MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

Churchill County, City of Fallon, and Fallon Paiute-Shoshone Tribe

February 2025

Prepared for:

Prepared by:

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LIST OF ACRONYMS

AIDS ..... Acquired Immunodeficiency Syndrome
BLM ..... Bureau of Land Management
BOR ..... Bureau of Reclamation
CARE ..... Community Action for a Renewed Environment
CDC ..... Centers for Disease Control and Prevention
CFR ..... Code of Federal Regulations
COVID-19 ..... Coronavirus Disease 2019
CRS ..... Community Rating System
CWSD ..... Carson Water Subconservancy District
DHS ..... Department of Homeland Security
E. coli ..... Escherichia coli
EHS ..... Extremely Hazardous Substances
EMPG ..... Emergency Management Performance Grant
EOC ..... Emergency Operation Center
EPCRA ..... Emergency Planning and Community Right to Know Act
FEMA ..... Federal Emergency Management Agency
FIRMs ..... Flood Insurance Rate Maps
FMA ..... Flood Management Assistance
FMAG ..... Fire Mitigation Assistance Grants
HHPD ..... High Hazard Potential Dam
HMGP ..... Hazard Mitigation Grant Program
HMP ..... Hazard Mitigation Plan
HMPG ..... Hazard Mitigation Project Grants
HUD ..... Housing & Urban Development
Hwy ..... Highway
I-80 ..... Interstate 80
IBC ..... International Building Code
IFC ..... International Fire Code
IOM ..... Institute of Medicine
kts ..... knots
LDS ..... Latter-Day Saints
LEPC ..... Local Emergency Planning Committee
LUST ..... Leaking Underground Storage Tank
MJHMP ..... Multi-Jurisdictional Hazard Mitigation Plan
MMI ..... Modified Mercalli Intensity
NAS ..... Naval Air Station
NBMG ..... Nevada Bureau of Mines and Geology
NDA ..... Nevada Department of Agriculture
NDCNR ..... Nevada Department of Conservation and Natural Resources
NDEM ..... Nevada Division of Emergency Management
NERMP ..... Nevada Earthquake Risk Mitigation Plan
NFIP ..... National Flood Insurance Program
NRCS ..... Natural Resources Conservation Service
NWS ..... National Weather Service
PA ..... Public Assistance
PDM ..... Pre-Disaster Mitigation

PL ..... Public Law
POC ..... Point of Contact
PW ..... Public Works
RCI ..... Resource Concepts Incorporated
RFC ..... Resource Finance Conservation
SARS ..... Severe Acute Respiratory Syndrome
SERC ..... State Emergency Response Commission
SRL ..... Severe Repetitive Loss
TCID ..... Truckee-Carson Irrigation District
the City ..... the City of Fallon
the County ..... Churchill County
the Reservoir ..... the Lahontan Dam and Reservoir System
the State ..... the State of Nevada
the Tribe ..... Fallon Paiute-Shoshone Tribe
U.S. ..... United States
URM ..... Unreinforced Masonry
USC ..... United States Code
USDA ..... U.S. Department of Agriculture
USDOT ..... U.S. Department of Transportation
USEPA ..... U.S. Environmental Protection Agency
USGS ..... U.S. Geological Survey
WNV ..... West Nile Virus
WTP ..... Water Treatment Plant
WWTP ..... Wastewater Treatment Plant

EXECUTIVE SUMMARY

Across the United States, natural and human-caused disasters have led to increasing levels of death, injury, property damage, and interruption of business and government services. The toll on families and individuals can be immense and damaged business cannot contribute to the economy. The time, money, and effort to respond to and recover from these emergencies or disasters divert public resources and attention from other important programs and problems. Churchill County, Nevada, recognizes the consequences of disasters and the need to reduce the impacts of natural and human-caused hazards.

The elected and appointed officials of Churchill County, the City of Fallon, and the Fallon Paiute-Shoshone Tribe also know with careful selection, mitigation actions in the form of projects and programs can become long-term, cost-effective means for reducing the impact of natural and human-caused hazards. Applying this knowledge, the Churchill County Hazard Mitigation Planning Committee prepared the Churchill County, Nevada, Multi-Jurisdictional Hazard Mitigation Plan. With the support of various county and city officials, Nevada, and the United States Department of Homeland Security/Federal Emergency Management Agency, this plan is the result of several months' worth of work to create a hazard mitigation plan to guide Churchill County, the City of Fallon, and the Fallon Paiute-Shoshone Tribe toward greater disaster resistance in full harmony with the character and needs of the community and region.

People and property in Churchill County are at a risk from a variety of hazards having the potential for causing widespread loss of life and damage to property, infrastructure, and the environment. The purpose of hazard mitigation is to implement actions that eliminate the risk from hazards or reduce the severity of the effects of hazards on people and property. Mitigation is any sustained action taken to reduce or eliminate long-term reduction of hazard vulnerability. The goal of mitigation is to save lives and reduce property damage. Mitigation can reduce the enormous cost of disasters to property owners and all levels of government. In addition, mitigation can protect critical community facilities, reduce exposure to liability and minimize community disruption. Preparedness, response, and recovery measures support the concept of mitigation and may directly support identified mitigation actions.

The Churchill County, Nevada, Multi-Jurisdictional Hazard Mitigation Plan has been prepared in compliance with Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 United States Code 5165, enacted under Section 104 the Disaster Mitigation Act of 2000, Public Law 026-390 of October 30, 2000. This plan identifies hazard mitigation actions intended to eliminate or reduce the effects of future disasters throughout Churchill County, the City of Fallon, and the Fallon Paiute-Shoshone Tribe.

1.0 OFFICIAL RECORD OF ADOPTION

This section provides an overview of the Disaster Mitigation Act of 2000 (DMA 2000); Public Law (PL) 106-390, the adoption of the updated Churchill County, City of Fallon, and Fallon Paiute-Shoshone Tribe Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) by the local governing body and supporting documentation for the adoption.

1.1 Disaster Mitigation Act of 2000

The DMA 2000 was passed by Congress to emphasize the need for mitigation planning to reduce vulnerability to natural and human-caused hazards. The DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act; 42 United States [U.S.] Code [USC] 5121-5206 [2008]) by repealing the act's previous mitigation planning section (409) and replacing it with a new mitigation planning Section (322). In addition, Section 322 provides the legal basis for the Federal Emergency Management Agency's (FEMA) mitigation plan requirements for mitigation grant assistance.

To implement the DMA 2000 planning requirements, FEMA published an Interim Final Rule in the Federal Register on February 26, 2002. This rule (44 Code of Federal Regulations [CFR] Part 201) established the mitigation planning requirements for states, tribes, and local communities. The planning requirements are described in detail in Section 2.0 and identified in their appropriate sections throughout this MJHMP update.

This MJHMP update is intended to meet the requirements of The Stafford Act and Title 44 CFR 201. This MJHMP is being updated to maintain compliance with Title 44 CFR 201.6.1 and to maintain eligibility for FEMA hazard mitigation project grant (HMPG) funding. Under the requirements of 44 CFR 201.6(d)(3), a local jurisdiction must review and revise its Hazard Mitigation Plan (HMP) to reflect changes in development, progress in local mitigation efforts, and changes in priorities. The plan must be resubmitted for approval within five years to continue to be eligible for mitigation project grant funding.

FEMA's Local Mitigation Plan Review Guide was relied on as official interpretation and explanation for the mitigation planning regulation in 44 CFR Part 201.

1.2 Adoption by the Local Governing Body and Supporting Document

The requirements for the adoption of an MJHMP by the local governing body, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Prerequisites

Adoption by the Local Governing Body

Requirement §201.6(c)(5): [The local HMP shall include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).

Element

- Has the local governing body adopted the plan?
- Is supporting documentation, such as a resolution, included?

Source: FEMA, March 2008

Churchill County (the County), the City of Fallon (the City), and the Fallon Paiute Shoshone Tribe (the Tribe) are the jurisdictions represented in this MJHMP. No other political subdivisions exist within the County. The MJHMP meets the requirements of Section 409 of the Stafford Act and Section 322 of the DMA 2000.

The local governing body of the County (Board of Commissioners), the City (City Council), and the Tribe (Tribal Council) has adopted this MJHMP. The signed resolutions are provided in Appendix A.

2.0 BACKGROUND

This plan was created and officially adopted in 2012, and updated in 2016 by the County, City, and Tribe. In 2012 and 2016 the planning effort was led by the County. The current update was developed throughout 2023-2024.

2.1 Plan Purpose and Authority

Congress approved the DMA 2000 on October 10, 2000. On October 30, 2000, the President signed the bill into law, creating PL 106-390. The purposes of the DMA 2000 are to amend the Stafford Act, establish a national program for Pre-Disaster Mitigation (PDM), and streamline administration of disaster relief.

The MJHMP meets the requirements of the DMA 2000, which calls for all communities to prepare HMP's. By preparing this MJHMP, the County, City, and Tribe are eligible to receive federal mitigation funding after disasters and to apply for mitigation grants before disasters strike. This MJHMP starts an ongoing process to evaluate the risks different types of hazards pose to the County, City, Tribe, and community in dialogue to identify the steps to reduce these risks. This constant focus on planning for disasters will make the County, City, and Tribe, including its' residents, property, infrastructure, and the environment, much safer.

The local hazard mitigation planning requirements encourage agencies at all levels, residents, businesses, and the non-profit sector to participate in the mitigation planning and implementation process. This broad public participation enables the development of mitigation actions supported by these various stakeholders and reflect the needs of the entire community.

States are required to coordinate with local governments in the formation of hazard mitigation strategies, and local strategies combined with initiatives at the state level form the basis for the State Mitigation Plan. The information contained in MJHMP's helps states to identify technical assistance needs and prioritize project funding. Furthermore, as communities prepare their plans, states can continually improve the level of detail and comprehensiveness of statewide risk assessments.

For FEMA's PDM Grant Program and Hazard Mitigation Grant Program (HMGP), a local jurisdiction must have an approved MJHMP to be eligible for PDM and HMGP funding for a presidentially declared disaster after November 1, 2004. Plans approved, any time after November 1, 2004, will allow communities to be eligible to receive PDM and HMGP project grants.

Adoption by the local governing body demonstrates the jurisdiction's commitment to fulfilling the mitigation goals and objectives outlined in the MJHMP. Adoption legitimizes the updated MJHMP and authorizes responsible agencies to execute their responsibilities. The resolutions adopting the MJHMP are included in Appendix A.

2.2 FEMA Grant Programs

To be eligible for many of FEMA's resources and funding opportunities, communities must meet the requirements of a current FEMA approved HMP. States, tribal, and local governments are required to develop and adopt HMP's as a condition for receiving certain types of FEMA non-emergency disaster assistance, including funding for mitigation projects. Jurisdictions must update their HMP's every five years and re-submit them for FEMA approval to maintain eligibility. Through the Hazard Mitigation Assistance, HMGP, PDM, and Flood Management Assistance (FMA), FEMA offers planning grants supporting state, tribal, and local governments

in developing and updating mitigation plans. Table 1 summarizes how FEMA's mitigation plan requirement applies to states and federally recognized tribal governments applying directly to FEMA for assistance as applicants, and to local or tribal governments (federally recognized or non-federally recognized) applying for FEMA assistance through a state as sub-applicants. FEMA funding is now managed through an online web portal: https://go.fema.gov.

Table 1: Grant Funding and Hazard Mitigation Plans

Enabling Legislation	FEMA Assistance Program	Is a Mitigation Plan Required?	
		State / Tribal Applicant	Tribal / Local Sub-applicant
Stafford Act	Individual Assistance	No	No
	Public Assistance (PA) Categories 'A' and 'B' (e.g., debris removal, emergency protective measures)	No	No
	PA Categories 'C' through 'G' (e.g., repairs to damaged infrastructure, publicly owned buildings)	Yes	No
	Fire Mitigation Assistance Grants (FMAG)	Yes	No
	HMGP planning grant	Yes	No
	HMGP project grant	Yes	Yes
	PDM planning grant	No	No
	PDM project grant	Yes	Yes
National Flood Insurance Act	FMA planning grant	Yes	No
	FMA project grant	Yes	Yes
Water Infrastructure Improvements for the Nation (WIIN) Act	Rehabilitation of High Hazard Potential Dam (HHPD) Grant Program	Yes	Yes

2.3 Stafford Act Funding Programs

The Stafford Act authorizes the following grant programs.

2.3.1 Hazard Mitigation Grant Program

HMGP provides grants to states, tribes, and local entities to implement long-term hazard mitigation measures after a major disaster declaration. This program also funds development and update of HMP's. The purpose of the HMGP is to reduce the loss of life and property

because of natural disaster and to enable mitigation measures to be implemented during the immediate recovery from disaster. Projects must provide a long-term solution to a problem: for example, elevation of a home to reduce the risk of flood damages as opposed to buying sandbags and pumps to fight the flood. In addition, a project's potential savings must be more than the cost of implementing the project. Funds may be used to protect either public or private property or to purchase property subjected to, or is in danger of, repetitive damage. Funding available for the HMGP under a particular disaster declaration is limited. The program may provide a state or tribe with up to 20% of the total disaster grants awarded by FEMA. The cost-share for this grant is 75% federal and 25% nonfederal.

2.3.2 Pre-Disaster Mitigation Project Grants

PDM provides funds to states, tribes, and local entities, including universities, for hazard mitigation planning and the implementation of mitigation projects before a disaster event, including the development or update of an HMP. PDM grants are awarded on a nationally competitive basis. Like HMGP funding, a PDM project's potential savings must be more than the cost of implementing the project. In addition, funds may be used to protect either public or private property or to purchase property subjected to, or in danger of, repetitive damage. Congress appropriates the total amount of PDM funding available on an annual basis. The cost-share for this grant is 75% federal and 25% nonfederal.

2.3.3 Public Assistance Grant Program

The PA Grant Program provides assistance to state, tribal, territorial, and local governments, and certain types of private nonprofit organizations so communities can quickly respond to and recover from major disasters or emergencies declared by the President.

2.3.4 Fire Management Assistance Grant Program

FMAG provides assistance to state, tribal, territorial, and local governments for the mitigation, management, and control of fires on publicly or privately owned forests or grasslands threatening such destruction as would constitute a major disaster.

The Sandy Recovery Improvements Act of 2013 amended the Stafford Act to provide federally recognized tribal governments the option to request a Presidential emergency or major disaster declaration independent of a state. Tribal governments may still choose to seek assistance, as they have historically, under a state declaration request.

2.4 National Flood Insurance Act Funding

The National Flood Insurance Act of 1968, as amended (42 USC 4104c), authorizes the FMA grant program with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP). FMA provides funding to states, territories, tribes, and local communities for flood hazard mitigation projects, plan development, and management costs. The FMA program provides funds on an annual basis so measures can be taken to reduce or eliminate risk of flood damage to buildings insured under the NFIP. FMA provides up to 75% federal funding for a mitigation activity grant and/or up to 90% federal funding for a mitigation activity grant containing a repetitive loss strategy.

2.4.1 Severe Repetitive Loss Grant Program

The Severe Repetitive Loss (SRL) grant program provides funding to reduce or eliminate the long-term risk of flood damage to SRL structures insured under the NFIP. The SRL program provides funds on an annual basis to reduce the risk of flood damage to residential structures

insured under the NFIP having had one or more claim payments for flood damages. SRL provides up to 75% federal funding for eligible projects in communities qualifying for the program.

2.5 Water Infrastructure Improvements for the Nation Act Funding

On December 16, 2016, the WIIN Act was signed into law. The WIIN Act adds a new grant program under FEMA's National Dam Safety Program (33 USC 467f). Section 5006 of the Act, Rehabilitation of HHPD, provides technical, planning, design, and construction assistance in the form of grants for rehabilitation of eligible HHPD. 'High Hazard Potential' is a classification standard for any dam whose failure or mis-operation will cause loss of human life and significant property destruction. The HHPD Grant Program will provide funding to eligible applicants and sub applicants to rehabilitate, repair, or remove HHPDs. The statute allows for funding to be awarded to nonfederal sponsors or nonfederal governments and nonprofit organizations. Projects shall be approved by the dam safety agency in the state where the dam is located.

2.6 Plan Organization

The remainder of this MJHMP includes the following sections:

Section 3: Community Descriptions

Section 3 provides a general history and background of the County, City, and Tribe and historical trends for population, demographic, economic conditions, land use, and land development having shaped the area.

Section 4: Planning Process

Section 4 describes the planning process, identifies Planning Committee members and the key stakeholders within the community and surrounding region. In addition, this section documents public outreach activities and the review and incorporation of relevant plans, reports, and other appropriate information.

Section 5: Risk Assessment

Section 5 describes the process through which the Planning Committee identified and compiled relevant data on all potential natural hazards threatening the County, City, Tribe, and immediately surrounding area. Information collected includes historical data on natural hazard events having occurred in and around the County, City, and Tribe and how these events impacted residents and their property.

The descriptions of natural hazards possibly affecting the County, City, and Tribe are based on historical occurrences and best available data from agencies such as FEMA, the U.S. Geological Survey (USGS), and the National Weather Service (NWS). Detailed hazard profiles include information on the frequency, magnitude, location, and impact of each hazard as well as probabilities for future hazard events.

Section 6: Vulnerability Analysis

Section 6 identifies potentially vulnerable assets such as people, housing units, critical facilities, infrastructure and lifelines, hazardous materials facilities, and commercial facilities. These data were compiled by assessing the potential impacts from each hazard using GIS and FEMA's natural hazards loss estimation model, HAZUS-MH. The resulting information identifies the full range of hazards the County, City, and/or Tribe could face and potential social impacts, damages, and economic losses.

Section 7: Capability Assessment

Although not required by the DMA 2000, Section 7 provides an overview of the County, City and Tribe's resources in the following areas for addressing hazard mitigation activities:

- Legal and regulatory resources
- Administrative and technical: The staff, personnel, and department resources available to expedite the actions identified in the mitigation strategy
- Fiscal: The financial resources to implement the mitigation strategy

Section 8: Goals, Objectives & Actions – Mitigation Strategy

Section 8 describes the Planning Committee's developed list of mitigation goals, objectives, and actions based upon the findings of the risk assessment and the capability assessment. Based upon these goals, the Planning Committee reviewed and prioritized a comprehensive range of appropriate mitigation actions to address the risks facing the community including:

- Preventative actions
- Property protection techniques
- Natural resource protection strategies
- Structural projects
- Emergency services
- Public information
- Awareness activities

Section 9: Plan Maintenance Process

Section 9 describes the Planning Committee's formal plan maintenance process to ensure the MJHMP remains an active and applicable document. The process includes:

1. Monitoring, evaluating, and updating the MJHMP
2. Implementing the HMP through existing planning mechanisms
3. Public involvement

Section 10: References

Section 10 lists the reference materials used to prepare this MJHMP update.

Appendices

The Appendices include:

- Adoption Resolutions
- Figures
- Public information
- Meeting agendas
- Notes and handouts
- Plan maintenance documents

3.0 COMMUNITY DESCRIPTIONS

This section describes the history, location, and geography of the County, City, and Tribe as well as their government, demographic information, and current land use and development trends.

3.1 Churchill County

3.1.1 History, Location, and Geography

The County is in Northern Nevada (the State), Approximately one hour east of Reno. The County was named after Brevet Brigadier General Sylvester Churchill (1783-1862). Churchill served as Inspector General of the Army for 20 years and was a hero in the Mexican War. The first Army fort established in the State was Ft. Churchill. Built on the banks of the Carson River in 1860, it is situated about 25 miles northeast from Carson City (R.O. Anderson 2016).

The County encompasses approximately 5,024 sq. miles; 94 sq. miles of which is water (Zapata 2021). The most current population estimate of the County is 25,723 persons for 2021 (U.S. Census Bureau 2022). Of that number, approximately 9,325 persons (36%) reside within Fallon. The County is also the home of the Tribe and the U.S. Naval Air Station (NAS) Fallon, where the Naval Aviation Warfare Development Command host Naval and joint combat training. The County is a leading producer of green energy with the Enel Green Power North America Solar-Geothermal Hybrid Plant.

Most of the population resides at an elevation of 4,000 ft. above sea level (R.O. Anderson 2016). The average high summer temperature is 95 degrees, and the average low winter temperature is 22 degrees. The average number of sunny days is 241 and average annual precipitation is 5” (Sperling's Best Places n.d.). The irrigation water for this county is obtained through the Carson River and the Truckee Canal system, which is part of the Newlands Project established by Congress in the Reclamation Act of 1902. Without this project, the County would be an arid desert. Most of the geography is high desert plains and the Carson River ends within the county boundary. Several water impoundments, expansive wetlands, and wildlife refuge areas (Lahontan Wetlands, Stillwater National Wildlife Refuge, and Carson Lake) occupy the county (R.O. Anderson 2016).

3.1.2 Government

The local governing body is composed of a three-member board called the County Commissioners. The Commissioners are elected by and accountable to the voters. All members of the Commission serve four-year terms.

The County Commissioners appoint a County Manager to be responsible for the general direction, supervision, administration, and coordination of all affairs for the County. Key County officials include:

- County Commissioners for Districts 1, 2, and 3
- County Manager
- County Assessor
- Clerk/Treasurer
- Cooperative Extension Director
- Development Services Director
- District Attorney
- Emergency Manager
- Finance Director
- Fire Chief
- Judges
- Planning Director
- County Recorder
- Sheriff

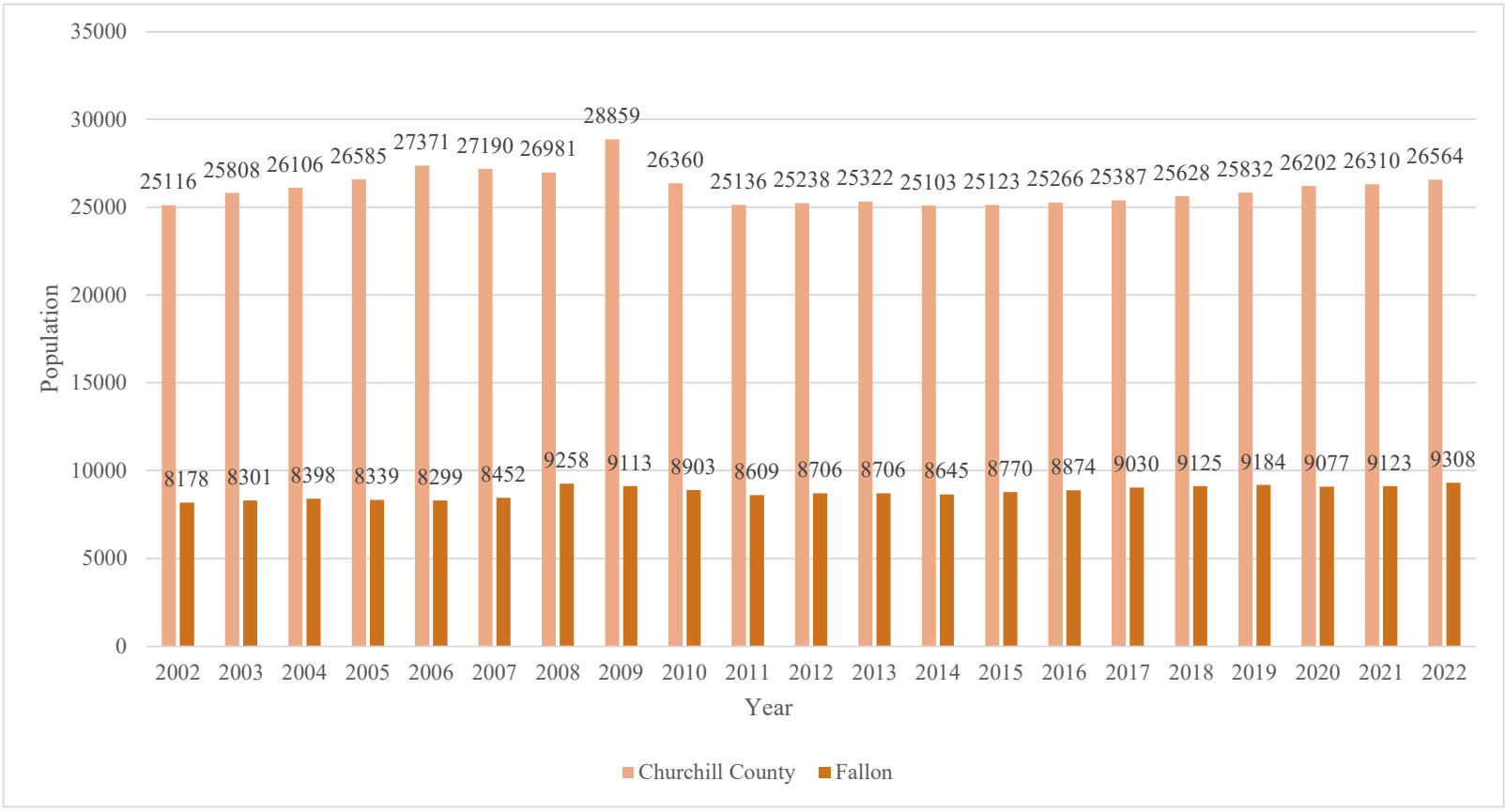
Key County departments and offices include:

- Assessor
- County building
- Cemetery
- Comptroller
- County managers office
- District courts
- Facilities and grounds maintenance
- Fire department
- Human resources
- Justice court
- Juvenile probation
- Library
- Museums
- Parks and recreation
- Planning department
- Roads department
- School district
- Social services
- Telephone company
- Veterans' services

3.1.3 Demographics

According to the Nevada State Demographer, in 2022 the County accounted for 0.83% of the State's total population of 3,204,105 with 26,564 residents. In 2014, the population of 25,103 accounted for 0.88% of the State's population of 2,843,301. Figure 1 shows the population of the County from 2002 to 2022 (Nevada State Demographer 2022).

Figure 1: Churchill County Population



Source: Nevada State Demographer

The County comprises approximately 3,224,240 acres, 85% of which is in federal management or ownership. The federal and state government controls more than 86% of the land in the

County. Only 13% of the land in the county is on the tax roll. Data in Table 2 is as of October 2011 from the Churchill County 2020 Master Plan (Churchill County 2020).

Table 2: Land Ownership in Churchill County

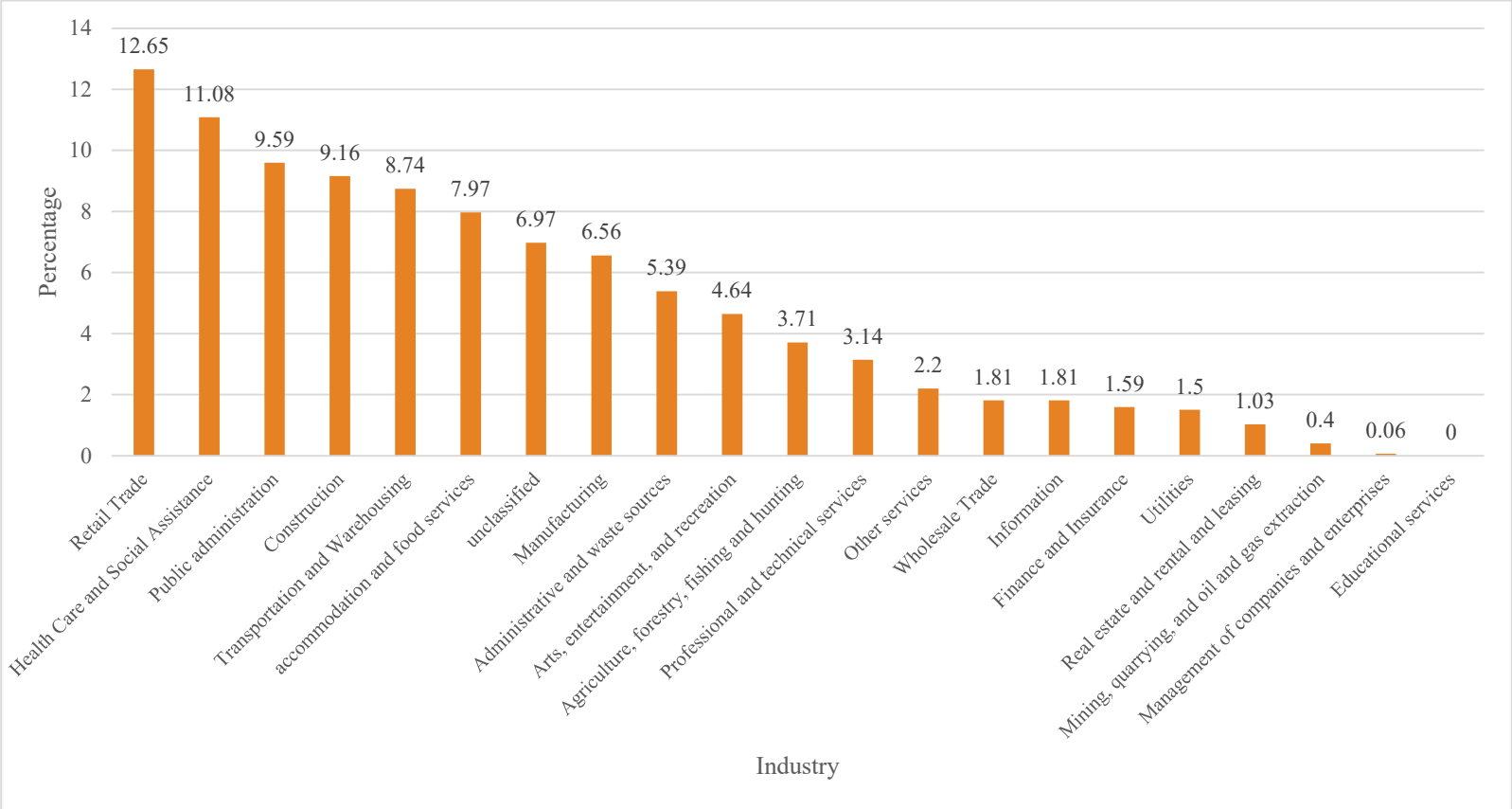
Land Ownership		Acreage 2011	Percentage of County
Federal	Bureau of Land Management (BLM)	2,182,644	67.69%
	Bureau of Reclamation (BOR)	456,231	14.15%
	Military	38,261	1.19%
	U.S. Government (Includes Postal)	27,397	0.85%
Tribal		50,938	1.58%
State		18,261	0.57%
Local Government		36,840	1.14%
Truckee-Carson Irrigation District (TCID)		3,268	0.10%
Private Lands		410,400	12.73%
Total		**3,224,240**	**100.00%**

Source: Churchill County 2020 Master Plan (Churchill County 2020)

According to the U.S. Census Bureau Quick Facts, in 2021 approximately 6.4% of the total population was under five years, 22.9% of the total population was under 18 years, and 19.1% was 65 years and greater. The County experienced a growth rate of approximately 0.8% between 2020 and 2021 (U.S. Census Bureau 2022).

In 2020, the County's nonfarm employment was 5,327 persons. This is a 1.5% increase from 2019 to 2020. The economic base of the County primarily consists of agriculture, tourism, educational services, retail trade, public administration, arts, and entertainment. The NAS Fallon employs more than 3,000 persons (U.S. Census Bureau 2022). The unemployment rate has risen from 2.2% in March 2022 to 3.6% in December 2022. The unemployment rate jumped to 11% in April of 2020 likely due to Coronavirus Disease (COVID-19) (U.S. Bureau of Labor Statistics 2022). In 2021, the median household income was $61,776 (U.S. Census Bureau 2022). Figure 2 represents the employment distribution within the county in 2020.

Figure 2: Churchill County Employment Distribution



Source: 2020 Churchill County Master Plan (Churchill County 2020)

3.1.4 Land Use and Development Trends

The Churchill County Master Plan establishes a planned pattern for development in the County and is designed to promote sound land use decisions. The master plan provides sufficient land for residential, commercial, industrial, and public uses, and locates these uses appropriately to enhance community balance and character; to preserve and protect important natural resources; and to enable the County to provide adequate public services to the community (Churchill County 2020).

The land use map directs urban development to the northwestern area of the County where more intensive, mixed uses, conducive to an urban environment will be encouraged. This guides development away from wetlands, agriculture, and NAS Fallon. Several planned unit developments are in the planning stages in the northern part of the County where wastewater treatment plants (WWTP) and water treatment plants (WTP) subsist, both of which may be expanded in the future. With more than 3,000 residential lots in the planning stages, development will proceed slowly and carefully to mitigate impacts to existing residents. Most of the population of the County is in the area served by the Newlands Reclamation Project, which provides surface water for agriculture, wildlife habitat, and aquifer recharge.

In response to the planned increase in population, the County is working to preserve agriculture and support NAS Fallon, two of the largest economic sectors of the county. Several programs are in place for conservation easements on agricultural lands to limit development and

encroachment on the base. More than 7,000 acres in conservation easements are in the County.

Growth in the industrial sector includes renewable energy facilities such as geothermal power plants and solar energy facilities.

3.2 City of Fallon

3.2.1 History, Location, and Geography

The City is located 50 miles east of the Reno in the southwest portion of the County on U.S. Highway (Hwy) 50 traversing east-west and U.S. Hwy 95 traversing north-south. The geography of the City is flat land with the Carson River running just west and north of town. It is surrounded by farms and ranches, and the Lahontan Valley Wetlands.

Fallon was named after Mike Fallon, born in Ireland in 1849. Fallon was a Union Army drummer boy in (what is believed to be) one of John Fremont's units. The Fallon family moved to Forestville, California in 1853. In 1869, Fallon moved to the State with his wife Eliza Bruner and their four children, trading his land in Forestville for an alfalfa ranch in Stillwater near present day Fallon. His ranch home was located at a well-traveled crossroads to Stillwater and surrounding areas. This was the logical site for a post office and a small store and soon became the community we know today as Fallon (R.O. Anderson 2016).

3.2.2 Government

The City became the County seat in 1903 and was incorporated in 1908. The City's governing body is composed of a three-member elected board called the City Council, and the City's chief executive officer is the Mayor. The City Council members and Mayor are elected by and accountable to the voters. Members of the council and the mayor serve four-year terms.

The Mayor preserves order and decorum and enforces the rules of the City Council. Key officials include:

- City Council
- Convention and Tourism Board
- City Engineer
- Mayor and Chief Executive Officer
- City Attorney
- City Clerk/Treasurer
- Emergency Management Director
- Municipal Court Judge
- Police Chief

Key departments and offices include:

- City engineering department
- Emergency management department
- Fire department
- Police department
- Public works (PW) department

3.2.3 Demographics

The 2021 estimated population for the City is 9,123 from the Nevada State Demographer and 9,325 from the U.S. Census Bureau (Nevada State Demographer 2022). The labor force population of 16 years and older was 57.6% of the population between 2017 and 2021. The median household income in 2021 was $49,785 according to the U.S. Census QuickFacts. Owner-occupied households comprise 44.2% of the total households (3,991). The average household size is 2.23 persons. Figure 1 shows the population of the City from 2002 to 2022. (U.S. Census Bureau 2022).

3.2.4 Land Use and Development Trends

The City is nearly completely developed. The city will sometimes annex properties in the County when it is advantageous for all concerned parties. The annex process is methodical and includes the connection to all city infrastructure and services (streetlights, electric, sewer, water, sidewalks, etc.)

3.3 Fallon Paiute-Shoshone Tribe

3.3.1 History, Location, and Geography

The Tribe reservation is located approximately six miles north-northeast of the City. The 1,567-member tribe traditionally known as the *Toi Ticutta* (cattail eaters), provides its' people with a broad variety of services and activities from health care to a senior center. Their land encompasses 8,299 acres and is in the northeast part of Lahontan Basin, in the shadow of the sacred Fox Peak Mountain (Stillwater Range also known as Jobs Peak).

3.3.2 Government

The Tribal Government is a federally recognized tribe and, as such, is associated with the U.S. Bureau of Indian Affairs. The Tribe government is a seven-member tribal council functioning under tribal sovereignty where land use decisions associated with the reservation must be coordinated through the tribal council and in concert with U.S. federal and state governments. The Tribe's government provides public services to its' residents including, but are not limited to, education, PW, senior care services, and general Native American services. Key officials for the Tribe include:

- Chairman
- Treasurer/Finance
- Secretary
- Emergency Management Director
- Tribal Administrator
- Judicial services
- Tribal court
- Tribal Health Center
- Youth and family services
- Tribal law enforcement
- Tax department
- Tribal employment rights office
- PW department
- Grant department
- Community development department

Key departments and offices include:

- Administration
- Cultural affairs
- Education department
- Emergency management
- Environmental protection
- Housing
- Victim services
- Human resources
- Natural resources
- Stepping Stones

3.3.3 Demographics

As of 2024, 1,567 tribal members belong to the Tribe. The Colony has an estimated population of 200 and the Reservation has an estimated population of 1,000.

3.3.4 Land Use and Development Trends

The Fallon Tribal Development Corporation has plans for growth and development including:

- 22 units of low income housing
- A cultural center
- A daycare
- A clinic

These projects are anticipated to be completed by the end of 2025. Various public works projects may also be in the planning process.

4.0 PLANNING PROCESS

This section:

- Provides an overview of the planning process
- Identifies Planning Committee members and key stakeholders
- Documents public outreach efforts
- Summarizes the review and incorporation of existing plans, studies, and reports used in the development of this MJHMP.

Additional information regarding the Planning Committee and public outreach efforts is provided in Appendix C and Appendix D.

The requirements for the planning process, as stipulated in the DMA 2000 and its' implementing regulations, are described below.

DMA 2000 Requirements: Planning Process

Documentation of the Planning Process

Requirement §201.6(b): To develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:

- An opportunity for public to comment on the plan during the drafting stage and prior to plan approval
- An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and nonprofit interests to be involved in the planning process
- Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information

Requirement 201.6(c) (1): [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

Element

- Does the new or updated plan provide a narrative description of the process followed to prepare the plan?
- Does the new or updated plan indicate who was involved in the planning process? (For example, who led the development at the staff level and were there any external contributors such as contractors? Who participated on the Planning Committee, provided information, reviewed drafts, etc.?)
- Does the new or updated plan indicate that an opportunity was given for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process?
- Does the updated plan document how the planning team reviewed an analyzed each section of the plan?
- Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information?
- Does the updated plan indicate for each section whether it was revised as part of the update process?

Source: FEMA, March 2008.

4.1 Overview of Planning Process

The County hired DOWL to assist in the development of the MJHMP update. The combined plan required coordination with the County, City, and Tribe. The initial planning phase included establishing contact persons from each of the organizations and meeting with the Local Emergency Planning Committee (LEPC). The County, City, and Tribe prepared this MJHMP with the assistance of DOWL. Each section of the initial MJHMP was reviewed for content and revised by the committee as needed.

The first step in the planning update process was to meet with the LEPC for the County. The primary Point of Contact (POC) for the LEPC was Steve Endacott, Emergency Manager of the City.

Once the Planning Committee was formed, the following five-step planning process took place from January 2023 to December 2023:

1. **Organize Resources:** The Planning Committee identified resources, including County, City Staff, Tribe, agencies, and local community members, who could provide technical expertise and historical information
2. **Assess Risks:** The Planning Committee identified the hazards specific to the County, City, and Tribe and developed the risk assessment. The Planning Committee reviewed the risk assessment, including vulnerability analysis, prior to and during the development of the mitigation strategy
3. **Assess Capabilities:** The Planning Committee reviewed current administrative and technical, legal, regulatory, and fiscal capabilities to determine whether existing provisions and requirements adequately address relevant hazards
4. **Develop a mitigation strategy:** After reviewing the risks posed by each hazard, the Planning Committee worked to develop a comprehensive range of potential mitigation goals, objectives, and actions. Subsequently, the Planning Committee identified and prioritized the actions to be implemented
5. **Monitor Process:** The Planning Committee developed an implementation process to ensure the success of an ongoing program to minimize hazard impacts to the County, City, and Tribe

4.2 Hazard Mitigation Planning Committee

4.2.1 Formation of the Planning Committee

Planning of the MJHMP update began in January 2023. Initially, the planning process, including hazard profiling, was presented to the LEPC of the County, City, and Tribe. The LEPC included representatives from public, private, and government entities. LEPC members are included in Table 3. LEPC meetings are described in this Section and meeting minutes are provided in Appendix D.

Table 3: Local Emergency Planning Committee Members

Name	Department/Plan Input	Jurisdiction
Richard Ingram	Emergency Manager: Vice Chair, Churchill County LEPC. Lead for Churchill County, provided evaluation and information on the	The County

Name	Department/Plan Input	Jurisdiction
	following sections: Hazard Profile, Vulnerability Analysis, Risk Assessment, Mitigation Strategies, Plan Maintenance, Public Outreach, Attended meetings, reviewed drafts and provided input.	
Steve Endacott	Emergency Manager: Chairman, Churchill County LEPC, Lead for City of Fallon, provided evaluation and information on the following sections, hazard profile, vulnerability analysis, risk assessment, mitigation strategies, plan maintenance, provided public outreach. Attended meetings, reviewed drafts and provided input.	The City
Alex Haffner	Fire Department/Training Manager: Provided information on wildfire, mitigation strategy. Attended meetings, reviewed drafts and provided input	The County/City
Jared Dooley	Fire Department/Chief: Provided information on wildfire, mitigation strategy. Attended meetings, reviewed drafts and provided input	The County/City
Richard Black	Environmental Manager: Provided hazard information. Attended meetings, reviewed drafts and provided input. Took information back to Tribal Council for presentation and to receive input from Council.	The Tribe
Jackie Conway	Emergency Manager: Provided hazard information, mitigation strategy. Attended meetings, reviewed drafts and provided input. Took information back to Tribal Council for presentation and to receive input from Council.	The Tribe
Anne McMillin	Public Information Officer: Provided information on hazard profile. Designed and conducted public online surveys to support plan development. Attended meetings, reviewed drafts and provided input.	The County
Barry Wood	EOC Manager: Provided information on NAS Fallon for mitigation strategy. Attended meetings, reviewed drafts and provided input.	NAS Fallon
Kris Alexander	Police Department/Chief: Provided information on City of Fallon. Attended	The City

Name	Department/Plan Input	Jurisdiction
	meetings, reviewed drafts and provided input.	
John Frandsen	Police Department/Captain: Provided information on City of Fallon. Attended meetings, reviewed drafts and provided input.	The City
Ron Wenger	Police Department/Captain: Provided information on City of Fallon. Attended meetings, reviewed drafts and provided input.	The City
John Riley	Police Department/Captain: Provided information on City of Fallon. Attended meetings, reviewed drafts and provided input.	The City
Daniel Babiarz	Police Department/Officer: Provided information on City of Fallon. Attended meetings, reviewed drafts and provided input.	The City
Bill Lawry	Sheriff's Office/Training: Provided hazard information, vulnerability and mitigation strategy. Attended meetings, reviewed drafts and provided input.	The County
Bob Clifford	Amateur Radio Emergency Service/ Chairman: Attended meetings, reviewed drafts and provided input Attended as member of the public.	The County
Steve Towne	Banner Churchill Community Hospital/EMS Chief: Provided information on hazard profile, vulnerabilityAttended meetings, reviewed drafts and provided input.	The County
Derild Parsons	School District/Emergency Manager: Provided building information on school district. Attended meetings, reviewed drafts and provided input.	The County
Preston Denney	Planning Department/Department Head: Provided GIS mapping. Information on vulnerability and mitigation strategy. Attended meetings, reviewed drafts and provided input	The County
Mike Adams	Truckee Carson Irrigation District/Analyst: Provided hazard information on flood and mitigation strategy. Reviewed drafts and provided input.	The County

Non-LEPC members also in attendance at the various LEPC meetings include the following:

- Emily Paris, DOWL, LLC
- Alan Wagner, Red Cross
- Jim Richards, Red Cross
- Kristi Turley, Kennametal
- Heather Lafferty, Nevada Division of Emergency Management (NDEM)
- Brenn McClean, NDEM
- Emily Gould, Nevada Public Health Preparedness
- Sheryl Faught, Latter-Day Saints (LDS) Church and Community Resident
- Barbara Lewis, LDS Church, and Community Resident
- Tiandra Rushing, Central Nevada Health District
- Robert Frank, NAS Fallon
- Benjamin Owusu, NAS Fallon
- Lucy Carnahan, Fallon Chamber of Commerce and Community Resident
- QM1 Timothy White, NAS Fallon
- Steve Towne, Banner Churchill
- Francisco Ceballos, Washoe County Emergency Management

4.2.2 Planning Committee Meetings & Monthly Progress

January 2023

The County LEPC met and discussed general information regarding the MJHMP. Members of the LEPC completed the “Hazard Profiling Worksheet” (Appendix D).

May 2023

The County LEPC met and discussed the results from the “Hazard Profiling Worksheet” and made any necessary changes. Members of the LEPC discussed new plans/policies since the last plan update, and public involvement.

September 2023

The County LEPC met and reviewed the draft MJHMP, including the Capability Assessment, Mitigation Strategy, and Plan Maintenance.

4.3 Participation and Public Involvement

In July 2023, the County distributed an online survey to the public through County, City, and Tribal offices. The survey and the results can be found in Appendix C. Results were used by the LEPC during their development of the mitigation strategy. The public was responsive to the questionnaire with 84 responses.

A press release was posted on the County website and notice of the survey was sent out to two radio stations, KVLV in Fallon, and KUNR in Reno. A copy of the press release can be found in Appendix C.

Note that the Fallon Paiute-Shoshone Tribe (FPST) does not not have a standard definition of “public”. However, standard practice for “public” includes all FPST Tribal Members and Community Members residing within the FPST jurisdictional boundaries, when applicable dependent on the situation.

4.3.1 Coordination with Other Agencies and Stakeholders

Coordination with other agencies was sought throughout the plan update process. The Planning Committee reached out to local officials and community groups to obtain information related the plan update. The County mailed letters (Appendix C) regarding the update of the MJHMP to the following entities:

- FEMA (Region 9)
- NDEM
- Fallon Chamber of Commerce
- Nevada Department of Transportation
- Counties of Lander, Lyon, Mineral, Nye, Pershing, and Washoe
- The City Municipal Airport
- TCID
- Fallon Chamber of Commerce
- NAS Fallon

4.4 Incorporation of Existing Plans and Other Relevant Information

During the planning process, the LEPC reviewed and incorporated information from plans, studies, reports, and technical reports into the MJHMP. A synopsis of the sources is below:

- Carson River Geographic Response Plan (2006)
- Carson River Watershed Discovery Report (2018)
- Carson River Watershed Regional Floodplain Management Plan (Carson Water Subconservancy District [CWSD], 2018)
- Churchill County Building Code (2018)
- Churchill County Fire Plan (Resource Concepts Incorporated [RCI], 2004)
- Fallon/Churchill Fire Code (Updated every three years)
- Churchill County Hazardous Materials Emergency Response Plan (Updated Annually)
- Churchill County Mass Illness Plan (Updated Annually)
- Churchill County Master Plan (Churchill County Planning, 2020)
- Churchill County Water Conservation Plan (2019)
- Churchill County Water & Wastewater Utility Master Plan (2019)
- Community Wildfire Protection Plan, RCI (2004)
- Design, Estimating and Construction Review Truckee Canal Risk Assessment (2014)
- Emergency Operations Plan (Churchill County Emergency Management, 2015)
- Lahontan Dam Tabletop Flood Exercise (2017)
- NAS Fallon Joint Land Use Study (2015)
- State of Nevada Enhanced HMP (2018)
- State Maintained Hwys of Nevada (2023)
- FEMA Flood Insurance Rate Maps for Churchill County, NV (FEMA 2009)

The following FEMA guides were also consulted for general information on the MJHMP process:

- Local Mitigation Planning Policy Guide (2022)
- Local Mitigation Planning Handbook (2023)

A complete list of the sources consulted is provided in Section 10.0.

5.0 RISK ASSESSMENT

The requirements for risk assessment, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Risk Assessment – Assessing Vulnerability

Assessing Vulnerability Overview

§201.6(c)(2)(i): [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.

Element

- Does the new or updated plan include an overall summary description of the jurisdiction's vulnerability to each hazard?
- Does the new or updated plan address the impact of each hazard on the jurisdiction?

Source: FEMA, March 2008

5.1 Hazard Identification and Screening

A hazard analysis included the identification and screening of each hazard and subsequent profiling of each hazard. Hazard identification is the process of recognizing the natural and human-caused events threatening an area. Natural hazards result from unexpected or uncontrollable natural events of sufficient magnitude. Human-caused hazards result from human activity and include technological hazards and terrorism. Technological hazards are generally accidental or result from events with unintended consequences, for example, an accidental hazardous materials release. Terrorism is defined as the calculated use of violence or threat of violence to attain political, religious, or ideological goals.

Even though a particular hazard may not have occurred in recent history in the study area, all hazards potentially affecting the study area are included through the collection of historical and anecdotal information, review of existing plans and studies, and preparation of hazard maps of the study area. Hazard maps are used to determine the geographical extent of the hazards and define the approximate boundaries of the areas at risk.

The requirements for hazard identification, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Risk Assessment – Overall

Identifying Hazards

§201.6(c)(2)(i): [The risk assessment shall include a] description of the type of all natural hazards that can affect the jurisdiction.

Element

Does the new or updated plan include a description of all the types of all natural hazards that affect the jurisdiction?

Source: FEMA, March 2008

The first step of the hazard analysis is the identification and screening of hazards, as shown in Table 4. During the first MJHMP meeting, the LEPC reviewed natural disasters, severe weather events, and human-caused hazards. The Planning Committee identified 18 hazards (eight natural hazards, eight severe weather hazards, and two human-caused hazards) with the

addition of four new hazards to this update, which impact all jurisdictions. The results of the hazard identification and screening worksheet are included in Appendix E.

Table 4: Identification and Screening of Hazards

Hazard Type	Should it Be Profiled?	Explanation
Natural Disaster		
Avalanche	No	No historical record of this hazard in the County
Drought	Yes	History of severe drought in the County
Earthquakes	Yes	Several active fault zones pass through the County
Epidemic	Yes	This hazard was addressed in the State Multi-HMP
Expansive Soils	Yes	History of expansive soils near the river banks
Flood (includes dam and canal wall failure, flash flood and mudslide)	Yes	Flash floods occur during thunderstorms. Carson river flooding has been mitigated several times by using emergency precautionary water releases from Lahontan Reservoir and other responses.
Subsidence/Ground Failure	Yes	History of subsidence in the County
Infestations	Yes	Weed and insect infestations are known
Landslide	Yes	History of landslide(s) in the County
Severe Weather		
Extreme Heat	Yes	Churchill is susceptible to severe weather. Previous events have caused damage to property
Hail and Thunderstorms	Yes	Churchill is susceptible to severe weather. Previous events have caused damage to property
Severe Winter Storm/Extreme Cold	Yes	Churchill is susceptible to severe weather. Previous events have caused damage to property
Tornado	No	Churchill is not susceptible to Tornados.
Windstorm	Yes	Churchill is susceptible to severe weather. Previous events have caused damage to property
Tsunami/Seiche	Yes	No history of seiche in the County, however, could occur at the

Hazard Type	Should it Be Profiled?	Explanation
		Lahontan Dam and Reservoir System (the Reservoir)
Volcano	Yes	No significant historic events have occurred in the County; however, a young volcano resides in the County and Mammoth Mountain located in Mono County, CA, has a small chance of an event occurring
Wildfire	Yes	The terrain, vegetation, and weather conditions in the region are favorable for the ignition and rapid spread of wildland fires
Human-Caused		
Hazmat	Yes	Churchill has facilities handling or processing hazardous materials. Hazmat travels through the City on the two 2 intersecting hwys
Terrorism/WMD	Yes	Due to the sensitivity of this hazard, while the risk will be identified, it will not be discussed further in this MJHMP due to the public nature of the document

5.1.1 Assigning Vulnerability Ratings

During a LEPC meeting, the members were tasked to prioritize the hazards by their total impact in the community. An exercise was completed requiring the committee members response to a form tabulating their ratings of each hazard. The exercise took into account the probability/frequency, magnitude/severity, warning time, and duration of loss of critical facilities and services of each respective hazard.

Hazards of the same magnitude and the same frequency can occur in similar sized areas; however, the overall impact would be different because of varying population densities and property values.

The rubric used for the State HMP was used as a guidance for this MJHMP update and is shown in Table 5 (State of Nevada 2018).

Table 5: Hazard Prioritization Criteria

Criterion	Value	Category	Description
Probability/Frequency	1	Very Low	Occurs less than once in 1000 years
	2	Low	Occurs less than once in 100 to once in 1000 years
	3	Medium	Occurs less than once in 10 to once in 100 years

Criterion	Value	Category	Description
	4	High	Occurs less than once in five to once in 10 years
	5	Very High	Occurs more frequently than once in five years
Magnitude/Severity (Incudes Economic Impact, Area Affected, and Vulnerability)	1	Very Low	• Negligible property damages (less than 5% of all buildings and infrastructure) • Negligible loss of quality of life • Local emergency response capability is sufficient to manage the hazard
	2	Low	• Slight property damages (5% to 15%) of all buildings and infrastructure • Slight loss of quality of life • Emergency response capability of the city or surrounding community is sufficient to manage the hazard
	3	Medium	• Moderate property damages (15% to 30% of all buildings and infrastructure) • Some loss of quality of life • Emergency response capability, economic, and geographic effects of the hazard are of sufficient magnitude to involve one or more counties
	4	High	• Moderate property damages (30% to 50% of all buildings and infrastructure) • Moderate loss of quality of life • Emergency response capability, economic, and geographic effects of the hazard are of sufficient

Criterion	Value	Category	Description
			magnitude to require state assistance
	5	Very High	• Property damages to greater than 50% of all buildings and infrastructure • Significant loss of quality of life • Emergency response capability, economic, and geographic effects of the hazard are of sufficient magnitude to require federal assistance
Warning Time	1	Very Low	>48 hours
	2	Low	24 to 48 hours
	3	Medium	12 to 24 hours
	4	High	12 to six hours
	5	Very High	>six hours
Duration of loss of Critical facilities and services	1	Very Low	One to three days
	2	Low	Four to seven days
	3	Medium	Eight to 14 days
	4	High	15 to 20 days
	5	Very High	More than 20 days

The team used the total scores to analyze and prioritize the hazards to focus on during the profiling, vulnerability assessment, and mitigation strategy.

Table 6 is a summary of the hazards scoring results of both the members present at the meeting and the supplied feedback via e-mail after the meeting. The Planning Committee determined 18 hazards pose some level of threat to the County:

- Drought
- Earthquake
- Epidemic
- Flood
- Hazmat
- Terrorism
- Infestations
- Extreme Heat
- Hail/Thunderstorms
- Severe Winter
- Windstorm
- Wildfire
- Landslides
- Expansive Soils
- Ground Failure
- Tsunami/Seiche
- Volcano
- Tornado

The Committee determined six of these hazards to be high risk, six to be moderate risk, and six to be low risk (

Table 6, Table 7).

Table 6: Hazard Ranking Results

High Risk	Medium Risk	Low Risk
Churchill County		
Drought Earthquake Flood Hazmat Terrorism	Infestations Extreme Heat Hail/Thunderstorms Severe Winter Windstorm Wildfire Epidemic	Landslides Expansive Soils Ground Failure Tsunami/Seiche Volcano Tornado
City of Fallon		
Drought Earthquake Epidemic Flood Hazmat Terrorism	Infestations Extreme Heat Hail/Thunderstorms Severe Winter Windstorm	Expansive Soils Ground Failure Volcano Tornado
Fallon Paiute-Shoshone Tribe		
Drought Earthquake Epidemic Flood Terrorism	Infestations Extreme Heat Hail/Thunderstorms Severe Winter Windstorm Wildfire Hazmat	Landslides Expansive Soils Ground Failure Tsunami/Seiche Volcano Tornado

All jurisdictions ranked drought, earthquake, flood, and terrorism as high-risk hazards.

The remaining hazards excluded through the screening process were considered to pose no threat to life and property in the County due to the low likelihood of occurrence or the probability life and property would be significantly affected. Should the risk from these hazards increase in the future, the MJHMP would be updated to incorporate a vulnerability analysis for these hazards. The committee determined terrorism should be addressed, however due to the public nature of this document the risk will not be discussed in the vulnerability analysis or mitigation strategies.

The high and moderate ranked hazards will be carried through to the Risk Assessment and will be addressed in the Mitigation Strategy. The hazards with a “low” rating will not be carried through to the Risk Assessment or Mitigation Strategy, as currently and historically those hazards have occurred in unpopulated areas having little to no impact, measurable magnitude,

or feasible mitigation actions. The "low" ranked hazards will be profiled for future reference to monitor the possible impact of these hazards in relation to the growth within the County and increasing visitor appeal.

The County's Hazard Rating results generally correspond with ratings determined in the State Standard HMP. Earthquake and flood were also ranked high in the State Plan; however, drought and hazardous materials are ranked as medium in the State Plan, epidemic is ranked as low, and terrorism was not profiled.

Table 7: Combined Hazard Ranking

High Risk	Medium Risk	Low Risk
Drought	Infestations	Landslides
Earthquake	Extreme Heat	Expansive Soils
Epidemic	Hail/Thunderstorms	Ground Failure
Flood	Severe Winter	Tsunami/Seiche
Hazmat	Windstorm	Volcano
Terrorism	Wildfire	Tornado

5.2 Hazard Profile

The requirements for hazard profile, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Risk Assessment – Profiling Hazards

Profiling Hazards

Requirements §201.6(c) (2) (i): [The risk assessment **shall** include a] description of the location and extent of all natural hazards that can affect the jurisdiction. The plan **shall** include information on previous occurrences of hazard events and on the probability of future hazard events.

Element

- Does the risk assessment identify the **location** (i.e., geographic area affected) of each natural hazard addressed in the plan?
- Does the risk assessment identify the **extent** (i.e., magnitude or severity) of each hazard addressed in the plan?
- Does the plan provide information on **previous occurrences** of each hazard addressed in the plan?
- Does the plan include the **probability of future events** (i.e., chance of occurrence) for each hazard addressed in the plan?

Source: FEMA, March 2008

The specific hazards selected by the Planning Committee for profiling have been examined in a methodical manner based on the following factors:

- Nature
- History
- Location of future events
- Extent of future events
- Probability of future events

The hazards profiled for the County are presented in this section in alphabetical order not by level of importance or risk. Low-rated hazards were not profiled.

5.2.1 Drought

Planning Significance:	The County: High The City: High The Tribe: High

5.2.1.1 Nature

Drought is a normal, recurrent feature of virtually all climate zones, including areas of both high and low rainfall, although characteristics will vary significantly from one region to another. It differs from normal aridity, which is a permanent feature of the climate in areas of low rainfall. Drought is the result of a natural decline in the expected precipitation throughout an extended period, typically one or more seasons in length. Other climatic characteristics, such as high temperature, high wind, and low relative humidity, impact the severity of drought conditions.

Drought can be defined using both conceptual and operational definitions. Conceptual definitions of drought are often used to assist in the widespread understanding of drought. Many conceptual definitions portray drought as a protracted period of deficient precipitation resulting in extensive damage to agricultural crops and the consequential economic losses. Operational definitions define the beginning, end, and degree of severity of drought. These definitions are often used to analyze drought frequency, severity, and duration for given periods of time. Such definitions often require extensive weather data on hourly, daily, monthly, or other time scales and are used to provide a greater understanding of drought from a regional perspective. Four common definitions for drought are provided as follows:

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

A drought's severity depends on numerous factors, including duration, intensity, and geographic extent as well as regional water supply demands by humans and vegetation. Due to its multi-dimensional nature, drought is difficult to define in exact terms and poses difficulties in terms of comprehensive risk assessments.

Drought differs from other natural hazards in three ways:

- The onset and end of a drought are difficult to determine due to the slow accumulation and lingering effects of an event after its' apparent end
- The lack of an exact and universally accepted definition adds to the confusion of its existence and severity
- The impact of drought is less obvious and may be spread throughout a larger geographic area. These characteristics have hindered the preparation of drought contingency or mitigation plans by many governments

5.2.1.2 History

The County lies within the State's Northwestern Climate Division (1). In 2022, the U.S. Department of Agriculture (USDA) designated 13 counties in the State as Primary Natural Disaster Areas, including the County. According to the U.S. Drought Monitor, these counties suffered from a drought intensity value during the growing season of either:

- D2 Drought-Severe for eight or more consecutive weeks
- D3 Drought-Extreme or D4 Drought-Exceptional (USDA FSA 2022)

5.2.1.3 Location, Extent, and Probability of Future Events

The County is dependent on water largely from the Sierra via other counties delivered through a canal system. This canal system also recharges the groundwater aquifer, which feeds local wells. With decreases in precipitation, the canals would deliver a decreased amount of water as well as decreased water quality. Drought would affect the County economically due to the large amount of water usage for agriculture and the many homes on wells. Wells would need to be modified for a lower groundwater table and agriculture would require reduced water usage crops or water delivery systems to minimize water loss.

The U.S. Seasonal Drought Outlook forecasts improved drought conditions in 2023 due to high precipitation from the previous winter; however, predicting when this ongoing drought will end is nearly impossible. Since drought has been a recurring hazard in the past 100+ years, it is almost certain to affect the region on and off in the future.

Future Conditions:

Snow levels are expected to continue to rise in the future. The rising snow levels will result in a large fraction of winter precipitation falling as rain instead of snow. As a result of the predicted changing precipitation source, maintaining, and creating additional resources will become even more important for storing water supply (R.O. Anderson 2016).

5.2.2 Earthquake

Planning Significance:	The County: High The City: High The Tribe: High

5.2.2.1 Nature

An earthquake is a sudden motion or trembling caused by a release of strain accumulated within or along the edge of the earth's tectonic plates. The effects of an earthquake can be felt far beyond the site of its' occurrence. Earthquakes usually occur without warning and, after just a few seconds, can cause massive damage and extensive casualties. The most common effect of earthquakes is ground motion, or the vibration or shaking of the ground during the earthquake.

The severity of ground motion generally increases with energy released and decreases with distance from the fault or epicenter of the earthquake. Ground motion causes waves in the earth's interior, also known as seismic waves, and along the earth's surface, known as surface waves. Two kinds of seismic waves can occur. P (primary) waves are longitudinal or compressional waves similar in character to sound waves causing back-and-forth oscillation along the direction of travel (vertical motion). S (secondary) waves, also known as shear waves, are slower than P waves and cause structures to vibrate from side to side (horizontal motion).

Surface waves include Raleigh waves and Love waves. These waves travel more slowly and typically are significantly less damaging than seismic waves.

In addition to ground motion, several secondary hazards can occur from earthquakes such as surface faulting, the differential movement of two sides of a fault at the earth's surface. Displacement along faults, both in terms of length and width, varies but can be significant (e.g., up to 20 feet), as can the length of the surface rupture (e.g., up to 200 miles). Surface faulting can cause severe damage to linear structures including railways, hwys, pipelines, and tunnels.

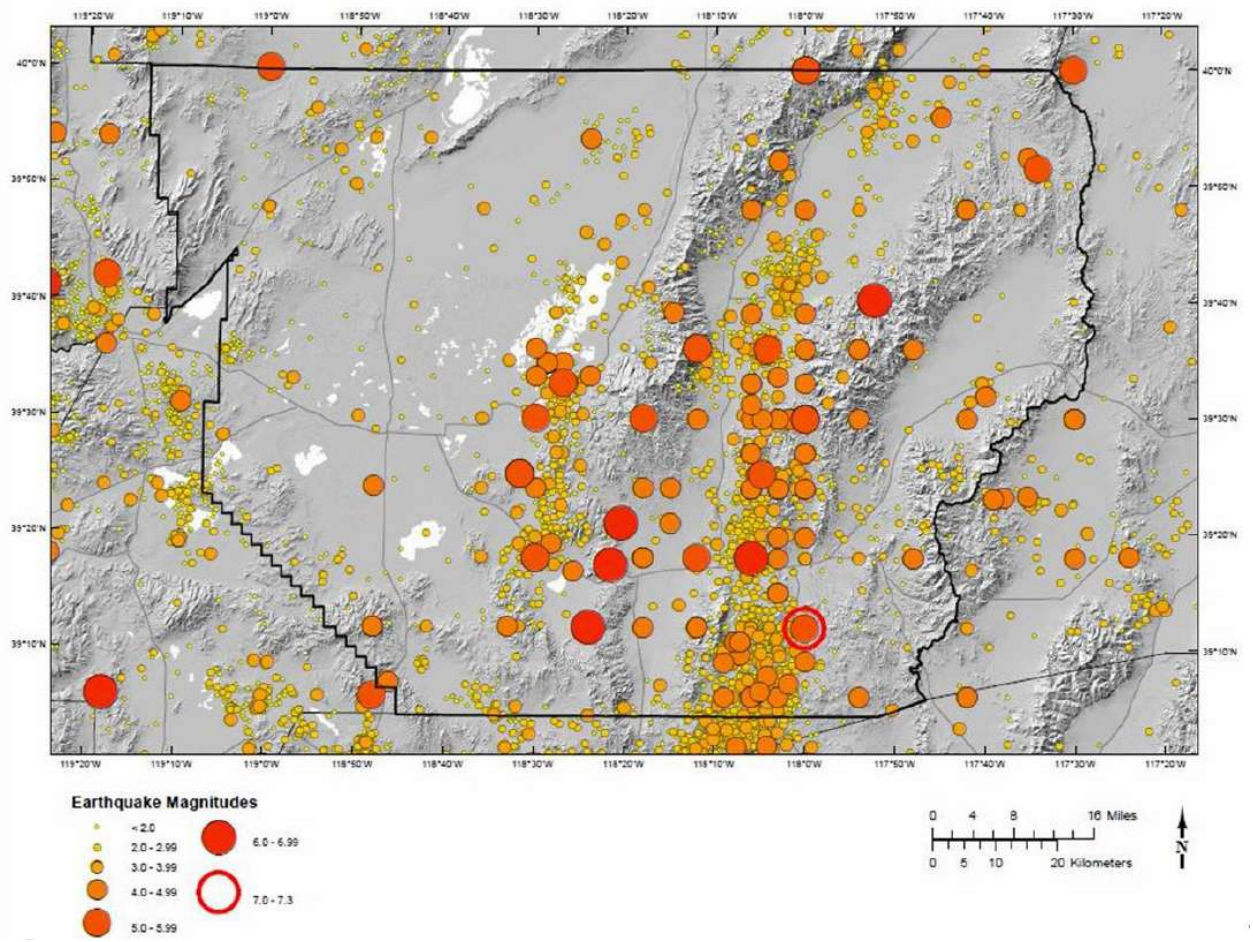
Earthquake-related ground failure due to liquefaction is another secondary hazard. Liquefaction occurs when seismic waves pass through saturated granular soil, distorting its granular structure and causing some of the empty spaces between granules to collapse. Pre-water pressure may also increase sufficiently and cause the soil to behave like a fluid for a brief period, causing deformations. Liquefaction causes lateral spreads (horizontal movements of commonly 10 to 15 feet, but up to 100 feet), flow failures (massive flows of soil, typically hundreds of feet, but up to 12 miles), and loss of bearing strength (soil deformations causing structures to settle or tip). Liquefaction can cause severe damage to property.

The effects of earthquake waves at the surface can be measured using the Modified Mercalli Intensity (MMI) Scale, which consists of arbitrary rankings based on observed effects, or the Richter Magnitude Scale, a mathematical basis expressing the effects of an event in magnitude.

5.2.2.2 History

The State is ranked third in the U.S. for highest number of large earthquakes. The Sierra Nevada-Great Basin seismic belt includes earthquakes along the eastern side of the Sierra Nevada and appears to be a northern continuation of the Eastern California seismic belt. The Central Nevada seismic belt, shown in Figure 3, which trends north south in the west-central part of the state, includes the largest historic earthquakes in the State in the 20th century. The County sits within both belts.

Figure 3: Earthquake Activity in Churchill County from 1872-2014



The table below provides the historical earthquakes (greater than 4.0 in magnitude) in the County.

Table 8: Historical Earthquakes greater than 4.0 magnitude in Churchill County

Date	Magnitude	Nearest Community	Effects	MMI
May 30, 1868	6.0	Virginia City	Possibly two earthquakes, public concern	VI
Dec 27, 1869	6.4, 6.2	Virginia City	Content dam, wall cracks	VI+
1903	6.0	Wonder	Surface rupture	VI
Oct. 3, 1915	7.3	Winnemucca	Surface rupture, building	VI
April 12, 1930	4.5	Fernley	Cracked Chimneys, plaster	VI
Dec 20, 1932	7.1	Gabbs	Surface rupture, chimney damage	VI
June 25, 1933	6.0	Wabuska	Building and chimney damage	VI+

Date	Magnitude	Nearest Community	Effects	MMI
July 6, 1954	6.2, 6.1	Fallon	Building and plaster damage	VII
Aug 23, 1954	6.8	Fallon	Building and chimney damage	VII
July 6, 1954	6.5	Fallon	Building and plaster damage	VI
Dec 16, 1954	7.1, 6.9	Fallon	Building and plaster damage	VI
March 23, 1959	6.3	Dixie Valley	Building and plaster damage	VI
May 17, 1993	4.0	Dixie Valley	Cracked chimneys and plaster	VI

The County has been struck by some of the largest historical earthquakes in the State and has been shaken by a potentially damaging earthquake approximately every decade. Earthquake activity has decreased since 1960, but the County cannot become complacent. Strong shaking from earthquakes will continue and preparedness for this shaking is critical for decreasing injuries, economic impact, and personal losses.

Earthquakes have been felt in the County throughout its history, and damage has occurred from at least five major events, in 1915, 1932, and four times in 1954. Damage from the 1954 earthquakes was some of the severest to occur in the State, challenging communities like Fallon to mount an emergency response and recovery effort. More than 30 buildings were damaged by these events and many emergency repairs were completed. Extensive damage occurred to the irrigation system in Lahontan Valley resulting in the first presidential emergency declaration for an earthquake disaster. Many of the effects from these earthquakes are risks still existing today, so reviewing these earthquakes for a sense of what could happen is instructive.

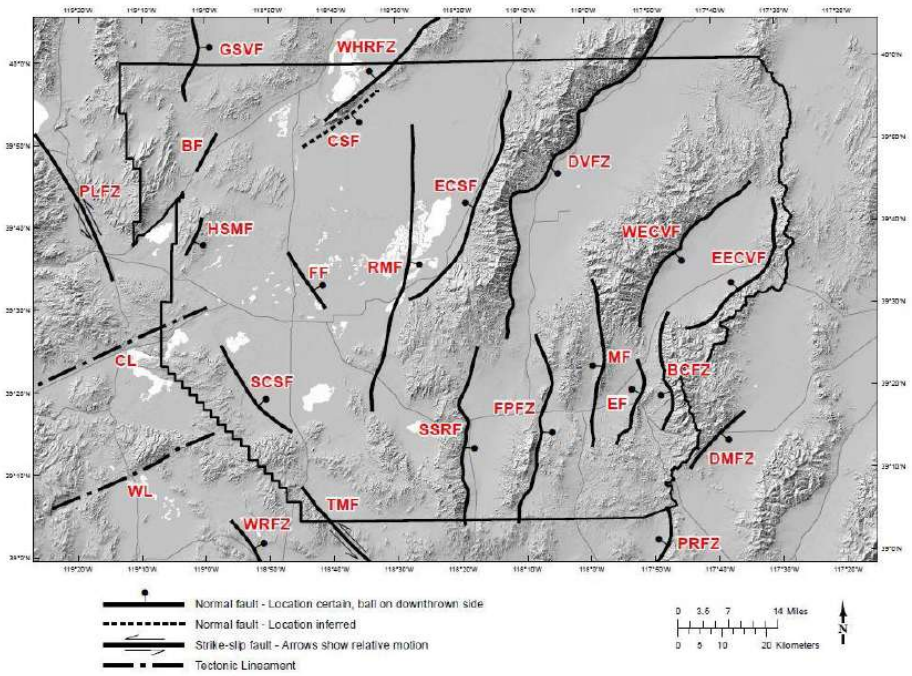
A seismicity map of the County (1872-2014) is shown in Figure 3. The central part of the map is dominated by earthquakes related to the 1954 earthquake sequence, including hundreds of aftershocks. Outside of this belt of earthquakes, a high level of background seismicity occurs throughout the U.S.

5.2.2.3 Location, Extent, and Probability of Future Events

The City would have the greatest impact from an earthquake because of its high population density. Figure 4 provides a map of the major faults in the County. The map in Appendix B shows greater detail of the fault lines in the County. No fault lines occur within the City.

The calculated probabilities determine a moderate chance of a damaging earthquake in the County. The probabilities of having a magnitude 6.0 or larger earthquake within 31 miles and 50 years in the County ranges from 16% to 35%. The chances of having a MMI VII damage within the county within 50 years ranges from 14% to 35%; at these levels of damage, an emergency response would be required (dePolo 2016).

Figure 4: Schematic Major Fault Map of Churchill County



LEGEND:

*Bradys fault (**BF**), Buffalo Creek fault zone (**BCFZ**), Carson Sink fault (**CSF**), Desotoya Mountains fault zone (**DMFZ**) , Dixie Valley fault zone (**DVFZ**),1954 Historical Rupture,Eastern Carson Sink fault (**ECSF**),Eastern Edwards Creek Valley fault (**EECVF**), Eastgate fault (**EF**),Fairview fault (**FPFZ**),1954 Historical Rupture, Fallon fault (**FF**), Granite Springs Valley fault (**GSVF**), Holocene, Hot Springs Mountains fault (**HSMF**), Middlegate fault (**MF**), Paradise Range fault zone (**PRFZ**), Rainbow Mountain fault (**RMF**), Historical Rupture, Sand Springs Range fault (**SSRF**), Southwest Carson Sink fault (**SCSF**), Wassuk Range fault zone (**WRFZ**), late Holocene, West Humboldt Range fault zone (**WHRFZ**), Western Edwards Creek Valley fault (**WECVF**), lineament (**CL**), Pyramid Lake fault zone (**PLFZ**), Terrill Mountains fault (**TMF**), Wabuska lineament (**WL**)*

The Nevada Earthquake Safety Council, in part through the services of the Nevada Bureau of Mines and Geology (NBMG) and the Nevada Seismological Laboratory, provides assistance of earthquake risk assessment and earthquake mitigation activities for the State. The Planning Committee used the Nevada Earthquake Risk Mitigation Plan (NERMP) to identify mitigation strategies.

The Executive Summary of the NERMP states the State is in earthquake country, ranking third in the U.S. in the number of major earthquakes. Since the 1850's, 62 earthquakes have occurred in the State with potentially destructive magnitudes of 5.5 (Richter Scale) or greater. The State is a national leader in population growth, and the risk of harm and loss from earthquakes increases proportionally with population and development. Earthquakes are expected to continue to occur in the State, some of which will strike growing urban centers and communities.

Future Conditions:

The extent & probability for the County as shown in Table 9 was provided by the NBMG and is the probability of earthquakes of various magnitudes occurring within 50 years within 50 kilometers. This probability is used for the entire county as 90 percent of the population lives within 50 kilometers of the City.

Table 9: Magnitude Ranks by Probability in Multiple Communities in Churchill County

Community	Rank by Probability			
	M>5.5	M>6.0	M>6.5	M>7.0
Fallon	52%	32%	20%	8%
Hazen	50%	30%	20%	7%
I80 and HWY 95	30%	16%	9%	2%
Lahontan Dam	55%	35%	22%	9%
Dixie Valley	45%	27%	18%	5%
Eastgate	60%	35%	23%	7%

Table 10: Probabilities of Modified Mercalli Intensity Ground Motions occurring in Churchill County based on USGS Hazard Curves

Earthquake Intensity*	Description	50-Year Probability
VI	Cracks in walls and causes people to be frightened	11-59%
VII	Chimneys damaged and an emergency response is necessary	14-33%
VIII	Weak buildings to partially collapse and a recovery effort should be mounted	<1-8%
IX	Damage to some modern buildings	<1-2%

**Intensity VI – cracks in walls and causes people to be frightened; Intensity VII – chimneys damaged, and an emergency response is necessary; Intensity VIII levels – weak buildings to partially collapse and a recovery effort should be mounted; Intensity IX levels – damage to some modern buildings*

The probabilities presented in Table 10 indicate a moderate chance of the County experiencing MMI VI or VII shaking levels within a 50-year period. These probabilities also correspond to the chances of the county having an emergency response to an earthquake.

5.2.3 Epidemic

Planning Significance: The County: Medium
The City: High
The Tribe: High

5.2.3.1 Nature

A disease is a pathological (unhealthy or ill) condition of a living organism or part of the organism characterized by an identifiable group of symptoms or signs. Disease can affect any living organism, including people, animals, and plants. Disease can directly (via infection) and indirectly (via secondary impacts) harm these living things. Some infections can cause disease in both people and animals.

An epidemic is a disease affecting an unexpected number of people or sentinel animals at one time (note: an epidemic can result from even one case of illness if the illness is unheard of in the affected population, i.e., smallpox).

Infectious diseases caused by the entry and growth of microorganisms is of great concern for human health. Most, but not all, infectious diseases are communicable. They can spread by coming into direct contact with someone infected with the disease, someone in a carrier state who is not sick at the time, or another living organism carrying the pathogen. Disease-producing organisms can also be spread by indirect contact with something a contagious person or other

carrier has touched and contaminated, like a tissue, doorknob, or another medium (e.g., water, air, food).

According to the Centers for Disease Control and Prevention (CDC), during the first half of the twentieth century, steady progress was made against infectious diseases in humans via improved water quality and sanitation, antibiotics, and inoculations. The incidences and severity of infectious diseases such as tuberculosis, typhoid fever, smallpox, polio, whooping cough, and diphtheria were all significantly reduced during this period. Unfortunately, antibiotics began to lose their effectiveness against infectious disease (e.g., Staphylococcus aureus); new strains of influenza emerged in China and spread rapidly around the globe; sexually transmitted diseases resurged; new diseases were identified in the U.S. and elsewhere (e.g., Legionnaires' disease, Lyme disease, toxic shock syndrome, and Ebola hemorrhagic fever); acquired immunodeficiency syndrome (AIDS) appeared; and tuberculosis (including multidrug-resistant strains reemerged (Centers for Disease Control and Prevention 1998).

In a 1992 report titled *Emerging Infections: Microbial Threats to Health in the United States*, the Institute of Medicine (IOM) identified the growing links between U.S. and international health and concluded emerging infections are a major and growing threat to U.S. health. An emerging infectious disease is one that has newly appeared in a population or is known for some time but is rapidly increasing in incidence or geographical range. Emerging infectious diseases are a product of modern demographic and environmental conditions, such as global travel, globalization, centralized processing of the food supply, population growth, and increased urbanization.

In response to the threat of emerging infectious diseases, the CDC launched a national effort to protect the U.S. public in a plan titled *Addressing Emerging Infectious Disease Threats*. Based on the CDC's plan, major improvements to the U.S. health system have been implemented, including improvements in surveillance, applied research, public health infrastructure, and prevention of emerging infectious diseases (Centers for Disease Control and Prevention 1998).

A follow-up report from the IOM, titled *Microbial Threats to Health: Emergence, Detection, and Response*, noted the impact of infectious diseases on the U.S. has only grown in the ten years prior to the report, and public health and medical communities remain inadequately prepared. Further improvements are necessary to prevent, detect, and control emerging, as well as resurging, microbial threats to health. The dangers posed by infectious diseases are compounded by other important trends:

- The continuing increase in antimicrobial resistance
- The diminished capacity of the U.S. to recognize and respond to microbial threats
- The intentional use of biological agents to do harm (Institute of Medicine 2003)

The CDC has established a national list of more than 50 reportable diseases. A reportable disease, by law, must be reported by health providers to federal, state, or local public health officials. Reportable diseases are those of public interest by reason of their communicability, severity, or frequency. The long list includes diseases such as:

- AIDS
- Anthrax
- Botulism
- Cholera
- Diphtheria
- Encephalitis
- Gonorrhea
- Hantavirus pulmonary syndrome
- Hepatitis (A, B, C)
- HIV (pediatric)
- Legionellosis
- Lyme disease
- Malaria
- Measles
- Mumps
- Plague

- Polio (paralytic)
- Rabies (animal and human)
- Rocky Mountain spotted fever
- Rubella (also congenital)
- Salmonellosis
- Severe Acute Respiratory Syndrome (SARS)
- Streptococcal disease (Group A)
- Streptococcal toxic-shock syndrome
- Trichinosis
- Tuberculosis
- Typhoid fever
- Yellow fever (CDC 2023)

Many other hazards, such as floods, earthquakes, or drought, may significantly increase the frequency and severity of diseases. These hazards can affect basic services (e.g., water supply and quality, wastewater disposal, electricity), the availability and quality of food, and the public and agricultural health system capacities. As a result, concentrated areas of diseases may result and, if not mitigated right away, increase, potentially leading to large losses of life and damage to the economic value of the area's goods and services.

5.2.3.2 History

The influenza pandemic of 1918 and 1919, known as the Spanish Flu, had the highest mortality rate in recent history for an infectious disease. More than 20 million persons were killed worldwide, some 500,000 of which were in the U.S. alone (CDC, October 1998). More recent incidences of major infectious diseases affecting people in the U.S. include the following:

- **H1N1 -** an influenza strain first recognized in Mexico entered the U.S. in Southern California in April 2009. H1N1 was recognized as a worldwide pandemic by the World Health Organization in May 2009. H1N1 varies from other influenzas because it does not seem to affect populations born after 1950 due to the group's immunity to a similar strain. The CDC has taken an aggressive approach to this highly contagious strain and is in the process of inoculating the U.S. public through vaccinations. Although H1N1 has a less than 1% mortality rate, due to its' high contagion rate this could lead to a significantly higher than normal number of deaths (CDC 2009)
- **West Nile Virus (WNV)** - a seasonal infection transmitted by mosquitoes caused an epidemic in 1999 from 64 cases to 4,156 reported cases, including 284 deaths. However, due to communities' aggressive approach to mosquito control the number of cases dropped to 1356 with 44 deaths by 2008 (CDC, 2009)
- **SARS** - estimated to have killed 774 and infected 8,098 worldwide. In the U.S., 175 suspected cases and eight confirmed cases occurred. All cases traveled to other parts of the world, although no deaths have been reported (CDC, 2009)
- **Norovirus** – CDC estimates 23 million cases of acute gastroenteritis are due to norovirus infection, and at least 50% of all food borne outbreaks of gastroenteritis can be attributed to norovirus (CDC, 2009)
- **Escherichia coli (E. coli)** - a large and diverse group of bacteria. Although most strains of E. coli are harmless, others can make you sick. Some kinds of E. coli can cause diarrhea, while others cause urinary tract infections, respiratory illness, pneumonia, and other illnesses. Experts speculate about 70,000 infections of E. coli O157 each year in the U.S. (CDC, 2009)
- **COVID-19** - The COVID-19 pandemic of 2019 to 2022 was the most recent pandemic event to impact the County, State, and U.S. Approximately seven million persons were killed worldwide, with more than one million in the U.S. alone (World Health Organization 2023). Within Churchill County, 123 deaths occurred. Figure 4 shows reported cases of Covid-19 per 100,000 people per capita within the State. The County had 30,640 cases per 100,000 people (30.6%) (New York Times 2023)

Figure 5: Covid-19 Cases per capita in the State (2019-2023)

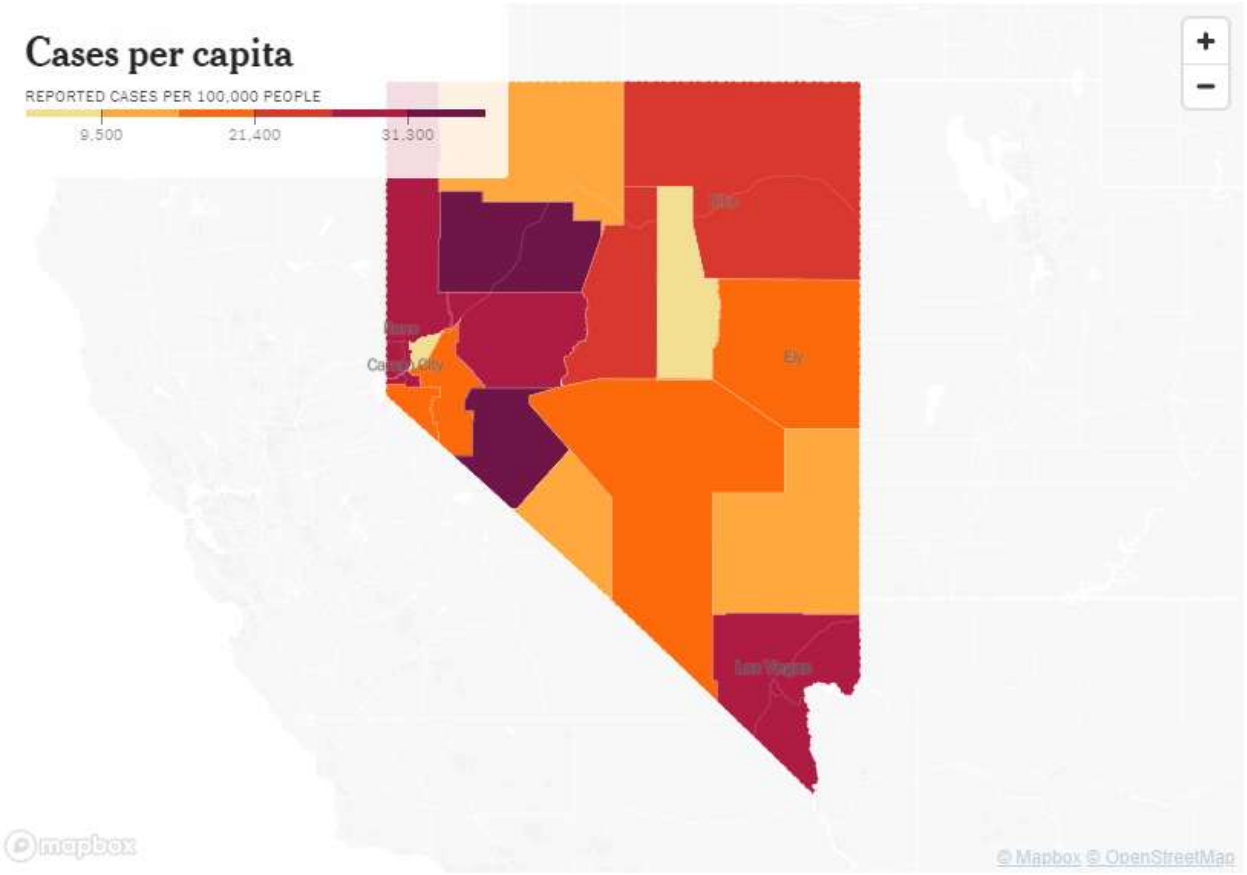


Table 11: Historic Occurrences of Epidemics Registered in the State

Date	Details
February 1992	Cholera outbreak confirmed. At least 26 passengers from Aerolineas Argentinas Flight 386 brought a cholera outbreak to Las Vegas where 10 showed symptoms of the disease. Cholera or cholera-like symptoms developed in 67 passengers.
Spring 2000	Five cases of the measles confirmed. Outbreak identified and confirmed, Clark County Health District Office of Epidemiology worked with the Immunization Clinic and the media to alert the community about the prevention of the spread of the disease.
October 2004	Norovirus confirmed at a major public accommodation facility on the Strip. Details regarding the spread of this disease and the exact number affected are still under investigation and pending at time of print of this plan.
2004	40 states, including the State, reported a total of 2,151 cases of WNV this year.
March 2007	A norovirus outbreak in Las Vegas sickened at least 215 inmates and 41 staff members at the Clark County Detention Center. None were hospitalized.

Date	Details
April 2009	H1N1 virus confirmed by the WHO as a worldwide epidemic. The CDC is currently working on vaccinating the public for the 2009-2010 flu seasons.
October – December 2015	Norovirus outbreak caused more than 2,000 staffers, faculty, and students in the Washoe County School District to be sickened.
2015	Two individuals tested positive for WNV in Washoe County.
2015	Nevada healthcare personnel treated 11 cases of Measles.
2019-2023	7,632 individuals tested positive for Covid-19. 123 of those resulted in death.

5.2.3.3 Location, Extent, and Probability of Future Events

An epidemic in the County would affect a regional response requiring coordination among Banner Churchill Community Hospital, the County, neighboring counties, and state and federal agencies. Segments of the population at highest risk for contracting an illness from a foreign pathogen are the very young, the elderly, or individuals who currently experience respiratory or immune deficiencies, those of which are present within the County.

Due to the wide variation in disease characteristics, the warning time for a disease disaster can vary from no time to months, depending upon the nature of the disease. No warning time may be available due to an extremely contagious disease with a short incubation period, particularly if combined with a terrorist attack in a crowded environment. However, agencies in place have capabilities to prevent, detect, and respond to these types of diseases, such as the CDC, and the Nevada State Health Division. This provides a positive, balancing influence on the overall outcome of a disease disaster event.

The probability and magnitude of an epidemic is difficult to evaluate due to the wide variation in disease characteristics, such as rate of spread, morbidity and mortality, detection and response time, and the availability of vaccines and other forms of prevention. A review of the historical record (Table 11) indicates disease related disasters do occur in humans with some regularity and varying degrees of severity. Growing concern about emerging infectious diseases as well as the possibility of a bioterrorism attack exist.

Epidemics constitute a significant risk to the population of the State, particularly as it relates to the frequency in which the County population travels and the proximity of Las Vegas and Reno's tourist population. Of highest concern is in the Reno area, in various entertainment venues, and Reno/Tahoe International Airport. The transient nature of the Washoe County population, coupled with dense population gatherings, increases the potential for an epidemic as well as for its' spread into neighboring counties such as the County.

Future Conditions:

As of the development of this plan, there is a man-made policy hazard underway. Specifically, there are hundreds of thousands of migrants entering the U. S illegally every year and they are not being adequately screened or quarantined before being released into the general U.S. population. They are arriving from 160 different countries, some as far away as China and Afghanistan. "In the end, it is hard to completely ignore the health risks posed by those whose entry into the country avoids medical examination and treatment. Whether you sit on the "build a wall" end of the spectrum or the "they're just seeking a better life" end, accepting that treatable major health risks are freely entering into our general population is an unwise strategy..." (Peter Edelstein 2017).

5.2.4 Extreme Heat

Planning Significance:	The County: Medium The City: Medium The Tribe: Medium

5.2.4.1 Nature

Extreme heat is a period of high heat and humidity with temperatures above 90 degrees for at least two to three days. In extreme heat, your body works extra hard to maintain a normal temperature, which can lead to severe side effects, including death. Extreme heat is responsible for the highest number of annual deaths among all weather-related hazards. Older adults, children, and sick or overweight individuals are at a greater risk from extreme heat (Ready.gov 2023).

5.2.4.2 History

In the State and across the County, hotter and more frequent heat waves have been trending. The State is home to the U.S.'s fastest warming city, Las Vegas (Natural Resources Defense Council 2021). In the State, average temperatures have been increasing, and eight of the 10 warmest years since 1895 have occurred between 2000 and 2020. Although temperatures throughout the State are increasing, the rate of warming is not the same everywhere. Urban areas, for example, are getting hotter faster than rural areas. Average temperatures are expected to increase in all seasons, but the warming is likely to be greatest in the summer and fall. Higher temperatures affect multiple sectors including public health, agriculture, hospitality, environmental, and water resources.

5.2.4.3 Location, Extent, and Probability of Occurrence

Future Conditions

The climate of the earth has been evolving for millennia and will continue to do so. Volatility in the severity of weather-related events was considered during the Hazard Identification and Screening process in the development of this plan. There were no changes in the ranking of the hazards in sections 5 and 6 nor in the effort to address the same issues due to this phenomenon.

Increasing temperatures would have the highest impact on urban areas like the City. In 2021, Fallon broke its all-time high with temperatures topping 109°F, according to the NWS in Reno. The previous record was set on Aug. 8, 1981, (Lahontan Valley News 2021).

5.2.5 Flood

Planning Significance:	The County: High The City: High The Tribe: High

5.2.5.1 Nature

Flooding is defined by the NFIP as a general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties from:

- Overflow of inland or tidal waters
- Unusual and rapid accumulation or runoff of surface waters from any source

- Mudflow (a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water)
- Collapse or subsidence of land along the shore of a lake or similar body of water because of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels result in a flood as defined above

Floodplains are lowlands adjacent to water bodies subject to recurring floods. Floods are natural events considered hazards only when people and property are affected.

Nationwide, floods result in more deaths than any other natural hazard. Physical damage from floods include the following:

- Inundation of structures, causing water damage to structural elements and contents
- Erosion or scouring of stream banks, roadway embankments, foundations, footings for bridge piers, and other features
- Impact damage to structures, roads, bridges, culverts, and other features from high-velocity flow and from debris carried by floodwaters. Such debris may also accumulate on bridge piers and in culverts, increasing loads on these features or causing overtopping or backwater effects
- Destruction of crops, erosion of topsoil, and deposition of debris and sediment on croplands
- Release of sewage and hazardous or toxic materials as WWTP are inundated, storage tanks are damaged, and pipelines are severed

Floods also cause economic losses through:

- Closure of businesses and government facilities
- Communications disruptions
- Water and sewer service disruptions
- Excessive expenditures for emergency response
- Normal community function disruption

In the County, flooding is most associated with:

- Rain or snow “atmospheric rivers” in the Sierra, flooding downstream rivers including the Truckee, Carson, and associated canals/tributaries
- Localized thunderstorms in the summer associated with the monsoon weather pattern which produces flash flooding in areas not normally prone to flooding

The aridity of the County makes the area dry except during and shortly after these storms. Flash floods are generally understood to involve a rapid rise in water level, high velocity, and large amounts of debris, which can lead to significant damage including:

- The uprooting of trees
- Undermining of buildings and bridges
- Scouring of new channels

The intensity of flash flooding is a function of the intensity and duration of rainfall, steepness of the watershed, stream gradients, watershed vegetation, natural and artificial flood storage areas, and configuration of the streambed and floodplain.

In areas where alluvial fans are present, the flow paths of flash floods lack definition. Flow depths with alluvial fan flooding are generally shallow with damage resulting from:

- Inundation
- Variable flow paths

- Localized scour
- Deposition of debris

The predictability of winter “rain or snow” river floods has increased in the past decade. Often a preliminary heads-up can be provided from the NWS to emergency managers four to eight days in advance, with more detailed river and flood predictions one to three days ahead. Summer flash floods, however, are far less predictable and often occur with only 0-30 minutes lead time based on radar detections. Days of heightened flash flood risk can be forecast, usually one to three days in advance but are just general outlooks.

Canal and Dam Failures

Canal or dam failures involve unintended releases or surges of impounded water resulting in downstream flooding. The high-velocity, debris-laden wall of water released from dam failures results in the potential for:

- Human casualties
- Economic loss
- Lifeline disruption
- Environmental damage

Failures may involve either the total collapse of a dam, or other hazardous situations such as:

- Damaged spillways
- Overtopping from prolonged rainfall
- Unintended consequences from normal operations

Severe storms with unusually high amounts of rainfall within a drainage basin, earthquakes, or landslides may cause or increase the severity of failure. Factors causing failure may include natural or human-caused events, or a combination of both. Dam failures usually occur when the spillway capacity is inadequate, and water overtops the dam. Piping is an event where water drills its way through a weak spot in the earth and fill. Piping causes internal erosion through the dam foundation and is another factor in a dam failure. Structural deficiencies from poor initial design or construction, lack of maintenance or repair, or gradual weakening from aging are factors contributing to this hazard.

5.2.5.2 History

Flooding within the County portion of the Carson River Watershed is very different from the upstream reaches due to the Reservoir. The Reservoir was not constructed as a flood control facility and is not recognized by FEMA or the State as a flood control structure, but it does help alleviate potential flooding impacts to the County provided adequate storage is available. Historically, severe flooding has been mitigated via proactive “precautionary releases” of water from the Reservoir, orchestrated by the BOR. These releases create more reservoir flood storage, and the procedures are part of a BOR Emergency Operations Plan for the Lahontan Dam. The decision to conduct precautionary releases is based upon predictive models of weather impacts upon the current snowpack in the Carson River watershed. In addition, the county constructed two weirs along the V-line canal in 2017 and 2023, respectively, located just below Lahontan Reservoir. These weirs serve to significantly enhance the capacity for precautionary water release below the dam.

Flooding from the Carson River in the County is typically localized; however, many homes and businesses have been constructed within the floodplain area of the Carson River and can be directly impacted during flood events. Storm water run-off can be problematic in urban areas

and include negative impacts to water quality. Public concern regarding the association of storm water and wastewater problems based on health considerations subsists.

Table 12 provides historical flooding in and near the County and the City. Flooding to areas above the Lahontan Dam and outside of the County is included as they demonstrate how the Reservoir system can be impacted by floods.

Table 12: Historical floods in the Carson River Drainage

Date	Location	Description
3/1907	Fallon	Carson River flood - Carson Valley flooded with agriculture and homes impacted
1/1914	Churchill	Carson River flood - Homes impacted
3/1928	Churchill	Little damage occurred
6/1983	Fallon	Late spring runoff produced flood conditions in the Fallon area. Flooding was accentuated by floodwater releases from the Reservoir
6, 1984	Dayton	Isolated heavy thunderstorms caused flash flooding, which closed Hwy 50
3, 1995	Storey County, Carson city, Douglas County, Lyon County	Six Mile Canyon, between Virginia City and U.S. Hwy 50, was closed due to flash flooding caused by very heavy rainfall. In Carson City, flash flooding caused water more than three feet deep in many parts of the city, stranding people in their cars. More than $two million in damage due to small stream flooding occurred in Douglas County, where four homes and eight businesses were damaged in Genoa. In northern Douglas County, the Johnson Lane area sustained major flood damage. More than $300,000 in damages to homes, drainage structures, and roads. Heavy rain in the northern Pine Nut Mountains caused the Hughes Gavel Pit near Dayton to flood, causing about $300,000 damage to the pit and mining equipment. In addition, a subdivision about five miles northeast of Dayton flooded, causing about $60,000 damage
6, 1995	Carson City and Douglas County	Strong thunderstorms dropped heavy rain across western, NV, causing flash flooding in Carson City and Douglas County. Spotters in these areas reported rainfall rates of from 1” to 2” per hour. About a dozen homes were damaged, as basements, garages, and yards were flooded, and many roads were inaccessible. U.S. 395 through Gardnerville was closed for many hours
12, 1995	Carson City, Gardnerville, Dayton	Many roads closed and some businesses flooded due to very heavy rainfall
2, 1996	Dayton, Fernley, Stagecoach, Silver Springs	Several homes and trailers flooded or needed to be sandbagged. Extensive damage to one of the State’s oldest cemeteries in Dayton
6, 1996	Fallon	A strong, cold, low pressure system brought thunderstorms to the eastern Sierra. Up to half inch of rainfall in fewer than 30 minutes in the Fallon area with resultant widespread urban flooding

Date	Location	Description
1, 1997	Carson Basin	Extremely heavy rainfall combined with snow levels above 10,000 feet and complete melt-off of a heavy low-elevation snow pack caused moderate to severe flash flooding and small stream flooding on streams coming out of the mountains throughout the Carson Basin. The County estimated to have sustained $345K in damages (per CWSD)
7, 1998	14 miles N of Fallon (Upsal Hogback)	Just north of Upsal Hogback, about 14 miles north Fallon, about 60 4th grade children were camped with their teachers on a dry lakebed on a desert survival overnight camping trip. Their camp was flooded to a depth of 4" to 6" at about 10pm from an extremely heavy downpour. No injuries occurred, but children and teachers were forced to carry all their soaked camping gear back to their buses more than two miles away in complete darkness in the middle of the night
12, 2005, 1, 2006	Northern Nevada	FEMA, 1629, New Year's Flood – Flooding occurred in Carson City, Douglas, Elko, Lyon, Storey, and Washoe Counties
1, 2008	Fernley	Truckee Canal breach caused extensive flooding. FEMA 1738, Fernley Flood
10, 2010	Fallon	Two separate heavy rain events caused ponding of water to more than one foot deep at the Ideal Mobile Home Park. Other areas of Fallon had periodic standing water and minor flooding due to poor drainage
6, 2015	Fallon	Heavy rain events caused flooding on Keddie Street, Court Street, Venturacci Lane, Taylor Street, and A Street. In some residences, water was up to the garage doors
5, 2017	Churchill County	In reaction to severe snow runoff conditions, officials from the County, City, and State joined forces to construct a weir along the V-line canal, substantially boosting the capability for precautionary water release below the dam. Unfortunately, the water diversion caused flood damage to a US Navy training range.
Spring, 2023	Churchill County	2023 was a repeat of the 2017 flood scenario. Due to the success of the first V-line weir, a second larger weir was built next to it. The US Navy training range once again experienced flood damage.

Canal and Dam Failure

The Truckee Canal breach in Fernley occurred in January 2008. No dam failures have occurred in Churchill County (Nevada Gazetteer 2023).

Table 13: Dams in Churchill County.

Dam	Location
Carson Diversion Dam	Carson River Below Lahontan Dam
Lahontan Dam	Lahontan Reservoir
Sheckler Dam	Sheckler Reservoir
S Line Dam (Coleman Rd. Diversion Dam)	Coleman Road
Stillwater Point Dam	Foxtail Lake

5.2.5.3 Location, Extent, and Probability of Future Events

Flooding, whether localized or basin-wide, is a common phenomenon in the Carson River Watershed.

In 2008 the CWSD, working with the State, FEMA, and the Carson River Coalition, developed a regional floodplain management plan. This plan was formally adopted by all five counties along the Carson River, including the County. The main goals of the plan are to help protect community members from flooding hazards, reduce flood-related costs, lower flood insurance rates, and to provide proactive strategies for floodplain management to be applied regionally and locally. The CWSD is a FEMA Cooperating Technical Partner and is working with all counties in the watershed, the State, and other organizations to:

- Develop workable, locally approved approaches to reducing flood hazards
- Provide outreach to community members
- Developing projects to address incorrect modeling and mapping data on the flood insurance rate maps (FIRMs)

Floods are described in terms of their extent (including the horizontal area affected and the vertical depth of floodwaters) and the related probability of occurrence. Flood studies often use historical records, such as stream flow gages, to determine the probability of occurrence for floods of different magnitudes. The probability of occurrence is expressed as a percentage for the chance of a flood of a specific extent occurring in any given year.

Factors contributing to the frequency and severity of flooding include the following:

- Rainfall intensity and duration (or warm snow in a pineapple express storm)
- Antecedent moisture conditions
- Single event, warm rain on Sierra snowpack, resulting in premature and rapid melting of the snowpack (also known as pineapple express condition)
- Watershed conditions, including steepness of terrain, soil type, amount and type of vegetation, and density of development
- The existence of attenuating features in the watershed, including natural features such as swamps and lakes and human-built features such as dams
- The existence of flood control features, such as levees and flood control channels,
- Velocity of flow
- Availability of sediment for transport, and the erodibility of the bed and banks of the watercourse

These factors are evaluated using both:

- A hydrologic analysis to determine the probability a discharge of a certain size will occur
- A hydraulic analysis to determine the characteristics and depth of the flood results from discharge

The magnitude of flood used as the standard for floodplain management in the U.S. is a flood having a one percent probability of occurrence in any given year. This flood is also known as the 100-year flood or base flood. The most readily available source of information regarding the 100-year flood is the system of FIRMs prepared by FEMA. These maps are used to support the NFIP. The FIRMs show 100-year floodplain boundaries for identified flood hazards. These areas are also referred to as ‘Special Flood Hazard Areas’ and are the basis for flood insurance and floodplain management requirements. The FIRMs also show floodplain boundaries for the 500-year flood, which is the flood having a 0.2 percent chance of occurrence in any given year. FEMA has prepared a FIRM for the County, dated 2009, used by the County Floodplain Manager to create the flood map in Appendix B.

The river below the Lahontan Dam is very different from the reaches above the reservoir due to the Newlands Irrigation Project and associated irrigation canals. Much of the flooding problems in the area are the result of alluvial fan flooding and stormwater drainage issues. Bafford Bridge has been identified by the County as a flood hazard due to low capacity and sediment clogging. The river corridor is highly urbanized and approximately 50% of the property along the river has homes near the channel.

The slope in and around the City is very flat and therefore a flood impacts a large area. Additionally, the County has a high water table, in some cases up to one ft underground. In the case of flooding, the slope of the underground is changed from its normal flow towards Carson River to flooding away from the river. This impacts the wells, septic system leach fields, and sewer systems and results in pesticides, fertilizers, and hormones from agriculture and sewer system water ending up in shallow wells.

Future Conditions:

Due to the construction of the two new weirs along the V line canal, and the successful demonstration of flood mitigation operations by the BOR using precautionary releases from Lahontan Reservoir, the County, City, Carson Water Subconservancy, and FEMA are in the process of revising the County and City FIRMs. The revision is expected to completely remove the 100 year flood zone from the County.

Dam failure would direct water into the canal system, causing heavy damage. A failure of the Lahontan dam would be extensive along the Carson River drainage and impact the entire City and most of the residents of the County as major hwys would be impacted. The Committee felt a low rate of probability for dam failure exists. A map is included in Appendix B with dam locations.

National Flood Insurance Program:

The County participates in the NFIP but not in the Community Rating System (CRS); however, the building department works closely with the public to ensure constructure standards are met and a good understanding of impacts from flooding and measures to minimize impacts exist. The County does not permit building in the floodway.

The two basic components to the NFIP program include:

- Insurance for homeowners, which is often required by home lender
- Regulations implemented by participating local governments. The regulations are intended to ensure all development within special flood hazard areas is designed to minimize loss of life and damage to property (Churchill County 2020)

Repetitive Loss:

A repetitive loss property is a structure covered by a contract for flood insurance made available under NFIP that:

- Has incurred flood-related damage on two occasions in which the cost of the repair on the average equaled or exceeded 25% of the market value of the structure at the time of each such flood event
- At the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage

By this definition, the State has two repetitive loss properties (State of Nevada 2018).

The state is working with a variety of stakeholders to reduce the number of properties considered to be repetitive loss properties and to prevent SRL properties from developing. The

CWSD as a FEMA CTP is working to help identify and reduce impacts associated with repetitive loss properties.

A SRL property is a structure that:

- Is covered under a contract for flood insurance made available under NFIP
- Has incurred flood-related damage
    - For which four or more separate claims payments have been made under flood insurance coverage with each such claim exceeding $5,000, and with the cumulative amount of such claim payments exceeding $20,000
    - For which at least two separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure

By this definition, the State has one SRL property (State of Nevada 2018).

Table 14 is a summary of the number of repetitive loss cases and claims paid due to floods for communities in the State.

Table 14: Summary of Repetitive Loss Due to Flood for Communities in the State

Community Name	Number of RL Properties	Total Claims Paid
City of Las Vegas	4	$2,351,499
City of Reno	12	$7,767,495

Note: The data in this report contains repetitive loss properties only. It does not include mitigated properties. Data as of 8/31/2017

Source: NV State Flood Plain Manager; NV HMP 2018

5.2.6 Hail/Thunderstorms

Planning Significance: The County: Medium
The City: Medium
The Tribe: Medium

5.2.6.1 Nature

Thunderstorms:

Thunderstorms are formed from a combination of moisture, rapidly rising warm air, and a force capable of lifting the air, such as warm and cold fronts or mountainous terrain. A thunderstorm produces lightning, thunder, and/or rainfall and can develop in just minutes. Thunderstorms may occur singly, in clusters, or in lines. As a result, several thunderstorms can potentially affect one location during a few hours. The main threats from thunderstorms are:

- Hail
- Wildfires
- Deadly lightning
- Tornadoes
- Flash floods
- Downburst winds

Flash floods and wildfires are detailed in this plan. Hazards from thunderstorms have limited predictability given current technology. Severe thunderstorms can be predicted one to three days in advance. With a general heads up, however, specific warnings are often limited to 0-30 minutes lead time.

Hailstorms:

Hail is a form of solid precipitation, which consists of balls, or irregular lumps of ice, individually called hailstones. Hailstones consist mainly of water ice and typically measure between 0.20" and 3" in diameter, with the larger stones coming from severe and dangerous thunderstorms. Hail is possible with most thunderstorms as strong rising air currents in the thundercloud transport moisture laden air well above the freezing level converting super-cooled water vapor into hailstones. The stronger the updraft into the thunderstorm, the longer these initially small hailstones stay suspended in the storm, allowing them to grow to the point where they eventually become too heavy for the updraft to keep them aloft, and they fall to the surface.

5.2.6.2 History

According to the NOAA Storm Events Database, 30 thunderstorm events and nine hail events were reported between January 1, 2000, and April 30, 2023 (Table 15) (NOAA 2023).

Table 15: Hail and Thunderstorm events in Churchill County (2000-2023)

Location	Date	Event Type	Magnitude
Fallon	9/1/2000	Hailstorm	0.75"
Fallon	6/18/2003	Thunderstorm	75 knots (kts)
Fallon	7/6/2004	Thunderstorm	57 kts.
Fallon	6/2/2007	Thunderstorm	52 kts.
Huxley	7/6/2007	Thunderstorm	56 kts.
Fallon	7/11/2007	Thunderstorm	52 kts.
NAS Fallon	7/11/2007	Thunderstorm	50 kts.
Dixie Valley	7/11/2007	Thunderstorm	55 kts.
Fallon	7/16/2007	Thunderstorm	61 kts.
Salt Wells	7/16/2007	Thunderstorm	52 kts.
Fallon	6/21/2008	Thunderstorm	52 kts.
Ocala	6/21/2008	Thunderstorm	56 kts.
Lahontan	6/29/2008	Thunderstorm	51 kts.
NAS Fallon	6/29/2008	Thunderstorm	52 kts.
Lahontan	7/21/2008	Thunderstorm	58 kts.
Fallon	7/21/2008	Thunderstorm	52 kts.
Lahontan	7/21/2008	Thunderstorm	61 kts.
Lahontan	7/21/2008	Hailstorm	0.75"
Lahontan	7/21/2008	Hailstorm	0.88"
Fallon Airport	7/21/2008	Hailstorm	0.88"
Fallon	7/21/2008	Hailstorm	1.00"
Fallon	7/21/2008	Hailstorm	0.75"
Fallon	7/21/2008	Hailstorm	1.25"
Fallon	5/18/2009	Thunderstorm	48 kts.
Fallon	5/18/2009	Thunderstorm	43 kts.
Fallon	6/19/2009	Hailstorm	1.00"
Fallon	4/22/2012	Thunderstorm	51 kts.
Bango	8/9/2012	Thunderstorm	67 kts.
Fallon	8/9/2012	Thunderstorm	61 kts.
Lahontan	7/4/2013	Hailstorm	1.00"
NAS Fallon	7/20/2014	Thunderstorm	59 kts.

Location	Date	Event Type	Magnitude
Ocala	7/20/2014	Thunderstorm	53 kts.
Fallon	7/8/2015	Thunderstorm	55 kts.
NAS Fallon	5/5/2016	Thunderstorm	53 kts.
Fallon	5/5/2016	Thunderstorm	52 kts.
Ocala	6/20/2017	Thunderstorm	50 kts.
Parran	8/8/2017	Thunderstorm	53 kts.
Brady's Hot Springs	8/7/2019	Thunderstorm	52 kts.
Frenchman	8/8/2019	Thunderstorm	54 kts.

5.2.6.3 Location, Extent, and Probability of Future Events

Thunderstorms producing hail and downburst winds occur in the County every year. An active thunderstorm pattern, resulting from monsoon moisture throughout the Southwestern U.S. being transported into the State can lead to a prolonged period of thunderstorms and severe weather. In addition, weak weather systems moving through the State after a period of hot weather often leads to dry thunderstorms with strong downburst winds.

Hailstorms are a common occurrence in the County, especially during the late spring through early fall months when thunderstorms are most frequent. Hail sizes are typically between pea and marble size but can get larger than golf balls during the strongest storms. A severe thunderstorm for hail, as defined by the NWS, is a thunderstorm capable of producing hail stones greater than 1" in diameter, which typically occurs in the County once every one to three years.

Future Conditions:

Warmer air is capable of holding more moisture, approximately 7% per 1°C of warming, indicating an increased chance of thunderstorms and hailstorms as temperatures continue to rise. The *journal Science* reported a 12% increase in lightning per 1°C of warming (Royal Meteorological Society 2023).

5.2.7 Hazardous Materials Events

Planning Significance: The County: High
The City: High
The Tribe: Medium

5.2.7.1 Nature

Hazardous materials may include hundreds of substances posing a significant risk to humans. These substances may be highly toxic, reactive, corrosive, flammable, radioactive, or infectious. Hazard materials are regulated by numerous federal, state, and local agencies including the U.S. Environmental Protection Agency (USEPA), U.S. Department of Transportation (USDOT), National Fire Protection Association, FEMA, U.S. Army, and International Maritime Organization.

Hazardous material releases may occur from any of the following:

- Fixed site facilities (such as refineries, chemical plants, storage facilities, manufacturing, warehouses, WWTP, swimming pools, dry cleaners, automotive sales/repair, and gas stations)
- Hwy and rail transportation (such as tanker trucks, chemical trucks, and railroad tankers)
- Air transportation (such as cargo packages)

- Pipeline transportation (liquid petroleum, natural gas, and other chemicals)

Unless exempted, facilities using, manufacturing, or storing hazardous materials in the U.S. fall under the regulatory requirements of the Emergency Planning and Community Right to Know Act of 1986 (EPCRA), enacted as Title III of the Federal Superfund Amendments and Reauthorization Act (42 USC 110001-11050; 1988). Under EPCRA regulations, hazardous materials posing the greatest risk for causing catastrophic emergencies are identified as extremely hazardous substances (EHS). These chemicals are identified by the USEPA in the *List of Lists – Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-to-Know Act and Section 112 of the Clean Air Act.* Releases of EHS can occur during transport to and from fixed site facilities. Transportation-related releases are generally more troublesome because they occur anywhere, including close to human populations, critical facilities, or sensitive environmental areas. Transportation-related EHS releases are also more difficult to mitigate due to the variability of locations and distance from response resources.

In addition to accidental human-caused hazardous material events, natural hazards may cause the release of hazardous materials and complicate response activities. The impact of earthquakes on fixed facilities may be particularly serious due to the impairment or failure of the physical integrity of containment facilities. The threat of any hazardous material event may be magnified due to restricted access, reduced fire suppression and spill containment, and even complete cut-off of response personnel and equipment. In addition, the risk of terrorism involving hazardous materials is considered a major threat due to the location of hazardous material facilities and transport routes throughout communities and the frequently limited antiterrorism security at these facilities.

On behalf of several federal agencies include the USEPA and the USDOT, the National Response Center serves as the POC for reporting oil, chemical, radiological, biological, and etiological discharges into the environment within the U.S.

5.2.7.2 History

The Nevada Division of Environmental Protection (NDEP) reports the following oil and chemical spills in the County since 1999 (Table 16).

Table 16: Hazardous Material Release in Churchill County

Location	Date	Substance	Description
Trinity Truck Stop (old)	3/8/2000	Diesel	Ground water contamination – current open non-Leaking Underground Storage Tank (LUST) corrective action
Kinder Morgan Energy Partners	5/24/2001	Jet Fuel/ Av Gas	Soil contamination – current open non-LUST Corrective action
EW Site 70 in Dixie Valley NAS Fallon	2/11/2005	Diesel Fuel	Mechanical malfunction of diesel generator caused >25 gal. of diesel to be released. Soil excavated
11 Miles N. of Fallon, Kennametal Corp	2/12/2005	Neutralization Water	200 gal. from equipment failure
Hangar 1 NAS Fallon	3/9/2005	Aircraft Fuel	>50 gal. of aircraft fuel spilled from incorrectly stored tank
Stillwater Geothermal Plant	3/14/2005	Fuel	Soil around turbine/generators contaminated by an unknown amount of fuel
NAS Fallon	5/31/2005	Diesel	150 gal. leaked into soil from tank
U.S. 95 27 Miles South of Fallon	3/9/2006	Diesel	70 gal. from traffic accident
U.S. 50 West of Fallon	8/21/2007	Diesel	200-300 cubic yards from parked vehicles
Electronic Warfare Site Dixie Valley	9/12/2007	Diesel Fuel	>15 gal. from failed “O” ring caused diesel to spew
Transport Yard NAS Fallon	5/29/2008	Sewage	1000 gal. of sewage release when sewage line backed up
Unknown	6/13/2008	Diesel	1400 gal. of fuel release midair jet collision
Railroad Fuel Off-Load Facility, Hazen	7/18/2008	Diesel Fuel	79 gal. spill due to operator error
W. NV Railroad Park, Hazen	3/26/2009	Diesel Fuel	>15 gal. from pulled hose of rail car
11 Miles N. of Fallon, Kennametal Corp	7/19/2010	Effluent Water	17,250 gal released containing gypsum and iron from leaking filter
Hangar 5, NAS Fallon	10/6/2010	Diesel Fuel	Unknown qty. historic releases from aircraft parked near hanger. Detection from soil samples
DACC’s Trucking Company Mobile Source	8/17/2016	Diesel	Soil contamination –open non-LUST corrective action
Sigma Freight Mobile Source Release	8/14/2020	Diesel	Soil contamination – open non-LUST corrective action
Wellsco Drilling Mobile Source Release	10/24/2022	Diesel, Other	Soil contamination – open non-LUST corrective action
U.S. Silica	6/13/2023	Motor Oil	Soil contamination – open non-LUST corrective action
The City Maintenance Yard	11/30/1998	Gasoline	Groundwater contamination – open LUST case
U.S. 50 @ York	8/29/2005	Diesel Fuel	100 gal. spill from ruptured saddle tank

Location	Date	Substance	Description
MP 12.11 of Fallon lead Industrial	8/29/2005	Diesel Fuel	50 gal. spill from traffic accident
Former Standard Industrial Minerals Site	Unknown	Arsenic	400,000 cubic yards arsenic in barite tails and ore from mill
283 Sherman St.	10/9/2006	Diesel Fuel	700-800 gal. spill from tank rupture
Bus Barn Sherman Way	11/14/2006	Heating Oil	900 gal. heating oil from tank rupture
Pine Grove Sewage Plant	1/7/2007	Sewage	80-100 gal partially treated sewage release unknown
A&K Hazen Sand & Gravel off U.S. 50	8/3/2007	Diesel	500-700 gal spill because operator error during filling
McDonalds	10/2/2007	Grease	200 gal. grease released into street & sewer during a transfer from McDonalds to truck
Transport Station Carson Rd.	3/19/2008	Sewage	200 gal. of sewage release when truck backed over cleanout station and pump came on.
Fallon Water Treatment Plan	8/23/2010	Hydrochloric Acid	1000 gal released from storage tank into chemical storage room
Fallon Water Treatment Plan	8/31/2010	Hydrochloric Acid	330 gal released from spill during off-loading
I-95 3.2 miles south of Interstate 80 (I-80)	9/14/2010	Diesel	80 gal released when trucker hit a railroad train safety station arm. Saddle tank was breached releasing ~80 gallons to the soil at the side of the road.
Injection Well #21-2, Desert Peak II Facility, appx 118’57”30 E 39’47’30 N	4/27/2011	Diesel	100 gal diesel-powered pump used to pump water from injection well to test well leaked diesel from temporary fuel tank
Salt Wells Geothermal Plant, tube, and shell heat exchanger	9/7/2011	Isobutene	4,000 gal defective tube ruptured during service disruption.
Rawhide Mine	11/24/2011	Mercury	20-30 gal leak of excess flow to the carbon vessel during startup, resulting in a small release of mercury impacted water
Well 267 at Freeman Lane and Stillwater Road	12/14/2011	Geothermal Water	100 gal frozen gauge on pipe gauge port. Crack on the pipe gave way and released water from the injected well
Old High School	1/18/2012	Heating Oil	Ground water contamination –open non-LUST corrective action
NAS Fallon	2/23/2012	GBU-16	2,000 lbs. GBU-16 bomb fell off the training range and detonated
NAS Fallon	3/03/2014	JP-8	1,000 lbs. of fuel from an F-18 fighter aircraft that crashed on BLM land
The County Moody Lane Lift Station	7/14/2012	Raw Sewage	200 gal air relief valve stuck open and released sewage to the surrounding area

Location	Date	Substance	Description
Corner of house in front yard	7/26/2012	Raw Sewage	150 gal sewer system not being maintained, and the clogged cleanouts are causing raw sewage released on property
1599 Lucas Road, Fallon NV 171 Rockwood Place, Fallon NV	8/23/2012	Oil, diesel, grease, sewage	Owner of A1 septic dumping pumped out sewage in goats' pens at his residence; at rental property, dumping diesel, oil, grease in tank. ~1000 gal to soil – McCarter brought tractor and covered with soil. Domestic well ~100 feet away
Kennametal Inc. 1077 Lovelock Hwy	9/2/2012	Sulfuric Acid	Reported 6500 gal. of sulfuric acid released from a tank due to a pipe break in the tank. A leak also occurred in the double containment releasing acid onto the ground. 1,300 gal. remained in the containment area. Remaining product released to soil
Brady Power Plant, 10750 I-80 East, Exit 65, Fallon, NV 89406	9/18/2012	Mineral Oil	320 gal transformer oil holding tank is corroded and dripping oil to the ground surface
SR 839 Near Churchill/Mineral County Line (Nevada Highway Patrol stated Churchill 0) A&K stated mile marker 76)	10/3/2012	Used Oil and Diesel	~ 70 gal mixed oil, 100-150 gal diesel rollover accident, front tank holding diesel and rear tank holding mixed used oil ruptured
NAS Fallon	11/20/2012	Fecal Coliform	25,000 gal chlorine pump malfunction
NAS Fallon	4/11/2013	JP-8	300 gal aircraft fuel drop tank ruptured, release to concreate, rain event occurring at time, spill entered concrete lined drainage ditch. Lined drainage ditch empties to unlined drainage ditch. No sheen observed at unlined section
NAS Fallon	2/5/2013	Fully Exploded Bomb	1500 lb. bomb fully detonated off range on BLM land
Patua Geothermal Site, Drill Location 7820	4/29/213	Geothermal Groundwater	10,000 – 15,000 gal piping in section 21 failed and released geothermal groundwater to the surrounding area
Patua Project, LLC North of Hazen off of Patua Road	5/20/2013	Geothermal Brine Fluid	1500 gal; 8000 gal temporary pipeline failure (couplings failed) occurred several times in one day, releasing geothermal brine to the surrounding soil
NAS Fallon	11/19/2014	F24-Jet Fuel	56 gal overfill valve failure led to fuel release from tanker truck
22211 Bango Road, Railspur B	7/24/2013	HT 110 Oil	170 gal railcar was overfilled during loading. Oil impacted the track ballast, surrounding soil and underlying soil
Kennametal, Inc. North Plant, 10777 North Lovelock Hwy, hill adjacent to the acid tanks	9/4/2013	Sulfuric Acid	350 gal sulfuric acid pipeline developed a small hole, which lead to a release so the surrounding area

Location	Date	Substance	Description
The County WWTP	11/10/2013	Sewage	200 gal flow was emanating from manhole on Dallas Dr., investigation indicated roots were blocking the sewer lateral blocking flow
I-80 westbound at Mile Marker 59, north shoulder	11/12/2013	Diesel	40 gal single vehicle accident at the above location caused a rupture in the saddle tank and a release to the surrounding area
Bango Oil Refining	6/24/2014	Oil and Water Mixture	100 gal clogged valve caused a release of oil and water mixture from the heat exchanger at the above located during cleaning
Terra-Gen Dixie Valley Geothermal Plant	7/21/2014	Lubricating Oil	400 gal binary expander hose failed, causing a release to the surrounding soil
Bango Oil Rail Spur, B Line	9/5/2014	Lube Oil, 100W	200 gal overflow occurred while loading a tank car with processed 100W lube oil. Estimated 200 gallons released to ballast and track area
Stillwater 1 Geothermal Power Plant	11/26/2019	Other	Soil contamination – open non-LUST corrective action
Stillwater 1 Geothermal Power Plant	2/3/2020	Other	Soil contamination – open non-LUST corrective action
Stillwater above ground Storage tank release	7/11/2020	Gasoline	Soil contamination – open non-LUST corrective action
ENEL Green Power	5/15/2023	Other	Soil contamination – open non-LUST corrective action

5.2.7.3 Location, Extent, and Probability of Future Events

The Nevada Department of Public Safety shows 133 facilities permitted to handle hazardous waste within the County. 123 facilities are listed in the City; and none are active and/or archived Superfund sites. The larger fixed facilities posing a higher risk to the County, City, and Tribe include the WTP for the County, the City, the Oil Refinery, the Western Nevada Rail Park, and the Asphalt Batch Plants. While several of the small, fixed facilities (e.g., body shops) have varying uses of hazardous chemicals, these facilities do not pose a significant risk to the County, City, or Tribe. The NAS at Fallon also shows historical releases of fuel.

In addition to fixed facilities, hazardous material events have the potential to occur along Hwy 50, I-80, and Hwy 95. The trucks using these transportation arteries commonly carry a variety of hazardous materials including gasoline, other crude oil derivatives, and other chemicals known to cause human health problems.

Future Conditions:

Comprehensive information on the probability and magnitude of hazardous material events from all types of sources (such as fixed facilities or transport vehicles) is not available. Wide variations among the characteristics of hazardous material sources and among the materials themselves make such an evaluation difficult. The exposure of population, buildings, and critical facilities should a hazardous materials event occur can be determined. Areas at risk for hazardous material events include any area within a one-mile radius of U.S. 50, I-80, and U.S. 95 and EHS fixed facilities, which are within the City area, see Appendix B.

5.2.8 Infestation

Planning Significance:	The County: Medium The City: Medium The Tribe: Medium

5.2.8.1 Nature

An “invasive species” is defined as a species that’s:

- Non-native (or alien) to the ecosystem under consideration
- Introduction causes or is likely to cause economic or environmental harm or harm to human health

Invasive species can be plants, animals (including aquatic species) and other organisms (e.g., microbes) (USDA n.d.).

Infestations impact the State’s economy through the destruction of crops and natural resources, which also impacts tourism. Some plant infestations are highly flammable and assist in the spread of wildfires. Human actions are the primary means of introduction and spread of invasive species.

5.2.8.2 History

The Nevada Department of Agriculture (NDA) monitors the introduction and spread of noxious weeds in the State. They have developed a categorization scheme for control of noxious weeds with Category “C” being the most widespread and subject to active eradication. Table 17 shows NDA’s Nevada Noxious Weed List as designated by application of NRS 555.

Nevada Noxious Weed List

NRS 555.130 Designation of noxious weeds. The State Quarantine Officer may declare by regulation the noxious weeds of the state, but a weed must not be designated as noxious which is already introduced and established in the State to such an extent as to make its control or eradication impracticable in the judgment of the State Quarantine Officer.

NAC 555.010 Designation and categorization of noxious weeds. (NRS 555.130)

The plants listed in Table 17 are designated noxious weeds and categorized as follows:

- **Category A weeds** are generally not found in or limited in distribution throughout the State. Such weeds are subject to active exclusion from the State and active eradication wherever found and active eradication from the premises of a dealer of nursery stock
- **Category B weeds** are generally established in scattered populations in some counties of the State. Such weeds are subject to active exclusion where possible and active eradication from the premises of a dealer of nursery stock
- **Category C weeds** are generally established and widespread in many counties of the State and are subject to active eradication from the premises of a dealer of nursery stock

Table 17: Noxious Weeds in the State

Category A Weeds:	
African rue *(Peganum harmala)*	Iberian Starthistle *(Centaurea iberica)*
Austrian fieldcress *(Rorippa austriaca)*	Malta Starthistle *(Centaurea melitensis)*
Black henbane *(Hyoscyamus niger)*	Mayweed chamomile *(Anthemis cotula)*
Camelthorn *(Alhagi pseudalhagi)*	Mediterranean sage *(salvia aethiopis)*
Common crupina *(Crupina vulgaris)*	Perennial sowthistle *(Sonchus arvensis)*
Common St. Johnswort *(Hypericum perforatum)*	Purple loosestrife *(Lythrum slicaria, L. virgatum & cultivaris)*
Crimson fountain grass *(Pennisetum setaceum)*	Yellow toadflax *(Linaria vulgaris)*
Dalmatian toadflax *(Linaria dalmatica)*	Purple Starthistle *(Centaurea calcitrapa)*
Dyer's woad *(Isatis tinctoria)*	Rush skeletonweed *(Chondrilla juncea)*
Eurasian watermilfoil *(Myriophyllum spicatum)*	Spotted knapweed *(Centaurea maculosa)*
Giant reed *(Arundo donax)*	Squarrose knapweed *(Centaurea virgata)*
Giant salvinia *(Salvinia molesta)*	Sulfur cinquefoil *(Potentilla recta)*
Goatsrue *(Galega officinalis)*	Swainsonpea *(Sphaerophysa salsula)*
Houndstongue *(Cynoglossum officinale)*	Syrian beancaper *(Zygophyllum fabago)*
Hydrilla *(Hydrilla verticillate)*	Yellow Starthistle *(Centaurea solstitialis)*
Category B Weeds:	**Category C Weeds:**
African mustard *(Brassica tournefortii)*	Canada thistle *(Cirsium arvense)*
Diffuse knapweed *(Centaurea diffusa)*	Hoary cress *(Cardaria draba)*
Horsenettle *(Solanum carolinense)*	Johnsongrass *(Sorghum halepense)*
Leafy spurge *(Euphorbia esula)*	Perennial pepperweed *(Lepidium latifolium)*
Medusahead *(Taeniatherum caput-medusae)*	Poison-hemlock *(Conium maculatum)*
Musk thistle *(Carduus nutans)*	Puncturevine *(Tribulus terrestris)*
Russian knapweed *(Acroptilon repens)*	Salt cedar (tamarisk) *(Tamarix spp.)*
Scotch thistle *(Onopordum acanthium)*	Spotted water hemlock *(cicuta maculate)*
Silverleaf nightshade *(Solanum elaeagifolium)*	

The following noxious weeds currently can be found in the County:

- Yellow Starthistle (*Centaurea solstilitalis)*
- Diffuse Knapweed (*Centaurea diffusa)*
- Russian Knapweed (*Acroptilon repens)*
- Perennial Pepperweed (*Lepidium latifolium)*

Other invasive plants presenting problems but too widely distributed in the State to be included in the noxious weed list include:

- *Bromus tectorum L. or Cheatgrass* - an annual grass forming tufts up to two feet tall. The leaves and sheathes are covered in short soft hairs. The flowers occur as drooping, open, terminal clusters having a greenish, red, or purple hue. These annual plants will germinate in fall or spring (fall is more common) and senescence usually occurs in summer. Cheatgrass invades rangelands, pastures, prairies, and other open areas. Cheatgrass has the potential to completely alter the ecosystems it invades. It can completely replace native vegetation and change fire regimes. It occurs throughout the U.S. and Canada but is most problematic in areas of the western U.S. with lower

precipitation levels such as the State. Cheatgrass is native to Europe and parts of Africa and Asia, first introduced into the U.S. accidentally in the mid-1800's

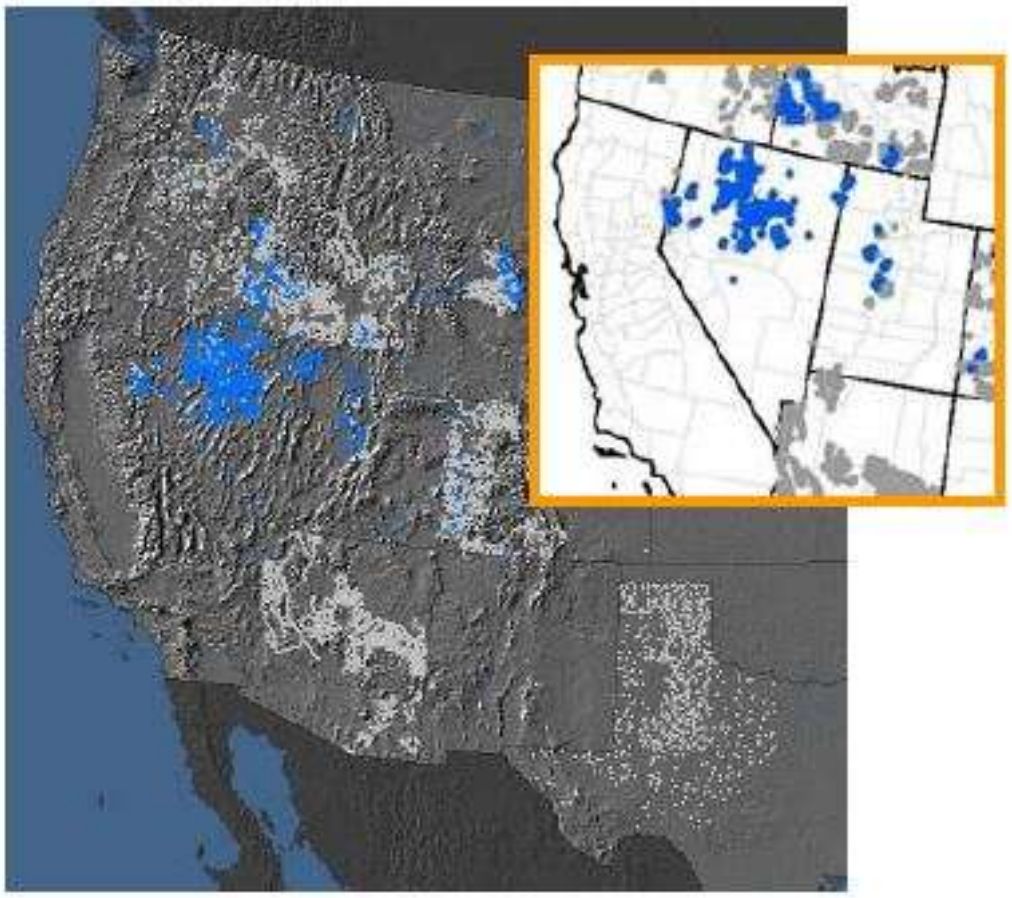
- *Bromus rubens L or Red brome* - reported to be invasive in the North American region because it faces low herbaceous competition. Once established, it has the potential to compete with other grasses. The accumulation of litter and necromass has the potential to increase fire frequency in the desert. Red brome-fueled fires result in the loss of native perennial species in invaded areas, resulting in disturbed areas ideal for increased growth of red brome
- *Lepidium latifolium or Tall White Top or Pepperweed* - has robust, spreading roots and numerous seeds, making this perennial difficult to impossible to control. Waste places, wet areas, roadsides, ditches, and croplands, including alfalfa fields are the most common locations that it can be found and is transported in waterways or hay bales

Animal infestations – Insects

The following is a list of invasive insect species infestations currently affecting the State:

- *Africanized honeybees*: Imported and bred with European honeybees to increase honey production in South America. The Africanized honeybees are more aggressive than European honeybees with a negative impact on the honey production industry
- *Scolytus schevyrewi or Bark Beetle:* Came from Asia, first collected in insect traps in Aurora Colorado. The beetle infests and breeds in elm trees stressed by drought
- *Solenopsis Invicta or Fire Ants*: In 1930 the light fire ant was introduced from South America into the mobile area and has since spread to its current range. The ants' nest in the soil of open areas, pastures, and agronomic fields, but are found occasionally in wooded areas. Mounds are generally dome-shaped in contrast to those of other fire ant species, and the sting, characterized by an intense burning sensation, is more severe. A pustule (not seen in the sting of other species) is formed at the sting site in a day or so, which may become infected. Sensitive individuals can swell up because of stings and occasionally die. The ants have a serious impact on agriculture since the hardened mounds interfere with the mechanical cultivation of fields and the ants' painful stings interfere with livestock grazing and harvesting of crops by farm workers
- *Mormon crickets*: Flightless, ground dwelling insects native to the western U.S. They eat naïve, herbaceous perennials (forbs), grasses, shrubs, and cultivated forage crops, reducing feed for grazing wildlife and livestock. In large numbers, their feeding can contribute to soil erosion, poor water quality, nutrient depleted soils, and potentially cause damage to range and cropland ecosystems. Drought encourages Mormon cricket outbreaks, which may last several years (historically five to 21 years) and cause substantial economic losses to rangeland, cropland, and home gardens.

Figure 6: National Distribution of Mormon Crickets, August 2005 (blue=high density, gray=low density)



Animal infestations – aquatic species

Zebra mussels, quagga mussels, Asian clams, and New Zealand mud snails have become a particular concern in the Sate in recent years.

Zebra and quagga mussels were first found at Lake Mead in 2004 and 2007, respectively. Since that time, the population has exploded, now numbering in the trillions. Both mussels are nuisance invasive species reproducing quickly and in large numbers. They are biofoulers obstructing pipes in municipal and industrial raw-water systems, requiring millions of dollars annually to maintain. They produce microscopic larvae floating freely in the water column, and thus can pass by screens installed to exclude them. Monitoring and control of these mussels cost millions of dollars annually. As filter feeders, zebra and quagga mussels remove suspended material from the habitat in which they live. This includes planktonic algae, the primary base of the food web. Thus, these mussels may completely alter the ecology of water bodies in which they invade. Currently, no quagga or zebra mussels have been found in a northern California reservoir southeast of San Francisco, and a UNR researcher has determined Lake Tahoe water can support these species. Proactive measure are being taken by several groups to prevent the spread of these species into Lake Tahoe and the Truckee watershed. The Tahoe Resource Conservation District's invasive species program includes a boat inspection effort in the Tahoe Basin to prevent the introduction of quagga and zebra mussels into the area.

While discarded zebra mussel pupa cases were found at Lahontan, five water tests during a fifteen month period have been negative. Lahontan staff currently performs watercraft inspections before they allow boats to launch in the lake.

The Truckee Meadows Water Authority is funding a program with more than $231,000 from the Truckee River Fund and money collected from utility bills to pay for projects and protect the Truckee River. In 2010 the program efforts included monitoring lakes and reservoirs within the Truckee River system for the presence of adult or juvenile mussels. A program to inspect boats launching into at least one lake, such as Boca Reservoir, also began.

The Asian clam is an aquatic invasive species established in Lake Tahoe. Asian clams impact Lake Tahoe's environment by:

- Releasing nitrogen and phosphorus to the lake, resulting in algal blooms
- Negatively impacting drinking water by clogging intake pipes
- Littering beaches with their sharp shells, negatively impacting recreation

In 2010 the Tahoe Resource Conservation District physically removed Asian clams from south shore areas of Lake Tahoe and installed large plastic bottom barrier sheets to cover and terminate Asian clam populations by reducing oxygen and food availability.

The New Zealand mud snail is a nuisance aquatic species now reported in a few Nevada streams along the periphery of the State. The New Zealand mud snail is reported in all western states, except New Mexico and is listed as an invasive species in California. It reproduces rapidly, competes for food with native gastropods and other species, and is detrimental to trout populations because of its lack of nutritional value. It is being monitored in the State and may become more of a problem in the future.

5.2.8.3 Location, Extent, and Probability of Future Events

In 2009, the Nevada Natural Heritage Foundation developed limited maps for the State showing Diffuse Knapweed and Tall White Top/Perennial Pepperweed along the western portion of Hwy 80, in the Truckee Canal and in Stillwater and Russian Knapweed and Yellow Starthistle near Fallon. The Nevada Division of Forestry provided a map of Cheat Grass due to its high fire hazard (Appendix B). The I-80 corridor provides transportation of weed seed and the area around Fallon is agricultural land with water as well as a transportation corridor from U.S. 50. The severity of noxious weed infestations is continuously monitored by the NDA's A, B, and C categorization of noxious weeds described in Table 17. No known infestations of insects or aquatic species currently exists; however, the infestation of insects could affect the agricultural crops around the Fallon area and aquatic species could affect the Reservoir, Carson River, and the canals.

Future Conditions:

The Planning Committee agreed plant, insect, and aquatic organism infestations will continue to occur throughout the State as recreation and commerce continue to move people and property. Cooperative efforts are necessary among state, federal, agencies, and other interested regional groups to implement programs to control and mitigate the effects of infestations on all aspects of the state's environment and economy (State of Nevada 2018).

5.2.9 Severe Winter

Planning Significance: The County: Medium The City: Medium The Tribe: Medium

5.2.9.1 Nature

Winter storms can bring heavy rain, snow, high winds, extreme cold, and freezing rain to the region. In the State, winter storms are from massive low-pressure weather systems originating in the North Pacific Ocean. Winter storms can also plunge southward from arctic regions and drop heavy amounts of snow and ice. The severity of winter storms is generally minor in the County. However, even a light accumulation of snow and ice can result in major travel impacts. The region can be subject to significant snowfalls of one to two feet; however, those events are rare, occurring approximately once every five years. Additionally, a large winter storm event can also cause exceptionally high rainfall persisting for days, resulting in heavy flooding. Winter storms tapping into subtropical moisture are the ones most likely to lead to flooding due to heavy warm rain. Flooding is exacerbated by warm heavy rains falling on low elevation snowpack.

The predictability of both winter storms and downslope wind events has improved considerably in the last decade. These can often be predicted four to seven days in advance, with more specific wind and snow predictions one to three days in advance. This improvement in predictability can help mitigate the impacts of these storms by ensuring public safety agencies and the public are better prepared and can consider alternate plans.

5.2.9.2 History

Snow occurs in smaller amounts in the County & the City than some other northern counties in the State, mainly due to lower elevation and a broad rain shadowing effect east of the Sierra. According to data collected by the NWS, since 1903 the Fallon area averages four days each winter with at least 0.1” of snowfall, three days with more than 1”, and only one day each winter with 3” or more.

5.2.9.3 Location, Extent, and Probability of Future Events

In the County, winter storms generating heavy rainfall and leading to flooding occur once every several years. Snowfall accumulation in the County, City, and Tribe are generally associated with a strong low-pressure system dropping out of the Gulf of Alaska with the higher elevations receiving the greatest amount of snow. Minor snowfalls occur virtually every winter, while more major events with widespread travel and infrastructure impacts are much less frequent. The potential for winter storms will affect all portions of the County equally.

Future Conditions:

A warmer atmosphere can produce more frequent and intense winters because of its ability to hold more moisture indicating the potential for more severe winter conditions in the future.

5.2.10 Terrorism/Weapons of Mass Destruction

Planning Significance:	The County: High The City: High The Tribe: High

5.2.10.1 Nature

The Department of Justice (DOJ) Federal Bureau of Investigation (FBI) defines terrorism as the unlawful use of force or violence against persons or property to intimidate or coerce a government and/or the civilian population in furtherance of political or social objectives. Weapons of Mass Destruction (WMD) associated with terrorism can be chemical, biological, radiological, nuclear, or explosive in origin. Technological terrorism is defined as the intentional

disruption in the U.S.'s data control systems. Attacks on financial, business, and governmental computer networks are being considered as technological terrorist-related acts.

As defined by the FBI, international terrorism involves violent acts or acts dangerous to human life violating the criminal laws of the U.S. or would be a criminal violation if committed within the jurisdiction of the U.S. These acts appear to be intended to:

- Intimidate or coerce a civilian population
- Influence the policy of a government by intimidation or coercion
- Affect the conduct of a government by assassination or kidnapping

International terrorist acts occur outside the U.S. or transcend national boundaries in terms of how they are accomplished, the persons they appear intended to coerce or intimidate, or the locale in which their perpetrators operate or seek asylum. According to the U.S. Department of State, the current list of designated foreign terrorist organizations contains more than 50 groups. Most prominent among these groups are:

- Al-Qaida
- Al-Shabaab
- Boko Harem
- HAMAS
- ISIS
- Hezbollah

These groups share similar Islamic extremist ideology; however, their objectives and capabilities are different.

As defined by the FBI, domestic terrorism is the unlawful use, or threatened use, of force or violence by a group or individual based and operating entirely within the U.S. or Puerto Rico without foreign direction committed against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof in furtherance of political or social objectives. Forms of domestic terrorism include:

- Extremists (homegrown, religious, anti-government, political, etc.)
- Hate groups
- Lone offenders

The FBI is the primary investigatory agency for domestic terrorism. The Central Intelligence Agency monitors potential security threats from foreign sources. The DOJ through the FBI will coordinate the domestic preparedness programs and activities of this nation to address the threat posed by terrorists and the use of WMD.

Examples of terrorism include the:

- World Trade Center bombing in New York City
- Murray Federal Building bombing in Oklahoma City
- Olympic Centennial Park bombing in Atlanta
- Pan American Flight bombing Lockerbie, Scotland

Acts of terrorism may originate from a single person, special interest groups, or acts sponsored by a foreign government. Terrorist acts include:

- The use of arson
- Hostile takeovers
- Shootings
- Biological agents (such as anthrax, plague, botulism, and others)
- Chemical agents (such as hydrogen cyanide, sulfur mustard, sarin, and chlorine)
- Hostage taking
- Cyber-attacks

The most popular method used in recent events in the United States has been terrorism by bombing.

Bioterrorism

A bioterrorism attack is the deliberate release of viruses, bacteria, or other germs (agents) used to cause illness or death in people, animals, or plants. Most biological agents are naturally occurring in various parts of the world. They can be weaponized to enhance their virulence, make then resistant to current vaccines and antibiotics, or increase their ability to be spread into the environment. Biological agents can be spread through the air, through water, or in food. Terrorists use biological agents because they can be extremely difficult to detect, they do not cause illness for several hours to several days, and even the threated use of a bioweapon can have a tremendous psychological impact on the populations. According to the CDC, bioterrorism agents can be separated into three categories, depending on how easily they can be spread and the severity of illness or death they cause. These three categories include Category A, Category B, and Category C Bioterrorism agents. Following is a description of each category of bioterrorism agents:

Category A Bioterrorism Agents

These high-priority agents include organisms or toxins posing the highest risk to the public and national security. They may be easily spread or transmitted from person to person. They result in high death rates, have the potential for major public health threat, and may cause public panic and social disruption.

Category A agents include:

- Anthrax (*Bacillus anthracis*)
- Botulism (*Clostridium botulinum toxin*)
- Plague (*Yersinia pestis*)
- Smallpox (*variola major*)
- Tularemia (*Francisella tularensis*)
- Viral hemorrhagic fevers (filoviruses [e.g., *Ebola Marburg*] and arenaviruses [e.g., *Lassa, Machupo*])

Category B Bioterrorism Agents

These agents are the second highest priority and are moderately easy to spread. They result in moderate illness rates and low death rates, and they require specific enhancements of CDC's laboratory capacity and enhanced disease monitoring.

Category B agents include:

- Brucellosis (*Brucella species*)
- Epsilon toxin of Clostridium perfringens
- Food Safety threats (e.g., *Salmonella species, E. coli O157:H7, Shigella*)
- Glanders (*Burkholderia mallei*)
- Melioidosis (*Burkholderia pseudomallei*)
- Psittacosis (*Chlamydia psittaci*)
- Q fever (*Coxiella burnettii*)
- Ricin toxins from Ricinus communis (*castor beans*)
- Staphylococcal enterotoxin B
- Typhus fever (*Rickettsia prowazekii*)
- Viral encephalitis (alphaviruses [e.g., *Venezuelan equine encephalitis, eastern equine encephalitis, western equine encephalitis*])

- Water safety threats (e.g., *Vibrio cholerae, Cryptosporidium parvum*)

Category C Bioterrorism Agents

These third highest agents include emerging pathogens with potential to be engineered for mass spread in the future. They are easily available, produced, and spread. They have potential for high morbidity, mortality rates, and major health impacts.

While bioterrorism attacks using any category of agent could create great psychological stress as well as physical illness and death, Category A agents would have the greatest impact on public health and national security.

Chemical Agents

Many different chemical agents might be used in terrorist attacks. Varying effects include blistering, choking, incapacitation, and vomiting. Following is a list of chemical agents categorized by effect.

Blood (Blister/Vesicants)

- Arsine
- Cyanogen Chloride
- Hydrogen Chloride
- Hydrogen Cyanide

Choking/Lung/Pulmonary Damaging

- Chlorine
- Diphosgene
- Cyanide
- Nitrogen Oxide
- Perflurorisobutylene
- Phosgene
- Red Phosphorus
- Sulfur Trioxide-Chlorosulfonic Acid
- Teflon and Perflurorisobutylene
- Titanium Tetrachloride
- Zinc Oxide

Incapacitating (Nerve/Riot Control/Tear Gas)

- Bromobenzylcyanide
- Chloroacetophenone
- Chloropicrin
- Benzene and Carbon Tetrachloride
- Chloroform
- Chloropicrin in Chloroform)

Vomiting

- Adamsite
- Diphenylchloroarsine
- Diphenylcyanoarsine

5.2.10.2 History

The County has no history of terrorism.

5.2.10.3 Location, Extent, and Probability of Future Events

All areas of the County are potentially susceptible to the impacts of terrorism, though risk is comparatively higher in areas with larger concentrations of people. According to the FBI, sporting events, political gatherings, and other special events are attractive targets for domestic and foreign terrorists because they are highly visible and attract celebrities and political leaders. Based on this, the geographic location of high capacity venues is at a relatively higher risk of terrorist attack. Other potential targets of terrorist activities include PW facilities, utilities, major infrastructure, and transportation facilities such as airports, bus, and train stations. Military bases, schools, medical facilities, and other state and federal facilities are other identified potential targets.

Based on the Homeland Security Threat-Level System, terrorism is expected to remain a high to very high threat into the foreseeable future. Because terrorism events typically are focused on a single location or facility, estimated damage is less than one percent damage to facilities in the County. The overall magnitude and potential severity of impacts of terrorism and WMD is considered high/very high in the County.

Considering a worst case scenario, terrorism events can require state level support, can impact critical facilities, disrupt services for one to three days, and have citywide economic impacts. More typical terrorism events are handled at the city and county levels. Close liaison occurs between the City and NAS Fallon; however, details will not be discussed in this document due to security protocols.

Future Conditions:

Comprehensive information on the probability and magnitude of terrorism/WMD events from all types of sources is not available. Wide variations among the characteristics of terrorism/WMD materials make such an evaluation difficult. All areas of the County are equally at risk for a terrorism/WMD event. However, at this present plan update, the U.S. is engaged, either directly or indirectly, in active combat operations in the Middle East and Eastern Europe. Simultaneously, several hundred thousand individuals per year from over 160 countries are unlawfully entering the U.S. through both southern and northern borders and being released into the general population with minimal tracking or accountability. The current circumstances create an opportune environment for potential radicalized or directed individuals to systematically plan and carry out acts of terrorism.

5.2.11 Wildfire

Planning Significance:	The County: Medium The City: Low The Tribe: Medium

5.2.11.1 Nature

A wildland fire is a type of wildfire spreading through consumption of vegetation. It often begins unnoticed, spreads quickly, and is usually signaled by dense smoke visible from miles around. Wildland fires can be caused by human activities (such as arson or campfires) or by natural events such as lightning. Wildland fires often occur in forests or other areas with ample vegetation. In addition to wildland fires, wildfires can be classified as urban fires, interface or intermix fires, and prescribed fires.

The following three factors contribute significantly to wildland fire behavior and can be used to identify wildland fire hazard areas.

- **Topography**: As slope increases, the rate of wildland fire spread increases. South-facing slopes are subject to more solar radiation, making them drier and intensifying wildland fire behavior. However, ridge tops may mark the end of wildland fire spread since fire spreads more slowly or may even be unable to spread downhill.
- **Fuel**: The type and condition of vegetation plays a significant role in the occurrence and spread of wildland fires. Certain types of plants are more susceptible to burning or will burn with greater intensity. Dense or overgrown vegetation increases combustible material available to fuel the fire (referred to as the "fuel load"). The ratio of living to dead plant matter is also important. The risk of fire is increased significantly during periods of prolonged drought, as the moisture content of both living and dead plant matter decreases. The fuel's continuity, both horizontally and vertically, is also an important factor.
- **Weather**: The most variable factor affecting wildland fire behavior is weather. Temperature, humidity, wind, and lighting can affect chances for ignition and spread of fire. Extreme weather, such as high temperatures and low humidity, can lead to extreme wildland fire activity. By contrast, cooling and higher humidity often signals reduced wildland fire occurrence and easier containment.

The frequency and severity of wildland fires also depends upon other hazards, such as lightning, drought, and infestations. If not promptly controlled, wildland fires may grow into an emergency or disaster. Even small fires can threaten lives and resources and destroy improved properties. In addition to affecting people, wildland fires may severely affect livestock and pets. Such events may require emergency watering/feeding, evacuation, and shelter.

The indirect effects of wildland fires can be catastrophic. In addition to stripping the land of vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and the land itself. Soil exposed to intense heat may lose its capability to absorb moisture and support life. Exposed soils erode quickly and enhance siltation of rivers and streams, thereby increasing flood potential, harming aquatic life, and degrading water quality. Lands stripped of vegetation are also subject to increased debris flow hazards, as described above.

5.2.11.2 History

Fire in the County and the City are managed by the Fallon/Churchill Fire Department, an all-volunteer organization. Near the County, 23 wildfires were recorded between 1984 and 2021. In August 2017, two buildings in the County were impacted by the Tungsten fire. This fire covered 60 square miles.

5.2.11.3 Location, Extent, and Probability of Future Events

Communities in the County have a varying degree of risk from wildfire. This risk is varied, largely due to past fire activity and the type of moisture received during the winter months. Lengthy rainy seasons tend to increase the production of grasses, which can create fast moving fires in the brush and grass areas of the County. Drought seasons tend to decrease the fuel moisture in the large fuels (trees and large brush) and create high output fires difficult to control that can extend for days.

Depending upon the type and amount of moisture received, the risk to a given community in the County can change from season to season. the County has developed a Community Wildfire Protection Plan to help guide the community and its' residents on where and how to focus fuel reduction efforts. The Community Wildfire Protection Plan generally speaks to protecting the

built environment from threats of wildland fire. A Wildfire Assessment for the County was completed by RCI in 2004, the results are summarized in Table 18.

Table 18: Wildfire Assessment Summary by Community

Community	Hazard Rating
Cold Springs	Moderate
Eastgate	High
The City	Low
NAS Fallon	Low
The City Outskirts	Low
Middlegate	Moderate

Source: RCI County Wide Assessment Results

Based on historical records, the County can anticipate nearly eight wildland fire starts per year; however, a very small percentage (less than 1%) of the fires will exceed 20 acres. See Appendix B for Wildland Urban Interface for the Fallon area.

Future Conditions

Rising average temperatures increase the rate of evaporation in dense wilderness areas, causing soil and vegetation to dry more, quickly increasing flammability (Risk Factor n.d.).

5.2.12 Windstorm

Planning Significance: The County: Medium
The City: Medium
The Tribe: Medium

5.2.12.1 Nature

Winds are horizontal flows of air blowing from areas of high pressure to areas of low pressure. Wind strength depends on the difference between the high and low pressure systems and the distance between them. Therefore, a strong pressure gradient results from a large pressure difference in a short distance causing strong winds.

Downslope Windstorms:

Strong and/or severe winds often precede or follow frontal activity, including cold fronts, warm fronts, and dry lines. Down-slope windstorms are common in the County during the fall-winter-spring months when storms approach the Sierra. Strong winds ahead of a cold front are ducted down to the surface due to mountain waves, enhancing wind speeds often stronger than Down-slope windstorms seen in the rest of the U.S. Down-slope winds in the Sierras typically produce sustained southwest winds of 30 to 50 mph with gusts to 70 mph. During the strongest down slope windstorms, winds can exceed greater than 100 mph and last numerous hours.

Downburst Winds:

A downburst wind is created by an area of significantly rain-cooled air spreading out in all directions producing strong winds after hitting ground level. Unlike winds in a tornado, winds in a downburst are directed outwards from the point where it hits land or water. Dry downbursts are associated with thunderstorms with very little rain, while wet downbursts are created by thunderstorms with high amounts of rainfall. Downburst winds are often termed microbursts, macrobursts, or outflow thunderstorm winds. Most downburst winds to impact the County occur as dry downbursts due to the high cloud bases of the associated thunderstorms, which allows

for much of the rainfall to evaporate before reaching the ground. They are usually microbursts compared to macrobursts since the area affected is typically fewer than 2.5 miles. Macrobursts do occur in the region when individual thunderstorm cells organize into a line or cluster but are less common. Downburst winds are typically 35 to 75 mph but can exceed greater than 100 mph in rare cases.

Downburst winds typically damage fences, roofs, weakened structures, trees, and/or power lines. Downbursts do pose a significant risk to aviation, especially to aircraft taking off and landing due to strong winds changing direction in very short distances. In addition, small aircrafts on the ground can incur damage if not secured. Downburst winds pose a significant risk to new lightning induced wildfire starts, allowing small fires to grow quickly. During periods of drought, dust storms result from downburst winds and cause visibility to drop below ½ mile, creating hazardous driving conditions. Downburst winds from thunderstorms are common in the County from late spring through early fall.

5.2.12.2 History

Between 1996 and 2015, a total of 58 high wind events were recorded in and near the County. The severe winds reported were independent or in advance of thunderstorm activities. The following highlights some of the more recent events.

- On June 18, 2003, Thunderstorm outflow winds estimated at 75 mph caused scattered damage across the City including five downed power poles, a large tree blown into a fuel storage tank, and a destroyed home gazebo
- On July 16, 2007, a trained weather spotter located four miles SSW of Fallon reported a thunderstorm wind gust of 61 kts (70 mph)
- On July 21, 2008, a trained weather spotter reported wind gusts estimated at 61 kts (70 mph) destroyed wire fencing near the Reservoir. 0.5” diameter hail also occurred with the thunderstorm
- On April 14, 2008, a strong cold front moved through the northern and central Sierra Nevada and western Nevada on April 14 and 15. Slight damage occurred throughout the region. A trained weather spotter located one mile southwest of Fallon estimated a wind gust of 52 kts (60 mph). Visibility was fewer than one mile due to blowing dust
- On April 27, 2010, a powerful storm slammed into the region on the 27 and 28 bringing extensive wind damage. Winds at NAS Fallon hit 64 mph. The high winds caused damage (power lines, trees down, and some structural damage) near Fallon. The Nevada Hwy Patrol reported visibilities of ¼ mile or less in blowing dust in Lovelock and Fallon
- On March 31, 2012, a strong low pressure moved across the North Pacific and into the West on April 1 bringing strong winds to the Sierra and western Nevada on the 31. Winds on the 31st were sustained between 35 and 47 mph with gusts 60-64 mph in the City and Lovelock. Strong winds caused blowing dust, which reduced visibility to ¼ mile or less at times in the City and Lovelock.

5.2.12.3 Location, Extent, and Probability of Future Events

Severe wind events in the County occur every year and are the result of winter storms or severe thunderstorms. All parts of the County are equally prone to these high wind events. Wind gusts in winter storms can often reach 40-60 mph in widespread areas, with gusts in severe thunderstorms being more localized but more intense, up to 80 mph. It is virtually certain the

County will see at least one of these types of wind storms each year, often several events per year.

6.0 VULNERABILITY ANALYSIS

A vulnerability analysis predicts the extent of exposure resulting from a hazard event of a given intensity in a given area. The analysis provides quantitative data used to identify and prioritize potential mitigation measures by allowing communities to focus attention on areas with the greatest risk of damage. A vulnerability analysis consists of:

(1) Asset inventory
(2) Methodology
(3) Data limitations
(4) Exposure analysis
(5) Summary of impacts

6.1 Asset Inventory

Asset inventory is the first step of a vulnerability analysis. Assets within each community include population, buildings (residential and non-residential), critical facilities, and infrastructure. Assets and insured values throughout the County are identified and discussed in detail below.

6.1.1 Population and Building Stock

Population data for the County and City was obtained from the NV State Demographer's 2022 estimate and is shown in Table 19. The Nevada State Demographer's Office maintains annual population estimates by county. Estimated numbers and replacement values for residential and nonresidential buildings, as shown in Table 19, were obtained from the County Assessor's office. To achieve a value the building count was multiplied by an average replacement value of $200,400, which represents a 1,200 sq. ft. home at $167/sq. ft. building cost (Houzeo 2023).

The residential buildings considered in this analysis include single-family dwellings, mobile homes, multi-family dwellings, temporary lodgings, and nursing homes. Nonresidential buildings were also analyzed including commercial, industrial, agricultural, government, educational, and religious centers.

Table 19: Estimated Population and Building Inventory (County and City)

Population	Residential Buildings		Nonresidential Buildings	
NV Demographer Projected 2023 Population	Total Building Count	Total Value of Buildings	Total Building Count	Total Value of Buildings
Churchill County				
26,564	11,036	$2,211,614,400	13,970	$2,799,588,000
City of Fallon				
9,308	3900	$849,094,800	1,694	$339,477,600

Population data for the Tribe was obtained from the Tribal Emergency Manager. Estimated numbers and replacement values for residential and nonresidential buildings, as shown in Table 20, were obtained from the Tribal Emergency Manager.

Table 20: Estimated Population and Building Inventory (Tribe)

Population	Residential Buildings		Nonresidential Buildings	
Tribe Estimated Population	Total Building Count	Total Value of Buildings	Total Building Count	Total Value of Buildings
Fallon Paiute-Shoshone Tribe				
1,567	333	$66,733,200	26	$5,210,400

6.1.2 Critical Facilities and Infrastructure

A critical facility is defined as a public or private facility providing essential products and services to the general public, such as preserving the quality of life in the County and fulfilling important public safety, emergency response, and disaster recovery functions (Table 21).

Similar to critical facilities, critical infrastructure is defined as infrastructure essential to preserve the quality of life and safety in the County. Existing County and City roads were not critical to evacuation or response.

New critical facilities constructed since the 2016 MJHMP include the Churchill County Detention Center, opened in December of 2017, and the William N. Pennington Life Center, opened in June of 2017. The Rafter 3C Arena (used as an evacuation location), the Fallon Youth Club, and the Fallon Convention Center were also added to the list of Critical Facilities (Table 21). Values were calculated by adding 20% to the net assessed value of the buildings to get the market value. Although the building count or value may not be precise, whether residential or nonresidential, this analysis will meet the intention of the DMA 2000 by providing County and City residents with an accurate visual representation of their community's risk by hazard. This data is the most complete dataset available at the time and will be updated in future versions of the MJHMP.

Table 21: Critical Facilities and Infrastructure

Category	Type	Number	Estimated Value Total (millions of $)
Churchill County			
Critical Facilities	Sherriff Stations/Jail	3	$8.623
	Fire Stations	4	$1.85
	Emergency Operation Centers (EOC) & County Admin	1	$8.9
	Public Primary and Secondary Schools	8	$36.813
	Hospital/Emergency Room & Urgent Care	4	$15.197
	Communication Facilities (County Owned)	14	$31.1
	Evacuation Centers	1	$7.739
	Senior Centers	1	$1.617

Category	Type	Number	Estimated Value Total (millions of $)
	Youth/Convention Centers	4	$5.764
Critical Infrastructure	State and federal Hwys (miles)	245	$4,948.00
	Bridges	69	Included in Hwys
City of Fallon			
Critical Facilities	Police Stations	1	$5
	Fire Stations	1	$12
	Youth/Convention Centers	2	$15
Critical Infrastructure	State and federal Hwys (miles)	4	$80
	Airport Facilities	1	$17.1
	Utilities (Water, Wastewater)	7	$100
	Water Treatment Plant	1	$60
	Sewage Treatment Plant	1	$40
	Lift Stations	11	$11
	City Hall	1	$10
	Electrical Infrastructure (Households)	4,254	$200
Fallon Paiute-Shoshone Tribe			
Critical Facilities	With Hazardous Materials	5	N/A
	With Heating Oil	1	N/A
	With Propane	7	N/A
Critical Homes	With Heating Oil	145	N/A
	With Propane	105	N/A
Natural Resources	Stillwater National Wildlife Refuge	1	N/A

6.2 Methodology

A conservative exposure-level analysis was conducted to assess the risks of the identified hazards. Hazard areas were determined using information provided by the U.S. Seasonal Drought Monitor, HAZUS, NBMG, and NWS. This analysis is a simplified assessment of the potential effects of the hazard on values at risk without consideration of probability or level of damage.

Using GIS, the parcels of critical facilities were compared to locations where hazards are likely to occur. If any portion of the critical facility parcel fell within a hazard area, it was counted as impacted. Using census block level information, a spatial proportion was used to determine the percentage of the population and structures located where hazards are likely to occur. Census blocks completely within the boundary of the hazard area were determined to be vulnerable and were totaled by count. A spatial proportion was also used to determine linear assets, such as hwys and pipelines, within a hazard area. The exposure analysis for linear assets was measured in miles. For drought, population was the only asset analyzed, as drought mainly affects people and agricultural lands.

Replacement values or insurance coverage were developed for physical assets. These values were developed from a combination of the County's Assessor's Office, School District, Planning, PW, and HAZUS-MH 2009 run. For facilities without specific values per building in a multi-building scenario (e.g., schools), the buildings were grouped together and assigned one value. For each physical asset located within a hazard area, exposure was calculated by assuming the worst-case scenario (i.e., the asset would be completely destroyed and would have to be replaced). Finally, the aggregate exposure, in terms of replacement value or insurance coverage, for each category of structure or facility was calculated. A similar analysis was used to evaluate the proportion of the population at risk (HAZUS-MH 2023).

6.3 Data Limitations

The vulnerability estimates provided herein use the best data currently available, and the methodologies applied result in an approximation of risk. These estimates may be used to understand relative risk and potential losses from hazards. However, uncertainties are inherent in any loss estimation methodology, arising in part from incomplete scientific knowledge concerning hazards and their effects on the built environment, as well as approximations and simplifications necessary for a comprehensive analysis.

The resulting analysis was compiled to the highest degree possible with the hardware, software, and data availability limitations discovered during plan preparation. HAZUS determined the population and critical facilities within the hazard area and a limited assessment was derived. Where structures would not usually be affected the term N/A (not applicable) is used.

The quantitative vulnerability assessment results are limited to the exposure of people, buildings, critical facilities, and infrastructure. Developing a more detailed or comprehensive assessment of risk (including annualized losses, injuries and deaths, shelter requirements, facility/system function loss, and economic loss) was beyond the scope of this MJHMP. Such impacts may be addressed with future updates of the MJHMP such as with unreinforced masonry (URM) information.

6.3.1 Changes in Development

The County constructed a new detention center in 2017 and the Rafter 3C Arena in 2022. The projects are located outside the flood zone and was built to earthquake standards per the

existing building code. Therefore, these new projects do not significantly affect the vulnerability of the County. Residential structures have increased by 210 since the last update.

6.3.2 Future Development

According to the 2020 Master Plan, Churchill County is committed to future development of mining, communication infrastructure, and energy production (Churchill County 2020). A significant amount of land in the County has potential for development for residential or commercial growth. Several planned unit developments are in the planning stages in the northern part of the County where existing sewage treatment and WTPs subside, both of which may be expanded in the future. Development will proceed slowly and carefully to mitigate impacts to existing residents.

Multiple renewable energy projects, in particular, geothermal production, are currently in various stages of implementation. Although a significant number of people can be employed during construction of a renewable energy plant, permanent positions created are relatively few. All development will incorporate existing or future building codes and regulations including mitigation measures and will not pose a significant vulnerability (Churchill County 2020).

Population growth in the County has been steadily increasing for the last 10 years (5%) along with decreasing unemployment rates. According to the Nevada State Demographer's Office, current population forecasts anticipate a 1.3% annual growth rate through 2041 (Nevada State Demographer 2022). Therefore, the numbers and values of the figures in Table 22 and Table 23 have been updated for this MJHMP update.

6.4 Exposure Analysis

The requirements for a risk assessment, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Risk Assessment, Assessing Vulnerability, Overview

Assessing Vulnerability: Overview

Requirement §201.6(c)(ii): [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c) (2) (i) of this section. This description shall include an overall summary of each hazards and its impact on the community.

Element

- Does the new or updated plan include an overall summary description of the jurisdiction's vulnerability to each hazard?
- Does the new or updated plan address the impact of each hazard on the jurisdiction?

Source: FEMA, 2008

DMA 2000 Recommendations: Risk Assessment, Assessing Vulnerability, Identifying Structures

Assessing Vulnerability: Identifying Structures

Requirements §201.6(c)(2)(ii)(A): The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area.

Element

- Does the new or updated plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?
- Does the new or updated plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in in the identified hazard areas?

Source: FEMA, 2008

DMA 2000 Recommendations: Risk Assessment, Assessing Vulnerability, Estimating Potential Losses

Assessing Vulnerability: Estimating Potential Losses

Requirements §201.6(c)(2)(ii)(B): [The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate.

Element

- Does the new or updated plan estimate potential dollar losses to vulnerable structures?
- Does the new or updated plan reflect changes in development in loss estimates?
- Does the new or updated plan describe the methodology used to prepare the estimate?

Source: FEMA, 2008

The results of the HAZUS exposure analysis are summarized in Table 22, Table 23, and in the discussion below. The results in this exposure analysis were greatly affected by the hardware, software, and data availability limitations described above. The significant hazards designated as high risk and moderate risk are included in the exposure analysis below.

Table 22: HAZUS Potential Hazard Vulnerability Assessment – Population and Buildings[1]

Hazard	Population	Buildings			
		Residential		Nonresidential	
	Number	Number	Value ($)	Number	Value ($)
Total Evaluated	**25,516**	**11,570**	**$3,072,000**	**1,430**	**$2,096,000**
Earthquake – Magnitude 7.1	3	776	$8,490,000	145	$13,660,000
Flood (100yr)	4,875	1,051	$183,557,000	63	$247,633,000
Flood (500yr)	9,992	2,161	$527,590,000	214	$759,680,000

Table 23: HAZUS Potential Hazard Vulnerability Assessment – Critical Facilities Affected[2]

	Sheriff/ Police Stations	Fire Stations	EOC & County Admin	Schools	Hospital Beds
Total Evaluated	**3**	**3**	**2**	**11**	**40**
Earthquake (Magnitude 7.1)	0	0	0	0	1
Flood (100yr)	0	0	0	0	0
Flood (500yr)	1	0	1	3	0

[1] *Data acquired from the 2023 HAZUS run by Churchill County Planning Department (Preston Denney)*

[2] *At least moderately damaged*

6.4.1 Drought

According to the U.S. Seasonal Drought Monitor, the entire area of the County is at equal risk to a drought event. The entire population of the County, 26,564, and City, 9,308, may be affected by drought. Buildings and critical facilities would be limited in their use but would not be damaged.

Drought would affect agriculture, recreation, wetlands, hydro-generation, and geothermal generation, all of which rely on water continuing to flow through the canals. The County agriculture yields a wide variety of crops and livestock and the economic activity generated by agriculture in the county is $90,689,000 per year (USDA 2017). The Reservoir supplies the water operating the three hydro-generation plants during the irrigation season and the interrelationship between the deep geothermal aquifer and the upper aquifers is being studied. The four geothermal power generating properties generate some of the highest amounts of property tax in the County.

6.4.2 Earthquakes

According to the 2018 State HMP, the probability of an earthquake greater than or equal to 5.0 magnitude occurring within 50 years is 80-90% (State of Nevada 2018). Using HAZUS-MH earthquake perimeters of a 7.1 magnitude, 921 buildings (7%) will be at least slightly damaged. No buildings will be damaged beyond repair. The estimated damages sustained from slight to severe could be up to 776 residential buildings (worth $8.49 million), and 145 non-residential buildings (worth $13.66 million).

The HAZUS run indicated the hospital will have minor damage limiting its bed availability (40 beds) by 1% for 30 days (39 beds). The EOC's would have 96.9% functionality on the day of the earthquake. 11 schools (public and private), three police stations, and three fire stations would have more than 50% functionality on the day of an earthquake. The total economic loss (including building and lifeline related losses) is $113.83M for the County. The utility system (including water, gas, oil, electrical, and communication) would have an estimated damage of $91.09M. No critical facilities, transportation systems, or utility systems would have moderate to severe damage.

The entire population of the County (26,564) is considered impacted by an earthquake due to potential road and utility damage, critical infrastructure damage leading to reduced services, and building damage. The HAZUS-MH estimates between one and two injuries requiring medical attention would occur, depending on the time of day.

The percentage of building damage (7%) was obtained from the HAZUS-MH run dated December 22, 2023, and the assessor's office total building numbers and values were used instead of the HAZUS estimates. The affected population, building inventories, and values were calculated from the County's Assessors Office and the Nevada State Demographer.

Nevada Bureau of Mines and Geology reported one URM in the State in 2014 (Nevada Bureau of Mines and Geology 2014) showing 178 Commercial Buildings (1.6M sq. ft.) and 192 residential buildings (358K sq. ft) were constructed of URM. These buildings would have significantly more damage during an earthquake than other buildings. The data from this report can be used by the County, City, and Tribe to identify and target structures for reinforcement.

6.4.3 Epidemic

The entire population of the County (26,564) may be affected by a pandemic; however, building, and critical facilities would not be damaged. Depending on the severity of an epidemic, critical facilities may be impacted by full capacity.

6.4.4 Extreme Heat

The entire population of the County (26,564) may be affected by extreme heat; however, buildings and critical facilities would not be damaged. Depending on the severity of the heat wave, critical facilities may be impacted by full capacity.

6.4.5 Floods

Digital FIRMs and the HAZUS-MH run dated December 21, 2023, were used for an estimate of population and buildings at risk. Within the 100-year floodplain, the population at risk is approximately 4,875 people (19%). The risk posed by the 100-year flood is high with 1,051 residential buildings (9%) and 63 nonresidential buildings (4%) within the 100-year floodplain. The exposure to residential buildings is $183.557 million and exposure to nonresidential buildings is $247.633 million.

Within the 500-year floodplain, the population at risk is approximately 9,992 people (39%). 2,161 home (19%) and 214 nonresidential buildings (15%) subside within the 500-year floodplain. The exposure to residential property is estimated at $527.59 million, and nonresidential property losses is estimated at $759.68 million.

Dam failure was rated as low probability and the entire County was considered within the flood area, which includes 25,516 residents, 11,570 residential buildings, and 1,430 nonresidential buildings. Most residents in the County would be inundated or severely affected by a dam failure. No engineering data is currently available for canal failure; however, the Planning Committee speculated a few hundred homes may be impacted.

6.4.6 Hail/Thunderstorms

Using thunderstorm data provided by the NWS, risks posed by thunderstorms were calculated for the County, City, and Tribe. All population and buildings are within the severe winter storm hazard area, however, homes and buildings within the area are built to withstand a degree of severe weather. The Planning Committee determined a severe thunderstorm event may affect 25% of the population (due to road closures) and 0.5% of the buildings which are 56 residential buildings and 70 non-residential buildings.

6.4.7 Hazardous Materials Events

GIS mapping shows 9,290 parcels are within one mile of major highways within Churchill County, the majority of which are classified as Single Family Residential (Table 24).

Table 24: Land Use Group for Parcels within One Mile of Major Highways in Churchill County

Land Use Group	Count	Percentage
Vacant	1561	16.8%
Single Family Residential	6011	64.7%
Multi-Family Residential	471	5.1%
Commercial	619	6.7%
Industrial	87	0.9%
Rural	454	4.9%
Utilities	21	0.2%
Mines	19	0.2%
Special Use	47	0.5%

Land Use Group	Count	Percentage
Total	9290	100%

Building exposure includes 6,482 or $1,298.992M residential buildings and 2,808 or $562.723M nonresidential buildings may be affected by a Hazmat event.

The critical facilities exposure to a hazardous materials spill is high since all facilities reside within the one-mile radius.

6.4.8 Infestation

The County buildings and infrastructure are not at risk to infestation. County agriculture and jobs, however, would be at risk. The variables for an infestation are too many to accurately determine the financial loss to the County or City.

6.4.9 Severe Winter

Using winter storm data provided by the NWS, risks posed by winter storms were calculated for the County, City, and Tribe. All population and buildings are within the severe winter storm hazard area, however, homes and buildings within the area are built to withstand a degree of severe weather. The Planning Committee determined a severe winter storm event may affect 25% of the population (due to road closures) and 0.5% of the buildings which are 56 residential and 70 nonresidential buildings. The affected population, building inventories, and values were calculated from the County's Assessors office.

6.4.10 Wildfire

According to the Nevada Community Wildfire Risk/Hazard Assessment Project for Churchill County, the risk posed by wildfire is rated low to moderate. The LEPC determined the risk to be low for the City and Moderate for the County and Tribe. The Cold Springs area is evaluated as high hazard. 10 residents and eight residential buildings have exposure to a moderate or high wildland fire (RCI 2004).

6.4.11 Windstorm

Using windstorm data provided by the NWS, risks posed by windstorms were calculated for the County, City, and Tribe. Homes and buildings within the area are built to withstand a degree of severe weather. The Planning Committee determined a severe windstorm event may affect 25% of the population (due to road closures) and 0.5% of the buildings (56 residential buildings and 70 non-residential buildings). The affected population, building inventories, and values were calculated from the County's Assessors office.

7.0 CAPABILITY ASSESSMENT

While not required by the DMA 2000, an important component of an HMP is a review of the County, City, and Tribe's resources to identify, evaluate, and enhance the capacity of those resources to mitigate the effects of hazards. This section evaluates the County, City, and Tribe's resources in three areas – legal and regulatory, administrative, and technical, and financial – and assesses the capabilities to implement current and future hazard mitigation actions.

7.1 Legal and Regulatory Capabilities

The County, City, and Tribe currently support hazard mitigation efforts through their regulations, plans, and programs. The County's Building Code outlines hazard mitigation-related ordinances. Additionally, the County Master Plan identifies goals, objectives, and actions for natural hazards, including floods, drought, and earthquakes. In addition to policies and regulations, the County and City carry out hazard mitigation activities by participating in the NFIP.

Table 25 summarizes the County, City, and Tribe's hazard mitigation legal and regulatory capabilities.

Table 25: Legal and Regulatory Resources Available for Hazard Mitigation

Regulatory Tool	Title	Year Updated	Effect on Hazard Mitigation
Plans	County Master Plan	2020	Lists goals for coordination, neighborhood design, public awareness, floodplain & hazard area development, and geologic hazards to guide land use planning.
	Carson River Watershed Regional Floodplain Management Plan	2018	Provides flood identification and habitat remediation. Provides strategies for floodplain management applied regionally and locally.
	Carson River Geographic Response Plan	2006	Developed to protect the health, safety, environment, and property from the effects of hazardous materials incidents in or near Carson River.
	Comprehensive Economic Development Strategy 2020-2025	2020	Business Development
	Community Wildfire Protection Plan	2005	Provides wildfire hazards. Enables the County to mitigate fuel loads
	State Hazardous Materials Emergency Response Plan	2005	Provides emergency response to reduce impact of HAZMAT spills.
	The County School District Emergency Operations Plan	2023	Provides directives to reduce future hazard impacts on school grounds
	Lahontan Dam Table Top Flood Exercise	2009	Provides a review of reduction in loss of life and minimize property damage

Regulatory Tool	Title	Year Updated	Effect on Hazard Mitigation
	The County School District EOP	2023	School-site EOP
	Western Nevada College Policy Manual Chapters 10 & 11	2019	Public safety and Environmental Health & Safety
	Churchill County Multi-Jurisdictional Emergency Response Plan	2015	Provides directives to respond to emergencies
Program	NFIP	2023	The County & the City adopts and enforces a floodplain management ordinance to reduce future flood damage. In exchange, the NFIP makes federally backed flood insurance available to homeowners, renters, and business owners.
Ordinances and Policies	International Building Code (IBC)	2018	Provides regulations to reduce hazard impacts
	International Fire Code (IFC)	2018	Provides regulations to reduce hazard impacts

7.2 Administrative and Technical Capabilities

The administrative and technical capability assessment identifies the staff and personnel resources available within the County & City to engage in mitigation planning and carry out mitigation projects. The administrative and technical capabilities of the County, City, and Tribe are listed in Table 26.

Table 26: Administrative and Technical Resources for Hazard Mitigation

Staff/Personnel Resources	Department/Agency
County	
Planner(s) or engineer(s) with knowledge of land development and land management practices	Building & Planning
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Building
Planner(s) or engineer(s) with an understanding of manmade or natural hazards	Building, Planning, Fire Dept.
Staff with education or expertise to assess the community's vulnerability to hazards	Building, fire, Emergency Manager
Floodplain Manager	Planning
Personnel skilled in GIS and/or HAZUS-MH	Planning
Scientist familiar with the hazards of the community	UNR, Bureau of Mines & Geology for Earthquakes
Emergency Services	Fire Department, Emergency Management, Sherriff

Staff/Personnel Resources	Department/Agency
Finance (purchasing) – fiscal management	Comptroller
Public information officers, planner(s)	Sherriff's Office, Fire Dept. Executive Staff
City of Fallon	
Planner(s) or engineer(s) with knowledge of land development and land management practices	Building, Planning, & PW
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Building & PW
Planner(s) or engineer(s) with an understanding of manmade or natural hazards	Building, Planning, Fire Dept., Emergency Mgmt., Police Dept.
Staff with education or expertise to assess the community's vulnerability to hazards	Building, Emergency Management, PW
Floodplain manager	City Building
Personnel skilled in GIS and/or HAZUS-MH	Building/Planning
Scientist familiar with the hazards of the community	UNR, Bureau of Mines & Geology for Earthquakes, NOAA
Emergency services	Fire Department, Emergency Management, Police
Finance (purchasing) – Fiscal Management	City Clerk
Public information officers, planner(s)	Police, Mayor's Office

7.3 Financial Capabilities

The fiscal capability assessment lists the specific financial and budgetary tools available to the County, City, and Tribe for hazard mitigation activities. These capabilities, which are listed in Table 27, include both local and federal entitlements.

Table 27: Financial Resources for Hazard Mitigation

Financial Resources	Effect on Hazard Mitigation
Local (County & City)	
Authority to levy taxes for specific purposes	Yes. Upon approval of the County Board of Commissioners or the City Council, staying within the stipulations set forth in the NRS
Capital Improvement Plans and Impact Fees	Assigns impact development fees to finance fire and flood control capital improvement programs
Community Development Block Grants	Yes. Subject to federal/state grant
Incur debt through general obligation bonds	Yes. Staying within the stipulations set forth in the Nevada Revised Statutes
Incur debt through special tax and revenue bonds	Yes. Upon voter approval, staying within the stipulations set forth in the NRS
Incur debt through private activity bonds	Yes. Upon voter approval, staying within the stipulations set forth in the NRS
Withhold spending in hazard-prone areas	Yes

Financial Resources	Effect on Hazard Mitigation
State	
Question #1 State Bond	Funding for parks which can include re-vegetation
Federal	
FEMA HMPG and PDM grants	Provides technical and financial assistance for cost-effective pre-disaster and post-disaster mitigation activities to reduce injuries, loss of life, and damage and destruction of property
FMA	Mitigate repetitively flooded structures and infrastructure
USFA Assistance to Firefighters Grant Program	Provide equipment, protective gear, emergency vehicles, training, and other resources needed to protect the public and emergency personnel from fire
FEMA/DHA Homeland Security Preparedness Technical Assistance Program	Build and sustain preparedness technical assistance activities in support of the four homeland security mission areas (prevention, protection, response, recovery) and homeland security program management
U.S. Housing & Urban Development (HUD) Community Block Grant Program Entitlement Communities Grants	Acquisition of real property, relocation and demolition, rehabilitation of residential and non-residential structures, construction of public facilities and improvements, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes
USEPA Community Action for a Renewed Environment (CARE)	Through financial and technical assistance offers an innovative way for a community to organize and take action to reduce toxic pollution (i.e., storm water) in its local environment. Through CARE, a community creates a partnership implementing solutions to reduce releases of toxic pollutants and minimize people's exposure to them
USEPA Clean Water State Revolving Fund	A loan program providing low-cost financing to eligible entities within state and tribal lands for water quality projects, including all types of non-point source, watershed protection or restoration, estuary management projects, and more traditional municipal wastewater treatment projects
CDC Public Health Emergency Preparedness Cooperative Agreement	Funds are intended to upgrade state and local public health jurisdictions' preparedness and response to bioterrorism, outbreaks of infectious diseases, and other public health threats and emergencies

Financial Resources	Effect on Hazard Mitigation
Bureau of Indian Affairs	Funds have been used to assist with pandemic mitigation as well as flood mitigation

7.4 Current Mitigation Capabilities

The County's, City's, and Tribe's current mitigation programs, projects, and plans are listed in Table 28, Table 29, and Table 30.

Table 28: Churchill County Local Mitigation Capability Assessment

Agency Name (Mission/ Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	POC Name and Phone	Effect on Loss Reduction			Comments
			Support	Facilitate	Hinder	
Building	Code Enforcement, Permitting, Flood Plain Mgmt.	Marie Henson 775-428-0264	✓	✓		Engineering and flood management
Planning Dept.	Economic development	Dean Patterson 775-423-7627	✓	✓		Planning support
Roads Dept.	Roads	Gary Fowkes 775-423-4133	✓	✓		Engineering, detailed knowledge of infrastructure
Utilities & Capital Projects	Water, sewer, capital projects, building maintenance, parks, pool	Building Department 775-428-0264	✓	✓		Engineering, detailed knowledge of infrastructure
Emergency Management	Emergency management, mitigation plan	Richard Ingram (775) 427-4992	✓	✓		Familiar w/ mitigation grants, knowledge of vulnerability
County Fire Chief	Fuels mitigation, public education	Jared Dooley 775-423-6521	✓	✓		Detailed knowledge of vulnerability
School District	Identify and implement mitigation actions for school property	Derild Parsons 775-427-3621	✓	✓		Familiar w/ school district infrastructure

Agency Name (Mission/ Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	POC Name and Phone	Effect on Loss Reduction			Comments
			Support	Facilitate	Hinder	
Sherriff's Office	Public safety	Richard Hickox 775-423-3116	✓	✓		Familiar w/ terrorist mitigation
Health/Human Services	Public Health Officer	Dr. Ted McDonald	✓	✓		Familiar w/ epidemic and CDC grant, health capability
TCID	Canals	Michael Adams 775-423-2141	✓	✓		Control flood channels
LEPC	Hazard Mitigation and public outreach	Steve Endacott (775) 423-4607 Rich Ingram (775) 427-4992	✓	✓		Familiar with mitigation grants, exercise planning

Table 29: City of Fallon Local Mitigation Capability Assessment

Agency Name (Mission/ Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	POC Name and Phone	Effect on Loss Reduction			Comments
			Support	Facilitate	Hinder	
Building & Planning Dept.	Code Enforcement, Economic Development, Flood Plain management	Brian Byrd 775-423-3040	✓	✓		Engineering and Planning support
PW	Roads, water, sewer, capital projects, building maintenance, parks, pool	Brian Byrd 775-423-3040	✓	✓		Engineering, detailed knowledge of infrastructure
Emergency Management	Emergency Management, Mitigation Plan	Steve Endacott 775-427-5356	✓	✓		Knowledge of vulnerability
State Fire Marshall Volunteer Fire	Fuels mitigation, public education	Ralph Hamman 775-423-6521	✓	✓		Detailed knowledge of vulnerability

Agency Name (Mission/ Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	POC Name and Phone	Effect on Loss Reduction			Comments
			Support	Facilitate	Hinder	
Police Department	Public Safety	Ron Wenger 775-426-9303	✓	✓		Familiar w/ terrorist mitigation
City Clerk	City Financial	Michael O'Neill 775-423-5104	✓	✓		Detailed knowledge of infrastructure costs

Table 30: Fallon Paiute Shoshone Tribe Local Mitigation Capability Assessment

Agency Name (Mission/ Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	POC Name and Phone	Effect on Loss Reduction			Comments
			Support	Facilitate	Hinder	
Environmental Dept.	Economic Development, Flood Plain management	Richard Black 775-423-0590	✓	✓		Flood Coordinator, Land Use Planner, Environmental Protection Specialist
Emergency Management	Emergency Management, Mitigation Plan	Jackie Conway 775-867-8706	✓	✓		Knowledge of vulnerability
Information Technology	Information Technology	Steve Naylor 775-423-6075	✓	✓		IT support Management
Tribal Police	Public Safety	David Blackeye 775-423-8848	✓	✓		Tribal Police Dept.

The programs, plans, policies, and regulations listed above provide a basic framework for mitigation projects. These programs cover the County's infrastructure and program needs and are effective. However, the funding for mitigation projects may not always be available.

The County, City, and Tribe, being small in population, have individuals wearing multiple hats, but still possess strong legal, administrative, and financial capabilities. The County is able to enforce the IBC & IFC, Building Code Title 12.09 and 15.05 which restrict building within a floodway, and is a member of the NFIP, in addition to programs for public safety, health and human services, PW, and the school district. These programs are run by trained County staff, who are provided the resources to implement and promote the programs.

7.4.1 National Flood Insurance Program

DMA 2000 Requirements: Mitigation Strategy – NFIP

NFIP Compliance

Requirement §201.6(c)(3)(iii): [The mitigation strategy] must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.

Element

- Does the updated plan document how the planning team reviewed and analyzed this section of the plan and whether this section was revised as part of the update process?
- Does the new or updated plan describe the jurisdiction(s) participation in the NFIP?
- Does the mitigation strategy identify, analyze, and prioritize actions related to continued compliance with the NFIP?

Source: FEMA, March 2008

The County and City have identified special flood-hazard areas and entered the NFIP in 1985 and 1999, respectively. The County, City, and Tribe do not actively participate in the CRS. The CRS is a voluntary program for the NFIP-participating communities to reduce flood losses, facilitate accurate insurance rating, and promote the awareness of flood insurance. The County, City, and Tribe outline mitigation actions listed under goals for floods detailed in Table 33. Current building code within the County, City, and Tribe restricts future building within a floodway.

8.0 MITIGATION STRATEGY

The four-step process for preparing a mitigation strategy includes:

- Developing mitigation goals
- Identifying and analyzing potential actions
- Prioritizing mitigation actions
- Implementing an action plan

8.1 Mitigation Goals and Objectives

The requirements for the local hazard mitigation goals, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Mitigation Strategy – Local Hazard Mitigation Goals

Local Hazard Mitigation Goals

Requirement §201.6(c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Element

- Does the new or updated plan include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards?

Source: FEMA, March 2008

Mitigation goals are defined as general guidelines explaining what a community wants to achieve in terms of hazard and loss prevention. Goal statements are typically long-range, policy-oriented statements representing community-wide visions. The Planning Team developed 10 goals to reduce or avoid long-term vulnerabilities to the identified hazards (Table 31).

Table 31: Mitigation Goals

Goal Number	Goal Description
1	Promote increased and ongoing County, City, and Tribal involvement in hazard-mitigation planning and projects
2	Build and support local capacity to enable the public to prepare for, respond to, and recover from disasters
3	Reduce the possibility of damage and losses due to drought
4	Reduce the possibility of damage and losses due to earthquakes
5	Reduce the possibility of threat to life and losses due to epidemic
6	Reduce the possibility of damage and losses due to floods
7	Reduce the possibility of damage and losses due to severe weather
8	Reduce the possibility of damage and losses due to wildland fires
9	Reduce the possibility of damage and losses due to hazardous materials release
10	Reduce the possibility of damage and losses due to infestations

8.2 Identifying Mitigation Actions

The requirements for the identification and analysis of mitigation actions, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Mitigation Strategy

Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Element

- Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?
- Do the identified actions and projects address reducing the effects of hazards on new buildings and infrastructure?
- Do the identified actions and projects address reducing the effects of hazards on existing buildings and infrastructure?
- Does the mitigation strategy identify actions related to the participation in and continued compliance with the NFIP?

Source: FEMA, March 2008

Mitigation actions are usually grouped into six broad categories:

- Prevention
- Property protection
- Public education and awareness
- Natural resource protection
- Emergency services
- Structural projects

Individual members of the Planning Committee were tasked to provide mitigation actions, listed in Table 32.

Table 32: Mitigation Goals and Potential Actions

Goals	County/ City/ Tribe	Action	New or Existing Buildings	Description
Goal 1: Promote increased and ongoing involvement in hazard-mitigation planning and projects	County	1A	New	Update the Master Plan to be consistent with the hazard area maps and implementation strategies developed in the MJHMP every 10 years. Review & update ordinances & code every three years
	All	1B	New and Existing	Annually review the County's, City's, and Tribe's Emergency Operations Plan and identify needed plan updates
	All	1C	New and Existing	Increase GIS and mapping capability to assess the risk in the County, City, and Tribe
	All	1D	New and Existing	Continue planning and coordination with multi-agency/regional planning for multi-hazards (applies to Goals 3-9)
	All	1E	New and Existing	Integration of new information (i.e., LIDAR, USACE, Canal Report) into County & City planning documents

Goals	County/ City/ Tribe	Action	New or Existing Buildings	Description
Goal 2: Build local capacity to enable the public to prepare for, respond to, and recover from disasters	All	2A	New and Existing	Use social media as a communication tool, as well as an education tool for hazard loss prevention
	All	2B	Existing	Conduct a minimum of one disaster exercise each year
	All	2C	New and Existing	Prepare, develop, & distribute appropriate public information about hazard mitigation programs and projects at County, City, and Tribal-sponsored events
Goal 3: Reduce the possibility of damage and losses due to drought	All	3A	New and Existing	Pursue studies and formalized agreements with upstream agencies to minimize impacts of drought conditions, including aquifer water quality, ground stabilization, economic impacts, and municipal/private well water supply
	All	3B	New and Existing	Encourage public participation in drought strategies through public information programs on water conservation and drought resistant landscaping and through building code ordinances
Goal 4: Reduce the possibility of damage and losses due to earthquakes	All	4A	New	Continue to enforce the IBC provisions pertaining to grading and construction relative to seismic hazards
	All	4B	Existing	Implement a URM building program to determine the structural safety of critical facility and infrastructure, and retrofit buildings, if necessary
	All	4C	Existing	Implement an URM building program to determine the structural safety of existing building inventory, and retrofit buildings, if necessary
Goal 5: Reduce the possibility of threat to life and losses due to epidemic	County	5A	N/A	Improve communication, collaboration, and integration among stakeholders and promote awareness of epidemic threats
	All	5B	N/A	Create & implement a training and exercise program relative to epidemics
Goal 6: Reduce the possibility of damage and losses due to floods	All	6A	New and Existing	Review and update flood plans including coordination with adjacent counties, cities, and special districts supporting a regional approach to flood control
	All	6B	Existing	Install new flood facilities including upgrade of the existing storm drain system to current standards including culverts and channel improvements
	All	6C	Existing	Protect and enhance existing water conveyance structures, storage, and

Goals	County/ City/ Tribe	Action	New or Existing Buildings	Description
				treatment facilities to reduce impact from flood
	All	6D	New and Existing	Formalize agreements to use federal lands to spread flood and precautionary release waters
	All	6E	Existing	Land acquisition of repetitive loss structures
	County	6F	New and Existing	Improve natural waterways in County for drainage
	All	6G	New and Existing	Implement multiple diversion projects for flood reduction along the Carson River and canal system
Goal 7: Reduce the possibility of damage and losses due to Severe Weather	All	7A	Existing	In areas at risk to severe weather, retrofit public buildings to withstand snow loads and severe winds to prevent roof collapse/damage
	All	7B	Existing	Enhance shelter facilities to withstand severe weather events (electrical, structural, etc.)
Goal 8: Reduce the possibility of damage and losses due to wildland fires	All	8A	Existing	Develop partnerships for a community based vegetation management program including chipping programs
Goal 9: Reduce the possibility of damage and losses due to hazardous materials release	All	9A	New and Existing	Enforce zoning ordinances to reduce public health risks from hazardous materials releases
Goal 10: Reduce the possibility of damage and losses due to infestation	All	10A	New and Existing	Develop new / updated contract services for aerial application of pesticides and other treatments

8.3 Evaluating and Prioritizing Mitigation Actions

The requirements for the evaluation and implementation of mitigation actions, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Mitigation Strategy – Implementation of Mitigation Actions

Implementation of Mitigation Actions

Requirement §201.6(c)(3)(iii): [The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

Element

- Does the mitigation strategy include how the actions are prioritized? (For example, is there a discussion of the process and criteria used?)
- Does the mitigation strategy address how the actions will be implemented and administered? (For example, does it identify the responsible department, existing and potential resources, and timeframe?)
- Does the prioritization process include an emphasis on the use of a cost-benefit review (*see page 3-36 of Multi-Hazard Mitigation Planning Guidance*) to maximize benefits?

Source: FEMA, March 2008

The mitigation actions were finalized during the Planning Committee meeting in September of 2016. At this time, the Planning Committee evaluated and prioritized each of the actions. To complete this task, 16 members of the Planning Committee completed the STAPLE+E evaluation criteria using rankings of one for lowest and five for highest priority, acceptance, feasibility, etc. The rankings for each action were totaled and the actions with the highest number of points were evaluated by the committee. These mitigation actions were reviewed and confirmed during the Planning Committee meeting in September of 2023.

Table 33: STAPLE+E Evaluation Criteria for Mitigation Actions

Evaluation Category	Discussion "It is important to consider…"	Considerations
Social	The public support for the overall mitigation strategy and specific mitigation actions	Community acceptance; adversely affects population
Technical	If the mitigation action is technically feasible and if it is the whole or partial solution	Technical feasibility; long-term solutions; secondary impacts
Administrative	If the community has the personnel and administrative capabilities necessary to implement the action or whether outside help will be necessary	Staffing: funding allocation; maintenance/operations
Political	What the community and its members feel about issues related to the environment, economic development, safety, and emergency management	Political support; local champion; public support

Evaluation Category	Discussion "It is important to consider…"	Considerations
Legal	Whether the community has the legal authority to implement the action, or whether the community must pass new regulations	Local, state, and federal authority; potential legal challenge
Economic	If the action can be funded with current or future internal and external sources, if the costs seem reasonable for the size of the project, and if enough information is available to complete a FEMA Benefit Cost Analysis	Benefit/cost of action; contributes to other economic goals; Outside funding required; FEMA Benefit Cost Analysis
Environmental	The impact on the environment because of public desire for a sustainable and environmentally health community	Effect on local flora and fauna; consistent with community environmental goals; consistent with local, state, and federal laws

Upon review by the Planning Committee, mitigation actions were selected for the County, City, and Tribe best fulfilling the goals of the MJHMP and were appropriate and feasible to implement during the five-year lifespan of this version of the MJHMP. In reviewing the actions, the Planning Committee considered the following:

- Actions to strengthen, elevate, relocate, or otherwise improve buildings, infrastructure, or other facilities to enhance their ability to withstand the damaging impacts of future disasters
- Actions in which the benefits (which are the reduction in expected future damages and losses) are greater than the costs considered as necessary to implement the specific action
- Actions to address multi-hazard scenarios or address a hazard presenting the greatest risk to the jurisdiction

The actions are shown in Table 34.

8.4 Implementing a Mitigation Action Plan

A Mitigation Action Plan Matrix was prepared for the County, City, and the Tribe detailing the priority of the mitigation actions, how the overall benefit-cost was taken into consideration, and how each mitigation action will be implemented and administered. The County, City, and Tribe priority ratings were the same for all actions except 2B, 5A, 6E, and 6F which are County only actions. This matrix is shown in Table 34.

Table 34: Action Plan Matrix

Action Number	Department/ Division	Potential Funding Source	Implementation Timeline	Economic Justification	Priority Level
1A	County Planning, City Planning, the Tribe	Local General Fund, HUD	24-36 months	Protection of lives due to pre-planning	High
1B	Emergency Management, Fire Department	HMGP, PDM, State Emergency Response Commission (SERC), Emergency Management Performance Grant (EMPG), USEPA, NDEP, Nevada Department of Conservation and Natural Resources (NDCNR), Department of Homeland Security (DHS), Local General Fund	Ongoing	Protection of lives and property due to pre-planning	High
1C	County planning	Local General Fund	Ongoing	Protection of lives and property due to pre-planning	High
1D	County & City planning emergency management, TCID, Carson River Subconservancy, NAS Fallon, the Tribe, USACE	HMGP, PDM, SERC, EMPG, USEPA, NDEP, NDCNR, DHS, Local General Fund	Ongoing	Protection of lives and property due to pre-planning	High
1E	The County, City & Tribe	USACE, PDM, HMGP, Local General Fund	Ongoing	Protection of lives and property due to pre-planning	Medium
2A	Emergency management, fire department, sheriff, school district, health department	Local general Fund	Ongoing	Protection of homes, businesses, infrastructure, and critical facilities	High
2B	Emergency management, fire department	EMPG, SERC, USEPA, NDEP, NDCNR, Local General Fund	Ongoing	Protection of lives and property due to pre-planning	High (County only)

Action Number	Department/ Division	Potential Funding Source	Implementation Timeline	Economic Justification	Priority Level
2C	Emergency management, fire department, Sherriff, school district, Health Dept. the Tribe, emergency management	Local General Fund	Ongoing	Protection of homes, businesses, infrastructure, and critical facilities	Medium
3A	County & City water utilities, emergency management	Local Utility Charge, Local General Fund, HMGP, PDM, NDEP, USACE, TCID	24-36 months	Protection of homes, businesses, infrastructure, and critical facilities	Medium
3B	County & City water utilities, emergency management	Local Utility Charge, Local General Fund, NDEP, TCID, Carson River Sub. Conservancy	12 months	Protection of homes, businesses, infrastructure, and critical facilities	High
4A	County & City building, planning & PW	HMGP, PDM, U.S. HUD, Local General Fund	24-48 months	Protection of lives, homes, businesses, infrastructure, and critical facilities	High
4C	County & City building, planning, & PW	HMGP, PDM, U.S. HUD, Local General Fund	24-48 months	Protection of lives, homes, businesses, infrastructure, and critical facilities	High
5A	Health Dept.	NV Health & Human Services, CDC	6-12 months	Protection of lives due to pre-planning	Medium (County Only)
5B	Health Dept.	NV Health & Human Services, CDC, Banner Hospital	6-12 months	Protection of lives due to pre-planning	Medium
6A	PW & Tribal Environmental Department	PDM, HMGP, FMA, Resource Finance Conservation (RFC), USDA, NDEP, USEPA, Nevada Department of Resource Conservation Services, Local general fund, PW	24-36 months	Protection of homes, businesses, infrastructure, and critical facilities while strengthening regional coordination	High

Action Number	Department/ Division	Potential Funding Source	Implementation Timeline	Economic Justification	Priority Level
6B	PW	PDM, HMGP, FMA, RFC, USDA, NDEP, USEPA, Natural Resources Conservation Service (NRCS), local general fund, PW	24-36 months	Protection of homes, businesses, infrastructure, and critical facilities	High
6C	PW, Tribal Environmental Department	PDM, HMGP, FMA, RFC, USDA, NDEP, USEPA, NRCS, FEMA, 319(h) grants (Clean Water Act), PW	24-36 months	Protection of homes, businesses, infrastructure, and critical facilities	High
6D	PW, Tribal Environmental Department	PDM, HMGP, FMA, RFC, USDA, NDEP, USEPA, NRCS, FEMA, 319(h) grants, PW	24-36 months	Protection of homes, businesses, infrastructure, and critical facilities	High
6E	Floodplain Manager	PDM, HMGP, FMA, RFC, NDEP, USEPA, NRCS	24-36 months	Protection of homes, businesses, infrastructure, and critical facilities	Medium (County Only)
6F	County PW, TCID	PDM, HMGP, FMA, RFC, USDA, NDEP, USEPA, NRCS, FEMA, 319(h) grants, USGS, Local General Fund, USACE	18-24 months	Protection of homes, businesses, infrastructure, and critical facilities	High (County Only)
6G	County & City PW, TCID	PDM, HMGP, FMA, RFC, USDA, NDEP, USEPA, NRCS, FEMA, 319(h) grants, USGS, local general fund, USACE	18-48 months	Protection of homes, businesses, infrastructure, and critical facilities	High
7A	County & City PW	PDM, HMGP, local general fund	12-14 Months	Protection of infrastructure, and critical facilities	Medium
7B	County & City PW	PDM, HMGP, local general fund, school bond	12-14 Months	Protection of infrastructure, and critical facilities	Medium

Action Number	Department/ Division	Potential Funding Source	Implementation Timeline	Economic Justification	Priority Level
8A	NV Division of Forestry, Fire Dept.	Nevada Department of Forestry, BLM, National Fire, U.S. Fire Service, local general fund	6-12 months	Mitigation project will ensure a greater number of residential structures and critical facilities and infrastructure benefit from actions to protect lives and property from wildfire	Medium
9A	County & City building department, Fire Department	Local general fund, NDEP, USEPA	12-24 months	Protection of lives, homes, businesses, infrastructure, and critical facilities	Medium
10A	County, City, Fire DEPT., NAS, the Tribe	Local general fund, DHA	Ongoing	Protection of lives, homes, businesses, infrastructure, and critical facilities	Medium

9.0 PLAN MAINTENANCE

This section describes a formal plan maintenance process ensuring the MJHMP remains an active and applicable document. It includes an explanation of how the County, City, Tribe, and Planning Committee intend to organize its' efforts to ensure improvements and revisions to the MJHMP occur in a well-managed, efficient, and coordinated manner.

The three step process for plan maintenance are address in detail in sections 9.1, 9.2, and 9.3.

9.1 Monitoring, Evaluating, and Updating the MJHMP

The requirements for monitoring, evaluating, and updating the MJHMP, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Plan Maintenance Process – Monitoring, Evaluating, and Updating the Plan

Monitoring, Evaluating, and Updating the Plan

Requirement §201.6(c)(4)(i): [The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

Element

- Does the new or updated plan describe the method and schedule for monitoring the plan? (For example, does it identify the party responsible for monitoring and include a schedule for reports, site visits, phone calls, and meetings?)
- Does the new or updated plan describe the method and schedule for evaluating the plan? (For example, does it identify the party responsible for evaluating the plan and include the criteria used to evaluate the plan?)
- Does the new or updated plan describe the method and schedule for updating the plan within the five-year cycle?

Source: FEMA, March 2008

The County, City, and the Tribe Emergency Managers recognize the need for plan maintenance and want to include tools into the plan for maintenance. The MJHMP was prepared as a collaborative effort between the County, City, and the Tribe Emergency Management, the County Planning Department, the LEPC, and NDEM. To maintain momentum and build upon this hazard mitigation planning effort, the Planning Committee will monitor, evaluate, and update this MJHMP. The Planning Committee will be responsible for implementing the Mitigation Action Plan. The County Emergency Manager along with the City Emergency Manager will serve as the primary points of contact and will coordinate all local efforts to monitor, evaluate, and revise this MJHMP.

The LEPC will conduct an annual review of the progress in implementing the MJHMP, particularly the Mitigation Action Plan. As shown in Appendix E, the Annual Review Questionnaire and Mitigation Action Progress Report will provide the basis for possible changes in the overall Mitigation Action Plan by refocusing on new or more threatening hazards, adjusting to changes to or increases in resource allocations, and engaging additional support for the MJHMP implementation. The County Emergency Manager will initiate the annual review one month prior to the month of date of adoption. The findings from this review will be presented annually to the County Manager, City Chief of Staff and Tribe Council. The review will include an evaluation of the:

- Participation of County, City, and Tribe agencies and others in the MJHMP implementation
- Notable changes in the County, City, and Tribe's risk of natural or human-caused hazards
- Impacts of land development activities and related programs on hazard mitigation
- Progress made by implementing the Mitigation Action Plan (identify problems and suggest improvements as necessary)
- The adequacy of resources for implementation of the MJHMP

The process of reviewing the progress on achieving the mitigation goals and implementing the Mitigation Action Plan activities and projects will also be accomplished during the annual review process. During each annual review, a Mitigation Action Progress Report will be submitted to the Planning Committee and provide a brief overview of mitigation projects completed or in progress since the last review. As shown in Appendix E, this will include the current status of the mitigation project, including any changes made to the project, the identification of implementation problems and appropriate strategies to overcome them, and whether or not the project has helped achieve the appropriate goals identified in the plan.

In addition to the annual review, the Planning Committee will update the MJHMP every five years. To ensure this occurs, in the third year following adoption of the MJHMP, the Planning Committee will undertake the following activities:

1. Thoroughly analyze and update the County's, City's, and Tribe's risk of natural and man-made hazards
2. Provide a new annual review (as noted above), plus a review of the three previous annual reports
3. Provide a detailed review and revision of the mitigation strategy
4. Prepare a new action plan with prioritized actions, responsible parties, and resources
5. Prepare a new draft MJHMP and submit it to the County, City, and Tribe Boards for possible adoption
6. Submit an updated MJHMP to the State Hazard Mitigation Officer and FEMA for approval

9.2 Implementation Through Existing Planning Mechanisms

The requirements for implementation through existing planning mechanisms, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Plan Maintenance Process – Incorporation Into Existing Planning Mechanisms

Incorporation Into Existing Planning Mechanisms

Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate

Element

- Does the new or updated plan identify other local planning mechanisms available for incorporating the requirements of the mitigation plan?
- Does the new or updated plan include a process by which the local government will incorporate the requirements in other plans, when appropriate?

Source: FEMA, March 2008

After the adoption of the MJHMP, the Planning Committee will continue to ensure the MJHMP is incorporated into existing planning mechanisms. Each member of the Planning Committee will achieve this incorporation by undertaking the following activities:

- Conduct a review of the community-specific regulatory tools to assess the integration of the mitigation strategy. These regulatory tools are identified in Table 25
- Work with pertinent divisions and departments to increase awareness of the MJHMP and provide assistance in integrating the mitigation strategy (including the action plan) into relevant planning mechanisms. Implementation of these requirements may require updating or amending specific planning mechanisms
- Incorporating the Churchill County Water Conservation Plan (2019). The purpose of the plan is to document current conservation efforts and provide a strategy for future water saving measures and incentives

9.3 Continued Public Involvement

The requirements for continued public involvement, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 Requirements: Plan Maintenance Process – Continued Public Involvement

Continued Public Involvement

Requirement §201.6(c)(4)(iii): [The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.

Element

- Does the new or updated plan explain how continued public participation will be obtained? (for example, will there be public notices, an ongoing mitigation plan committee, or annual review meetings with stakeholders?)

Source: FEMA, March 2008

The County, City, and Tribe are dedicated to involving the public directly in the continual reshaping and updating of the MJHMP. Hard copies of the MJHMP will be provided to each department. In addition, a downloadable copy of the plan and any proposed changes will be posted on the County's website. Contact information to which interested parties may direct their comments or concerns will also be posted.

The Planning Committee will also identify opportunities to raise community awareness about the MJHMP and the County's, City's, and Tribe's hazards (including attendance and provisions of materials at sponsored events). Any public comments received regarding the MJHMP will be collected by the County, City, and Tribe Emergency Managers, included in the annual report to the County and City Managers and Tribe Council, and considered during future MJHMP updates. A press release and public notice by the County, City, and Tribe will be issued each year before the annual maintenance meeting inviting the public to participate.

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APPENDIX A: ADOPTION RESOLUTION

Churchill County
Agenda Report

Date Submitted: June 9, 2025

Agenda Item #: New Business - K
Meeting Date Requested: June 18, 2025

To: Board of Churchill County Commissioners
From: Chris Spross, Assistant County Manager/HR Director
Subject Title: Consideration and possible action re: Adoption of the Multi-Jurisdictional Hazard Mitigation Plan.

Type of Action Requested: Adopt

Does this action require a Business Impact Statement? No

Recommend Board Action: motion to adopt the Multi-Jurisdictional Hazard Mitigation Plan as prepared by Dowl and to give authority to the Assistant County Manager to modify the plan for grammatical and formatting errors.

Discussion: People and property in Churchill County, the City of Fallon, and the Fallon Paiute-Shoshone Tribe are at risk from a variety of hazards having the potential to cause widespread loss of life and damage to property, infrastructure, and the environment. The purpose of hazard mitigation is to implement actions that eliminate the risk of hazards or reduce the severity of the effects of hazards on people or property.

This Hazard Mitigation Plan was prepared by Dowl in coordination with Churchill County, the City of Fallon, and the Fallon Paiute-Shoshone Tribe. The Multi-Jurisdictional Hazard Mitigation Plan has been updated to maintain compliance with federal regulations and to maintain eligibility for FEMA hazard mitigation project grant funding. Per Title 44 CFR 201.6.1, it is necessary for the governing board of the county (County Commission) to formally adopt this plan. The minutes of the County Commissioners' meeting documenting the adoption of the Hazard Mitigation Plan will be included in the plan as part of Appendix "A".

Alternatives: None.

Fiscal Impact: None.

Explanation of Impact: None.

Funding Source: N/A

Prepared By: Christian Spross, Assistant County Manager/HR Director

Churchill County
Agenda Report

Reviewed By:

Jim Barbee, County Manager — Date: June 11, 2025

Joseph Sanford, Deputy District Attorney — Date: June 13, 2025

Sherry Wideman, Comptroller — Date: June 13, 2025

Board Action Taken:

Motion: _____

1) None — **Aye: 0**

2) None — **Nay: 0**

(Vote Recorded By)

The submission of this agenda report by county officials is not intended, necessarily, to reflect agreement as to a particular course of action to be taken by the board; rather, the submission hereof is intended, merely, to signify completion of all appropriate review processes in readiness of the matter for consideration and action by the board.

FALLON PAIUTE-SHOSHONE TRIBE

Resolution No. 25-F-019

BE IT RESOLVED BY THE GOVERNING BODY OF THE FALLON PAIUTE-SHOSHONE TRIBE, THE FALLON BUSINESS COUNCIL, THAT;

WHEREAS: the Fallon Business Council is the recognized Governing Body of the Fallon Paiute-Shoshone Tribe ("Tribe") and was established to exercise the privileges and powers of self-government, to conserve and develop the Tribe's resources for the social and economic well-being of its members, and to preserve and protect the civil rights of its members; and

WHEREAS: the Fallon Tribe is federally recognized by the United States Government and the Secretary of the Interior as a Native American Tribe, and by the powers vested by the Tribal Constitution and Bylaws the Business Council has the authority to enter into contracts and administer any funds within the control of the Tribe; and

WHEREAS: the Fallon Paiute-Shoshone Tribe in conjunction with Churchill County and the City of Fallon and the efforts of the Churchill County Hazard Mitigation Planning Committee prepared the Churchill County, Nevada, Multi-Jurisdictional Hazard Mitigation Plan (the HMP); and

WHEREAS: the people and property in Churchill County are at a risk from a variety of hazards having the potential for causing widespread loss of life and damage to property, infrastructure, and the environment. The purpose of hazard mitigation is to implement actions that eliminate the risk from hazards or reduce the severity of the effects of hazards on people and property. The goal of mitigation is to save lives and reduce property damage. In addition, mitigation can protect critical community facilities, reduce exposure to liability and minimize community disruption; and

WHEREAS: the Churchill County, Nevada, Multi-Jurisdictional Hazard Mitigation Plan has been prepared in compliance with Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 United States Code 5165, enacted under Section 104 the Disaster Mitigation Act of 2000, Public Law 026-390 of October 30, 2000;

NOW THEREFORE BE IT RESOLVED that the Fallon Business Council hereby approves and adopts the Churchill County Multi-Jurisdiction Hazard Mitigation Plan, and further directs the Emergency Management Coordinator to continue to inform the public and community of the hazard mitigation strategies recommended by the plan; and

BE IT FINALLY RESOLVED that the Chairman of the Fallon Business Council, or his designee in his absence, is hereby authorized to effectuate any and all administrative actions necessary to carry out the intent of this Resolution.

CERTIFICATION

The seven members of the Fallon Business Council, the Governing Body of the Fallon Paiute-Shoshone Tribe, five of which constitute a quorum, there were **7** members present on the **28th**

day of **January, 2025** who **VOTED 5 FOR, 0 AGAINST, AND 2 ABSTENTION(S),** in the adoption of the foregoing resolution, in accordance with the powers vested by the Fallon Paiute-Shoshone Tribe's Constitution and By-laws.

Philip Johnson, Secretary
Fallon Business Council

CERTIFICATE OF CITY CLERK

STATE OF NEVADA

CITY OF FALLON

THE UNDERSIGNED HEREBY CERTIFIES that:

1. On the 1ST day of July, 2025 the City Council (the *Council)* of the City of Fallon, Nevada (the *City)* convened in regular session at its regular meeting place in the City Hall of the City (the *Meeting),* the duly constituted members of the Council being as follows:

Kelly Frost	Councilmember
Karla Kent	Councilmember
Paul Harmon	Councilmember

and all of such persons were present at the Meeting, thus constituting a quorum. Among other business considered at the Meeting, the attached Plan entitled:

Multi-Jurisdictional Hazard Mitigation Plan dated February 2025

was introduced and submitted to the Council. After presentation and due consideration of the agenda item, the Multi-Jurisdictional Hazard Mitigation Plan was approved by a 3-0 vote of the council.

IN WITNESS WHEREOF, I have signed my name officially and affixed the seal of the City, this 8th day of July, 2025

CITY OF FALLON INCORPORATED JULY 1, 1908 STATE OF NEVADA

Michael O'Neill
City Clerk/Treasurer
City of Fallon

Ken Tedford
MAYOR

THE OASIS OF NEVADA
FALLON
Incorporated 1908

Kelly Frost
Councilwoman

Karla K. Kent
Councilwoman

Paul W. Harmon
Councilman

January 21, 2026

Kiana Wong
Community Planner | PIB Branch | Mitigation Division
1111 Broadway, Suite 1200
Oakland, CA 94607

To Kiana:

The City of Fallon adopted the Multi Jurisdiction Hazard Mitigation Plan on July 1, 2025. As Mayor, and Chief Executive Officer of the City of Fallon, I acknowledge addendums Appendix F and Section 4 to the existing plan and do hereby approve and accept the addendums to the plan.

Sincerely,

Ken Tedford

Ken Tedford
Mayor

FALLON PAIUTE-SHOSHONE TRIBE

Resolution No. 26-F-008

BE IT RESOLVED BY THE GOVERNING BODY OF THE FALLON PAIUTE-SHOSHONE TRIBE, THE FALLON BUSINESS COUNCIL, THAT;

WHEREAS: the Fallon Business Council is the recognized Governing Body of the Fallon Paiute-Shoshone Tribe ("Tribe") and was established to exercise the privileges and powers of self-government, to conserve and develop the Tribe's resources for the social and economic well-being of its members, and to preserve and protect the civil rights of its members; and

WHEREAS: the Fallon Tribe is federally recognized by the United States Government and the Secretary of the Interior as a Native American Tribe, and by the powers vested by the Tribal Constitution and Bylaws the Business Council has the authority to enter into contracts and administer any funds within the control of the Tribe; and

WHEREAS: the Multi-Jurisdictional Local Emergency Planning Committee (LEPC), which the Fallon Paiute-Shoshone Tribe is a Member along with the City of Fallon and Churchill County, prepared the Multi-Jurisdictional Hazard Mitigation Plan, hereby known as the 2025 Multi-Jurisdictional Hazard Mitigation Plan (the HMP); and

WHEREAS: the Multi-Jurisdictional LEPC has prepared the 2025 HMP in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS: the 2025 HMP identifies mitigation goals and actions to reduce or eliminate long-term risk to people in the above-mention jurisdictions from the impacts of future hazards and disasters; and

WHEREAS: adoption by the above-mentioned jurisdictions demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 HMP; and

NOW THEREFORE BE IT RESOLVED that the Fallon Business Council hereby approves and adopts the attached addendum for the 2025 Hazard Mitigation Plan (HMP) for the mitigation planning period between the years 2025-2029 and that subsequent plan updates following the approval period for this plan will require separate adoption resolutions; and

BE IT FINALLY RESOLVED that the Chairman of the Fallon Business Council, or his designee in his absence, is hereby authorized to effectuate any and all administrative actions necessary to carry out the intent of this Resolution.

CERTIFICATION

The seven members of the Fallon Business Council, the Governing Body of the Fallon Paiute-Shoshone Tribe, five of which constitute a quorum, there were **7** members present on the **13th** day of **January 2026**, who **VOTED 4 FOR, 0 AGAINST, AND 3 ABSTENTION(S),** in the adoption of the foregoing resolution, in accordance with the powers vested by the Fallon Paiute-Shoshone Tribe's Constitution and By-laws.

Philip Johnson, Secretary
Fallon Business Council

RESOLUTION ADOPTING THE, 2025 MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

Churchill County

WHEREAS, The Multi-Jurisdictional Local Emergency Planning Committee (LEPC) has prepared a multi-hazard mitigation plan, hereby known as the 2025 Multi-Jurisdictional Hazard Mitigation Plan (Plan); and

WHEREAS The Multi-Jurisdictional LEPC has prepared the 2025 Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS, the 2025 Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people in the above-mentioned jurisdictions from the impacts of future hazards and disasters; and

WHEREAS, adoption by the above-mentioned jurisdictions demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2025 Plan: now, therefore, be it

RESOLVED, that the above-mentioned jurisdictions adopt the attached addendum for the 2025 Plan for the mitigation planning period between the years 2025-2029; be it further

RESOLVED, that subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

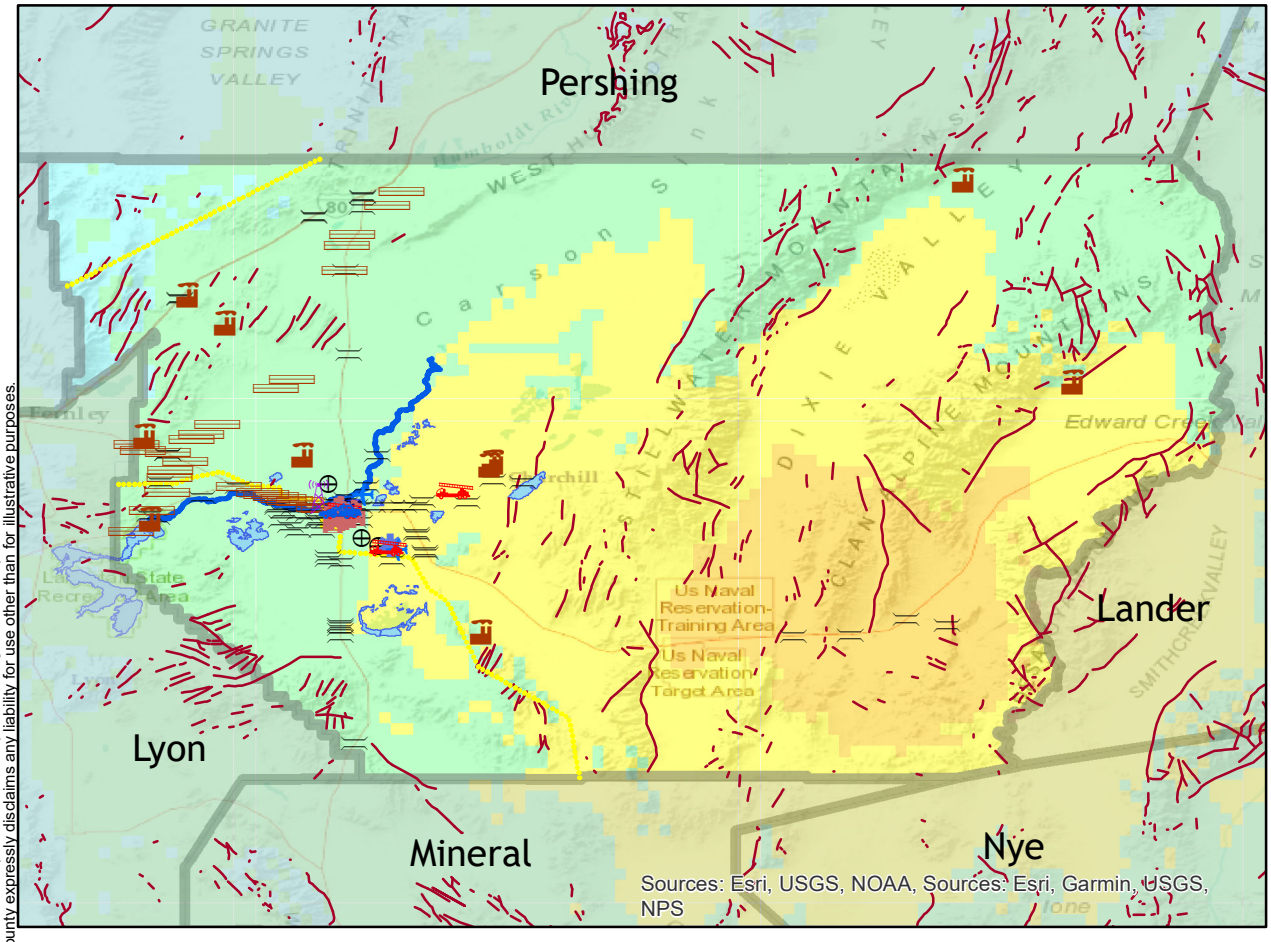
Adopted this 2 day of December 2025

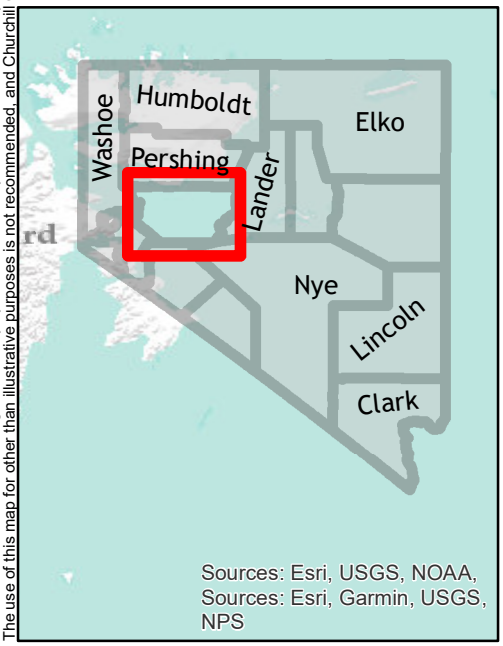
Churchill County

By: Christian Spross
County Manager

APPENDIX B: FIGURES

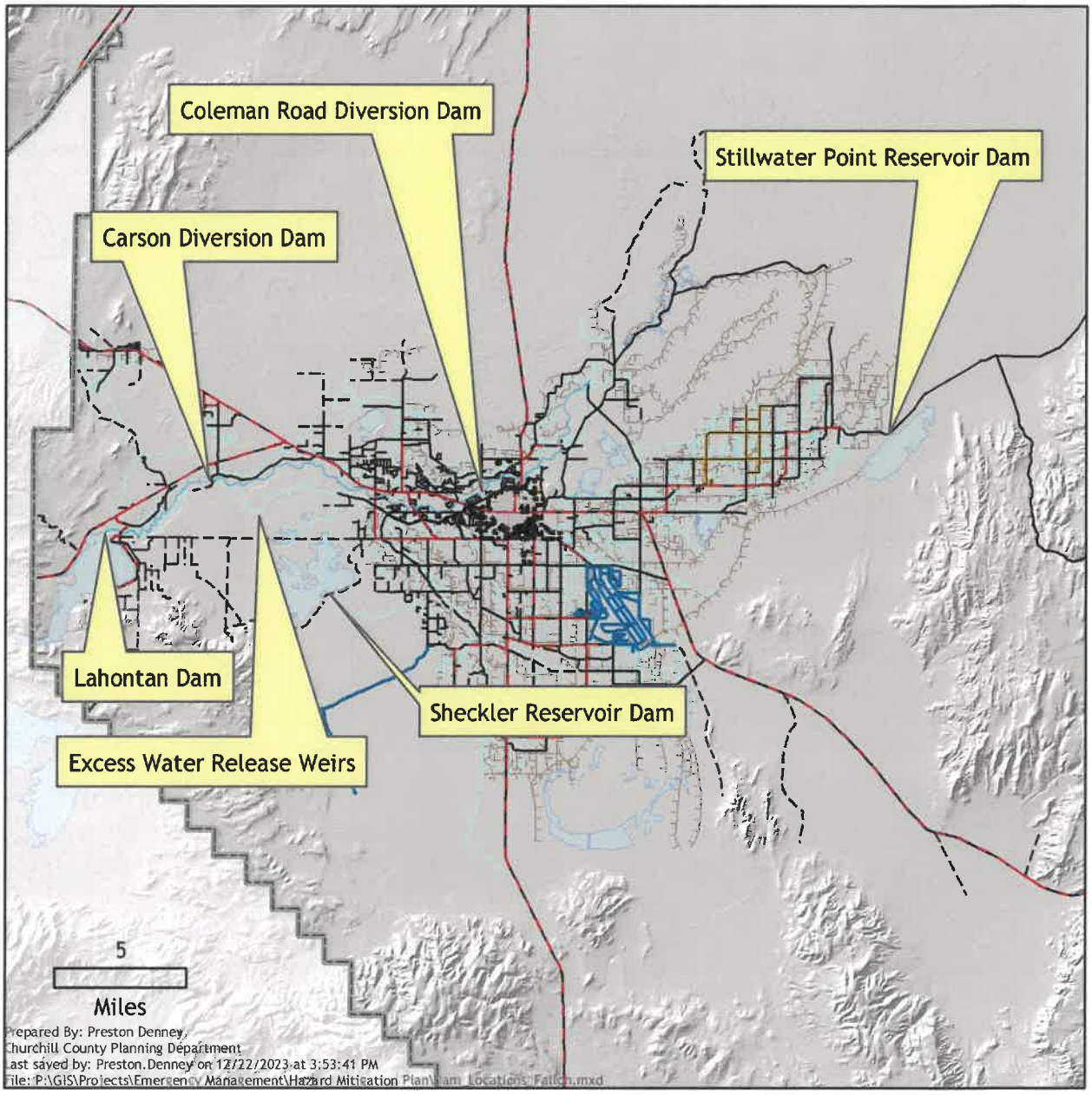
Churchill County Potential Earthquake





- Not Felt (< 0.2 %g)
- Weak (0.2 - 1.4 %g)
- Light (1.4 - 3.9 %g)
- Moderate (3.9 - 9.2 %g)
- Strong (9.2 - 18 %g)
- Very Strong (18 - 34 %g)
- Severe (34 - 65 %g)
- Violent (65 - 124 %g)
- Extreme (> 124 %g)
- Police Station
- Fire Station
- Airport Facility
- School
- Emergency Center
- Communication Facility
- Electric Power Facility
- Waste Water Facility
- Railway Bridge
- Highway Bridge
- Care Facility
- Natural Gas Pipeline
- Earthquake Faults
- Carson River
- County Boundaries
- Water Bodies

Prepared By: Preston Denney
Churchill County Planning Department
Last saved by: Preston.Denney on 12/22/2023 at 3:05:54 PM
File: P:\GIS\Projects\Emergency Management\Hazard Mitigation Plan\2023\Earthquake\hazuseq.mxd



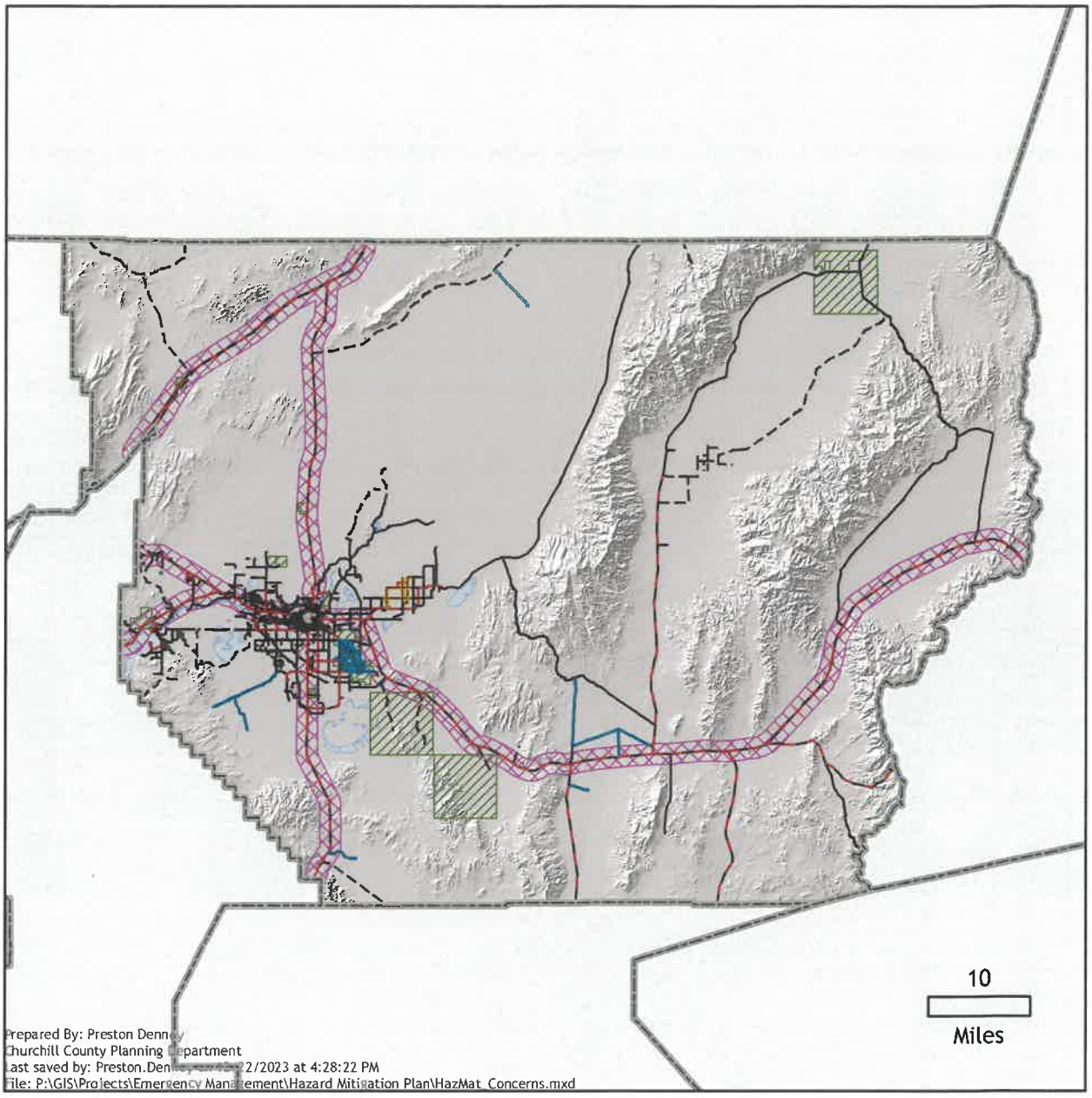
Dams and Critical Control Structures

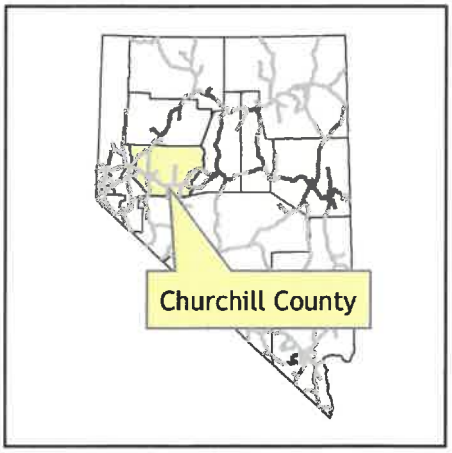
County

- Churchill County Line
- City of Fallon
- Carson River
- Lakes and Reservoirs
- Canals
- Drains

Churchill Roads Maintained By

- State
- County
- City
- Navy
- Tribe
- Private/Other





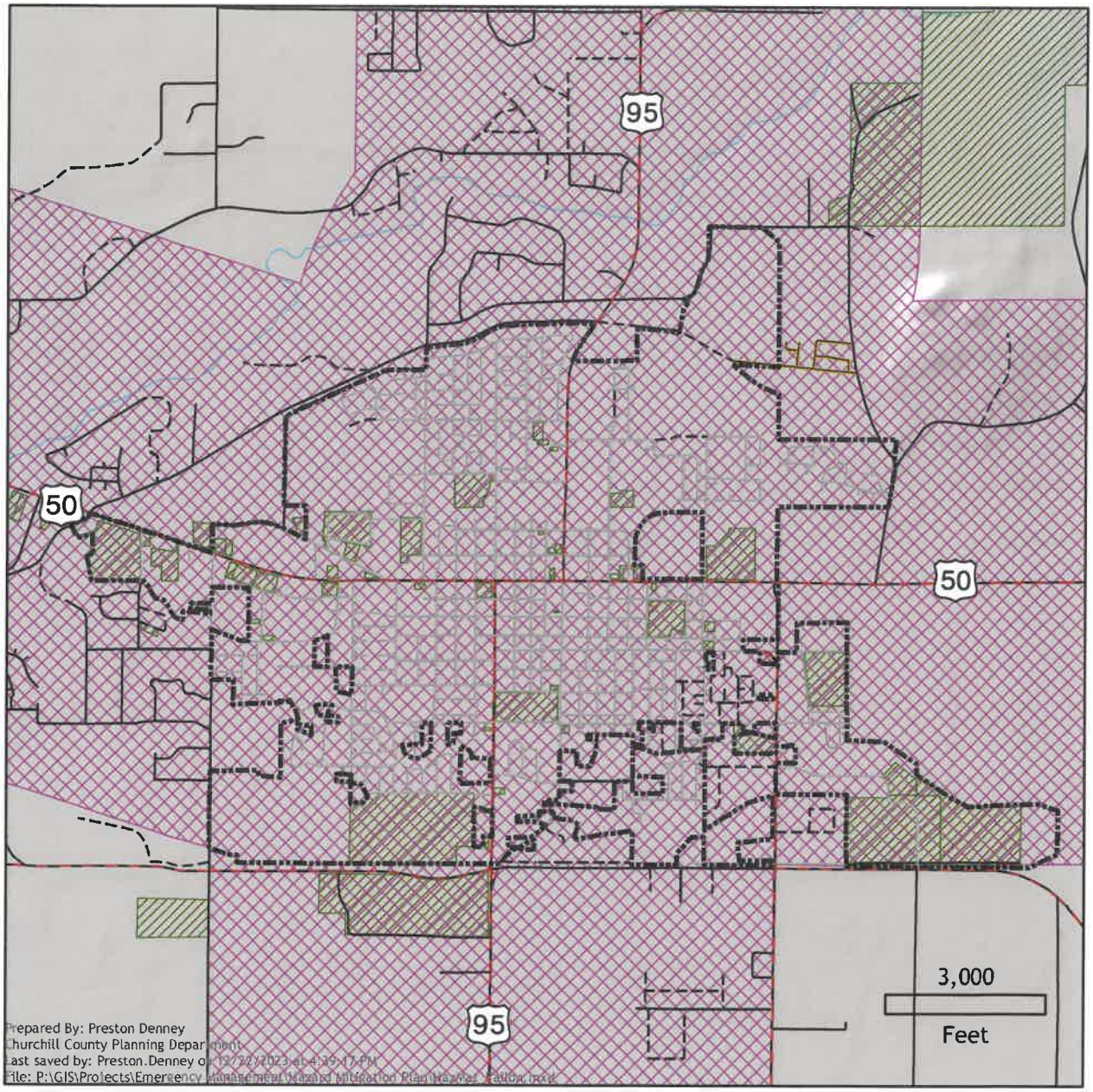
Potential Hazardous Materials

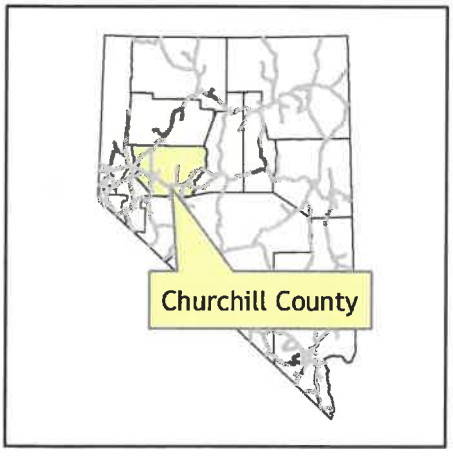
Churchill County

- Churchill County Line
- City of Fallon
- Parcels with Hazardous Material
- Road Buffer for Hazardous Material
- Carson River
- Lakes and Reservoirs

Churchill Roads Maintained By

- State
- County
- City
- Navy
- Tribe
- Private/Other





Potential Hazardous Materials

City of Fallon

- Churchill County Line
- City of Fallon
- Parcels with Hazardous Material
- Road Buffer for Hazardous Material
- Carson River
- Lakes and Reservoirs

Churchill Roads Maintained By

- State
- County
- City
- Navy
- Tribe
- Private/Other

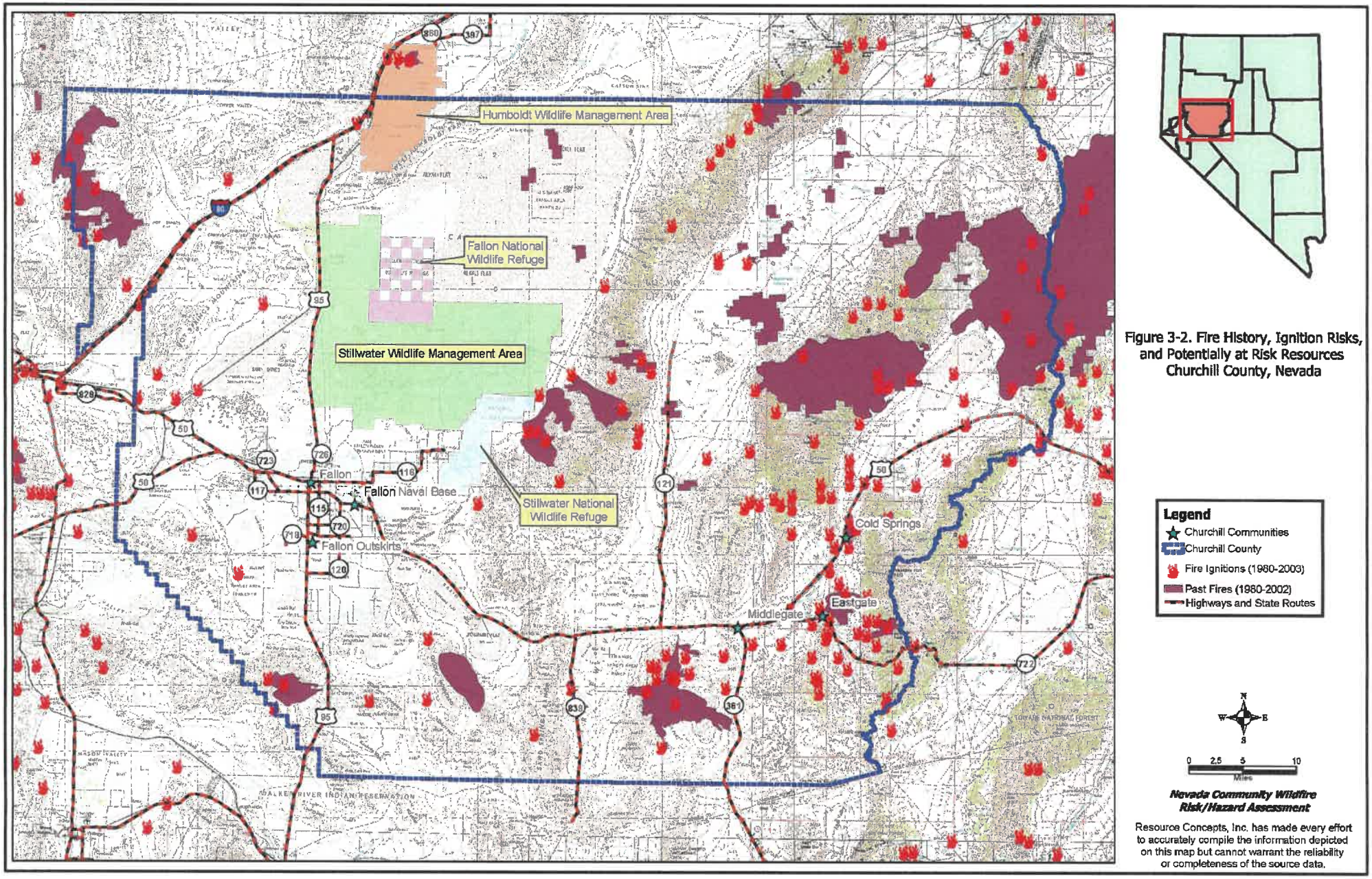
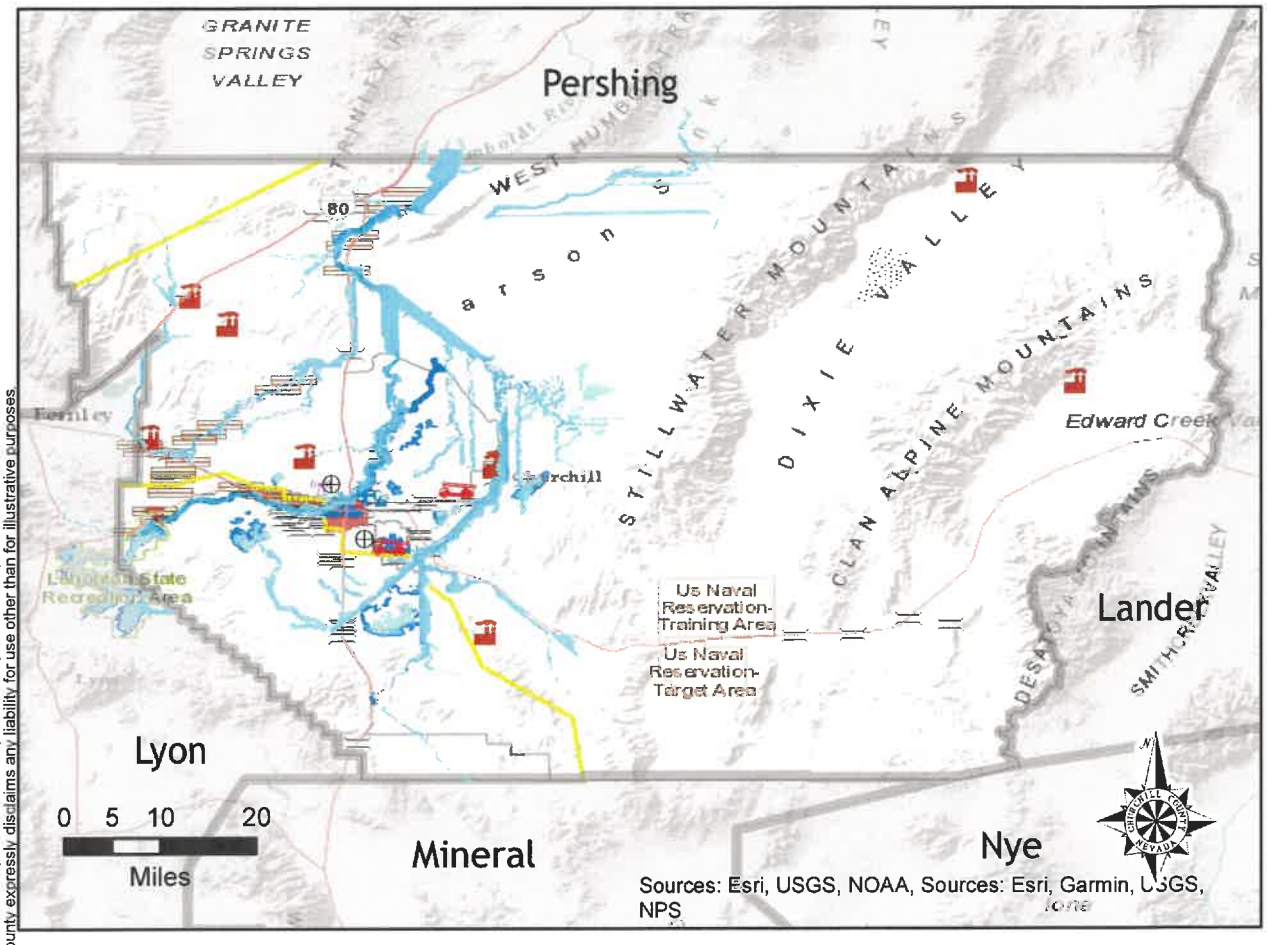
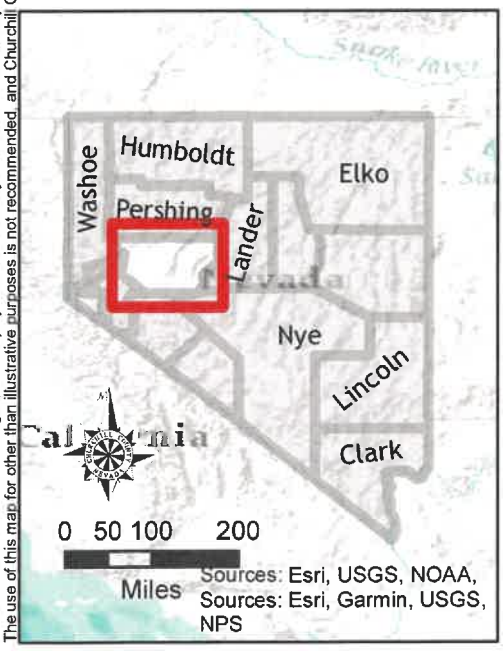


Figure 3-2. Fire History, Ignition Risks, and Potentially at Risk Resources Churchill County, Nevada

Churchill County Potential Flooding
1 Percent Chance (100 Year Event)





Potential Flood Areas

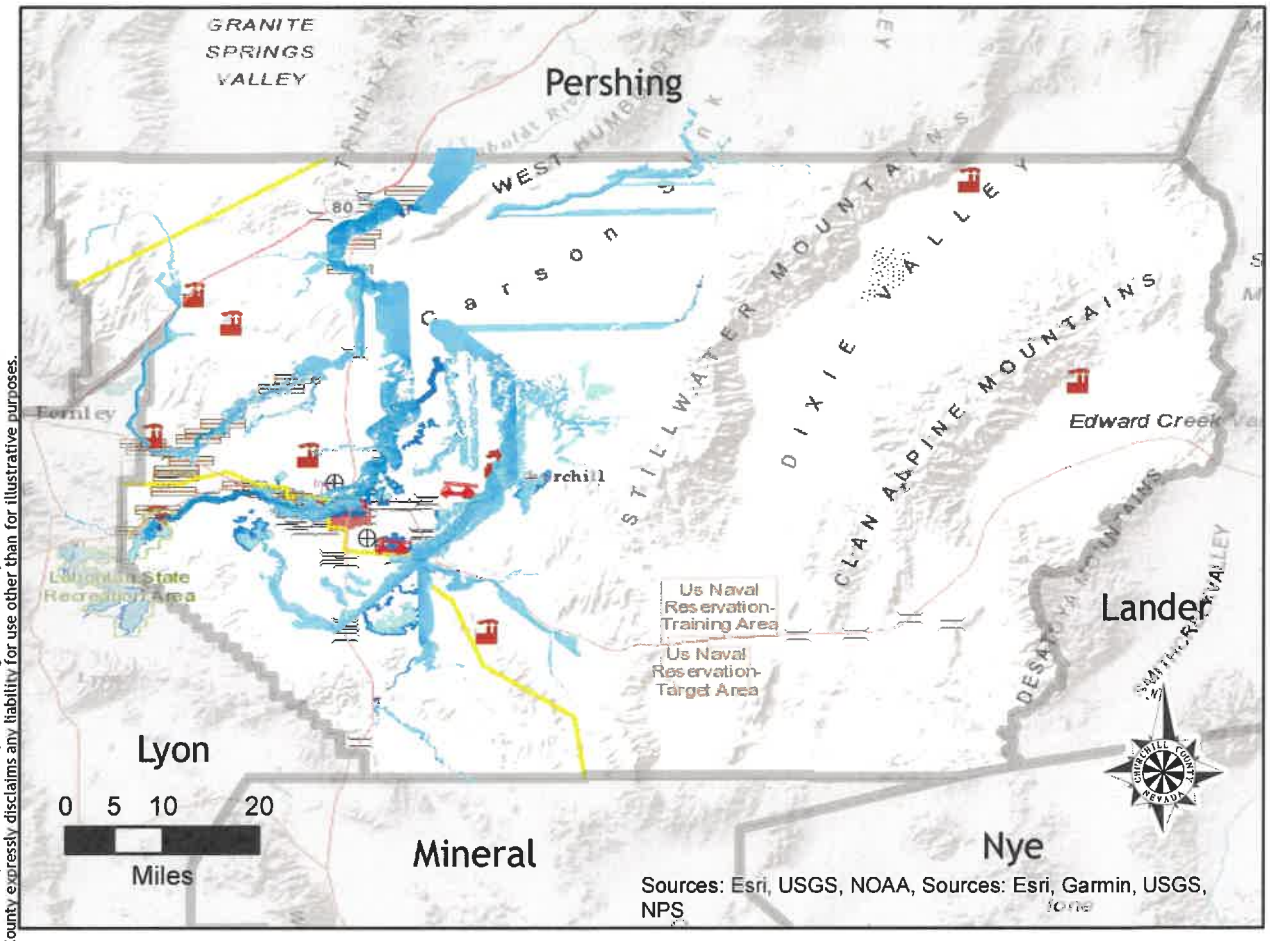
Value

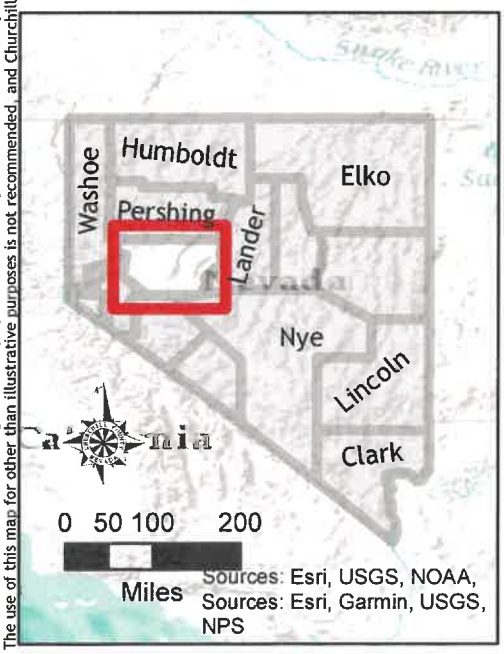
- High : 612.498
- Low : 0

- Police Station
- Fire Station
- Natural Gas Pipeline
- Airport Facility
- School
- Emergency Center
- Communication Facility
- Electric Power Facility
- Waste Water Facility
- Railway Bridge
- Highway Bridge
- Care Facility
- County Boundaries
- Carson River
- Water Bodies

Prepared By: Preston Denney
Churchill County Planning Department
Last saved by: Preston.Denney on 12/21/2023 at 4:33:41 PM
File: C:\HazusData\Regions\Churchill\hazusFl.mxd

Churchill County Potential Flooding
0.2 Percent Chance (500 Year Event)





Potential Flood Areas

Value

High : 605.592

Low : 0

- Police Station
- Fire Station
- Natural Gas Pipeline
- Airport Facility
- School
- Emergency Center
- Communication Facility
- Electric Power Facility
- Waste Water Facility
- Railway Bridge
- Highway Bridge
- Care Facility
- County Boundaries
- Carson River
- Water Bodies

Prepared By: Preston Denney
Churchill County Planning Department
Last saved by: Preston.Denney on 12/21/2023 at 1:12:52 PM
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APPENDIX C: PUBLIC INFORMATION

August 21, 2023

Dear Neighboring Community,

We invite you to participate in the Churchill County Multi-Jurisdictional Hazard Mitigation Plan update.

Over the new few months, Churchill County, the City of Fallon, and the Fallon Paiute-Shoshone Tribe will be finalizing the update to their Multi-Jurisdictional Hazard Mitigation Plan. This update to the plan will be developed to facilitate compliance with federal requirements and to provide a tool for local government, industry, and private venues to help reduce the impact of these threats. Further, the plan will help our community develop infrastructure to lessen potential damage.

One of the major components of the plan development is having a good cross-section of community input and participation by neighboring communities, and that is the reason for this invitation. I hope that you will agree to be included on our planning team. The level of commitment will involve attendance of one meeting to review the components of the plan as they are written.

Our meeting to review the plan update will be help on September 19th, 2023, at 10:00AM at 507 S. Maine St., Fallon, NV 89406. I am hoping that you can participate as a representative of your profession. If you are willing to join our group, please RSVP to Steve Endacott at sendacott@fallonnevada.gov.

Cordially,

Steven Endacott

Steve Endacott
Emergency Manager
City of Fallon

August 21, 2023

Dear Neighboring Community,

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Cordially,

Steven Endacott

Steve Endacott
Emergency Manager
City of Fallon

July 12, 2023

Dear Residents of Churchill County:

Churchill County, along with the City of Fallon, and Fallon Paiute Shoshone Tribe have launched a planning effort to update the *Multi-Jurisdictional Hazard Mitigation Plan* to assess risks posed by natural and manmade disasters and identify ways to reduce those risks. This plan is required under the Federal Disaster mitigation Act of 2000 as a pre-requisite for receiving certain forms of Federal disaster assistance. The plan was created in 2012, updated in 2016, and must be updated every 5 years.

Planning efforts will focus on potential impacts of disasters including earthquake, fire, flood, dam failure, transportation, hazardous material events, and other hazards. Mitigation measures will focus on prevention, property and natural resource protection, public education and awareness, enhanced emergency services, and improved management practices for structural projects.

The public, including local, State and Federal entities is invited to participate in this planning process. A task force consisting of the Local Emergency Planning Committee (LEPC) is supervising the creation of this plan. LEPC meetings are held once per quarter at the Churchill County Emergency Management Office (507 S. Maine St., Fallon, NV 89406).

You are welcome to attend any of these regular meetings or you may contact me directly at (775) 427-5356, email: endacottsteve@charter.net, or submit written comments to the address below.

Steve Endacott
Emergency Manager
55 W Williams Ave
Fallon, NV 89406

Your concerns and hazard mitigation strategy input would be both helpful and welcome.

Sincerely,

Steve Endacott,
Churchill County Emergency Manager

PRESS RELEASE
For
Local Media and Website
July 12, 2023

Local Emergency Planning Committee Seeks Public Input on Hazard Mitigation Plan

Churchill County, the City of Fallon, and the Fallon Paiute Shoshone Tribe have launched a planning effort to update the *Multi-Jurisdictional Hazard Mitigation Plan.* The purpose of the plan is to assess risks to life and property posed by natural and manmade disasters and to identify ways to reduce those risks.

The plan is required under the Federal Disaster Mitigation Act of 2000 as a pre-requisite for receiving certain forms of federal disaster assistance.

An update to the *Multi-Jurisdictional Hazard Mitigation Plan* is being supervised by the Local Emergency Planning Committee (LEPC) which is gathering information and seeking input from residents and the public.

Opportunities for public participation on the plan update include a public questionnaire and review/public comments on the draft plan. All comments received from the public will be documented and considered for inclusion in the plan. The County anticipates submittal of the draft plan to the Churchill County Commissioners for adoption in late 2023 before final submission to the Federal Emergency Management Agency.

Public comments and participation are welcomed and encouraged. Begin by participating in a brief local hazards survey at: https://que7lfsr6.supersurvey.com. The survey will close on Sept. 1, 2023.
Public meetings for input and comments on the plan will occur and be announced this summer and fall.

For questions on this process, please contact Steve Endacott, City of Fallon Emergency Manager at sendacott@fallonnevada.gov

2023 Public Survey Questions

1. What is your zip code?
- 89406
- 89407
- 89408
- 89496

2. Do you have home internet access?
- Yes
- No

3. Do you own or rent your housing?
- Own
- Rent
- Other (please specify)

4. Number of years in the County?

5. How concerned are you about the following disasters affecting your community?

	Not Concerned	Somewhat concerned	Moderately Concerned	Very Concerned
Drought				
Earthquakes				
Epidemic				
Expansive Soils				
Flood				
Ground failure				
infestations				
landslides				
Extreme heat				
Hail and thunderstorm				
Severe winter storm/extreme cold				
Tornado				
Windstorm				
Tsunami/Seiche				
Volcano				
Wildfire				
Hazardous materials				

Terrorism/Weapons of Mass Destruction				

6. Have you or someone in your household (check all that apply):
- Attended meetings or received written information on natural disaster/emergency preparedness?
- Talked with family members about what to do in case of a disaster/emergency?
- Developed a household/family emergency plan?
- Prepared a disaster supply kit?
- Been trained in first aid or CPR within the last year?

7. How much time per year are you willing to spend on disaster/emergency preparedness?
- 0 to 1 hour
- 2 to 3 hours
- 4 to 7 house
- 5 to 15 hours
- 16+ hours

8. Did you consider natural hazards when you bought/moved into your current home?
- Yes
- No

9. Would you be willing to spend more money on a home that has features that make it more disaster resistant?
- Yes
- No
- Other (please specify)

10. Do you carry flood insurance? If yes, what is the annual cost? If no, was it available?

11. Would you be willing to make your home more resistant to natural disasters?

12. What modifications for earthquakes and floods have you made to your home? (Check all that apply)
- Anchor bookcases/cabinets to wall
- Secure water heater to wall
- Install latches on drawers/cabinets

- Fit gas appliances with flexible connections
- Flood proof
- Secure home to foundation
- Brace inside of cripple wall with sheathing
- Brace unreinforced chimney
- Brace unreinforced masonry and concrete walls and foundations
- Elevate home
- Other (please specify)
- None of the above

13. Planning for natural or human-caused disasters can help lessen the impact. The following statement will help us determine community priorities for planning

	Very important	Somewhat important	Neutral	Not very important	Not important
Protecting private property					
Protecting critical facilities (hospitals, fire stations, etc)					
Preventing development in hazard areas					
Protecting natural environment					
Protecting historic and cultural landmarks					
Promoting cooperation among public agencies, citizens, and businesses					
Protecting and reducing damage to utilities					
Strengthening emergency services					

14. Please check the answer that best represents your opinion of the following risk and loss strategies

	Agree	Neutral	Disagree	Unsure
I support regulatory approach to reducing risk				
I support a non-regulatory (voluntary) approach to reducing risk (i.e., providing informational pamphlets, encouraging				

hazard preparedness)				
I support policies to prohibit development in areas subject to natural hazards				
I support the use of local tax dollars to reduce risks and losses from natural disasters				
I support protecting historical and cultural structures				
I would be willing to make my home more disaster-resistant				
I support steps to safeguard the local economy following a disaster event				
I support improving the disaster preparedness of schools				

15. If your property were located in a designated “high hazard” area, or had received repeated damages from a natural hazard event, would you consider a “buyout”, elevation of the structure, or relocation offered by a public agency?

- Yes
- No

16. Hoe prepared do you feel that you and your household are for the impacts of natural hazard events that could occur within the County?

- Completely unprepared
- Somewhat unprepared
- Somewhat prepared
- Mostly prepared
- Completely prepared

17. Thank you for your time. We welcome any other comments below:

Thank you for your time. We welcome any other comments:
The power grid is the most important things the local, county, state and federal government should be concerned with. See the emp commission report and watch grid down power out documentary. 90% of the US population will die according to the emp commission! The next most important thing is water in Churchill County. Emp shields need to be installed on all coun ty vehicles now. They also need to be installed in the local and county law enforcement buildings. Having water shipped in from outside the county is not an option when the entire US grid is down. Wake up! Yes, I have an emp shield installed on my person vehicle.
I live along the river and a canal and am concerned about land movement the most caused by the river or canal since I have moved here I have seen the river under cut the ground below my house. I told TCID but nothing has been done.
These questions were only about efforts to mitigate the effects of potential disaster, mainly associated with flooding. Raising structures, relocation, etc. How to avoid the worst effects of a disaster. But nothing on how to maintain critical infrastructure during a disaster. How do plan to: maintain communication system infrastructure, IT systems, maintaining effectiveness of displaced workers, etc. Do you have a plan to re-route telephone services to pre-determined relocation sites if access to county buildings is affected? Can the IT infrastructure move with people? What is the plan to communicate to the community throughout a disaster--assuming your core infrastructure (buildings and ICT systems housed there are damaged). What about off site back ups. System restoration plans, etc. Pre-determined relocations plans, etc. Do you have them? From what I can tell these issues are not being addressed, and they are the most important elements in a County's ability to respond effectively during a disaster. Where do people go, where do systems go, are the systems survivable, redundant, or resilient? How do you connect physically to outside world? Fiber, copper, microwave, unlicensed wireless? If fiber or copper, do you have back up microwave or unlicensed wireless systems? Don't assume they will not be affected during an outage. You cannot rely on a single connection to these systems, it is an all of the above approach to truly be ready for a disaster, and they must be in place prior to a disaster. A communication strategy through a DR event is what is needed. If you do not have one, develop one. That is my advice.
Thank you for conducting this and for informing us of what we can do. How about volunteering and volunteer projects? Are school buildings and church buildings in consideration for use during certain emergencies? Rafter C building? Senior center? WNC? Convention Center? Might be good to have a master list of what each could offer/provide. I also have a concern about water storage/supply.
No
no comment
when you talk about steps to migate something I want to know what steps we are talking about. We already have a over reach of government
County & City Goverments need to let the agenceys that have the training do the regulateing
No agency of government has any lawful authority to create any law, rule, regulation concerning how people live, preparedness of their homes, etc. Less government and more personal responsibility is what really needs to be in place. It is understood that disasters may occur, but these questions lead me to think that government is preparing to restrict, takeaway or violate the rights given under the organic U.S. Constitution by means of mandates, statutes or the use of corporate law.
Everyone should have a small portion of a disaster survival plan and supplies if not a full 72 hour pack and beyond you need to be responsible for your well being.
You completely ignore the threat of war, civil war, nuclear war, invasion. Russia is threatening nuclear war repeatedly and many believe it is an extremely high risk situation. Tyranny by the current Administration including a complete breakdown of the rule of law and imposition of unconstitutional emergency declarations and lockdowns is increasing the risk of civil war significantly. Large numbers of fighting age Chinese nationals are coming across the southern border possible sleeper cells for a Chinese invasion or at least massive terrorism on US soil related to Taiwan. We should have an organized local response force to deal with these threats that is NOT under the control of the Federal government.

APPENDIX D: MEETING AGENDAS, NOTES, AND HANDOUTS

Churchill County
Local Emergency Planning Committee (LEPC)

155 N. Taylor Street
Fallon, Nevada 89406
Phone: (775) 423-4188
Fax: (775) 423-5677
Email: mheidemann@churchillcounty.org

******NOTICE OF PUBLIC MEETING******

PLEASE POST

PLACE OF MEETING: Churchill County Emergency Management Building
507 S. Main St., Fallon, NV 89406
DATE & TIME: Tuesday ,January 31, 2023 at 10:00 A.M.
TYPE OF MEETING: Regular Quarterly Meeting

Notes:

a. ***This meeting is subject to the provisions of Nevada Open Meeting Law (NRS Chapter 241). This meeting is open and public.***
b. ***Action will be taken on all agenda items, unless otherwise noted.***
c. ***The agenda is a tentative schedule. The Local Emergency Planning Committee may act upon agenda items in a different order than is stated in this notice, so as to effect the people's business in the most efficient manner possible.***
d. ***In the interest of time, the Local Emergency Planning Committee reserves the right to impose uniform time limits upon matters devoted to public comment.***
e. ***Any statement made by a member of the Local Emergency Planning Committee during the public meeting is absolutely privileged.***

Agenda:

1. Call to Order.
2. Verification of the Posting of the Agenda.
3. Self-Introduction of Attendees.
4. Public Comments (on items not on the agenda).
5. Approve minutes from the LEPC meeting on November 22, 2022
6. Discussion/Action – Election of 2023 LEPC Vice -Chair - Committee
7. *Discussion – Introduction/presentation of new Rural Nevada Preparedness Coordinator – Mike Heidemann*
8. Discussion – Introduction/presentation of 5 Years Hazard Mitigation Plan Update Far West Engineering – *Mike Heidemann*
9. Consideration and Possible Action – Review and approval of annual year-end report required by the State Emergency Response Commission (SERC)– Mike Heidemann
10. General Discussion – other items pertinent to LEPC (no action items).
11. Discussion – set tentative meeting dates for remainder of 2023
12. Public Comments (on items not on the agenda).
13. Adjournment.

Affidavit of Posting

State of Nevada)
:ss
County of Churchill)

I, Geof Stark, do hereby affirm that I posted, or caused to be posted, a copy of this notice of public meeting, on the **17th day of January, 2023**, between the hours of 2:30 PM and 5:00 PM, at the following locations in Churchill County, Nevada and websites:

1. Churchill County Emergency Management, 507 S. Maine Street, Fallon, NV;
2. County Administration Building, 155 N. Taylor Street, Fallon, NV;
3. The Churchill County Website @ www.churchillcounty.org/lepc
4. The State of Nevada Website @ https://notice.nv.gov

Geof Stark

Subscribed and Sworn to before me this 17th day of January, 2023.

TASHA HESSEY
Notary Public - State of Nevada
Appointment Recorded in Churchill County
No: 07-2167-4 - Expires Apr 19, 2023

Notary Public

Endnotes:

Disclosures:

- Churchill County is an equal opportunity provider and employer.

Accommodations:

- Churchill County will make all reasonable efforts to assist and accommodate physically handicapped person desiring to attend. Persons who are disabled and require special assistance may contact Mike Heidemann, Emergency Manager, in writing at 507 S. Maine Street, Fallon, Nevada, 89406, or by calling (775) 423-4188.

Procedures:

- The schedule of regular meetings of the Local Emergency Planning Committee is provided for by Title 2, Chapter 2.52, of the Churchill County Code.
- The public meetings may be conducted according to rules of parliamentary procedure.
- Person providing public comment will be asked to state their name for the record.
- The Local Emergency Planning Committee reserves the right to restrict participation by persons in the public meeting where the conduct of such persons is willfully disruptive to the people's business.
- In accordance with Federal law and U.S. Department of Agriculture policy, Churchill County is prohibited from discriminating on the basis of race, color, national origin, sex, age, or disability (not all prohibited bases apply to all programs). To file a complaint of discrimination, write USDA, Director, Office of Equal Rights, 1400 Independence Avenue, S.W., Washington, D.C., 20250-9410, or call (800) 795-3972 (voice) or (202) 720-6382 (TTD)

Churchill County Local Emergency Planning Committee (LEPC)

MEETING MINUTES FOR January 31,2023

The Churchill County Local Emergency Planning Committee (LEPC) held a public meeting on January 31, 2023, beginning at 10:00 AM at the CCEM 507 S. Main St. Fallon, NV.

1. Call to Order – The meeting was called to order at 10:05 AM by LEPC Chair Mike Heidemann.

2. Verification of the Posting of the Agenda. Geoff Stark has properly posted the agenda. Posted 1-17-31.

3. Introduce Attendees – Attendees introduced themselves. Committee Members Present: Alex Haffner – Fallon Churchill F.D., Jared Dooley – Fallon/Churchill F.D., Richard Black – FPST Environmental Mgr., Jackie Conway FPST E.M.,Steve Endacott –Fallon Emergency Manager, Mike Heidemann – CC (Emergency Mgr.), Anne McMillin – C.C. P.I.O., Barry Wood – E.M., Kris Alexander – Fallon P.D., John Frandsen – Fallon P.D., Bill Lawry CCSO., Bob Clifford – ARIES, Steve Towne – Banner/Churchill Hospital, Debra Shyne/CCSD., Alan Wagner – Red Cross, Preston Denney – CC Planning Dept., Brenn McClean – DEM, Emily Paris – Far West Engineering (DOWL), Emily Gould – PHP, Mike Adams – TCID, Kristi Turley – Kennametal, Heather Lafferty – DEM, Jim Richards – Red Cross.

4. Public Comments. – Emily Gould gave a presentation on the Rural Preparedness Summit to be held at the Fallon Convention Center on June 14-15,2023. Flyers will be coming out in March or April, feel free to send any training requests to her. PHP is building a Hazmat response trailer to be utilized by county and tribal partners. It will be kept in Carson City. Heidemann suggested to stock the trailer with operations level equipment, Chief Dooley agreed with that suggestion. A M.E.R.T. trailer has also been obtained by PHP to increase capabilities in case a mobile morgue unit should be needed. Heidemann suggested bringing the trailer to the Preparedness Summitt to the Fallon event to let people see it. Mike Adams gave an extensive report on the water situation as it could possibly affect the county during the spring thaw this year. The amount of water looks to be at least equal to the 2017 event. Farmers will get 100% of their allocation and spread water will happen again. The river and the rest of the system is being cleaned at this time. We are prepared to do the precautionary drawdowns again this year, the decision will be made in March. TCID has also purchased some sonar equipment to increase the ability to monitor the river and canal bottoms. They are also working on a potential flood water inundation map. Bren Mclean reminded everyone that the PIO from DEM has put together generic messaging to reference the upcoming spring thaw event and reminded everyone to take a look at the DEM training schedule. Anne has not been getting the messaging from the DEM PIO. Bren will look in to this. Mike Adams spoke about the WPGETS phone system for emergencies and that TCID is now on the system, Heidemann acknowledged that both the city and county are signed up for this also. Adams also will be working with AT&T to bring the First Net towers in to the county.

5. Approve Minutes from the LEPC meeting on November 22, 2022. - Mike Adams motion, Steve Endacott second to approve the minutes with the corrections recommended by Preston. Motion carries.

6. Discussion and Possible Action – appointment of LEPC Vice -chair. Mike motioned - Ane second to retain Steve Endacott in the position. Motion carries.

7. Discussion and possible action – Introduction of new Nevada Rural Preparedness Coordinator. Bren gave a presentation on what her position does and how it will work with the local jurisdiction. The position is designed to be a direct conduit to DEM. Heather Lafferty will be the contact for access and functional needs requests. These programs can also provide training at the local level.

8. Discussion and Possible Action – Introduction of Emily Paris - Environmental Engineer with DOWL. Dowl has been selected as the contractor for the 5- year hazard mitigation plan update. There will be public meetings held during the process. Emily handed out a survey for each LEPC member to fill out to rank the hazards in Churchill County. Please return these at your earliest convenience. Preston will be a large part of the project as he will be the G.I.S. contact. The goal will be to have the plan completed and sent to FEMA for approval by November 2023.Heidemann asked to have the survey sent to him electronically so he can get it to LEPC members not in attendance today.

9. Discussion possible action- Approval of year- end report required for SERC compliance. Heidemann went over all the required documents that were sent to the SERC Administrator with the committee. Anne motioned Barry to approve the year-end report. Motion carries.

10. Discussion – general discussion on items pertinent to the LEPC that are not on the agenda. Steve spoke about the earthquake drill we had last year and discussed the status of the improvement plan that was developed after the drill. Alex Haffner presented a list with quotes to be put into the SERC-OPTE grant that will be coming out in March. Heidmann also reminded the LEPC that the United WE Stand Grant will be coming out in April, and he will need a list with quotes from the Sheriff and Police Department for that grant. Jackie Conway informed the LEPC that there will be a CAMEO training at the convention center on May 17-19. No cost for this training and all members are invited.

11. Set meeting dates for the LEPC – it was decided to hold the next meeting on May 9th, 2023, and set remaining dates after we address the progress on the hazard mitigation plan.

12. Public comment – no public comment

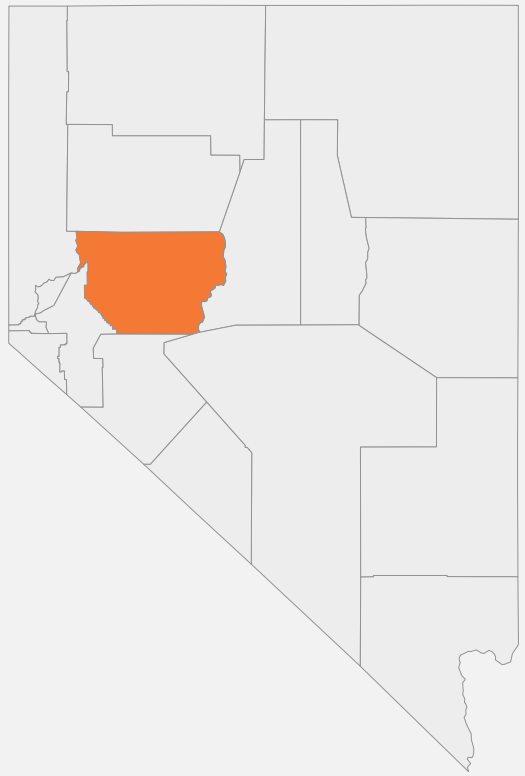
14. Adjournment of the LEPC – Alex motion, Preston second to adjourn. Motion carries. The LEPC was adjourned at 10:04 AM.

HAZARD MITIGATION PLAN UPDATE

Churchill County

1/31/2023

Emily Paris
eparis@dowl.com
775.336.0404



DOWL

CHURCHILL COUNTY HMP UPDATE

- Previous plans were completed in 2012 and 2016
- An update is required every 5 years to remain eligible for FEMA grant funding programs
- This is the first of 3 meetings to involve the public and complete the plan update

HAZARD MITIGATION PLANNING

DEFINITIONS

- **Hazard Mitigation**: Any effort to reduce loss of life and property by lessening the impact and long-term risk of harm from disasters.
- **Hazard Mitigation Planning**: Development of long-term strategies for protecting people and property from future hazard events. Planning includes participation by state, tribal, and local governments who identify and evaluate the risks and vulnerabilities associated with natural disasters and create strategies or identify courses of action to minimize the risks of identified hazards.

CHURCHILL COUNTY HAZARDS

2016 HAZARDS IDENTIFIED

Table 5-1. Identification and Screening of Hazards

HAZARD TYPE	SHOULD IT BE PROFILED?	EXPLANATION
Avalanche	No	No historical record of this hazard in the County.
Drought	Yes	Statewide drought declaration were issued in 2002 and 2004.
Earthquake	Yes	Several active fault zones pass through the County.
Epidemic	Yes	This hazard was addressed in the State Multi-Hazard Mitigation Plan.
Expansive Soils	No	No historical record of this hazard in the County.
Extreme Heat	No	No historical record of this hazard in the County.
Flood (Inc. Dam/Levee Failure)	Yes	Flash floods occurred during thunderstorms. Carson River flooded numerous times in recent history.
Hazardous Material Event	Yes	Churchill has several facilities that handle or process hazardous materials. Hazmat travels through the City on the 2 intersecting highways.
Infestations	Yes	Weed and insect infestations are known
Land Subsidence & Ground Failure	No	No historical events
Severe Weather (Snow/Ice/Windstorm/Tornado)	Yes	Churchill is susceptible to severe weather. Previous events have caused damage to property. Tornado warnings occur Frequently.
Seiche	No	No historical record of this hazard in the County.
Volcano	Yes	Significant historic events occurred in the County However a young volcano resides in the County and Mammoth has a small chance of an event occurring.
WMD/Terrorism	Yes	New to this plan update. Due to the sensitivity of the hazard, while the risk will be identified, it will not be discussed further in the vulnerability analysis or mitigation strategies.
Wildland Fire	Yes	The terrain, vegetation, and weather conditions in the region are favorable for the ignition and rapid spread of wildland fire.

CHURCHILL COUNTY HAZARDS

2016 HAZARDS RANKED

- Ranked by County, City, and Tribe, then combined

Table 5-4: Combined Ranking Results

High Risk	Medium Risk	Low Risk
Earthquake Flood Terrorism/WMD	Hazardous Materials Severe Weather Wildfire	Drought Epidemic Infestation Volcano

Table 5-3: Hazard Ranking Results

Churchill County		
High Risk	**Medium Risk**	**Low Risk**
Earthquake Flood Hazardous Materials Terrorism/WMD	Severe Drought Weather Wildfire	Epidemic Infestation Volcano
City of Fallon		
High Risk	**Medium Risk**	**Low Risk**
Earthquake Hazardous Materials Terrorism/WMD	Drought Epidemic	Infestation Severe Weather Volcano Wildfire
Fallon Paiute-Shoshone Tribe		
High Risk	**Medium Risk**	**Low Risk**
Earthquake Terrorism/WMD	Hazardous Materials Severe Weather	Drought Epidemic Flood Infestation Volcano

HMP UPDATE PROCESS

STEPS

1. Risk Assessment
2. Hazard Screening
3. Vulnerability Analysis
4. Capability Assessment
5. Mapping Hazards
6. Maintain Public Participation
7. Identify Goals and Future Mitigation Projects
8. Complete and Submit Plan

RISK ASSESSMENT

- Has a natural and/or technical or human-caused disaster occurred?
- Should the list of hazards addressed in the plan be modified?
- Are there any new data sources to be aware of?
- Do any new critical facilities or infrastructure need to be added to the asset list?
- Have any changes in development trends occurred that could create additional risks?
- Are there repetitive losses and/or severe repetitive losses to document?

HAZARD SCREENING

- Identifying and assigning vulnerability ratings to hazards
- Begin today

VULNERABILITY ANALYSIS

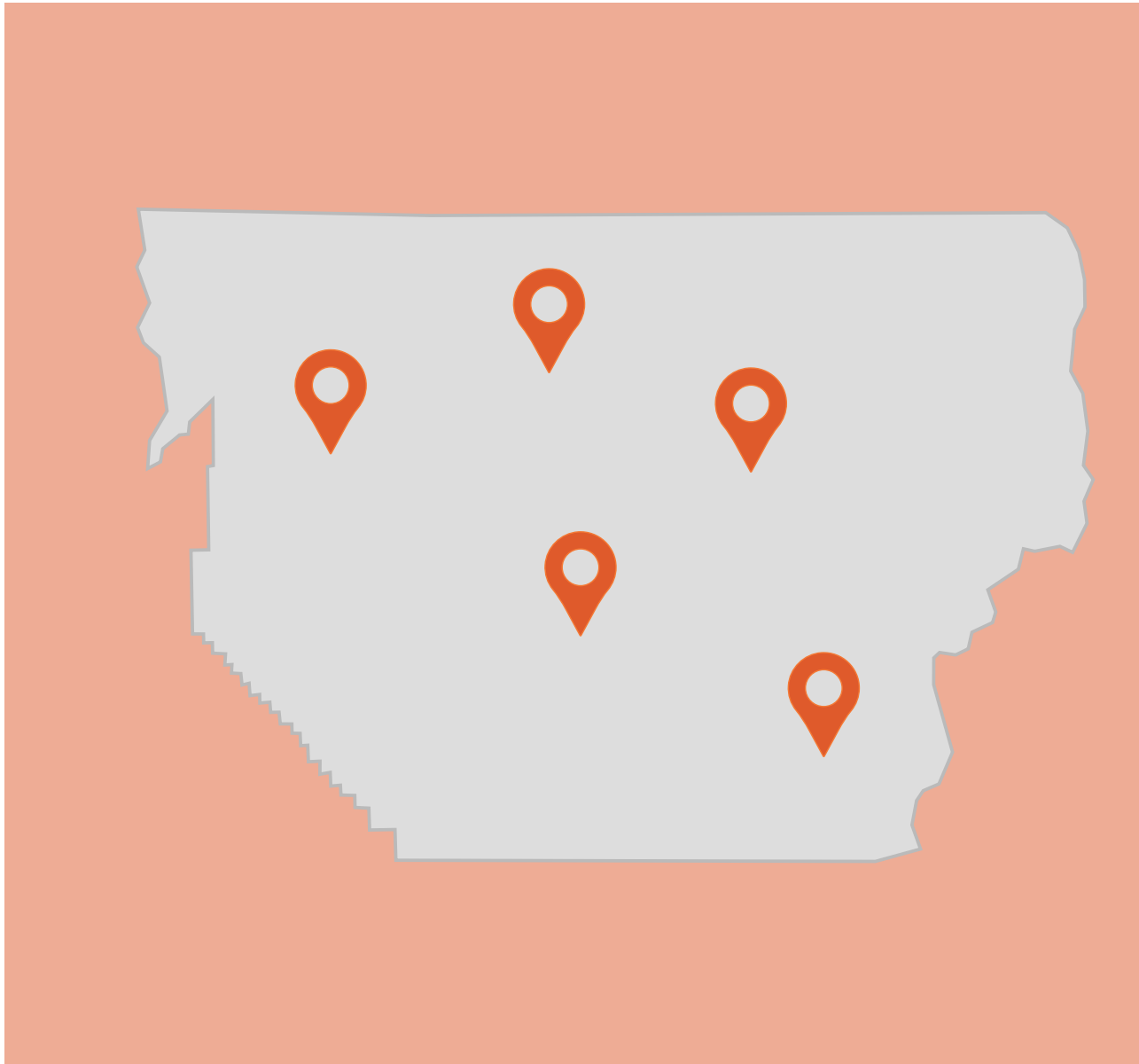
- Predicts the extent of exposure that may result from a hazard event of a certain intensity in a given area
- Quantitative data used to identify and prioritize potential mitigation measures
- Critical facilities are compared to locations where hazards are likely to occur.

CAPABILITY ASSESSMENT

- Has the County adopted any new policies, plans, regulations, or reports that could be incorporated into this plan?
- Are there different or additional administrative, human, technical, and financial resources available for mitigation planning?
- Are there different or new education and outreach programs and resources available for mitigation activities?
- Has National Flood Insurance Plan participation changed?

MAPPING HAZARDS

- Churchill County will complete
- FEMA HAZUS software?
- Potential Loses include physical damage, economic loss, and social impacts



MAINTAIN PUBLIC PARTICIPATION

- Public Participation is a requirement of the plan update
    1. Please sign-in for the meeting with your name, organization and contact
    2. LEPC meeting agendas and minutes will be submitted with the plan update
- Outreach strategy ideas:
    1. Local paper
    2. Letters in utility bills
    3. Social Media
    4. Posting on County Website
    5. Letters addressed to any specific stakeholders or stakeholder groups
        1. Letters to neighboring counties and governments
        2. Press Release

IDENTIFY GOALS AND FUTURE MITIGATION PROJECTS

1A. Update the Master Plan to be consistent with the hazard area maps and implementation strategies developed in the MJHMP every 10 years. Update Ordinances every 3 years.

1B. Annually review the County's & City's Emergency Operations Plan and identify needed plan updates

1C. Increase GIS and mapping capability to assess the risks in the County & City & FPST

1D. Continue planning and coordination with multi-agency/regional planning for multi-hazards

1E. Integration of new information (i.e., LIDAR, USACE Canal Report) into County, City & FPST planning documents.

2A Utilize social media as a communication tool, as well as an education tool for hazard loss prevention

2B. Conduct minimum of one disaster exercise/year

IDENTIFY GOALS AND FUTURE MITIGATION PROJECTS

2C. Prepare, develop, & distribute appropriate public information about hazard mitigation programs and projects at County, City & FPST sponsored events

3A. Pursue studies and formalized agreements with upstream agencies to minimize impacts of drought conditions, including aquifer water quality, ground stabilization, economic impacts and municipal/private well water supply

3B. Encourage public participation in drought strategies through public information programs on water conservation and drought resistant landscaping and through building code ordinances

4A. Continue to enforce the International Building Code (IBC) provisions pertaining to grading and construction relative to seismic hazards. Update County & City Codes to IBC 2012 when it is released

4B. Implement and Unreinforced Masonry (URM) building program that determines the structural safety of critical facility and infrastructure, and retrofit buildings, if necessary

4C. Implement and Unreinforced Masonry (URM) building program that determines the structural safety of existing building inventory, and retrofit buildings, if necessary

IDENTIFY GOALS AND FUTURE MITIGATION PROJECTS

5A. Improve communication, collaboration and integration among stakeholders and promote awareness of epidemic threats

5B. Create & implement a training and exercise program relative to epidemics

6A. Review & update flood plans for coordination w/ adjacent counties, cities, and special districts supporting a regional approach to flood

6B. Install new flood facilities including update of the existing storm drain system to current standards including culverts and channel improvements

6C. Protect and enhance existing water conveyance structures, storage and treatment facilities to reduce impact from floods.

6D. Formalize agreements to utilize federal lands to spread flood and precautionary release waters.

6E. Land acquisition of repetitive loss structures

IDENTIFY GOALS AND FUTURE MITIGATION PROJECTS

6F. Improve natural waterways in the County for drainage

6G. Implement multiple diversion projects for flood reduction along the Carson River and canal system

7A. In areas at risk to severe weather, retrofit public buildings to withstand snow loads and severe winds to prevent roof collapse/damage.

7B. Enhance shelter facilities to withstand severe weather events (electrical, structural, etc.)

8A. Develop partnerships for a community-based vegetation management program including chipping programs

9A. Enforce zoning ordinances to reduce public health risks from hazardous materials releases.

10A. Reduce the possibility of damage and losses due to Terrorism/WMD

COMPLETE AND SUBMIT PLAN

- The plan will be submitted to NDEM and FEMA
- Hope to complete plan by end of 2023

NEXT STEPS

- Please complete Hazard Screening and return in person today or via email
- Next HMP LEPC Meeting:
  - Review hazard assessment results
  - Present Vulnerability Results
  - Establish County's Goals
  - Identify mitigation Projects
  - Continue to Solicit Public Participation

THANK YOU...

Any questions or comments?

Churchill County
Local Emergency Planning Committee (LEPC)

507 S. Maine St
Fallon, Nevada 89406
Phone: (775) 423-4188
Fax: (775) 423-5677
Email: mheidemann@churchillcounty.org

******NOTICE OF PUBLIC MEETING******

PLEASE POST

PLACE OF MEETING: Churchill County Emergency Management*
507 S. Maine St., Fallon, NV 89406
DATE & TIME: Tuesday, May 9th, 2023 at 10:00 A.M.
TYPE OF MEETING: Regular Quarterly Meeting
*Note – this meeting is being held in person.

Time: 10:00 AM Pacific Time (US and Canada)

Notes:

a. ***This meeting is subject to the provisions of Nevada Open Meeting Law (NRS Chapter 241). This meeting is open and public.***
b. ***Action will be taken on all agenda items, unless otherwise noted.***
c. ***The agenda is a tentative schedule. The Local Emergency Planning Committee may act upon agenda items in a different order than is stated in this notice, so as to effect the people's business in the most efficient manner possible.***
d. ***In the interest of time, the Local Emergency Planning Committee reserves the right to impose uniform time limits upon matters devoted to public comment.***
e. ***Any statement made by a member of the Local Emergency Planning Committee during the public meeting is absolutely privileged.***

Agenda:

1. Call to Order.
2. Verification of the Posting of the Agenda.
3. Self-Introduction of Attendees.
4. Public Comments (on items not on the agenda).
5. Approve minutes from the LEPC meetings on January 31,2023 and April 27th, 2023.
6. Discussion and Possible Action – Approval of Update to LEPC Bylaws – *Steve Endacott/Committee*
7. Discussion and Possible Action – Approval of SERC OPTE Grant amounts– *Steve Endacott, Alex Haffner/Committee*
8. Consideration and Possible Action – Election of a New LEPC Vice-Chairman – *Steve Endacott*
9. Discussion and Possible Action – Results of The Hazard Screening Worksheets – Ms. Emily Paris, Environmental Specialist, DOWL
10. General Discussion – other items pertinent to LEPC (no action items).
11. Public Comments (on items not on the agenda).
12. Adjournment. See NOTE below

NOTE: After the formal LEPC meeting is adjourned, all attendees are asked to remain to participate in a Hazard Mitigation Working Session in support of the new county Hazard Mitigation Plan. Areas to be covered include the identification of any new facilities, infrastructure, regulatory plans, or policies in the County.

Affidavit of Posting

State of Nevada)
:ss
County of Churchill)

I, Geof Stark, do hereby affirm that I posted, or caused to be posted, a copy of this notice of public meeting, on the 2nd day of May, 2023 between the hours of 3:00 PM and 5:00 PM, at the following locations in Churchill County, Nevada and websites:

1. Churchill County Emergency Management, 507 S. Maine Street, Fallon, NV;
2. City Hall, 55 W. Williams Avenue, Fallon, NV;
3. County Administration Building, 155 N. Taylor Street, Fallon, NV;
4. Road Department, 330 N. Broadway Street, Fallon, NV;
5. The Churchill County Website @ www.churchillcounty.org/lepc
6. The State of Nevada Website @ https://notice.nv.gov

Geof Stark

Subscribed and Sworn to before me this May 2ND, 2023.

LACIE MCAFEE
Notary Public - State of Nevada
Appointment Recorded in Churchill County
No: 15-1242-4 - Expires December 11, 2026

Notary Public

Endnotes:

Disclosures:

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Accommodations:

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Procedures:

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Churchill County Local Emergency Planning Committee (LEPC)

MEETING MINUTES FOR 09 May, 2023

The Churchill County Local Emergency Planning Committee (LEPC) held a public meeting on 09 May, 2023, beginning at 1000 AM at the Churchill County Emergency Management office 507 S. Maine St., Fallon, NV 89406

1. Call to Order – The meeting was called to order at 10:05 AM by LEPC Chairman Steven Endacott.
2. Verification of the Posting of the Agenda. Geoff Stark has properly posted the agenda on 02 May, 2023
3. Attendees – Attendees and Committee Members Present: Jared Dooley – Fallon/Churchill F.D., Steve Endacott –Fallon EM, Anne McMillin – CC P.I.O., Ron Wenger and John Riley – Fallon P.D., Bill Lawry-CC S.O., Bob Clifford – ARIES, Mike Adams-TCID, Richard Black-Fallon Paiute/Shoshone Tribe Fallon, Emily Paris-DOWL LLC, Alan Wagner-Red Cross, Sheryl Faught and Barbara Lewis-LDS Church and Community Residents.
4. Public Comments. – There were no public comments.
5. Approve minutes from the LEPC meetings on January 31,2023 and April 27th, 2023: Minutes were reviewed. Mike Adams proposed and Anne McMillen seconded that the minutes be approved. Minutes were approved by a voice vote with no opposition.
6. Discussion and Possible Action – Approval of Update to LEPC Bylaws: The Nevada State Emergency Response Commission (NV SERC) requested that two additional articles be added to the Churchill County LEPC Bylaws. Specifically, ARTICLE IX concerning the Distribution of The Hazardous Materials Response Plan Annex, and ARTICLE X concerning the contingency and disposition of assets should the CC LEPC be dissolved. After reviewing the proposed changes, Bill Lawry proposed and Jared Dooley seconded the adoption of the proposed changes. The changes were approved by a voice vote with no opposition.
7. Discussion and Possible Action – Approval of the FY-23 SERC Operations, Planning, Training and Equipment (OPTE) Grant Application. The floor was given to Fire Chief Jared Dooley who briefed the attendees on the goals, objectives and equipment that will be pursued via this grant. Specifically, $ 18,919 is designated for firefighting technical equipment. Steve Endacott pointed out that an additional $ 4,000 of the grant is designated for LEPC operations for a total grant application ask of $ 22,919. A motion was made by Anne McMillen and seconded by Chief Ron Wenger for approval of the grant application. The motion passed on a voice vote with no opposition.

Churchill County Local Emergency Planning Committee (LEPC)

8. Discussion and possible action – Election of a new Vice-Chairman for the LEPC. The floor was opened for nominations. Chief Ron Wenger nominated Bill Lawry, of the Churchill County Sheriff's department, based upon his extensive experience within Churchill County. Bill Lawry accepted the nomination. Steve Endacott seconded the nomination of Bill Lawry and there were no further nominations. Nominations were closed and Bill Lawry was elected by voice vote. There was no opposition. Steve Endacott expressed that it will be helpful to have one of the LEPC chairmen from the City with the other representing the County.

9. Discussion and Possible Action – Results of The Hazard Screening Worksheets – Ms. Emily Paris, Environmental Specialist, DOWL: The hazard mitigation process and objective to the LEPC members and the attending public. Ms. Paris went over the results of the last survey concerning the ranking of hazards to Churchill County. This information will be the starting point for discussions during the working group that immediately follows this LEPC meeting.

10. General Discussion – other items pertinent to LEPC (no action items). There were no items presented or discussed.

11. Public Comments – Ms. Sheryl Faught and Ms. Barbara Lewis-LDS Church- were given the floor to discuss their effort within the church to encourage emergency preparedness and response, highlighting their ability to network, provide volunteers and public assets. Steve Endacott encouraged them to continue to attend and participate in future LEPC meetings, and the hazard mitigation working group that followed this meeting. He also offered an introduction to the Nevada Voluntary Organizations Active in Disaster (NV VOAD).

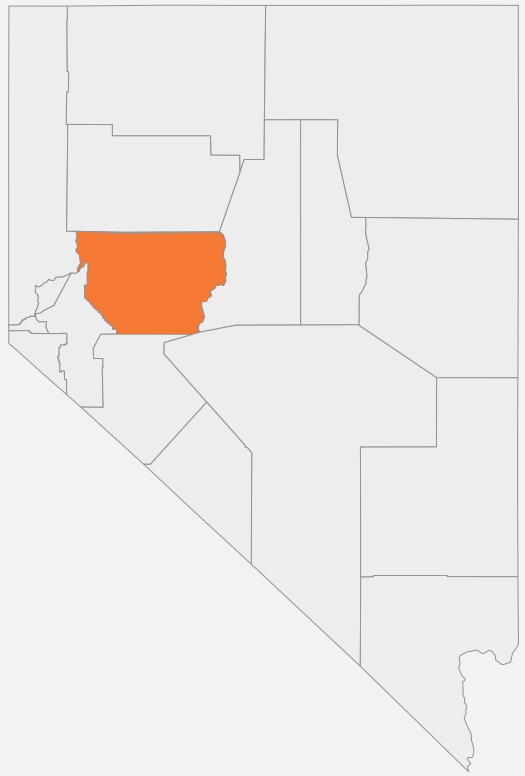
12. Adjournment of the LEPC – The LEPC was adjourned at 10:25 AM.

HAZARD MITIGATION PLAN UPDATE

Churchill County

5/09/2023

Emily Paris
eparis@dowl.com
775.336.0404



DOWL

MEETING AGENDA:

- Results of the hazard screening
- Vulnerability Analysis: Critical facilities and infrastructure
- Capability Assessment discussion
- Public Participation and Outreach Strategy: Community Survey
- Potential Mitigation Actions

HAZARD MITIGATION PLANNING

HAZARD SCREENING RESULTS AND DISCUSSION

- **Hazard Ranking Results for all responses**

Hazard Type	Probability /Frequency	Magnitude/Severity (includes economic impact, area affected and vulnerability)	Warning Time	Duration of Loss of Critical facilities and services	Planning Significance (Total)
		Natural Disaster			
Avalanche	Very Low	Very Low	Low	Low	Low
Drought	Very High	Medium	Very Low	High	High
Earthquakes	High	Medium	High	High	High
Epidemic	High	Medium	Very Low	High	High
Expansive Soils	Low	Very Low	Low	Low	Low
Flood (includes dam and canal wall failure, flash flood, and mudslide)	High	Medium	High	High	High
Ground failure	Low	Very Low	Medium	Very Low	Low
infestations	Low	Medium	Very Low	Medium	Medium
Landslide	Very Low	Very Low	High	Low	Medium
		Severe Weather			
Extreme Heat	High	Low	Very Low	Medium	Medium
Hail and Thunderstorms	Medium	Low	Medium	Very Low	Medium
Severe Winter Storm/Extreme Cold	Medium	Low	Low	Low	Medium
Tornado	Low	Low	High	Low	Medium
Windstorm	High	Low	Medium	Very Low	Medium
Tsunami/Seiche	Very Low	Very Low	Very Low	Low	Low
Volcano	Low	Low	Low	Medium	Medium
Wildfire	Medium	Medium	Medium	Low	Medium
		Human-caused			
Hazmat	High	Medium	Very High	Medium	High
Terrorism/WMD	Medium	Medium	High	Medium	High

HAZARD MITIGATION PLANNING

COMBINED RANKING RESULTS

2016 Combined Ranking Results

High Risk	Medium Risk	Low Risk
Earthquake Flood Terrorism/WMD	Hazardous Materials Severe Weather Wildfire	Drought Epidemic Infestation Volcano

2023 Combined Ranking Results

High Risk	Medium Risk	Low Risk
Drought Earthquake **Epidemic** Flood **Hazmat** Terrorism	**Infestations** Landslides Extreme Heat Hail/Thunderstorms Severe Winter Tornado Windstorm **Volcano** Wildfire	Avalanche Expansive Soils Ground Failure Tsunami/Seiche

HAZARD MITIGATION PLANNING

2016 HAZARDS BY JURISDICTION

Churchill County		
High Risk	**Medium Risk**	**Low Risk**
Earthquake Flood Hazardous Materials Terrorism/WMD	Severe Drought Weather Wildfire	Epidemic Infestation Volcano

City of Fallon		
High Risk	**Medium Risk**	**Low Risk**
Earthquake Hazardous Materials Terrorism/WMD	Drought Epidemic	Infestation Severe Weather Volcano Wildfire

Fallon Paiute-Shoshone Tribe		
High Risk	**Medium Risk**	**Low Risk**
Earthquake Terrorism/WMD	Hazardous Materials Severe Weather	Drought Epidemic Flood Infestation Volcano

2023 HAZARDS BY JURISDICTION?

Churchill County		
High Risk	**Medium Risk**	**Low Risk**

City of Fallon		
High Risk	**Medium Risk**	**Low Risk**

Fallon Paiute-Shoshone Tribe		
High Risk	**Medium Risk**	**Low Risk**

VULNERABILITY ANALYSIS

CHURCHILL COUNTY CRITICAL FACILITIES AND INFRASTRUCTURE (2016)

Type	Number	Estimated Value Total (millions of $)
Sherriff Stations/Jail	6	13.1
Fire Station	4	5.2
Emergency Operation Center & County Admin	1	8.9
Public Primary and Secondary Schools	7	149
Hospital/Emergency Room & Urgent Care/Ambulance	3	30
Communication Facilities (County Owned)	14	31.1
State and Federal Highways (miles)	340	1.934
Airport Facilities	1	17.1
Bridges	67	Included in Highway
Utilities (Water, Wastewater)	7	12

VULNERABILITY ANALYSIS

CITY OF FALLON CRITICAL FACILITIES AND INFRASTRUCTURE (2016)

Type	Number	Estimated Value Total (millions of $)
Police Stations	2	2.6
Fire Station	1	2
Emergency Operation Centers	0	0
State and Federal Highways (miles)	4	14.6
Bridges	0	0
Utilities (Water, Wastewater, Gas, Electrical)	n/a	660

VULNERABILITY ANALYSIS

FALLON PAIUTE SHOSHONE TRIBE CRITICAL FACILITIES AND INFRASTRUCTURE

- Do we want to add?

VULNERABILITY ANALYSIS

HAZUS MAPPING

- Will be done by Preston Denney (Churchill County GIS)
  - Hazard areas determined
    - *U.S. Seasonal Drought Monitor*
    - *HAZUS*
    - *Nevada Bureau of Mines and Geology*
    - *NWS*
  - Parcels of critical facilities are compared to hazard areas to determine if they would be impacted.
  - Percentage of population and residential/nonresidential structures in hazard areas determined

CAPABILITY ASSESSMENT

REVIEW OF RESOURCES IN THREE AREAS:

- Legal and Regulatory
- Administrative and Technical
- Financial

CAPABILITY ASSESSMENT

LEGAL AND REGULATORY

- Master Plan: Updated 2015
- Hazmat Plan: 2010
- Churchill Emergency Operations Plan: 2011
- Lahontan Dam Table Top Flood Exercise: 2009
- Any new plans/programs/ordinances and policies to add?

PUBLIC PARTICIPATION AND OUTREACH STRATEGY

PUBLIC PARTICIPATION IS A REQUIREMENT OF THE PLAN UPDATE

- Please sign-in for the meeting with your name, organization and contact
- LEPC meeting agendas and minutes will be submitted with the plan update

Outreach Strategy Ideas:

- Local Paper
- Letters in utility bills
- Social Media
- Posting on County Website
- Letters addressed to specific stakeholders
- Letters to neighboring counties and governments
- Press Release
- **Community survey will be sent out in next few weeks – what is the best way to get this to the community?**
  - **E-survey and paper copy**

THANK YOU...

Any questions or comments?

Churchill County
Local Emergency Planning Committee (LEPC)

507 S. Maine St
Fallon, Nevada 89406
Phone: (775) 427-5356
Fax: (775) 423-5677
Email: sendacott@fallonnevada.gov

******NOTICE OF PUBLIC MEETING******

PLEASE POST

PLACE OF MEETING: Churchill County Emergency Management*
507 S. Maine St., Fallon, NV 89406
DATE & TIME: Tuesday, September 19, 2023 at 10:00 A.M.
TYPE OF MEETING: Regular Quarterly Meeting
*Note – this meeting is being held in person.

Time: 10:00 AM Pacific Time (US and Canada)

Agenda:

1. Call to Order.
2. Verification of the Posting of the Agenda.
3. Self-Introduction of Attendees.
4. Public Comments (on items not on the agenda).
5. Approve minutes from the LEPC meetings on May 9, 2023.
6. Discussion and Possible Action – Progress report on the FY-24 United We Stand (UWS) Grant – *Sheriff Richard Hickox/Fallon Police Captain Daniel Babiarz*
7. Discussion and Possible Action – Presentation and review of the draft Churchill County Multijurisdictional Hazard Mitigation Plan – *Ms. Emily Paris, Environmental Specialist, DOWL / Committee*
8. General Discussion – other items pertinent to LEPC (no action items).
9. Public Comments (on items not on the agenda).
10. Adjournment.

Affidavit of Posting

State of Nevada)
:ss
County of Churchill)

I, Geof Stark, do hereby affirm that I posted, or caused to be posted, a copy of this notice of public meeting, on the **September 6, 2023** between the hours of 10:00 AM and 12:00 PM, at the following locations in Churchill County, Nevada and websites:

1. County Administration Building, 155 N. Taylor Street, Fallon, NV;
2. The Churchill County Website @ www.churchillcounty.org/lepc
3. The State of Nevada Website @ https://notice.nv.gov

Geof Stark

Subscribed and Sworn to before me this 6th September, 2023.

LACIE MCAFEE
Notary Public - State of Nevada
Appointment Recorded in Churchill County
No: 15-1242-4 - Expires December 11, 2026

Notary Public

Endnotes:

Disclosures:

- Churchill County is an equal opportunity provider and employer.

Accommodations:

- Churchill County will make all reasonable efforts to assist and accommodate physically handicapped person desiring to attend. Persons who are disabled and require special assistance may contact Mike Heidemann, Emergency Manager, in writing at 507 S. Maine Street, Fallon, Nevada, 89406, or by calling (775) 423-4188.

Procedures:

- The schedule of regular meetings of the Local Emergency Planning Committee is provided for by Title 2, Chapter 2.52, of the Churchill County Code.
- The public meetings may be conducted according to rules of parliamentary procedure.
- Person providing public comment will be asked to state their name for the record.
- The Local Emergency Planning Committee reserves the right to restrict participation by persons in the public meeting where the conduct of such persons is willfully disruptive to the people's business.
- In accordance with Federal law and U.S. Department of Agriculture policy, Churchill County is prohibited from discriminating on the basis of race, color, national origin, sex, age, or disability (not all prohibited bases apply to all programs). To file a complaint of discrimination, write USDA, Director, Office of Equal Rights, 1400 Independence Avenue, S.W., Washington, D.C., 20250-9410, or call (800) 795-3972 (voice) or (202) 720-6382 (TTD)

Churchill County Local Emergency Planning Committee (LEPC)

MEETING MINUTES FOR 19 September, 2023

The Churchill County Local Emergency Planning Committee (LEPC) held a public meeting on 19 September, 2023, beginning at 1000 AM at the Churchill County Emergency Management office 507 S. Maine St., Fallon, NV 89406

1. Call to Order – The meeting was called to order at 10:02 AM by LEPC Chairman Steven Endacott.
2. Verification of the Posting of the Agenda. Geoff Stark of Churchill County properly posted the agenda on 06 September, 2023, and confirmed by Churchill County PIO Anne McMillin.
3. Introductions – Attendees and Committee Members Present: Jared Dooley – Fallon/Churchill F.D., Steve Endacott –Fallon Emergency Manager (EM), Anne McMillin – CC P.I.O., John Riley and Daniel Babiarz – Fallon P.D., Bob Clifford – ARIES, Mike Adams-TCID, Richard Black-Fallon Paiute/Shoshone Tribe, Emily Paris-DOWL LLC, Tiandra Rushing-Public Health Preparedness Manager, Robert Frank-NAS Fallon EM, Benjamin Owusu and Tim White -NAS Fallon, Lucy Carnahan-Fallon Chamber of Commerce, Alex Haffner-Fallon/Churchill Fire, -Fallon PD, Steve Town-Banner Churchill Hospital, Francisco Ceballos, Washoe County EM, Preston Dennie-Churchill County GIS.
4. Public Comments:
    a. Bob Clifford of the Churchill County ARIES updated the committee on the progress for installing a new 30-foot radio antenna at the Churchill County EOC. Progress has been delayed by City of Fallon engineering department requirement for more in-depth engineering information to comply with City building code. Steve Endacott relayed that he had validated the requirement for the antenna with the City Engineer and that Bob should continue to work out the details.
    b. Tiandra Rushing, the new Public Health Preparedness Manager, gave a brief update and description of the new Public Health District. She was also provided a copy of the latest draft of the Hazard Mitigation Plan (HMP).
5. Approve minutes from the LEPC meetings on 09 May,2023: Minutes were reviewed. Jared Dooley proposed and Anne McMillen seconded that the minutes be approved. Minutes were approved by a voice vote with no opposition.
6. Discussion and Possible Action – Fallon Police Officer Daniel Babiarz updated the LEPC on progress made on purchasing items against the United We Stand (UWS) grant. All items

were available. The price of one item had increased, but the excess cost will be covered by the Fallon PD internal budget.

7. Discussion and Possible Action: Ms. Emily Paris, Environmental Specialist, DOWL, facilitated a discussion on inputs concerning the latest draft of the HMP. Additional public survey inputs were provided and reviewed. Most inputs were outside the scope of the HMP or were already address in the draft plan. Items that did apply are summarized below:
    a. The vulnerability of electrical grids in the nation were highlighted, particularly to hazards such as hacking, Electro Magnetic Pulse (EMP), earthquake, sabotage, terrorism, sun spots and severe weather. The consequences of grid failure will most likely be further exasperated by the nation's increasing dependance on electrical vehicles for transportation and commerce.
    b. It was proposed and agreed to that the numerus and often contradictory climate change sections in the previous version of the HMP be significantly reduced. It was also agreed that the any effects of climate change would not change the ranking of hazards in the HMP nor the plan to mitigate same.
    c. The asset valuation in the HMP (roads, building, etc.) appeared very low. However, the new valuation analysis had not been completed in time for this draft. It will be updated in the final draft.
    d. There were several grammatical, out of date and small technical errors in the plan. They were marked and submitted to Ms. Paris.
    e. The descriptions of the most recent flood emergencies were not adequately described. An updated section will be drafted.
    f. It was suggested to add a paragraph under the Terrorism section to address the close liaison and information exchange between City EM and NAS Fallon EM to address this threat. However, details cannot be address in the HMP.
    g. Fallon Paiute/Shoshone Tribe description section needs updating. Richard Black will take for action and work with Ms. Paris.
    h. The next draft iteration will be produced by DOWL in approximately a month and once the latest HAZUS analysis is completed by Churchill County GIS.

8. General Discussion – other items pertinent to LEPC (no action items). Jared Dooley – Fallon/Churchill F.D. updated the LEPC on the progress of the FY-23 SERC Operations, Planning, Training and Equipment (OPTE) Grant Application.

9. Public Comments – There were no public comments.

10. Adjournment of the LEPC – The LEPC was adjourned at 11:05 AM.

Churchill County
Local Emergency Planning Committee (LEPC)

507 S. Maine St
Fallon, Nevada 89406
Phone: (775) 427-5356
Fax: (775) 423-5677
Email: sendacott@fallonnevada.gov

******NOTICE OF PUBLIC MEETING******

PLEASE POST

PLACE OF MEETING: Churchill County Emergency Management*
507 S. Maine St., Fallon, NV 89406
DATE & TIME: Tuesday, December 5th, 2023 at 10:00 A.M.
TYPE OF MEETING: Regular Quarterly Meeting
*Note – this meeting is being held in person.

Time: 10:00 AM Pacific Time (US and Canada)

Agenda:

1. Call to Order.
2. Verification of the Posting of the Agenda.
3. Self-Introduction of Attendees.
4. Public Comments (on items not on the agenda).
5. Approve minutes from the LEPC meetings on September 19, 2023.
6. Discussion and Possible Action – Progress report on the FY-24 United We Stand (UWS) Grant – *Sheriff Richard Hickox/Fallon Police Captain Daniel Babiarz*
7. Discussion and Possible Action – Update on the Churchill County Multijurisdictional Hazard Mitigation Plan – *Mr. Steven Endacott*
8. Discussion and Possible Action – The process for updating the new Multi-Jurisdictional Comprehensive Emergency Response Plan – *Mr. Steven Endacott*
9. Discussion and Possible Action – Update on City of Fallon, Churchill County, NAS Fallon Joint Emergency Management Activity in Calendar Year 2024 – *Mr. Steve Endacott*
10. General Discussion – other items pertinent to LEPC (no action items).
11. Public Comments (on items not on the agenda).
12. Adjournment. See Endnotes below

Affidavit of Posting

State of Nevada)
:ss
County of Churchill)

I, Geof Stark, do hereby affirm that I posted, or caused to be posted, a copy of this notice of public meeting, on the 22nd day of November, 2023 between the hours of 10:00 AM and 12:00 PM, at the following locations in Churchill County, Nevada and websites:

1. Churchill County Emergency Management, 507 S. Maine Street, Fallon, NV;
2. County Administration Building, 155 N. Taylor Street, Fallon, NV;
3. The Churchill County Website @ www.churchillcounty.org/lepc
4. The State of Nevada Website @ https://notice.nv.gov

Geof Stark

Subscribed and Sworn to before me this November 22 2023.

AMY LAWRY
Notary Public - State of Nevada
Appointment Recorded in Churchill County
No: 97-3219-4 - Expires June 1, 2026

Notary Public

Endnotes:

Disclosures:

- Churchill County is an equal opportunity provider and employer.

Accommodations:

- Churchill County will make all reasonable efforts to assist and accommodate physically handicapped person desiring to attend. Persons who are disabled and require special assistance may contact Steven Endacott, Emergency Manager for the City of Fallon, in writing at 55 West Williams AV, Fallon, Nevada, 89406, or by calling (775) 427-5356.

Procedures:

- The schedule of regular meetings of the Local Emergency Planning Committee is provided for by Title 2, Chapter 2.52, of the Churchill County Code.
- The public meetings may be conducted according to rules of parliamentary procedure.
- Person providing public comment will be asked to state their name for the record.
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- In accordance with Federal law and U.S. Department of Agriculture policy, Churchill County is prohibited from discriminating on the basis of race, color, national origin, sex, age, or disability (not all prohibited bases apply to all programs). To file a complaint of discrimination, write USDA, Director, Office of Equal Rights, 1400 Independence Avenue, S.W., Washington, D.C., 20250-9410, or call (800) 795-3972 (voice) or (202) 720-6382 (TTD)

APPENDIX E: PLAN MAINTENANCE DOCUMENTS

Annual Review Questionnaire				
Plan Section	Questions	Yes	No	Comments
Planning Process	Are there internal or external organizations and agencies that have been invaluable to the planning process or to mitigation action?			
	Are there procedures (e.g., meeting announcement, plan updates) that can be done more efficiently?			
	Has the Steering Committee undertaken any public outreach activities regarding the HMP or implementation of mitigation actions?			
Hazard Profiles	Has a natural and/or human-caused disaster occurred in this reporting period?			
	Are there natural and/or human-caused hazards that have not been addressed in this HMP and should be?			
	Are additional maps or new hazards studies available? If so, what have they revealed?			
Vulnerability Analysis	Do any new critical facilities or infrastructure need to be added to the asset lists?			
	Have there been changes in development patters that could influence the effects of hazards or create additional risks?			
Mitigation Strategy	Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning?			
	Are the goals still applicable?			
	Should new mitigation actions be added to a community's Mitigation Action Plan?			
	Do existing mitigation actions listed in a community's Mitigation Action Plan need to be reprioritized?			
	Are the mitigation actions listed in a community's Mitigation Action Plan appropriate for available resources?			

Name:_____

Agency:_____

Hazard Profiling Worksheet

Ranking 1-5 (1=lowest priority)

Hazard Type	Probability/Frequency	Magnitude/Severity (Includes economic impact, area affected and vulnerability)	Warning Time	Duration of Loss of Critical facilities and services	Total
Avalanche					
Drought					
Earthquakes					
Epidemic					
Expansive Soils					
Flood (Includes dam and canal wall failure, flash flood, and mudslide)					
Subsidence/ground failure					
Infestations					
Landslide					
Severe Weather					
Extreme Heat					
Hail and Thunderstorms					
Severe Winter Storm/Extreme Cold					
Tornado					
Windstorm					
Tsunami/Seiche					
Volcano					
Wildfire					
Human-caused					
Hazmat					
Terrorism/WMD					

Table 3-2. Hazard Prioritization Criteria			
Criterion	**Value**	**Category**	**Description**
Probability/Frequency	1	Very Low	Occurs less than once in 1000 years
	2	Low	Occurs less than once in 100 to once in 1000 years
	3	Medium	Occurs less than once in 10 to once in 100 years
	4	High	Occurs less than once in 5 to once in 10 years
	5	Very High	Occurs more frequently than once in 5 years
Magnitude/ Severity (includes Economic Impact, Area Affected and vulnerability)	1	Very Low	▪ Negligible property damages (less than 5% of all buildings and infrastructure) ▪ Negligible loss of quality of life ▪ Local emergency response capability is sufficient to manage the hazard
	2	Low	▪ Slight property damages (5% to 15%) of all buildings and infrastructure) ▪ Slight loss of quality of life ▪ Emergency response capability of the city or surrounding community is sufficient to manage the hazard
	3	Medium	▪ Moderate property damages (15% to 30% of all buildings and infrastructure) ▪ Some loss of quality of life ▪ Emergency response capability, economic, and geographic effects of the hazard are of sufficient magnitude to involve one or more counties
	4	High	▪ Moderate property damages (30% to 50% of all buildings and infrastructure) ▪ Moderate loss of quality of life ▪ Emergency response capability, economic, and geographic effects of the hazard are of sufficient magnitude to require state assistance
	5	Very High	▪ Property damages to greater than 50% of all buildings and infrastructure. ▪ Significant loss of quality of life ▪ Emergency response capability, economic, and geographic effects of the hazard are of sufficient magnitude to require federal assistance
Warning Time	1	Very Low	> 48hrs
	2	Low	24 to 48 hrs
	3	Medium	12 -24 hrs
	4	High	12 - 6 hrs
	5	Very High	<6 hrs
Duration of loss of critical facilities and services.	1	Very Low	1 to 3 days
	2	Low	4 to 7 days
	3	Medium	8 to 14 days
	4	High	15 to 20 days
	5	Very High	More than 20 days

Mitigation Action Progress Report

Progress Report Period (Date): _____to _____

Project Title: _____ Project ID#: _____

Responsible Agency: _____

Address: _____

City: _____ State: _____

Contact Person: _____

Phone #(s): _____Email address: _____

List Supporting Agencies and Contacts: _____

_____

_____

Total Project Cost: _____

Anticipated Cost Overrun/Underrun: _____

Date of Project Approval: _____ Start date of the project: _____

Anticipated completion date: _____

Description of the Project (include a description of each phase, if applicable, and the time frame for completing each phase): _____

_____

_____

Milestones	Complete	Projected Date of Completion

Plan Goal(s): _____

Indicator of Success: _____
_____
_____
_____

Project Status:

- ☐ Project on schedule
- ☐ Project completed
- ☐ Project delayed; explain: _____
  _____
- ☐ Project Cancelled

Project Cost Status:

- ☐ Cost unchanged
- ☐ Cost overrun; explain: _____
  _____
- ☐ Cost underrun; explain: _____
  _____

Summary of progress on project for this report:

A) What was accomplished during this reporting period?
   _____
   _____
   _____

B) What obstacles, problems, or delays did you encounter, if any?
   _____
   _____
   _____

C) How was each problem resolved?
   _____
   _____
   _____

Next steps: What are the new step(s) to be accomplished over the next reporting period?
_____
_____
_____

Other Comments:
_____
_____
_____

APPENDIX F: STATUS UPDATE FOR MITIGATION ACTIONS IDENTIFIED IN THE PREVIOUS MITIGATION PLAN

Action Number	Action Item	Department / Division	Status and Actions Taken
1A	Update the Master Plan to be consistent with the hazard area maps and implementation strategies developed in the MJHMP every 10 years. Update Ordinances every 3 years.	County Planning, City Planning, FPST	The County Master Plan was last updated in 2019, with the next update process set to begin soon. In each planning cycle, information and recommendations from the Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) are incorporated to ensure consistency between land use planning and hazard mitigation priorities. The City, County, and Fallon Paiute Shoshone Tribe (FPST) also review and update their ordinances on an ongoing basis to align with evolving standards, regulations, and local hazard considerations.
1.B	Annually review the County's & City's Emergency Operations Plan and identify needed plan updates.	Emergency Mgr. Fire Dept.	The Churchill County Multi-Jurisdictional Comprehensive Emergency Management Plan (CEMP) undergoes an annual review conducted jointly by the City and County Emergency Managers. Each year, specific sections of the plan are examined by the Local Emergency Planning Committee (LEPC), whose membership includes representatives from fire services, law enforcement, emergency medical services, public health, utilities, and other key community partners. Recommended updates are incorporated to ensure the plan remains current, operationally relevant, and compliant with state and federal guidance. Following the local review process, the updated CEMP is submitted to the Nevada Office of Emergency Management (OEM) and the State Emergency Response Commission (SERC) for annual review and concurrence. In addition, Utility Vulnerability Assessments and Response Plans for electrical, water, and wastewater systems are reviewed annually by Public Works in coordination with Emergency Management. These reviews help maintain system resilience, safeguard critical infrastructure, and support continuity of essential services during emergencies. Future reviews may also integrate hazard-specific annexes for emerging threats, such as cybersecurity incidents and extreme heat, as well as expanded coordination with regional partners and private-sector utilities to further strengthen Churchill County's all-hazards preparedness posture.

1.C	Increase GIS and mapping capability to assess the risks in the County & City & FPST	County Planning	The City, County and FPST continue to enhance its GIS and mapping capabilities to improve risk assessment and planning. Mapping updates are conducted as new information, technologies, or hazard data become available, ensuring that emerging risks are accurately reflected. To further strengthen this capacity, the City has engaged a contractor to update its GIS systems and incorporate the latest hazard, infrastructure, and demographic data to better support emergency management and mitigation planning.
1.D	Continue planning and coordination with multi-agency/regional planning for multi-hazards (applies to Goals 3-9)	County & City Planning Emergency Mgr. TCID, Carson River Sub conservancy, NAS Fallon, FPST, USACE	All agencies identified to the left maintain active representation on the Local Emergency Planning Committee (LEPC) and participate in ongoing emergency planning, training, and mitigation discussions as outlined in Section IB above. This collaborative structure ensures that city, county, tribal, and regional partners maintain a unified approach to hazard preparedness and response. In recent years, the City of Fallon, Churchill County, the Federal Emergency Management Agency (FEMA), the Fallon Paiute Shoshone Tribe (FPST), and the Carson Water Subconservancy District have jointly undertaken an extensive Flood Rate Map (FIRM) Revision and Restudy. This initiative seeks to incorporate the significant floodwater diversion infrastructure improvements constructed following the 2017 and 2023 flood events. These structural mitigation measures were designed to reduce flood risk, improve water conveyance, and protect both urban and agricultural areas within the Carson River Basin. Progress toward publication of the updated FIRMs has been delayed by administrative and coordination challenges at the federal level. Local partners remain committed to advancing this effort, emphasizing the importance of accurate floodplain mapping to support sound land-use planning, insurance rate adjustments, and community resilience across Churchill County.
1.E	Integration of new information (i.e. LIDAR, USACE Canal Report) into County, City & FPST planning documents.	County ,City & FPST	The City, County, and FPST incorporated newly available LIDAR data into their planning documents following its release in 2019. This high-resolution information, along with other aerial image products, have been and will continue to be used to improve floodplain mapping, infrastructure assessments, and land-use planning.

2.A	Utilize social media as a communication tool, as well as an education tool for hazard loss prevention	Emergency Mgmt., Fire Dept., Sherriff, School District, Health Dept.	Churchill County actively uses social media as both a communication and educational tool to promote hazard awareness and loss prevention. The County Public Information Officer (PIO) routinely shares and amplifies messaging from the Nevada Division of Emergency Management, the Churchill County Sheriff's Office, and other partner agencies on topics such as home hardening, flood preparedness, and wildfire prevention. Posting frequency increases significantly during periods of heightened risk—such as flooding events, wildfire season, or public health emergencies—when engagement from residents is also notably higher. In addition to reposting partner content, the County has developed original posts tailored to local conditions, issued public service announcements, and used social media to promote community workshops, sandbag distribution, and emergency alert registration. These efforts have strengthened public awareness and encouraged residents to take proactive steps in reducing their vulnerability to hazards.
2.B	Conduct minimum of one disaster exercise/year	Emergency Mgr. Fire Dept.	The City of Fallon and Churchill County conduct at least one full-scale emergency exercise annually, supplemented by several smaller operational and functional drills throughout the year. These exercises are multi-agency in nature, commonly involving participation from the City, County, Fallon Paiute Shoshone Tribe (FPST), and Naval Air Station (NAS) Fallon, among other partners. Scenarios are designed to test coordination, communications, and resource-sharing capabilities across jurisdictions and disciplines. After-Action Reports (AARs) and Improvement Plans (IPs) are developed following each exercise and submitted to the Nevada Office of Emergency Management (OEM) for review and integration into statewide preparedness efforts. Lessons learned are incorporated into subsequent planning and training cycles, helping to refine local emergency procedures and strengthen operational readiness. In both 2017 and 2023, Churchill County and regional partners responded to local, regional and federally declared flood emergencies that engaged multiple agencies and counties across northern Nevada. These real-world incidents provided valuable data and experience that have since been used to validate plans, improve flood response protocols, and inform ongoing mitigation and infrastructure improvement efforts.

2.C	Prepare, develop, & distribute appropriate public information about hazard mitigation programs and projects at County, City & FPST sponsored events	Emergency Mgmt., Fire Dept., Sherriff, School District, Health Dept., FPST Emergency Mgmt.	Churchill County Emergency Management (EM) actively promotes preparedness and awareness through regular public outreach efforts. Articles authored or coordinated by Emergency Management staff are periodically published in local newspapers to highlight recent training exercises, seasonal preparedness tips, and community safety initiatives. These efforts help keep residents informed and engaged in local resilience activities. Emergency Management personnel also participate in the Safety and Security Working Groups organized by Naval Air Station (NAS) Fallon and the Churchill County School District. This collaboration enhances coordination between military, educational, and local government partners on topics such as threat assessment, emergency communications, and continuity of operations. In addition, one of the Emergency Managers serves as the Emergency Preparedness Merit Badge Counselor for local Scouting units. This role provides a valuable opportunity to educate youth on disaster readiness, leadership, and community service—helping to build the next generation of informed and capable responders.
3.A	Pursue studies and formalized agreements with upstream agencies to minimize impacts of drought conditions, including aquifer water quality, ground stabilization, economic impacts and municipal/private well water supply.	County & City Water Utilities, Emergency Mgmt.	The City and County community water systems rely primarily on underground aquifers. While the City's deep wells provide a high degree of resilience to drought, many shallow wells across the County remain vulnerable to both prolonged dry conditions and increased upstream development outside the County which may draw upon the same aquifer and its recharge source, the Carson River. Drought also continues to affect local agricultural production and water availability for irrigation.
3.B	Encourage public participation in drought strategies through public information programs on water conservation and drought resistant landscaping and through building code ordinances.	County & City Water Utilities, Emergency Mgmt., FPST Emergency Mgmt.	To promote public participation in drought preparedness, both the City and County share water conservation messaging through public information programs, encourage the use of drought-tolerant landscaping. Some community water systems in the county have adopted tiered pricing structures that increase water rates as household consumption rises.

4.A	Continue to enforce the International Building Code (IBC) provisions pertaining to grading and construction relative to seismic hazards. Update County & City Codes to IBC 2012 when it is released	County & City Bldg. Dept. & Planning Dept.	The City, County, and FPST regularly adopt and enforce updated International Building Code provisions, including those addressing grading, construction, and seismic safety.
4.B	Implement an Unreinforced Masonry (URM) building program that determines the structural safety of critical facility and infrastructure, and retrofit buildings, if necessary	County & City Building, Planning & Public Works	The City and County have implemented a program to assess the structural safety of URM buildings, focusing on critical facilities and infrastructure, and have completed or scheduled retrofits where necessary to enhance seismic safety.
5.A	Improve communication, collaboration and integration among stakeholders and promote awareness of epidemic threats	Health Dept.	The Central Nevada Health District (CNHD) has maintained a close partnership with the Churchill County Public Information Officer to share and promote critical public health preparedness information. The CNHD Public Health Preparedness Team has collaborated actively with the Churchill County Local Emergency Planning Committee (LEPC) to plan and participate in multiple emergency preparedness exercises, including the POD Game simulation conducted with Naval Air Station Fallon and the County Emergency Manager. CNHD has also taken part in hazardous materials (HazMat) drills and joint training events with neighboring jurisdictions to strengthen coordination, communication, and response readiness. These partnerships have improved regional collaboration, increased situational awareness among stakeholders, and enhanced the community's capacity to respond effectively to epidemic and other public health threats.
5.B	Create & implement a training and exercise program relative to epidemics	Health Dept.	Since its official inception on July 1, 2023, the Central Nevada Health District (CNHD) has actively developed and participated in training and exercise programs focused on epidemic preparedness across the district, including Churchill County. CNHD staff have regularly attended Local Emergency Planning Committee (LEPC) meetings to coordinate planning efforts and have conducted multiple Flu Point of Dispensing (POD) exercises to strengthen community readiness and vaccination response capabilities. These activities have enhanced interagency coordination, improved staff proficiency in emergency response protocols, and increased public confidence in the region's ability to respond to infectious disease outbreaks.
6.A	Review & update flood plans for coordination w/adjacent counties, cities, and special districts supporting a regional approach to flood	Public Works & FPST Environmental	Churchill County and the City of Fallon have dedicated substantial time, personnel, and resources to flood mitigation efforts, prioritizing both structural and non-structural measures to reduce risk to life and

			property. These efforts include ongoing coordination with the Carson Water Subconservancy District as well as upstream federal partners, such as the Bureau of Reclamation, to manage river flows, maintain diversion infrastructure, and monitor watershed conditions. During flood events and other emergency conditions, mitigation efforts expand to a broader network of regional and federal partners, including the National Oceanic and Atmospheric Administration (NOAA), the Nevada Office of Emergency Management (OEM), neighboring counties, and the Nevada National Guard. This multi-agency approach ensures timely situational awareness, rapid deployment of resources, and effective response strategies. By maintaining these collaborative relationships, Churchill County strengthens both immediate flood response and long-term resilience within the Carson River Basin.
6.B	Install new flood facilities including update of the existing storm drain system to current standards including culverts and channel improvements.	Public Works	The City has implemented and continues to enforce updated storm drain standards, including improvements to culverts and channels, to meet current flood management requirements. To address localized flooding during heavy rain events, the City has also purchased a vacuum truck to mitigate water pooling in flat areas. Additionally, the County actively participates in Flood Awareness Communications Team (FACT) meetings led by the State Floodplain Manager and NFIP Coordinator, and engages in public outreach efforts such as Flood Awareness Week to raise community awareness of flood risks and preparedness measures.
6.C	Protect and enhance existing water conveyance structures, storage and treatment facilities to reduce impact from floods.	Public Works, FPST Environmental	The City, County, and Fallon Paiute Shoshone Tribe (FPST) continue to protect, maintain, and monitor existing water conveyance, storage, and treatment facilities to minimize the impact of flooding and ensure continued reliability of essential water services.
6.D	Formalize agreements to utilize federal lands to spread flood and precautionary release waters.	Public Works, FPST Environmental	This action item is held in obeyance. See 6.F below.
6.E	Land acquisition of repetitive loss structures	Flood Plain Manager - Planning	There have been no repetitive loss properties identified in Churchill County to date. Nonetheless, local authorities remain aware of the land acquisition program and can utilize it if future repetitive loss structures are identified.
6.F	Improve natural waterways in the County for drainage.	County Public Works, TCID	During the 2017 flood, significant improvements were made to the natural waterway of the Carson River near populated areas. These

			efforts, combined with the construction of two new weirs (see Item 6.G) have greatly reduced flood risks throughout Churchill County and the City of Fallon, effectively mitigating flooding in nearly all developed areas.
6.G	Implement multiple diversion projects for flood reduction along the Carson River and canal system.	County & City Public Works, TCID	During the 2017 flood emergency, Churchill County constructed a weir along the V-Line Canal to safely divert excess flows from the Carson River via the Truckee-Carson Irrigation System. The structure proved highly effective in reducing flood impacts downstream of the Diversion Dam, leading to the construction of a second, larger weir at the same location in 2023. Together, these projects have provided substantial flood mitigation benefits for the County, FPST and the City of Fallon. As a result of these successes, Churchill County and the City of Fallon initiated a new Flood Insurance Rate Map (FIRM) study through the Carson Water Subconservancy District (CWSD) (case number 20-09-0012S). The study's technical findings demonstrate that the 100-year flood scenario has been fully mitigated when the V-Line Canal weirs are operated as designed. However, administrative and liability concerns among federal partners have delayed the formal adoption of the new FIRMs. Requests for technical assistance and leadership from FEMA Region 9 have not been forthcoming.
7.A	In areas at risk to severe weather, retrofit public buildings to withstand snow loads and severe winds to prevent roof collapse/damage.	County & City Public Works	Public buildings in the area are constructed to meet the 2024 International Building Code (IBC) standards. While winter storms are recognized as a hazard, the primary concerns are wind, cold, and power outages, as the region has little to no history of structural damage due to snow loads.
7.B	Enhance shelter facilities to withstand severe weather events (electrical, structural, etc.)	County & City Public Works	The Rafter 3C Arena, opened in June of 2022, is highly suitable for use as an emergency shelter for the public and their animals. The facility's 75,000-square-foot indoor arena provides ample space to accommodate large numbers of people while maintaining safe distancing if necessary. Its climate-controlled environment ensures comfort during extreme weather, and the arena is equipped with 1,822 seats, a 25,000-square-foot concourse, and designated wheelchair-accessible areas. Backup generators allow for continuous power during outages, supporting lighting, heating, and essential operations. Its proximity to the fairgrounds enables the sheltering of livestock and other animals in the complex's 184 enclosed and covered stalls, while

			88 RV hookups offer additional accommodations. These features collectively make the Rafter 3C Arena a versatile, well-equipped site for emergency response and disaster sheltering.
8.A	Develop partnerships for a community-based vegetation management program including chipping programs.	NV Div. of Forestry, Fire Dept.	Churchill County maintains a robust weed and mosquito abatement program to manage vegetation and protect public health. However, a community-wide vegetation management or chipping program has not been implemented, as such efforts are neither economical nor well-suited to the County's high desert environment, where dense vegetation and wildfire fuel loads are limited.
9.A	Enforce zoning ordinances to reduce public health risks from hazardous materials releases.	County & City Bldg. Dept., Fire Dept.	The City, County, and Fallon Paiute Shoshone Tribe (FPST) enforce zoning ordinances consistent with State of Nevada regulations to reduce public health risks from hazardous materials releases. New facilities that handle or store hazardous substances are restricted from locating near residential or commercial areas and are subject to conditional use permitting. Additionally, permitting processes and emergency response procedures for such facilities are reviewed with opportunities for public input through local government channels and the Local Emergency Planning Committee (LEPC).
10.A	Reduce the possibility of damage and losses due to Terrorism/WMD	County, City, Fire Dept., N.A.S. FPST	Naval Air Station (NAS) Fallon is considered a high-priority target for potential terrorist or security threats, which underscores the importance of closely coordinated planning, exercises, and information-sharing among local, county, tribal, and federal partners, including those previously listed. These joint activities ensure rapid, synchronized response capabilities, reinforce security protocols, and strengthen overall community resilience in the event of a threat. Local responders and the County Emergency Operations Center (EOC) frequently participate in NAS Fallon exercises, particularly those involving mass-casualty incidents, fires, or active shooter scenarios. In addition to planning and exercises, the Local Emergency Planning Committee (LEPC) has successfully leveraged federal support to enhance local law enforcement capabilities. Through the State Emergency Response Commission (SERC)–managed United We Stand (UWS) grant program, the LEPC has obtained critical equipment and resources, enabling first responders to better prepare for and respond to both natural and man-made hazards. These efforts

			highlight the committee's proactive approach to hazard mitigation, interagency collaboration, and public safety readiness.

Fallon Paiute-Shoshone Tribe (FPST)			
Action Number	Action Item	Department/Division	Status and Actions Taken
1	The FPST received FEMA Pre-Disaster Grant Funding in 2019 to reduce the possibility of damage and losses due to earthquakes identified in the 2016 Plan.	FBC/Tribal Emergency Response Commission/Emergency Management Department	The FPST was unable to complete the intent of the original grant due to the interruption caused by the COVID-19 pandemic, spending 2020-2023 mitigating against the pandemic. They also responded to a spring thaw flood and conducted mitigation strategies to prepare for the flood event. However, The 2016 mitigation actions are still relevant and included in the updated plan.

Note that the Fallon Paiute-Shoshone Tribe agrees to comply with all applicable federal statutes and regulations to the periods for which it received grant funding, including 2 CFR Parts 200 and 3002