, establishing written review procedures, modifying, or adding flood hazard area mapping, etc.
As the designated Floodplain Administrator (FPA), it would be helpful to know if any updates need to be added and/or deleted from our current Floodplain Ordinance, as well as learning more about how to implement certain procedures to assist the County. The City of Gallup's FIRM needs to be updated to include areas of recent development over the years. The City could also benefit from LiDAR mapping for this area. Providing more community outreach is a goal for the Public Works Department. Additionally, an existing mitigation action addressing flood has been revised to strengthen floodplain ordinances. The purpose of the action is to review and revise the current floodplain ordinance, policies and/or regulations to strengthen the floodplain ordinance to better protect flood-prone property and reduce the impact of flooding throughout the county.

Institutional Capability

McKinley County as a whole community is capable of implementing the strategies identified herein. In addition, they are capable of promoting the mitigation process and educating the public about the hazards prevalent to their area, as well as the mitigation process necessary to mitigate those hazards.

In an emergency, the county and each municipality's response is an extraordinary extension of responsibility and action, coupled with normal day-to-day activity. Normal governmental duties will be maintained, with emergency operations carried out by those agencies assigned specific emergency functions.

In addition to the mitigation actions and projects listed later in Section 4, McKinley County, the City of Gallup, and GMCS will increase their institutional capabilities by forming a Local Emergency Planning Committee (LEPC) and holding regularly scheduled meetings tailored to their wants and needs.

Political Capability

During the process of the development of this plan, opposition to mitigation measures was not evident in McKinley County or the City of Gallup. The primary limiting factor is funding, which is made more difficult by the current situation in the local, state, and national economies.

The county, city, and their partnerships with the participating agencies are well-organized and responsive to community needs. Leadership is informed and remains up-to-date on the hazards that threaten the area. Citizens who participated in the public meetings and presentations showed an interest in doing things to promote a safer community. Therefore, the county and city (the governing board, staff, and citizen population) appear willing to promote the economic efficiency and social utility of the mitigation measures contained in this plan, if appropriate funding can be identified.

4.2 – Mitigation Goals

The mitigation goals represent the plan's participants' long-term vision for the continued reduction of risks to hazards and the enhancement of their mitigation capabilities. The Planning Team reviewed the previous eleven goals in the last plan update and decided to remove seven as they were redundant and could be condensed into one goal, which is reflected in the revision of goal number 4. The previous goals are described more in **Table 4.21** and the updated goals agreed upon by the Planning Team are listed below.

- **Goal 1**: Reduce the risk from natural hazard events utilizing community cooperation and an all-hazards approach.
- **Goal 2**: Pursue additional, complete, and accurate data in support of mitigation planning, disaster preparedness, disaster response, and disaster recovery operations.
- **Goal 3**: Integrate the hazard mitigation plan's findings into the planning, and decision-making processes for all current and future emergency management and preparedness related activities.
- **Goal 4**: Minimize the risk to life and property from all natural hazards such as dam failure, drought, extreme temperatures, flood, high wind, severe winter storms, thunderstorms, tornadoes, and wildfire.

Table 4.21 – Previous Mitigation Goals

Previous Goal Number	Description
#4	Minimize the risk to life and property from dam failures
#5	Minimize the risk to property from droughts
#6	Minimize the risk to life and property from floods
#7	Minimize the risk to life and property from geologic hazards
#8	Minimize the risk to life and property from severe storms
#9	Minimize the risk to life and property from tornadoes
#10	Minimize the risk to life and property from wildfires
#11	Minimize the risk to life and property from winter storms

4.3 – Mitigation Actions

This plan identifies a comprehensive range of mitigation actions for all three participating jurisdictions. The selected set carefully takes an all-hazards approach to mitigation while simultaneously addressing each of the individual nine profiled hazards. The full list of mitigation actions can be found in Appendix E.

Each jurisdiction reviewed the previous plan update's actions and determined which actions the County will keep, revise, remove, or add. New actions were developed using the goals, objectives, updated hazard profiles, results of the vulnerability analysis, and updated Capability Assessment. The projects and actions were selected based upon their potential to reduce the risk to life and property, with an emphasis not only on new and existing infrastructure, but rather an imperative and necessity that all selected actions and projects must protect and increase resiliency to new and existing infrastructure. Additionally, ease of implementation, community and departmental support, consistency with other relevant plans and capabilities, available funding, vulnerability, and total risk were variable factors.

The Planning Team agreed to modify the column headers for the mitigation action table from the previous format in the last plan update. The mitigation actions now include the following information:

- **Action Identifier**: The numbering system will allow for quick reference to the specific action. As agreed by the Planning Team, actions are listed in order of the County's PRI score. If two actions are to be mitigated, the action is listed in order of the first PRI named. If more than two actions are to be mitigated, the actions are listed after Dam Failure (the seventh ranked hazard for the County according to the PRI scores). After the order of the hazards, the actions are listed based on the highest priority.
- **Priority Ranking**: The high-medium-low approach to prioritization is described more in BLANK.
- **Action Description**: This provides a short overview of the action intent and includes example locations in some instances.
- **Hazards Mitigated**: This lists the hazards to be mitigated by the specific action.
- **Cost Effectiveness**: This describes a favorable benefit versus cost evaluation, including monetary and non-monetary benefits. Examples of non-monetary benefits are the improvements in the quality of life or the natural ecosystem.
    - **Low Cost Effectiveness**: means that the benefits may not outweigh the costs, or that more research is needed
    - **Medium Cost Effectiveness**: means that the benefits are estimated to outweigh the costs
    - **High Cost Effectiveness**: means that the benefits are estimated to exceed the costs
- **Duration**: This refers to the anticipated timeline for implementation. If a project tasks several different years, duration is identified as in-progress. Duration actions are a description of what steps are anticipated throughout the 5-year plan approval cycle is included in the project description
    - Short duration means that the project will be implemented in years 1 or 2 of the plan approval cycle
    - Medum duration means that the project will be implemented in years 3 to 4 of the plan approval cycle
    - Long duration means that the project will be implemented in year 5 of the plan approval cycle
- **Responsible Entities**: This includes the organization, agency, or entity that is anticipated to serve in a leadership role to get the project planned, funded, and implemented.
- **Potential Funding Sources**: This lists the potential funding sources to implement the project. Acronyms used in the chart are described below.
    - FMA: Flood Mitigation Assistance

- HMGP: Hazard Mitigation Grant Program

- **Action Status**: Status was identified as either no action, in progress, or complete

Prioritization Process

Each mitigation action is assigned a priority ranking of high, medium, or low based on the following considerations:

- A favorable benefit versus cost evaluation, wherein the perceived direct and indirect benefits outweigh the project cost
- A direct beneficial impact on the ability to protect life and/or property from natural hazards
- A mitigation solution with long-term effectiveness

The Planning Team agreed to use a modified version of the Social, Technical, Administrative, Political, Legal, and Economic, and Environmental approach (STAPLE+E), which differs from the previous version used in the last plan update. **Table 4.22** summarizes the STAPLE+E categories. Each jurisdiction assessed their mitigation action and assigned a priority ranking of high, medium, or low based on the definitions below.

- A low-priority action is one that meets a few of the STAPLE+E characteristics (one or two)
- A medium priority action is one that meets some of the STAPLE+E characteristics (three or four)
- A high-priority action is one that meets most of the STAPLE+E characteristics (five or more)

Table 4.22 – STAPLE+E

Category	Description	Evaluation Criteria
Social	Public support of the overall implementation strategy and specific mitigation action, including addressing vulnerable populations.	• Action is compatible with present and future community values • Positive impact* on cultural values or resources • Positive impact* on a specific segment of the population, including vulnerable populations • Positive impact* on established neighborhoods, voting districts, or relocation impact
Technical	Action presents a reasonable solution, given the technological requirements of the proposed project.	• The action is implementation ready and doesn't require further concept development • Action is technically feasible • The solution is long-term • Action results in a reduction of natural hazard impacts (either primary or secondary impacts)
Administrative	Availability of anticipated administrative capabilities, including staffing, funding, and maintenance requirements of the action.	• Current staffing and/or technical experts are available (or can be readily obtained) to plan for and implement the action • Oversight staffing is available for meeting the requirements of funding mechanisms such as grants or loans
Political	Current community and state political support related to the environment, economic development, safety, emergency management, and similar.	• Political support for implementation and monitoring • Local champion or proponent of the action to ensure the action is successful • Support by decision-makers to provide a lead department, agency, or representative to oversee the action to completion
Legal	Legal authority at the local, state, and/or federal level to implement the action.	• Primary assigned entity has the legal authority to implement or partner to accomplish the action • The action meets (or can readily meet) all local, state, and federal requirements • Anticipated legal challenges or liability should be considered when considering if the action has 'legal' support

Category	Description	Evaluation Criteria
Economic	Cost effectiveness of the action and availability of funding for the action.	• Costs seem reasonable considering likely benefits (costs equal or exceed monetary and non-monetary benefits) • The financial burden placed on the tax base or local economy to implement this action is reasonable • Positive contribution* to other community economic goals, such as capital improvements or economic development • Funding can be readily obtained or is possible through competitive opportunities from outside sources of funding • It is anticipated that the community has the ability to meet the match requirements for outside funding sources
Environmental	Impact to the natural environment and cultural resources plus consistent with concepts of resiliency.	• Maintains or has a positive impact* on natural and cultural resources • Maintains or has a positive contribution* the community's ability to return to normal function after a hazard event • Consistent with community's environmental goals • Consistent with applicable environmental laws

*Positive impact or contribution means a reduction in risk from natural hazards and/or improvement to quality of life.

Mitigation Actions

The tables below detail the mitigation actions of all of the three participating jurisdictions to reduce risk to the profiled hazards noted in the risk assessment. Each mitigation action is prioritized based on the severity of risk it poses to each of the participating jurisdictions. **Table 4.23** to **Table 4.25** detail mitigation actions that each of the jurisdictions are actively implementing or have identified as potential mitigation actions to implement in the future. Appendix E details the mitigation actions that were completed or removed for McKinley County, the City of Gallup, and GMCS.

Below are definitions for the following categories Priority Ranking, Cost Effectiveness, Duration, and Status.

Priority Ranking: Determined by the STAPLEE assessment and prioritization. Each jurisdiction assessed their mitigation action and assigned a priority ranking of high, medium, or low based on the definitions below.

- A low-priority action is one that meets a few of the STAPLE+E characteristics (one or two)
- A medium priority action is one that meets some of the STAPLE+E characteristics (three or four)
- A high-priority action is one that meets most of the STAPLE+E characteristics (five or more)

Cost Effectiveness: How cost effective is the mitigation action. Is the mitigation action providing good value or benefits in terms of minimizing or reducing damage to property, environment, and people relative to costs

- High: Benefits estimated to exceed costs
- Medium: Benefits estimated to equal costs
- Low: Benefits may not equal costs
- MRN: More research needed

Duration: How long is the mitigation action expected to take to be completed

- Short Term: 1-2 years
- Medium-Term: 3-4 years
- Long-Term: 5 or more years
- Ongoing: more than one duration

Status: what is the status of the mitigation action

- No Action: There is no progress on this action
- In Progress: There is progress on this action
- Complete: This action is complete

Table 4.23 – McKinley County Mitigation Actions

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
Attain Storm Ready Accreditation: The NWS' StormReady helps arm communities with the communication and safety skills needed to save lives and property before, during, and after an event. Communities who have achieved this accreditation are better prepared to save lives from severe weather through advanced planning, education, and awareness.							
MC–1	High	Floods, Extreme Temperatures, High Wind, Thunderstorms, Tornado, Winter Storms	High	Local Budgets	**Lead**: McKinley County OEM **Additional**: McKinley County Metro Dispatch, McKinley County Sheriff's Office, McKinley County Fire Rescue, and McKinley County Manager's Office.	Short-Term	No Action
Increase Water Supply for Agriculture and Wildfire Suppression: Retention ponds and storage tanks can significantly increase the water supply available to rural communities. They are instrumental in providing relief to agricultural sectors in places without sizable water delivery infrastructure during drought events. Further, they help enhance and maintain the ability of local responders to fight wildfires during drought periods. Construction of these basins will occur in conjunction with local and regional irrigation districts to multiply their effectiveness and benefit. State permitting, including regulations on time-limitations for holding water will be included in the scoping and design. (Response)							
MC-2	Low	Droughts, Wildfires	MRN	Local Budget, NM State Forestry, USFS	**Lead:** McKinley County OEM **Additional:** McKinley County Management, McKinley County Fire Rescue, McKinley County Facilities, McKinley County Road Department	Long-Term	No Action
Build Stormwater Pump Stations: Storm water pump stations help protect areas by pumping away large volumes of water therefore preventing or decreasing the level of a flood. Pump stations can vary in size and design, allowing them to be tailored to the needs of a specific floodplain, region, or site-specific facility.							
MC-3	Low	Floods	Low	FMA, HMGP, Local Budgets,	**Lead**: McKinley County OEM **Support**: McKinley County Road Department	Ongoing	No Action
Build Detention Basins to Store Flood Water: Detention basins are built in strategic locations to reduce the impact of peak storm flood flows by temporarily holding rainwater and runoff. Detention basins would be built in areas where flood flow can be stored temporarily and slowly released. State permitting, including regulations on time-limitations for holding water will be included in the scoping and design.							

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
MC-4	Med	Floods	MRN	FMA, HMGP, Local Budgets	**Lead**: McKinley County OEM **Support**: McKinley County Manager's Office, McKinley County Road Department, McKinley County Fire Rescue	Ongoing	No Action
Build Snow Fences: Snow fences force drifting snow to accumulate in a desired location minimizing the amount of snowdrift on roads and railways. Controlling snow accumulation decreases the danger to a jurisdiction's citizens traveling during and after a winter storm. This project should be implemented along major transportation routes throughout the planning area. Submitted NOI for HMGP funding for small stretch of snow fence in the Zuni Mountains and FEMA denied based on response focus (not considered overall mitigation). (Response)							
MC-5	High	Winter Storms	Medium	HMGP, Local Budgets	**Lead**: McKinley County OEM **Support**: McKinley County Road Department	Medium-Term	In Progress
Bury Utility Lines, Pipes, and Tanks: Transferring existing utilities lines, pipes, and chemical storage tanks from above ground to below ground will significantly reduce the amount of property damage incurred from wind, ice, and snow related events.							
MC-6	Low	High Wind, Thunderstorm, Tornadoes, Winter Storms	MRN	HMGP (if public or quasi-public applicant), Local Budgets	**Lead**: Utility Providers/Infrastructure Owners **Support**:	Ongoing	No Action
Strengthen Floodplain Ordinance: Review and revise the current floodplain ordinance, policies and/or regulations to strengthen the floodplain ordinance to better protect flood-prone property and reduce the impact of flooding throughout the county. This includes ensuring adherense to current National Flood Insurance Program and adopting the updated ordinance through the McKinley County Board of Commissioners.							
MC-7	High	Floods	Low	Local Budgets	**Lead**: McKinley County Commissioners **Support**: McKinley County OEM	Ongoing	No Action
Conduct Dam Failure Inundation Study: McKinley County will partner with the Ramah Land and Irrigation Company along with state and federal agencies to develop comprehensive dam failure inundation maps and effects studies for the Ramah Dam. Without a comprehensive hydrological study and scientifically derived impacts of a dam failure, selecting appropriate mitigation actions not feasible.							
MC-8	Med	Dam Failures	MRN	Dam owner/ operator, USACE, OSE	**Lead**: McKinley County OEM **Additional**: Ramah Land and Irrigation Company, USACE, OSE	Medium-Term	No Action

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
Conduct Multi-hazard Public Awareness and Education Campaign: Prepare and conduct a multi-hazard public education campaign that will inform and educate the public on hazard risks, allowing them to reduce impacts of natural hazards to the community, structures, and the environment. Messaging would be prepared for the highest priority hazards first. Examples for extreme heat risk reduction would be to develop and disseminate Public Service Announcements and distribute heat safety information. Public health nurses and Fire Department personnel could include heat risk reduction education in regular interactions with vulnerable populations and the community in general. In addition, education and outreach may include appropriate evacuation procedures to reduce impact of natural hazards to the community. McKinley County hosts an annual Preparedness and Public Safety Day where students and the general public have the opportunity to learn more about emergency/disaster preparedness, including some of the hazards that may impact the county. McKinley County OEM, Fire Rescue, and Sheriff's Office have been a part of community meetings in 2025 that focused on wildfire preparedness and mitigation efforts that citizens can take.							
MC-9	High	Dam Failure, Drought, Extreme Temperatures, Floods, High Wind, Thunderstorms, Tornado, Winter Storms, Wildfire	High	HMPG, Local Budgets	**Lead**: McKinley County OEM **Support**: McKinley County Fire Rescue, McKinley County Sheriff's Office	Short-Term	In Progress
Create Defensible Spaces and Buffer Zones: Creating defensible spaces and buffer zones void of vegetative fuel and covered with gravel or rock helps prevent the spread of wildfire as well as creating an area in which local emergency response serviced can safely operate. This two-pronged approach directly mitigates damage to property and protects lives, but also indirectly mitigates the threat to life and property in the area at large. This project will be implemented in high risk areas as identified in this plan's WUI maps and well-known to burn areas as determined by the participating jurisdictions and appropriate local agencies.							
MC-10	Med	Wildfires	Medium	HMGP, Local Budgets, USFS, State Forestry	**Lead**: McKinley County Fire Rescue **Support**: McKinley County OEM, McKinley County Road Department	Medium-Term	No Action
Outdoor Warning Sirens/Public Venue Alerting Systems: The jurisdiction will continue to improve their alert, broadcast, and warning systems to give information and instructions in the face of an impending hazard impact to prevent injury and property damage. These systems will allow citizens to better protect themselves in the event of an impending or potentially impending hazard. Hazard or weather specific messaging can also be delivered to help prevent injury and property damage. These systems would be used to supplement the phone, text, and email mass notification system that is in use by the County. The Timberlake Subdivision in southern McKinley County did purchase and install an outdoor warning siren with HOA funds to be used when an evacuation is needed, primarily for wildfire.							
MC-11	High	Dam Failure, Floods, High Winds, Thunderstorms, Tornadoes, Winter Storms, Wildfires	Medium	HMGP, Local Budgets, NWS, HOAs	**Lead**: McKinley County OEM Additional: McKinley County Fire Rescue, McKinley County Red Rock Park	Ongoing	In Progress
Update Comprehensive Plan: The county will utilize available resources or coordinate with neighbors to update the comprehensive land use plan which aims to increase resiliency and deter future development from high-hazard locations.							

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
MC-12	Med	All Hazards	Medium	Local Budgets	**Lead**: McKinley County Commissioners	Medium-Term	No Action
Install Backup Generators: Backup generators provide critical facilities with electricity in the event a community's electrical transmission grid is either damaged by a disaster or overloaded by excessive use during an event. The County has applied for HMGP for two generators at Red Rock Park and one at MCFR FAC. Additional generators are needed for priority critical infrastructure, especially shelter locations.							
MC-13	High	All Hazards	High	HMGP, Local Budgets	**Lead**: McKinley County OEM **Support**: McKinley County Fire Rescue, McKinley County Facilities Department	Short-Term	In Progress
Floodproof Structures: This technique is often used when relocation or buying out is not an option as is the case with a historic building or a property owner that does not want to leave the location. Floodproofing projects constitute any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage. Wet floodproofing reduces property damage counteracting hydrostatic pressure on walls or other support structures by equalizing the pressure between the interior and exterior of a structure. Dry floodproofing seals the exterior of a structure to prevent flood water from entering.							
MC-14	Med	Dam Failure, Floods	MRN	FMA, HMGP, Local Budgets	**Lead**: McKinley County OEM **Support**: McKinley County Facilities Department	Ongoing	No Action
Reduce Wildfire Fuels: Reducing the amount of natural fuels and creating a balanced density of vegetative cover will help mitigate the severity and spread of wildfire. This project will be implemented in the moderate and high risk areas as identified in this plan's WUI maps and well-known areas that burn as determined by the Fire Department.							
MC-15	Med	High Wind, Thunderstorm, Tornadoes, Wildfires	Medium	HMGP, Local Budgets	**Lead**: McKinley County OEM **Support**: McKinley County Road Department	Short-Term	No Action
Install Flood Level Monitoring Systems: Strategically installing water monitoring stations will assist in measuring the severity of an existing or impending drought, the real-time and historical levels of flooding, as well as dam failures. Accurately measuring water levels will allow the community to take the necessary conservation and regulatory measures to mitigate the droughts, flood, and dam failure effects. This project should be implemented in all major basins and water retention, rivers and streams prone to flooding, natural and man-made, areas throughout the planning area. Additionally, having precise historical data from past floods will enhance the planning area's ability to develop future mitigation planning actions and projects.							
MC-16	Low	Dam Failure, Droughts, Floods	Medium	FMA, HMGP, Local Budgets	**Lead**: McKinley County OEM **Support**: USGS, NWS	Long-Term	No Action
Insulate Water Lines Against Freezing: Insulating a facility's water pipes helps prevent them from freezing and bursting due to sudden and prolonged low temperatures during winter storms. This project could be implemented in conjunction with GMCS and critical facilities standard maintenance cycles.							

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
MC-17	Med	Extreme Temperatures (Cold), Winter Storms	Medium	HMGP, Local Budgets	**Lead**: McKinley County Facilities Department **Support**: McKinley County OEM	Short-Term	No Action
Raise or Re-Direct Transportation Infrastructure: To combat uncontrollable waters emanating from a dam or levee failure, flash flood, or riverine flood, transportation infrastructure could be raised or re-directed to allow its continued use in a disaster event or to avoid directing flow into washes. Earthen berms could be included in the design to protect adjacent lands. Increased elevation or re-direct of roads or railway bridges can prevent the buildup of debris during incidents of high floodwaters and prevent further water buildup.							
MC-18	Low	Dam Failure, Floods	MRN	FMA, HMGP, Local Budgets	**Lead**: McKinley County Road Department **Support**: McKinley County OEM	Long-Term	No Action
Relocate or Buyout Vulnerable Structures: Some structures may be able to be relocated from identified floodplains or dam inundation zones. Removing them from identified hazard area will eliminate their risk.							
MC-19	Low	Dam Failure, Flood	Low	FMA, HMGP, Local Budgets	**Lead**: McKinley County OEM **Support**: McKinley County Manager's Office	Ongoing	No Action
Retrofit Structures for Wildfire Resistance: Retrofitting structures with screened vent enclosures, double paned glass, and spark arrestors will reduce the chances of a structure igniting from a wildfire as well as a wildfire's chance of spreading.							
MC-20	Med	Wildfires	Medium	HMGP, Local Budgets	**Lead**: McKinley County OEM **Support**:	Medium-Term	No Action
Retrofit Structures for Increased Wind Resistance: Enhancing a structure's wind resistance according to FEH bronze, silver, or gold specifications will significantly reduce the probability of injury to occupants and structural damage during a wind related event. Techniques include strengthening gable anchorages, soffits, roof sheathing, anchoring attached structures such as porches or carports, replacing thin windows, enhancing the integrity of building openings, and developing continuous load paths throughout a structure.							
MC-21	Med	High Wind, Thunderstorm, Tornadoes	Low	HMGP, Local Budgets	**Lead**: McKinley County OEM **Support**:	Long-Term	No Action
Upgrade Insulation & Energy Efficiency: Upgrading a facility's windows, windows frames, roofing, and insulation will allow it to better maintain a desired warm or cool temperature during prolonged extreme temperatures or winter storms. Additionally, it decreases the energy load necessary to do so, decreasing the burden on the local energy grid.							
MC-22	Med	Extreme Temperatures, Winter Storms	Medium	HMGP, Local Budgets, NM EMRND	**Lead**: McKinley County OEM **Support**: McKinley County Facilities Department	Ongoing	No Action

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
Upgrade Storm Water Drainage Systems: Significant flood damage in developed communities can be prevented by upgrading storm water drainage system. This mitigation measure will allow flood waters to drain quicker and prevent excess accumulation. This project should be implemented in areas prone to flooding, older storm water systems, and areas of new development.							
MC-23	Med	Floods	Medium	FMA, HMGP, Local Budgets	**Lead**: McKinley County Road Department **Support:** McKinley County OEM	Ongoing	No Action
Upgrade to Looped Grid Power Systems: Linear power grids have single points of failure that are vulnerable to a number of hazards. Looped power grids operate in parallel and are thus significantly more resistant to damage allowing the utilities to maintain power after an event.							
MC-24	Med	Dam Failure, Extreme Temperatures, Floods, High Wind, Thunderstorms, Tornadoes, Winter Storms, Wildfires	Medium	HMGP, Local Budgets	**Lead**: Utility providers (City, COOP, Private) **Support**: N/A	Ongoing	No Action from County side
Upgrade to Low Flow Utilities: To decrease water usage before, during, and after a drought, communities can install low water flow utilities throughout its critical facilities and infrastructure. This will not only decrease water usage but also decrease water demands. The planning area should implement this project in conjunction with their school districts and critical facilities standard maintenance cycles.							
MC-25	Med	Drought	Medium	HMGP, Local Budgets, NM EMNRD	**Lead:** McKinley County Facilities Department **Support**: McKinley County OEM, McKinley County Manager's Office	Short-Term	No Action
Install Bionets to Reduce Flood Impacts: Bionets installed in strategic locations will prevent the erosion of slopes subject to surface wash. The containment reinforcement of the exposed ground reduces the impact of heavy rain and mud. Decreasing the amount of suspended sediment in flood waters will reduce the potential for downstream impacts to people, structures, infrastructure, and property.							
MC-26	Med	Flood (Watershed Stabilization)	Medium	HMGP, Local Budget	**Lead**: McKinley County OEM **Support**: McKinley County Road Department	Long-Term	No Action
Stabilize Slopes to Reduce Flood Impacts: Identified hazard areas considered to be high risk will be the subject of slope modification measures. These measures will vary depending on location specifics, but could include soil stabilization, retaining wall installation, and vegetative cover. Decreasing the amount of suspended sediment in flood waters will reduce the potential for downstream impacts to people, structures, infrastructure, and property.							

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
MC-27	Med	Flood (Watershed Stabilization)	Low	HMGP, Local Budgets	**Lead**: McKinley County OEM **Support:** McKinley County Road Department	Ongoing	No Action
Improve Existing Structures: Improve existing shelter locations to serve as all-hazard safety zones for community members. Shelters can serve as safety zones during dam failure, flood, high wind, thunderstorm, tornado, winter storm, and wildfire conditions. Shelters can also serve as cooling centers during extreme heat conditions and warming centers during extreme cold temperatures. An assessment of existing shelter locations will be conducted as the first step in accomplishing this action. Back-up generators will be considered for shelters to provide continuity if electrical infrastructure is impacted during hazard events.							
MC-28	High	Dam Failure, Extreme Temperatures, Floods, High Wind, Thunderstorms, Tornado, Winter Storms, Wildfire	Medium	HMGP, Local Budget	**Lead:** McKinley County OEM **Additional:** County Manager's Office, City of Gallup	Medium-Term	New Action
Install Regional Weather Radar: Install a weather radar to supplement the coverage provided by the NWS radars out of Albuquerque and Flagstaff. Portions of McKinley County are so too far from the radar sites that reliable indicators for severe weather, heavy rains, and snow squalls are not reported accurately. Having supplemental radar coverage will provide more accurate data to assist with advisories for the public, preventative maintenance priority locations (i.e. cleaning culverts), and pre-positioning of response equipment (i.e. signage, road closures). The data will also assist with better understanding risk and vulnerability. (Preparedness)							
MC-29	Med	Floods, High Wind, Thunderstorms, Tornado, and Winter Storms	MRN	NWS, Local Budget	**Lead:** McKinley County **Additional:** Multi-Jurisdictional Initiative	Long-Term	New Action
Install Turn Around Don't Drown Signs and Public Outreach Campaign: Turn Around Don't Drown is a National Weather Service campaign used to educate people about the hazards of driving a vehicle or entering flooded areas. Install the Turn Around Don't Drown Signs within the County where there is a higher risk of flooding or frequently flooded locations (i.e. low water crossings). Utilize various public messaging mechanisms to educate the public on areas that are frequently flooded and pose a risk to the community.							
MC-30	High	Dam Failure, Flood	High	NWS, USACE, CAPSSEE, Local Budget	**Lead:** McKinley County OEM **Additional:** McKinley County Road Department	Short-Term	New Action

MC = McKinley County

Table 4.24 – City of Gallup Mitigation Actions

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
Build Storm Water Pump Stations: Storm water pump stations help protect areas by pumping away large volumes of water therefore preventing or decreasing the level of a flood. Pump stations can vary in size and design, allowing them to be tailored to the needs of a specific floodplain, region, or site-specific facility.							
COG–1	High	Floods	Low	FMA, HMGP, Local Budgets	**Lead**: City of Gallup Public Works **Additional**: COG Water and Wastewater Departments	Ongoing	No Action
Bury Utility Lines, Pipes, and Tanks: Transferring existing utilities lines, pipes, and chemical storage tanks from above ground to below ground will significantly reduce the amount of property damage incurred from wind, ice, and snow related events.							
COG-2	High	High Wind, Thunderstorm, Tornadoes, Winter Storms, Flooding	MRN	HMGP (if public or quasi-public applicant), Local Budgets	**Lead:** City of Gallup Public Works **Additional:** COG Water and Wastewater, Electrical Departments, Utility Providers/Infrastructure Owners	Ongoing	In Progress
Create Defensible Spaces and Buffer Zones: Creating defensible spaces and buffer zones void of vegetative fuel and covered with gravel or rock helps prevent the spread of wildfire as well as creating an area in which local emergency response serviced can safely operate. This two-pronged approach directly mitigates damage to property and protects lives, but also indirectly mitigates the threat to life and property in the area. This project will be implemented in high risk areas as identified in this plan's WUI maps and well-known to burn areas as determined by the Fire Department.							
COG-3	Low	Wildfires	Medium	HMGP, Local Budgets, USFS, State Forestry	**Lead**: Gallup Fire Department	Medium-Term	No Action
Install Backup Generators: Backup generators provide critical facilities with electricity in the event a community's electrical transmission grid is either damaged by a disaster or overloaded by excessive use during an event.							
COG-4	Med	Dam Failure, Extreme Temperatures, Floods, High Wind, Thunderstorms, Tornadoes, Winter Storms, Wildfires	High	HMGP, Local Budgets	**Lead**: Gallup Fire Department **Support**: City of Gallup Facilities	Short-Term	No Action

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
Install Flood Level Monitoring Systems: Strategically installing water monitoring stations will assist in measuring the severity of an existing or impending drought, the real-time and historical levels of flooding, as well as dam failures. Accurately measuring water levels will allow the community to take the necessary conservation and regulatory measures to mitigate the droughts, flood, and dam failure effects. This project should be implemented in all major basins and water retention, rivers and streams prone to flooding, natural and man-made, areas throughout the planning area. Additionally, having precise historical data from past floods will enhance the planning area's ability to develop future mitigation planning actions and projects.							
COG-5	High	Dam Failures, Droughts, Floods	Medium	FMA, HMGP, Local Budgets, OSE, US Department of Agriculture	**Lead**: City of Gallup Public Works	Long-Term	No Action
Raise or Redirect Transportation Infrastructure: To combat uncontrollable waters emanating from a dam or levee failure, flash flood, or riverine flood, transportation infrastructure. raised or re-directed to allow its continued use in a disaster event or to avoid directing flow into washes. Earthen berms could be included in the design to protect adjacent lands. Increased elevation or re-direct of roads or railway bridges can prevent the buildup of debris during incidents of high floodwaters and prevent further water buildup.							
COG-6	High	Dam Failures, Floods	MRN	FMA, HMGP, Local Budgets	**Lead:** Gallup Planning & Development **Support:** Municipal Public Works	Long-Term	No Action
Upgrade Insulation & Energy Efficiency: Upgrading a facility's windows, windows frames, roofing, and insulation will allow it to better maintain a desired warm or cool temperature during prolonged extreme heat or winter storms. Additionally, it decreases the energy load necessary to do so, decreasing the burden on the local energy grid.							
COG-7	Low	Extreme Temperatures, Severe Winter Storms	Medium	Local Budgets, NM EMRND	**Lead**: City of Gallup Facilities	Ongoing	No Action
Upgrade Storm Water Drainage Systems: Significant flood damage in developed communities can be prevented by upgrading their storm water drainage system. This mitigation measure will allow flood waters to drain quicker and prevent excess accumulation. This project should be implemented in prone to flooding, older storm water systems, and areas of new development.							
COG-8	High	Flood	Medium	FMA, HMGP, Local Budgets	**Lead**: City of Gallup Wastewater Department	Ongoing	No Action
Upgrade to Looped Grid Power Systems: Linear power grids have single points of failure that are vulnerable to a number of hazards. Looped power grids operate in parallel and are thus significantly more resistant to damage allowing the utilities to maintain power after an event.							

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
COG-9	High	Dam Failure, Extreme Temperatures, Floods, High Wind, Thunderstorms, Tornadoes, Winter Storms, Wildfires	Medium	HMPG, Local Budgets, Utility Providers (City, COOP, Private)	**Lead**: City of Gallup Electric Department	Ongoing	No Action
Improve Existing Shelters: Improve existing shelter locations to serve as all-hazard safety zones for community members. Shelters can serve as safety zones during dam failure, flood, high wind, thunderstorm, tornado, winter storm, and wildfire conditions. Shelters can also serve as cooling centers during extreme heat conditions and warming centers during extreme cold temperatures. An assessment of existing shelter locations will be conducted as the first step in accomplishing this action. Back-up generators will be considered for shelters to provide continuity if electrical infrastructure is impacted during hazard events. This is currently being funded and implemented under existing programs.							
COG-10	Med	Dam Failure, Extreme Temperatures, Floods, High Wind, Thunderstorms, Tornado, Winter Storms, Wildfire	Medium	HMGP, Local Budgets	**Lead**: McKinley County OEM **Support**: County Manager's Office, MCFD, City of Gallup	Ongoing	New Action: In Progress
Upgrade and Improve Drainage: Upgrade and improve the drainage from the Dam to Mesa Avenue and the Perky River (Unknown official name) inside of the city limits to include possible concrete culverts and strengthen the walls.							
COG-11	High	Floods	MRN	Federal or State Funding	**Lead**: City of Gallup (multiple departments and outside agencies)	Long-Term	New Action
Install Emergency Generators on Wells: Install emergency generators on water pumping wells.							
COG-12	High	All Hazards	High	Local Budgets (CIP), State or Federal Funds	**Lead**: City of Gallup Fire Department and Water Department	Medium-Term	New Action

COG = City of Gallup

Table 4.25 – Gallup-McKinley County Schools Mitigation Actions

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
Build Stormwater Pump Stations: Storm water pump stations help protect areas by pumping away large volumes of water therefore preventing or decreasing the level of a flood. Pump stations can vary in size and design, allowing them to be tailored to the needs of a specific floodplain, region, or site-specific facility.							
GMCS-1	Low	Floods	Low	FMA, HMGP, Local Budgets,	**Lead**: McKinley County OEM **Support**: McKinley County Road Department, GMCS	Ongoing	No Action
Build Snow Fences: Rainwater retention basins are artificial basins built in strategic locations. Detention basins would be built in areas where flood flow can be stored temporarily and slowly released. State permitting, including regulations on time-limitations for holding water will be included in the scoping and design.							
GMCS -2	Low	Winter Storms	Medium	HMGP, Local Budgets	**Lead**: McKinley County OEM **Support**: McKinley County Road Department, GMCS	Medium-Term	No Action
Bury Utility Lines, Pipes, and Tanks: Transferring existing utilities lines, pipes, and chemical storage tanks from above ground to below ground will significantly reduce the amount of property damage incurred from wind, ice, and snow related events.							
GMCS -3	Med	High Wind, Thunderstorm, Tornadoes, Winter Storms	MRN	HMGP (if public or qusi-public applicant), Local Budgets	**Lead**: Utility providers/infrastructure owners **Support**: GMCS	Ongoing	No Action
Conduct Multi-Hazard Public Awareness and Education Campaign: Prepare and conduct a multi-hazard public education campaign that will inform and educate the public on hazard risks, allowing them to reduce impacts of natural hazards to the community, structures, and the environment. Messaging would be prepared for the highest priority hazards first. Examples for extreme heat risk reduction would be to develop and disseminate Public Service Announcements and distribute heat safety information. Public health nurses and Fire Department personnel could include heat risk reduction education in regular interactions with vulnerable populations and the community in general. In addition, education and outreach may include appropriate evacuation procedures.							
GMCS -4	Med	Dam Failure, Drought, Extreme Temperatures, Floods, High Wind, Thunderstorms, Tornado, Winter Storms, Wildfire	High	Local Budgets	**Lead:** McKinley County OEM **Support:** McKinley County Fire Rescue; McKinley County Sheriff's Office, GMCS	Short-Term	In Progress

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
Conduct SKYWARN Storm Spotter Training: The NWS' SKYWARN Storm Spotter training program educates and delivers basic weather identification, spotting, and reporting information to any concerned citizens. Educating citizens in this program helps increase specific awareness and creates a skillset that helps the NWS create more accurate and timely warnings for tornadoes, severe storms, flash flooding, and other severe weather.							
GMCS -5	Low	Floods, High Wind, Thunderstorms, Tornadoes, Winter Storms	High	Local Budgets	**Lead:** McKinley County OEM **Support:** McKinley County Fire Rescue, GMCS	Short-Term	No Action
Outdoor Warning Sirens/Public Venue Alerting System: The jurisdiction will continue to improve their alert, broadcast, and warning systems to give information and instructions in the face of an impending hazard impact to prevent injury and property damage. These systems will allow citizens to better protect themselves in the event of an impending or potentially impending hazard. Additionally, hazard or weather specific information can be delivered to assist in achieving the previously stated goal. GMCS will meet with MCOEM to discuss how we partner to provide community warning systems at GMCS Teacher Housing.							
GMCS -6	Med	Dam Failure, Floods, High Wind, Thunderstorms, Tornadoes, Winter Storms, Wildfires	Medium	Local Budgets, HMGP	**Lead:** McKinley County OEM **Support:** McKinley County Fire Rescue; McKinley County Red Rock Park, GMCS	Ongoing	No Action
Update Comprehensive Plans: The jurisdiction will work with its available resources or pool its resources with its neighbors to develop comprehensive land use planning in order to bolster its ordinances, zoning, and floodplain regulations in order to increase its resiliency and detour future development from risky construction practices.							
GMCS -7	Low	Dam Failure, Drought, Extreme Temperatures, Floods, High Wind, Thunderstorms, Tornado, Winter Storms, Wildfire	Medium	Local Budgets	**Lead**: McKinley County OEM **Support**: GMCS	Medium-Term	No Action
Install Backup Generators: Backup generators provide critical facilities with electricity in the event a community's electrical transmission grid is either damaged by a disaster or overloaded by excessive use during an event. We will also need to update the battery UPS Servers.							

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
GMCS-8	Med	Dam Failure, Floods, High Winds, Thunderstorms, Tornadoes, Winter Storms, Wildfires	High	HMGP, Local Budgets	**Lead**: McKinley County OEM **Support**: McKinley County Fire Rescue; McKinley County Facilities Dept., GMCS	Short-Term	No Action
Floodproof Structures: This technique is often used when relocation or buying out is not an option as is the case with a historic building or it would require astronomical funding that is not available. Floodproofing projects constitute any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage. Wet floodproofing reduces property damage counteracting hydrostatic pressure on walls or other support structures by equalizing the pressure between the interior and exterior of a structure. Dry floodproofing seals the exterior of a structure to prevent flood water from entering.							
GMCS-9	Low	Dam Failure, Flooding	MRN	FMA, HMGP, Local Budgets	**Lead**: McKinley County Commissioners Additional: McKinley County Facilities Dept., GMCS	Ongoing	No Action
Insulate Water Lines: Insulating a facility's water pipes helps prevent them from freezing and bursting due to sudden and prolonged low temperatures during winter storms. The planning area should implement this project in conjunction with their school districts and critical facilities standard maintenance cycles.							
GMCS-10	Med	Extreme Temperatures (Cold), Severe Winter Storms	Medium	HMGP, Local Budgets,	**Lead**: McKinley County Facilities Department **Support**: McKinley County OEM, GMCS	Short-Term	No Action
Retrofit Structures for Wildfire Resistance: Retrofitting structures with screened vent enclosures, double paned glass, and spark arrestors will reduce the chances of a structure igniting from a wildfire as well as a wildfire's chance of spreading.							
GMCS-11	Low	Wildfires	Medium	HMGP, Local Budgets, USFS, State Forestry	**Lead**: McKinley County OEM **Support**: GMCS	Medium-Term	No Action
Retrofit Structures for Wind Resistances: Enhancing a structure's wind resistance according to FEH bronze, silver, or gold specifications will significantly reduce probability of a structure incurring damage and potentially hurting its occupants during a wind related event. Efforts to do so are, but not limited to, strengthening gable anchorages, soffits, roof sheathing, anchoring attached structures such as porches or carports, replacing thing windows, enhancing the integrity of building openings, and developing continuous load paths throughout a structure.							
GMCS-12	Low	High Wind, Thunderstorms, Tornadoes	Low	HMGP, Local Budgets	**Lead**: McKinley County OEM **Support**: GMCS	Long-Term	No Action

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
Upgrade Insulation & Energy Efficiency: Upgrading a facility's windows, windows frames, roofing, and insulation will allow it to better maintain a desired warm or cool temperature during prolonged extreme temperatures or winter storms. Additionally, it decreases the energy load necessary to do so, decreasing the burden on the local energy grid.							
GMCS-13	Low	Extreme Temperatures, Winter Storms	Medium	HMGP, Local Budgets, NM EMRND	**Lead:** McKinley County OEM **Support:** McKinley County Facilities Dept., GMCS	Ongoing	No Action
Upgrade Storm Water Drainage Systems: Significant flood damage in developed communities can be prevented by upgrading their storm water drainage system. This mitigation measure will allow flood waters to drain quicker and prevent excess accumulation. This project should be implemented in areas prone to flooding, older storm water systems, and areas of new development.							
GMCS-14	Low	Floods	Medium	FMA, HMGP, Local Budgets	**Lead**: McKinley County Road Department **Support**: McKinley County OEM, GMCS	Ongoing	No Action
Upgrade to Looped Grid Power Systems: Insulating a facility's water pipes helps prevent them from freezing and bursting due to sudden and prolonged low temperatures during winter storms. This project could be implemented in conjunction with GMCS and critical facilities standard maintenance cycles.							
GMCS-15	Low	Dam Failure, Extreme Temperatures, Floods, High Wind, Thunderstorms, Tornadoes, Winter Storms, Wildfires	Medium	HMGP, Local Budgets	**Lead**: Utility Providers (City, COOP, private) **Support**: GMCS	Ongoing	No Action
Upgrade to Low Flow Utilities: To decrease water usage before, during, and after a drought, communities can install low water flow utilities throughout its critical facilities and infrastructure. This will not only decrease water usage but also decrease water demands. The planning area should implement this project in conjunction with their school districts and critical facilities standard maintenance cycles.							
GMCS-16	Low	Drought	Medium	HMGP, Local Budgets, NM EMNRD	**Lead**: McKinley County Road Department **Support**: McKinley County OEM, McKinley County Manager's Office, GMCS	Short-Term	No Action

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
Install Bionets to Reduce Impacts: Bionets installed in strategic locations will prevent the erosion of slopes subject to surface wash. The containment reinforcement of the exposed ground reduces the impact of heavy rain and mud. Decreasing the amount of suspended sediment in flood waters will reduce the potential for downstream impacts to people, structures, infrastructure, and property.							
GMCS-17	Low	Flood (Watershed Stabilization)	Medium	HMGP, Local Budget	**Lead**: McKinley County OEM **Support**: McKinley County Road Department, GMCS	Long-Term	No Action
Stabilize Slopes to Reduce Flood Impacts: Identified hazard areas considered to be high risk will be the subject of slope modification measures. These measures will vary depending on location specifics, but could include slop modification, earth removal, or retaining wall installation, and vegetative cover. Decreasing the amount of suspended sediment in flood waters will reduce the potential for downstream impacts to people, structures, infrastructure, and property.							
GMCS-18	Low	Flood (Watershed Stabilization	Low	HMGP, Local Budgets	**Lead**: McKinley County OEM **Support**: McKinley County Road Department, GMCS	Ongoing	No Action
Improve Existing Structures: Improve existing shelter locations to serve as all-hazard safety zones for community members. Shelters can serve as safety zones during dam failure, flood, high wind, thunderstorm, tornado, winter storm, and wildfire conditions. Shelters can also serve as cooling centers during extreme heat conditions and warming centers during extreme cold temperatures. An assessment of existing shelter locations will be conducted as the first step in accomplishing this action. Back-up generators will be considered for shelters to provide continuity if electrical infrastructure is impacted during hazard events.							
GMCS-19	Med	Dam Failure, Extreme Temperatures, Floods, High Wind, Thunderstorms, Tornado, Winter Storms, Wildfire	Medium	HMGP, Local Budget	**Lead:** McKinley County OEM **Additional:** County Manager's Office, City of Gallup, GMCS	Medium-Term	New Action
Install Regional Weather Radar: Install a weather radar to supplement the coverage provided by the NWS radars out of Albuquerque and Flagstaff. Portions of McKinley County are so too far from the radar sites that reliable indicators for severe weather, heavy rains, and snow squalls are not reported accurately. Having supplemental radar coverage will provide more accurate data to assist with advisories for the public, preventative maintenance priority locations (i.e. cleaning culverts), and pre-positioning of response equipment (i.e. signage, road closures). The data will also assist with better understanding risk and vulnerability. (Preparedness)							
GMCS-20	Med	Floods, High Wind, Thunderstorms, Tornado, and Winter Storms	MRN	NWS, Local Budget	**Lead:** McKinley County **Additional:** Multi-Jurisdictional Initiative, GMCS	Long-Term	New Action

Mitigation Action Number	Priority Ranking	Hazard Addressed	Cost Effectiveness	Funding Source	Responsible Organization	Duration	Status
Install Turn Around Don't Drown Signs and Public Outreach Campaign: Turn Around Don't Drown is a National Weather Service campaign used to educate people about the hazards of driving a vehicle or entering flooded areas. Install the Turn Around Don't Drown Signs within the County where there is a higher risk of flooding or frequently flooded locations (i.e. low water crossings). Utilize various public messaging mechanisms to educate the public on areas that are frequently flooded and pose a risk to the community.							
GMCS-21	Low	Dam Failure, Floods	High	NWS, USACE, CAPSSEE, Local Budget	**Lead:** McKinley County OEM **Additional:** McKinley County Road Department, GMCS	Short-Term	New Action

GMCS = Gallup-McKinley County Schools

4.4 – Project Evaluation, Implementation, & Administration

This section describes how McKinley County, the City of Gallup, and GMCS plan to evaluate, implement, and administer mitigation actions and potential future projects.

Project Evaluation

Each jurisdiction will evaluate which mitigation actions to implement based on the priority ranking assigned through the STAPLE-E process described in the previous section and the results of the risk assessment. Other considerations that jurisdictions may use during their evaluation of mitigation actions to implement may include funding and staffing.

Project Implementation

The implementation of mitigation actions aims to reduce risk to hazards within the planning area. Each jurisdiction participating in this plan has their own decision-making bodies that are free to implement the mitigation actions found in this plan as they see fit.

Project Administration

McKinley County will be self-administering each project through its own government departments. The department chosen to administer a project will vary depending on the characteristics of each activity or project, whereas public works would be better suited for some projects, while county records and risk management would be better suited for others. For each participating municipality, they have the option and flexibility to administer their own activities and projects if they so choose. However, for the purpose of efficiency and governmental scale, activities and projects will default to being administered by McKinley County OEM.

The City of Gallup and GMCS will administer activities and projects in-house with individuals designated administrative responsibility on an ad hoc, per project basis. Individuals will be designated on a case-by-case basis as seen as most fitting by the organization, according to the specific characteristics of the project or activity, as oversight and administration duties can vary widely among these organizations.

Section 5 – Plan Maintenance

5.1 - Introduction

The HMP must describe the processes or mechanisms for maintaining and updating the hazard mitigation plan within the 5-year planning cycle. The plan maintenance process is cyclical, and maintenance items can operate simultaneously within the process.

Elements of this plain maintenance section include:

- Monitoring and Evaluating the Plan
- Updating the Plan
- Continued Public Participation
- 2025 HMP Integration into Other Planning Mechanisms

The following subsections provide a description of the plan maintenance procedures and activities documented for the next planning cycle.

Previous Plan Cycle

In the previous plan, the MCOEM had developed a method for monitoring, evaluating, and updating its HMP. However, due to the global pandemic and staffing restraints, many of the previously stated processes and mechanisms have not been implemented since the last plan update. The information stated in the following sections describe what McKinley County has committed to fulfilling that is reasonable and achievable by the next plan update.

5.2 - Plan Monitoring and Evaluation

Plan monitoring can be defined as the ongoing process by which stakeholders obtain regular feedback on the progress being made towards achieving their goals and objectives. In the more limited approach, monitoring may focus on tracking projects and the use of the agency's resources. In the broader approach, monitoring also involves tracking strategies and actions being taken by partners and non-partners, and figuring out what new strategies and actions need to be taken to ensure progress towards the most important results.

A plan evaluation is a rigorous and independent assessment of either completed or ongoing activities to determine the extent to which they are achieving stated objectives and contributing to decision-making.

McKinley County OEM will complete a one-page survey to the Planning Team in Spring of 2028 to collect feedback in a report to prepare for the next plan update. This report will also assist in monitoring and evaluating how participating jurisdictions have progressed since the plan was finalized and adopted.

5.3 - Plan Updating

McKinley County will begin their update process 3 years from this plan's adoption, according to FEMA DMA 2000 guidelines on local mitigation plan updates under the direction of the OEM Emergency Manager. McKinley County OEM plans to apply early for funding in the beginning of 2029. The planning process for the 2031 plan update will begin in Fall of 2029 to seek approval by early 2031. McKinley County OEM will continue to be the lead on the HMP update with the City of Gallup and GMCS as participating jurisdictions.

5.4 – Planning Integration

Mitigation does not end at plan approval. The successful implementation of any number of mitigation activities and projects requires the coordination and collaboration of a number of local agencies, departments, and organizations. Each group has varying decision-making processes and authorities governing their actions. This plan, once approved, must be integrated into their decision-making processes as a tool for improving their respective resiliencies. This plan is not only useful for implementing mitigation activities and projects but is also critical in supporting the development of plans and other activities within McKinley County that can aid in reducing risk to hazards.

McKinley County, the City of Gallup, and GMCS will continue to integrate the HMP into other plans, planning mechanisms, policies, and programs. A list of the plans, planning mechanisms, policies, and programs that McKinley County is committed to integrating are listed and described further below. A summary of the mechanisms this HMP will be integrated into is listed in **Table 5.1** below.

Table 5.1 – Summary of Plan Integration

Plan Name	Status
Comprehensive Plan	From 2021 HMP
Democratic Governments & Boards	From 2021 HMP
Emergency Management Planning	From 2021 HMP
Emergency Operations Plans	From 2021 HMP
State of New Mexico Department of Homeland Security and Emergency Management	From 2021 HMP
Gallup-McKinley County Schools Facilities Master Plan	From 2021 HMP
Regional Transportation Plan	New
City of Gallup Growth Management Master Plan	New

Comprehensive Plan

As of now, only McKinley County has a comprehensive plan. Zoning and subdivision regulations mainly follow the template set in the New Mexico Subdivision Act with limited County standards and few extra provisions added that may address the desires and needs of special communities or suburban areas. The City of Gallup maintains a complex set of ordinances, but as of yet does not have a comprehensive plan. These plans typically detail building codes, ordinances, zoning, and other land use measures as they relate to hazard risk reduction. Upon future updates of the McKinley County plan and if Gallup develops one, at a minimum, this mitigation plan will be considered for serving as a base guide to updating and improving hazard risk reduction measures contained within the comprehensive land use plans for each of the participating municipalities.

Democratic Governments & Boards

All the participating jurisdictions use some form of a democratic voting process. These organizations rely on agenda proposals, deliberation and discussion, and voting to solidify their decision-making.

All participating jurisdictions engage in capital improvement, infrastructure, and other various projects on an ad hoc basis. For these stakeholders, this plan should be integrated into agenda proposal's designs and cross-referenced during deliberation and discussion of proposed activities and projects. By using this plan's risk assessment, development and capital improvement projects can be appropriately implemented taking into consideration a community's resiliency.

Emergency Management Planning

All emergency management related planning will at a minimum cross reference this document during its production. In some instances, this plan or portions of it will be fully integrated depending on the circumstances and nature of the planning document.

Emergency Operations Plans

McKinley County's next EOP update will reflect the most probable and dangerous hazard event scenarios from the plan's risk assessment. Additionally, the plan will be referenced in its entirety as an appendix to the EOP. This revision is the responsibility of McKinley County OEM for all of the jurisdictions participating in this plan. Upon revision completion, all participating jurisdictions and appropriate emergency services will be notified of the revisions and sent out new copies of the EOP.

State of New Mexico Department of Homeland Security and Emergency Management

NM DHSEM has a FEMA approved mitigation plan current as of September 2018 and is updated every 5 years. The state's mitigation plan is required by FEMA regulation to include a discussion and summary of local hazard mitigation plans. The process of integrating this plan is already an established process and is managed by NM DHSEM.

Gallup-McKinley County Schools Facilities Master Plan (2017-2022)

The Gallup-McKinley County Schools is responsible for maintaining a facilities master plan and updating it every five years. Their current plan, adopted in 2017, outlines enrollment projections and facilities needs and capabilities, and capital improvement planning. Upon FEMA approval and school district adoption, this plan needs to be integral in the updating of the facilities master plan. Their outlined planning process entails 4 primary steps to updating their plan, the second of which is "Inventory/Analysis of Conditions." Review of this plan's risk assessment and mitigation strategy needs to be considered during this phase of their planning process as it can help guide their decision-making process to better plan their capital improvement projects to incorporate hazard mitigating measures and thus increasing their resiliency.

Regional Transportation Plan

The McKinley County Transportation Master Plan was finalized in May 2025 and was made with the general purpose of providing alternative options to allow the county to capitalize on the connection between transportation and economic development opportunities. The plan analyzes transportation, land use, and socio-economic data to provide a comprehensive understanding of the county's planning issues and develop a prioritized assessment of transportation needs. The plan addresses hazards including flooding to reduce flood water, impacts, and correct drainage issues on county roadways. Flood data and information in this HMP should be used to influence updates to the Regional Transportation Plan.

City of Gallup Growth Management Plan

The City of Gallup Growth Management Master Plan is a long-range planning document that is periodically updated. The most recent update was 2023. The plan provides long-range guidance for development activities integrated across the different disciplines and subjects of physical development of the city. The plan encompasses all functional elements that bear on physical development in an internally consistent manner, including land use, transportation, urban design, economic development, trails and open space, and housing. The plan includes a hazard mitigation section that outlines goals to integrate hazard mitigation into the plan. The list of goals is detailed below.

- Reduce the possibility of injury and death due to hazards

- Reduce the possibility of damage and loss to existing community assets including structures, critical facilities and infrastructure
- Promote disaster resistant development
- Promote disaster mitigation preparedness practices by all residents of Gallup and the surrounding areas

5.6 - Continued Public Involvement

The 2026 HMP is available for download on the HMP website. McKinley County is dedicated to involving the public in the ongoing development of its HMP and its mitigation projects and activities. The McKinley County OEM will continue to keep the public informed about its hazard mitigation projects and activities through its website, social media, and other public platforms. Additionally, it will update the HMP website to reflect progress in implementation or modifications. In the event this HMP undergoes any major developmental changes over its 5-year life cycle, McKinley County OEM will inform the public of these changes.