CLARK COUNTY, NEVADA

MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

2023

Acknowledgements

Special Acknowledgements

Development of this plan would not have been possible without the commitment of the Clark County Hazard Mitigation Plan Steering Committee. The dedication of the committee's members and jurisdictional representatives to allocate their time to supporting the development of the updated Multi-Jurisdictional Hazard Mitigation Plan has ensured this plan is inclusive of the whole community of Clark County. These efforts of the committee and the commitment to ongoing mitigation activities will set the course for successful implementation of this plan during the next performance period. The participating jurisdictions of the MJHMP include the following:

Municipalities

- Clark County, Nevada
- Boulder City, Nevada
- Henderson, Nevada
- Las Vegas, Nevada
- Mesquite, Nevada
- North Las Vegas, Nevada

Special Districts

- Clark County School District
- Southern Nevada Health District
- Las Vegas Valley Water District
- Clark County Water Reclamation District

Tribal Governments

- Las Vegas Paiute Tribe
- Moapa Band of Paiutes

Clark County 2023 Multi-Jurisdictional Hazard Mitigation Plan

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Record of Revisions

REVISION #	DATE	SECTIONS REVIEWED OR REVISIONS MADE	ENTERED BY

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Acronyms

Acronym	Definition
ARES	Amateur Radio Emergency Services
BNICE	Biological, Nuclear, Incendiary, Chemical, and Explosives
CCSD	Clark County School District
CCOEM	Clark County Office of Emergency Management
CDC	Centers for Disease Control and Prevention
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERT	Community Emergency Response Team
CFR	Code of Federal Regulations
CIP	Capital Improvement Plan
CCOEM	Clark County Office of Emergency Management
CCRFCD	Clark County Regional Flood Control District
COG	Continuity of Government
COOP	Continuity of Operations
COVID-19	Coronavirus 2019
CPRI	Calculated Risk Priority Index
DFIRM	Digital Flood Insurance Rate Map
DHS	U.S. Department of Homeland Security
DOT	U.S. Department of Transportation
DSAC	Dam Safety Action Classification
EAP	Emergency Action Plan
EDDMapS	Early Detection & Distribution Mapping System
EMS	Emergency Medical Service
EOP	Emergency Operations Plan
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-To-Know Act
EROS	National Center for Earth Resources Observation and Science

Acronym	Definition
ESF's	Emergency Support Functions
EUA	Emergency Use Authorization
FBI	U.S. Federal Bureau of Investigation
FDA	Federal Drug Administration
FEMA	Federal Emergency Management Agency
FIRMs	Flood Insurance Rate Maps
FMA	Flood Mitigation Assistance Grant Program
Fusion Center	The Southern Nevada Counter-Terrorism Center
GIS	Geospatial Information System
GISMO	Clark County Information Technology, GIS Management Office
HAZMAT	Hazardous Materials
HDPE	High-Density Polyethylene
HHP	High-Hazard Potential
HMP	Hazard Mitigation Program
HPRCC	High Plains Regional Climate Center
IBC	International Building Code
IDF	Inflow Design Flood
IEBC	International Existing Building Code
IRC	International Residential Code
LEPC	Local Emergency Planning Committee
MRC	Medical Reserve Corps
MPSC	Mitigation Planning Steering Committee
MJHMP	Multi-Jurisdictional Hazard Mitigation Plan
MMI	Modified Mercalli Intensity
MWD	Metropolitan Water District
NFIP	National Flood Insurance Program
NCEI	National Centers for Environmental Information

Acronym	Definition
NDMC	National Drought Mitigation Center
NDWR	State of Nevada Division of Water Resources
NEHRP	National Earthquake Hazards Reduction Program
NFIP	National Flood Insurance Program
NICC	National Interagency Coordination Center
NID	National Inventory of Dams
NIMS	National Incident Management System
NNSS	Nevada National Security Site
NOAA	National Oceanic and Atmospheric Administration
NRC	National Response Center
NV DHSEM	Nevada Division of Emergency Management
NVDEM	State of Nevada Division of Emergency Management
NWMA	Nevada Weed Management Association
OSHA	U.S. Occupational Safety and Health Administration
PDSI	Palmer Drought Severity Index
PMF	Probable Maximum Flood
PPE	Personal Protective Equipment
QA	Quality Assurance
QC	Quality Check
RL	Repetitive Loss
SARS	Severe Acute Respiratory Syndrome
Seismo Lab	Nevada Seismological Laboratory
SEMS	Standardized Emergency Management System
SFHA	Special Flood Hazard Areas
SNWA	Southern Nevada Water Authority
SPI	Standard Participation Index
SWQC	Stormwater Water Quality Committee
TRI	Preliminary Toxics Release Inventory

Acronym	Definition
USACE	U.S. Army Corps of Engineers
USBR	United States Bureau of Reclamation
USCG NRC	United States Coast Guard National Response Center
USGS	U.S. Geological Survey's
USGS	United States Geological Survey
VEGDRI	Vegetation Drought Response Index
WHO	World Health Organization
WMD	Weapon of Mass Destruction
WUIs	Wildland Urban Interface Areas

Section 1: Hazard Mitigation Program and Requirements

Clark County (County) alongside the cities of Boulder City, Henderson, Las Vegas and North Las Vegas, the Clark County Water Reclamation District, the Clark County School District, the Las Vegas Paiute Tribe, the Moapa Band of Paiutes and the Las Vegas Valley Water District (Steering Committee) have prepared the 2023 Multi-Jurisdiction Hazard Mitigation Plan (MJHMP) to assess the natural and human caused risks to the planning area so as to reduce the potential impact of the hazards by creating mitigation strategies. The 2023 MJHMP represents all the jurisdictions' commitment to create safer, more resilient communities by taking actions to reduce risk and by committing resources to lessen the effects of hazards on people and property.

This plan complies with the Federal Disaster Mitigation Act (2000), Federal Register 44 CFR Parts 201 and 206, which modified the Robert T. Stafford Disaster Relief and Emergency Assistance Act by adding a new section, 322 - Mitigation Planning. This law, as of November 1, 2004, requires local governments to develop and submit hazard mitigation plans as a condition of receiving Hazard Mitigation Grant Program (HMGP) and other mitigation project grants. The Planning Group has coordinated preparation of the MJHMP in cooperation with the State of Arizona, other jurisdictions, the County's and city/towns' departments, community stakeholders, partner agencies, and members of the public.

This section of the MJHMP provides a brief description of hazard mitigation planning, local mitigation plan requirements, and an outline of the 2023 MJHMP. There is also an overview of Federal Emergency Management Agency (FEMA) programs and grants related to hazard mitigation.

Hazard Mitigation Planning

Hazard mitigation is any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards. In general, hazard mitigation is work done to minimize the impact of a hazard event before it occurs, with the goal of reducing losses from future disasters. 44 CFR § 201.1(b) describes the purpose of mitigation planning is for local governments to identify the hazards that impact them, to identify actions and activities to reduce losses from those hazards, and to establish a coordinated process to implement the plan, taking advantage of a wide range of resources. For the Planning Team, hazard mitigation planning is a process that will:

- Identify and profile hazards that affect the planning area;
- Analyze the population and facilities at risk from those hazards;
- Develop mitigation strategies and actions to lessen or reduce impact of profiled hazards;
- Implement the strategy and actions that may involve planning, policy changes, programs, projects, and other activities.

The Planning Team's implementation of mitigation actions, which may be short-term or long-term strategies, is the primary objective of the planning process. This type of planning will supplement the other comprehensive planning and emergency management programs.

Local Mitigation Planning Requirements

Hazard mitigation planning is governed by the Stafford Act, as amended by the Disaster Mitigation Act of 2000 (DMA 2000), and by federal regulations implementing the Stafford Act. DMA 2000 revised the Stafford Act to require state, local, and tribal governments to develop and submit to FEMA a mitigation plan that outlines processes for identifying the natural hazards, risks, and vulnerabilities of the jurisdiction. Plan approval by FEMA is a prerequisite to receiving federal hazard mitigation grant funds (see 42 USC § 5165(a).

To implement the mitigation planning requirements of the Stafford Act, FEMA promulgated 44 CFR Part 201, the federal regulations governing the planning process, plan content, and the process for obtaining approval of the plan from FEMA. The planning requirements set forth in the CFR are identified throughout this plan mirroring the order of the FEMA Regulation Checklist in the Local Mitigation Plan Review Tool. FEMA has released the updated Local Mitigation Planning Policy Guide on April 19, 2022. The policies in the guide take effect on April 19, 2023; they supersede the 2011 Local Mitigation Plan Review Guide. The Local Mitigation Plan Review Tool (April 19, 2023), which has been tailored by FEMA Region IX as an appendix to the Local Mitigation Planning Handbook (2013) and new Local Mitigation Planning Policy Guide (effective April 2023), to demonstrate how the mitigation plan meets the regulation in 44 CFR § 201.6 and offers State and FEMA Mitigation Planners an opportunity to provide feedback to the jurisdiction. The Plan Review Tool has a regulation checklist that provides a summary of FEMA's evaluation of whether the plan has addressed all requirements. Local planners can also use the checklist prior to submitting the plan for approval to ensure they have addressed all the requirements. The Local Mitigation Plan Review Tool Regulation Checklist is provided in Appendix A of this document.

Hazard Mitigation Plan Description

The 202X MJHMP consists of the sections and appendices described below:

Table 1: Plan Sections, Appendices, and Descriptions

Section	Description
Section 1: Hazard Mitigation Program and Requirements	Includes background on hazard mitigation planning, lists the MJHMP planning requirements, provides a description of the plan, and discusses grants related to hazard mitigation.
Section 2: Introduction, Planning Process and Plan Maintenance Procedures	Introduces the update to the MJHMP and describes the planning process for the 2023 MJHMP, including an overview of how the MJHMP was prepared, identification of the MJHMP Planning Team, involvement of outside agencies and communities, the inclusion of related plans, reports and information, and stakeholder and public outreach activities. This section also describes procedures for updating the MJHMP to keep it current and for continuance of public engagement in the planning process.
Section 3: Planning Area Description	Includes a description of the natural and built out state of the Planning Team, including climate, geography, demographics, and economic conditions.
Section 4: Hazard Analysis and Risk Assessment	Provides a list of the hazards identified in the 2023 MJHMP, a profile of each hazard and hazard summary, and a risk assessment of the planning area.
Section 5: Mitigation Strategy and Capabilities Assessment	Identifies and evaluates the resources available to participating jurisdictions for hazard mitigation in the County and Identifies and evaluates the current, ongoing, and completed mitigation projects and programs of the participating jurisdictions and lists their mitigation strategies for reducing potential losses.

Section	Description
Section 6: Plan Approval and Adoption	Includes documentation of NV DHSEM and FEMA review process and documentation of MJHMP adoption by the elected leadership of each participating jurisdiction.
Appendix A: FEMA Local Mitigation Plan Review Tool	Contains the FEMA Local Mitigation Plan Review Tool, which documents compliance with the MJHMP planning requirements of 44 CFR Part 201.
Appendix B: Mitigation Planning Steering Committee Documentation	Contains documentation of the planning process for the Planning Team, including meetings, presentations, emails, etc.
Appendix C: Public Engagement Documentation	Contains documentation of the planning process including meetings, presentations held for the stakeholders and public, and other stakeholder/public outreach efforts.
Appendix D: Critical Facilities and Infrastructure	Contains list of critical facilities and infrastructure for Clark County and its participating jurisdictions.
Appendix E: FEMA Presidential Declaration Maps	FEMA Presidential Declaration Maps
Appendix F: FEMA DFRIM Maps	FEMA DFIRM Maps, Clark County, NV
Appendix G: Clark County, NV Storm Gauges	Clark County, NV: Flooding, Storm Gauges and Historical Crest Data
Appendix H: Mitigation Action Prioritization Tables	Mitigation Action Prioritization Tables
Appendix I: Jurisdictional Annexes	Contains jurisdiction-specific information, including planning area description, vulnerability analysis, and mitigation strategy for the following jurisdictions: Cities of Boulder City, Henderson, Mesquite, Las Vegas, North Las Vegas, Las Vegas Paiute Tribe, and Moapa Band of Paiutes.

Grant Programs with Mitigation Plan Requirements

Currently, four FEMA grant programs provide funding to local entities that have a FEMA-approved local mitigation plan that meets federal hazard mitigation plan requirements. Three of the grant programs are authorized under the Stafford Act. The remaining two programs are authorized under the National Flood Insurance Act and the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act.

Stafford Act Grant Programs

Funding is provided to state, local, and tribal governments that have an approved MJHMP through the following programs.

Hazard Mitigation Grant Program (HMGP)

The HMGP provides grants to implement long-term hazard mitigation measures after declaration of a major disaster. Its purpose is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. To qualify for HMGP funding, projects must provide a long-term solution to a problem and the project's potential savings must exceed the cost of implementing the project.

HMGP funds may be used to protect either public or private property or to purchase property that has

been subjected to, or is in danger of, repetitive damage. The amount of funding available for the HMGP under a particular disaster declaration is limited. Under the program, the federal government may provide a state or tribe with up to 20% of the total disaster grants awarded by FEMA and may provide up to 75% of the cost of projects approved under the program.

Hazard Mitigation Grant Program (HMGP) Post Fire (HMGP-PF)

The HMGP- Post Fire provides assistance to help communities implement hazard mitigation measures after wildfire disasters in any areas that receive a Fire Management Assistance Grant (FMAG) declaration. Section 1204 of the Disaster Recovery Reform Act of 2018 Stafford Act to allow FEMA to provide HMGP Post Fire assistance for hazard mitigation measures that substantially reduce the risk of future damage, hardship, loss or suffering in any area affected by a fire for which assistance was provided under Section 420 of the Stafford Act.31 amended Section 404 of the 32. Therefore, unlike HMGP, the availability of HMGP Post Fire assistance is not contingent on a major disaster declaration and is instead triggered by an FMAG declaration. Eligible activities may be outside of the declared area as long as the risk reduction benefits include the declared county or counties (e.g., watershed mitigation). HMGP-PF is managed by FEMA and administered by the Nevada Division of Emergency Management.

The Building Resilient Infrastructure and Communities (BRIC) Program

The new BRIC grant program is for pre-disaster mitigation activities and replaces FEMA's existing Pre-Disaster Mitigation program. The BRIC priorities are to:

- Incentivize public infrastructure projects;
- Incentivize projects that mitigate risk to one or more lifelines;
- Incentivize projects that incorporate nature-based solution;
- Incentivize the adoptions and enforcement of modern building codes.

BRIC will support states, local communities, tribes, and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. The BRIC program guiding principles are supporting communities through capability and capacity-building, encouraging and enabling innovation, promoting partnerships, enabling large projects, maintaining flexibility, and providing consistency. In FY 2021, BRIC funding totaled $1 billion. The federal government provides up to 75% of the cost of projects approved under the program.

Fire Prevention and Safety Grants (FP&S)

The Fire Prevention and Safety Grant (FP&S) are a part of the Assistance to Firefighters Grant (AFG) and support projects that enhance the safety of the public and firefighters from fire and related hazards. The primary goal is to reduce injury and prevent death among high-risk populations. Fire departments, local governments, and recognized community organizations are eligible to receive this funding.

National Flood Insurance Act Grant Programs

Flood Mitigation Assistance Program

The goal of the Flood Mitigation Assistance (FMA) Grant Program is to reduce or eliminate flood insurance claims under the National Flood Insurance Program (NFIP). This program emphasizes mitigating repetitive loss (RL) properties. The primary source of funding for the FMA program is the National Flood Insurance Fund. Grant funding is available for planning, projects, and technical assistance. Project grants are awarded to local entities to apply mitigation measures to reduce flood losses to properties insured under the NFIP. In FY 2021, FMA funding totaled $160 million. The cost-share for this grant is 75 percent federal and 25 percent nonfederal. However, a cost-share of 90 percent

federal and 10 percent nonfederal is available in certain situations to mitigate severe repetitive loss (SRL) properties.

Repetitive Flood Claims Program

The Repetitive Flood Claims (RFC) Program provides funding to reduce or eliminate the long-term risk of flood damage to residential and non-residential structures insured under the NFIP. Structures considered for mitigation must have had one or more claim payments for flood damages. All RFC grants are eligible for up to 100 percent federal assistance.

Other Funding Sources

Community Block Grant Program

The Community Development Block Grant (CDBG) Program provides annual grants on a formula basis to states, cities, and counties to develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low- and moderate-income persons. The program is authorized under Title 1 of the Housing and Community Development Act of 1974, Public Law 93-383, as amended 42 U.S.C. 5301 et seq. As mentioned in the previous MJHMP update (2018), this grant is for 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.

Southern Nevada Water Authority (SWNA) Water Preservation Funds

As mentioned in the previous MJHMP update (2018), this project-specific funding source by SWNA provides incentives to jurisdictions for water preservation efforts.

Local Revenues and Budgets

Recognizing the importance of hazard mitigation planning, Clark County and its participating jurisdiction(s) have self-funded the 25% match required by FEMA's HMGP and HMGP Post Fire grants.

Section 2: Introduction, Planning Process, and Plan Maintenance Procedures

The requirements for documentation of the MJHMP planning process are described below. This section summarizes the Steering Committee's hazard mitigation planning efforts in 2022-2023. In addition, the section describes public and stakeholder outreach efforts as part of the MJHMP planning process. The section also summarizes the review and incorporation of existing plans, studies, and reports used to develop the MJHMP. Documentation of the 2023 MJHMP planning process for the Steering Committee is provided in Appendix B and documentation of the planning process for the public and stakeholders is found in Appendix C. These appendices document the planning meetings and outreach, and include meeting agendas, presentation, materials, and other documentation used to conduct the planning process.

Table 2: FEMA Regulation Checklist: Planning Process

FEMA Regulation Checklist: Planning Process	
44 CFR § 201.6(c)(1)	**Documentation of the Planning Process:** The plan shall include documentation of 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.
Elements	
A1	Does the Plan document the planning process, including how it was prepared and who was involved the process for each jurisdiction? 44 CFR § 201.6(c)(1)
A2	Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? 44 CFR 201.6(b)(2)
A3	Does the Plan document how the public was involved in the planning process during the drafting stage? 44 CFR 201.6(b)(1) and 201.6(c)(1)
A4	Does the Plan document the review and incorporation of existing plans, studies, reports, and technical information? 44 CFR 201.6(b)(3)

Data Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

The planning process began with the Planning Team establishing the planning area and inviting stakeholders within the area to participate in the process. In addition, the Planning Team identified the financial and technical resources required to update the MJHMP. Once all the Planning Team's financial and technical resources were identified, the Planning Team established a schedule for the process.

Plan History

The initial basis for this plan was the 2007 HMP. Clark County took the lead to coordinate with all five incorporated jurisdictions within the County, as well as appropriate districts, universities, private, non-profit, and local, county, state and federal governments. The 2007 HMP development occurred from July 2002 through September 2006. The 2007 HMP was adopted by the Clark County Board of Commissioners in September 2006. On February 6, 2007, FEMA approved the adopted 2007 HMP. Participating organizations included:

Clark County

- City of Henderson
- City of Las Vegas
- City of Mesquite
- City of North Las Vegas

In March 2011, during the fourth year of the 2007 HMP, the County initiated an update to the HMP which was completed and adopted in 2012. URS Corporation provided professional consulting support. Participating organizations in the 2012 HMP included:

- Clark County
- City of Henderson
- City of Las Vegas
- City of Mesquite
- City of North Las Vegas

Plan Background, Purpose, and Authority

Each year in the United States, disasters take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. These monies only partially reflect the true cost of disasters, because additional expenses to insurance companies and nongovernmental organizations are not reimbursed by tax dollars. Many disasters are predictable, and much of the damage caused by these events can be alleviated or even eliminated.

Hazard mitigation is defined by FEMA as "any sustained action taken to reduce or eliminate long-term risk to human life and property from a hazard event." A 2019 cost-benefit analysis on hazard mitigation, the most in-depth available to date, concluded that adopting the latest building code requirements is affordable and saves $11 per $1 invested, above-code design could save $4 per $1 cost, private-sector building retrofit projects could save $4 per $1 cost, lifeline retrofit saves $4 per $1 cost, and Federal grants save $6 per $1 cost. The findings provide evidence that mitigation activities are highly cost-effective, in addition to saving lives and preventing injuries.[1]

Examples of hazard mitigation measures include, but are not limited to the following:

- Development of mitigation standards, regulations, policies, and programs;
- Land use/zoning policies;
- Strong building code and floodplain management regulations;
- Dam safety program, seawalls, and levee systems;
- Acquisition of flood prone and environmentally sensitive lands;
- Retrofitting/hardening/elevating structures and critical facilities;
- Relocation of structures, infrastructure, and facilities out of vulnerable areas;

National Institute of Building Science Multi-Hazard Mitigation Council, 2019, Natural Hazard Mitigation Saves: 2019 Report

- Public awareness/education campaigns;
- Improvement of warning and evacuation systems.

Hazard mitigation planning is the process through which hazards that threaten the County are identified, likely impacts of those hazards are determined, mitigation goals are set, and appropriate strategies to lessen impacts are determined, prioritized, and implemented. This plan documents the planning process employed by the Planning Team. The MJHMP identifies relevant hazards and risks and identifies the strategy that will be used to decrease vulnerability and increase resiliency and sustainability.

This MJHMP was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 and the implementing regulations set forth in the Federal Register (hereafter, these requirements will be referred to collectively as the DMA 2000). While the act emphasized the need for mitigation plans and more coordinated mitigation planning and implementation efforts, the regulations established the requirements that hazard mitigation plans must meet in order to be eligible for certain federal disaster assistance and hazard mitigation funding under the Robert T. Stafford Disaster Relief and Emergency Act.

Information in this MJHMP will be used to help guide and coordinate mitigation activities and decisions for future land use. Proactive mitigation planning will help reduce the cost of disaster response and recovery to the County and its property owners by protecting structures, reducing exposure and minimizing overall County impacts and disruption. The County has been affected by hazards in the past and is thus committed to reducing future disaster impacts and maintaining eligibility for federal funding.

This update to the 2018 Clark County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) the geographically covers the participating jurisdictions within the County boundaries (hereinafter referred to as the Planning Area) which are as follows:

One County

- Clark County

Four Cities

- City of Boulder City
- City of Henderson
- City of Las Vegas
- City of North Las Vegas

Two Tribal Nations

- Las Vegas Paiute Tribe
- Moapa Band of Paiutes

Four Special Districts

- Clark County Water Reclamation District
- Clark County School District
- Las Vegas Valley Water District
- Southern Nevada Health District

Each jurisdiction, as documented within the plan update, actively participated in the planning process from its inception. Accordingly, each jurisdiction provided at least one representative to offer a locality-specific perspective.

Planning Process Description

In March 2022, the planning process for the 2023 HMP began. Select staff from participating jurisdictions and stakeholders were invited to participate on the Steering Committee for the purpose of developing the 2023 HMP, in addition to representation from Nevada Division of Emergency Management. A solicitation was also sent to other interested agencies through an email sent by the County. Members of the Mitigation Planning Steering Committee (hereinafter referred to as the MPSC), actively participated in meetings, solicited input from community members, and ensured that all jurisdictional information was reflected in the plan.

If a committee member could not attend a meeting, they were contacted by phone in order to receive all documentation from the meeting. The phone call(s) consisted of a brief overview of the meeting along with time for the planning committee member to offer his/her suggestions or comments. A detailed description of the planning process, including a list of contributions from each jurisdiction, is provided in Section 2.5 – Jurisdictions. A complete list of planning committee participation can be found in Section 2.6 – Mitigation Planning Steering Committee.

During the plan review phase, feedback was requested from adjacent counties via email. See Appendix B – Mitigation Planning Steering Committee Documentation for a complete schedule and documentation of this process.

What's New in this Plan Update?

Table 3: FEMA Regulation Checklist: Plan Update

FEMA Regulation Checklist: Plan Update	
44 CFR § 201.6(d)(3)	**Documentation of the Plan Update Requirements:** was the plan revised to reflect changes in development and was the plan revised to reflect changes in priorities and progress in local mitigation efforts?
Elements	
E1.	Does the plan describe the changes in development that have occurred in hazard-prone areas that have increased or decreased each community's vulnerability since the previous plan was approved? 44 CFR § 201.6(d)(3)
E2-a.	Does the Plan describe how it was revised due to changes in community priorities? 44 CFR 201.6(d)(3)
E2-b.	Does the Plan include a status update for all mitigation actions identified in the previous mitigation plan? 44 CFR 201.6(d)(3)
E2-c.	Does the Plan describe how jurisdiction integrated the mitigation plan, where appropriate, into other planning mechanisms? 44 CFR 201.6(d)(3)

Data Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023

Much like the process for updating Clark County's Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) in the past, this plan update involved a comprehensive review of the previous plan (in this case, 2018) and performing a gap analysis, a specific process for evaluating each plan section and determining which portions require updating. As a part of the gap analysis, each section was reviewed in detail to identify all areas requiring re-evaluation and subsequent data needs.

As part of the (insert final approval date), certain elements of Clark County's 2018 MJHMP have been retained while outdated information has been either updated or reviewed. For the current version, there is a particular focus on updating the risk assessment, providing status for mitigation actions listed in the 2018 plan, identifying new mitigation actions, and describing meetings and presentations held as a part of the plan update.

What's New? Section 3 – Planning Area (Critical Facilities Summary)

The Clark County Mitigation Planning Steering Committee in conjunction with Clark County Office of Emergency Management and Clark County GISMO Information Technology Department assessed the list of critical facilities used throughout the MJHMP plan update and is the based off the vulnerability assessment and loss estimated. The complete list is available in Appendix D – Critical Facilities & Infrastructure. Clark County GISMO Information Technology Department staff updated this list to produce updated GIS maps located with the County for this plan update.

What's New? Section 4 – Hazard Analysis and Risk Assessment

The Clark County MJHMP Steering Committee assessed the hazards addressed in Clark County's 2012 and 2018 MJHMPs, the 2018 State of Nevada Enhanced Hazard Mitigation Plan, and the Nevada Threats and Hazards, September 2020 document. After assessing these documents, a final decision was made as to which hazards would be included in the Calculated Priority Risk Index (CPRI) and Probability of Future Events and analyzed in the 2023 plan update. A comparison of the hazards along with the final decision is shown in the proceeding table.

Table 4: Summary of Hazards for 2023 Update, Clark County MJHMP

Summary of Hazards for 2023 Update, Clark County MJHMP					
Hazards	**Clark County 2012 MJHMP Update**	**Clark County 2018 MJHP Update**	**2018 State of Nevada Enhanced Hazard Mitigation Plan**	**Nevada Threats & Hazards September 2020**	**Clark County 2023 MJHMP Update**
Natural Hazards					
Climate Change	Excluded	Included	Excluded	Excluded	Included as Climate Change (Excessive Heat and Severe Weather) – Disaster History
Drought	Included	Included	Included	Included as Drought	Included – Disaster History

Summary of Hazards for 2023 Update, Clark County MJHMP					
Hazards	**Clark County 2012 MJHMP Update**	**Clark County 2018 MJHP Update**	**2018 State of Nevada Enhanced Hazard Mitigation Plan**	**Nevada Threats & Hazards September 2020**	**Clark County 2023 MJHMP Update**
Earthquake	Included	Included	Included	Included as Geohazards – Earthquakes	Included as Geohazards, Earthquake and Seismic Hazards – Disaster History
Excessive Heat	Excluded	Excluded	Included	Included as Extreme Heat	Included as Extreme/Excessive Heat – Disaster History
Flooding	Included as Flood and Flash Flooding	Included as Flood	Includes as Floods, Flooding due to Dam Failure, and Flooding along Ditches and Canals	Included as Floods, Landslides & Debris Flow	Included as Flood, Landslides & Debris Flow, Flood – Included Disaster History
Subsidence	Included	Included as Subsidence and Fissures	Included as Land Subsidence and Ground Failure	Included as Fissures & Subsidence	Included as Fissures & Subsidence – Disaster History
Severe Weather	Excluded	Excluded	Included as Severe Weather and Snowfall	Included as Severe Weather	Included as Severe Weather (including Thunderstorms, Lightning, Hail) – Disaster History
Wildfire	Included	Included	Included	Included as Fire, Wildland Urban Interface	Fire, Wildland Urban Interface Included – Disaster History
Human-Caused Hazards					
Dam Failure	Included	Included	Included	Included as Infrastructure, Dam Failure	Included as Infrastructure, Dam Failure
Infestation	Included	Included	Included	Excluded	Included
Epidemic/ Infectious Disease	Included as Epidemic/ Infections Disease	Included as Infections Disease	Included	Included as Infectious Disease – Emerging Disease with Epidemic or Pandemic Potential and Respiratory Virus with Epidemic and Pandemic Potential	Included as Infectious Disease

Summary of Hazards for 2023 Update, Clark County MJHMP					
Hazards	**Clark County 2012 MJHMP Update**	**Clark County 2018 MJHP Update**	**2018 State of Nevada Enhanced Hazard Mitigation Plan**	**Nevada Threats & Hazards September 2020**	**Clark County 2023 MJHMP Update**
Hazardous Materials	Excluded	Included as Hazardous Material Events	Included	Included as Chemical, Biological, Radiological, Nuclear & Explosives (CBRNE)	Included as Chemical, Biological, Radiological, Nuclear & Explosives (CBRNE) – Hazardous Materials
Terrorism	Included	Included	Excluded	Included as Terrorism – International Terrorism, Domestic Terrorism, and Complex Coordinated Attack	Included
Utility Failure	Included	Excluded	Excluded	Included as Infrastructure as Power Outage	Excluded

Regarding the addition of Extreme/Excessive Heat and Severe Weather to this MJHMP update. While most both extreme heat and severe weather events are limited in their impact, duration, and spatial extent, they remain hazards of concern in the State of Nevada and the entire planning area. In recent years, extreme heat and severe weather (including thunderstorms, hail, wind, and tornadoes) have become increased hazards of concern for the Clark County and its participating jurisidctions (including Clark County Unincorporated Areas and the Tribal Lands of the Las Vegas Paitue Tribe and the Moapa Band of Paitues. With this shift in mitigation efforts, Clark County MPSC has identified these hazards as a concern and have added them to the plan to include previous occurrences and future probability to identify future mitigation actions related to exteme/excessive heat and severe weather in the planning area.

What's New? Section 5 – Mitigation Strategy

The Clark County 2023 Multi-Jurisdictional Hazard Mitigation Plan (update) contained a risk assessment of identified hazards for the County and participating municipalities, and a mitigation strategy to address these hazards' risk and vulnerability. Accordingly, an open discussion took place with the Mitigation Planning Steering Committee (MPSC) during the planning phase to determine the current mitigation action/priorities to include in this plan update. Among them, and considered a key part of the planning process, Clark County Office of Emergency Management (CCOEM) solicited participation from the County's participating jurisdictions and stakeholders to help identify mitigation activities/goals/projects for plan inclusion. Typically, mitigation activities/goals/projects focus on strengthening infrastructure and facilities. Clark County's cities and stakeholder's participation in the activities related to the mitigation strategy allowed for CCOEM to learn more about each jurisdictions' needs, facilities, and infrastructure. A Clark County mitigation planning steering committee meeting held

in November 2022, focused on the Mitigation Strategy update. Facilitated by Clark County OEM and CONSTANT Associates, provided Clark County's steering committee members with information on how to offer valuable insight related to the hazards within Clark County. The Clark County mitigation planning steering committee members learned how CONSTANT Associates would assist them in providing input to update the mitigation projects from the previous plan as well as how and when to offer any new/proposed projects to include in the current HMP update.

Following this meeting, representatives from CONSTANT Associates worked with Clark County OEM and the County's participating jurisdictions to provide updates relevant to previous mitigation projects (2018), including the current status (completed, deferred, or carryover). The MPSC was also tasked with identifying any new mitigation projects for this plan update and completing a new mitigation action worksheet created specifically for Clark County. During the planning process, Clark County was able to update these worksheets with its mitigation projects from the 2018 plan update along with the new/proposed projects for the next five-year plan cycle.

Capabilities

A capability assessment was conducted of the MJHMP participating jurisdictions' authorities, policies, programs, and resources. From the assessment, goals, and mitigation actions were developed.

Clark County and each participating jurisdictions' capabilities (planning and regulatory, administrative and technical, financial, and education and outreach) were reviewed and updated to provide any changes that reflect their current capabilities as described in the 2018 MJHMP plan update. Each jurisdiction was provided a Jurisdiction Capabilities Assessment Worksheet by CONSTANT to review their capabilities to be included in this plan update. All information provided and available by jurisdictions was included in the worksheets. The Yes/No column denotes if a particular jurisdiction has that specific capability.

STAPLE+E

Clark County and its participating jurisdiction(s)' (which includes Clark County Unincorporated Area and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) primary hazard risks, and thus priorities are climate change, drought, excessive heat, earthquake, flooding, fissures & subsidence, severe weather (including Thunderstorms, Lightning, Hail wildfire, dam failure, infectious disease, hazardous materials, and terrorism. A composite evaluation matrix was used to prioritize Clark County and its participating jurisdiction(s)' mitigation projects and activities. The evaluation was conducted for each mitigation project and activity for each participating jurisdiction. All priorities were re-assessed using STAPLE+E for this plan update to ensure that the projects reflect current priorities. The composite evaluation matrix is comprised of the three factors detailed below.

Mitigation Planning Steering Committee (MPSC)

The following table lists the participating jurisdictions of Clark County and their lead representative contact (s) during the MJHMP update's development, along with their MPSC contributions by plan development phase.

Table 5: Jurisdictional Contribution by Planning Phase

Jurisdictional Contribution by Planning Phase				
Jurisdiction and Representative	**Planning Process**	**Risk Assessment**	**Mitigation Strategy**	**Plan Maintenance**
Clark County Misty Richardson, Clark County Office of Emergency Management & Homeland Security, Assistant Emergency Management	• Lead the Mitigation Planning Steering Committee (MPSC) • Provided information on critical facilities, hazards, Points of Contact (POCs) • Served as POC and jurisdiction lead for the MPSC	• Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment	• Provided mitigation projects and actions history • Proposed mitigation projects • Prioritized mitigation projects using STAPLE+E approach	• Will lead in the MPSC as prescribed in Section 2 – Plan Maintenance
City of Henderson Josie Ross, City of Henderson, Emergency Management Officer	• Co-Lead the Mitigation Planning Committee (MPC) • Provided information on critical facilities, hazards, Points of Contact (POCs) • Served as secondary POC and jurisdiction co-lead for the MPC	• Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment	• Provided mitigation projects and actions history • Proposed mitigation projects • Prioritized mitigation projects using STAPLE+E approach	• Will lead in the MPSC as prescribed in Section 2 – Plan Maintenance
Clark County Water Reclamation District Tick Segerblom, Clark County Water Reclamation District, Chair	• Provides administrative support for the Mitigation Planning Committee (MPSC) • Provided information on critical facilities, hazards, Points of Contact (POCs)	• Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment	• Provided mitigation projects and actions history • Proposed mitigation projects	• Will lead in the MPSC as prescribed in Section 2 – Plan Maintenance
Clark County School District Dr. Jesus Jara, Clark County School District, Superintendent	• Provides administrative support for the Mitigation Planning Committee (MPSC) • Provided information on critical facilities, hazards, Points of Contact (POCs)	• Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment	• Provided mitigation projects and actions history • Proposed mitigation projects	• Will lead in the MPSC as prescribed in Section 2 – Plan Maintenance

Jurisdictional Contribution by Planning Phase				
Jurisdiction and Representative	**Planning Process**	**Risk Assessment**	**Mitigation Strategy**	**Plan Maintenance**
Las Vegas Valley Water District Marilyn Kirkpatrick, Las Vegas Valley Water District, President – Board of Directors	• Provides administrative support for the Mitigation Planning Committee (MPSC) • Provided information on critical facilities, hazards, Points of Contact (POCs)	• Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment	• Provided mitigation projects and actions history • Proposed mitigation projects	• Will lead in the MPSC as prescribed in Section 2 – Plan Maintenance
Southern Nevada Health District Dr. Fermin Leguen, Southern Nevada Health District, District Health Officer	• Provides administrative support for the Mitigation Planning Committee (MPSC) • Provided information on critical facilities, hazards, Points of Contact (POCs)	• Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment	• Provided mitigation projects and actions history • Proposed mitigation projects	• Will lead in the MPSC as prescribed in Section 2 – Plan Maintenance
City of Boulder City Joe Hardy, City of Boulder City, Mayor	• Provides administrative support for the Mitigation Planning Committee (MPSC) • Provided information on critical facilities, hazards, Points of Contact (POCs • POC and jurisdiction lead for the MPSC	• Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment	• Proposed mitigation projects • Prioritized mitigation projects using STAPLE+E approach	• Will lead in the MPSC as prescribed in Section 2 – Plan Maintenance
City of Henderson Michelle Romero, City of Henderson, Mayor	• Participated in MPSC • Provided information on critical facilities, hazards, POCs • POC and jurisdiction lead for the MPSC	• Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment	• Proposed mitigation projects • Prioritized mitigation projects using STAPLE+E approach	• Will lead in the MPSC as prescribed in Section 2 – Plan Maintenance
City of Las Vegas Carolyn G. Goodman, City of Las Vegas, Mayor	• Participated in MPSC • Provided information on critical facilities, hazards, POCs • POC and jurisdiction lead for the MPSC	• Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment	• Proposed mitigation projects • Prioritized mitigation projects using STAPLE+E approach	• Will participate in the MPSC as prescribed in Section 2 – Plan Maintenance

Jurisdictional Contribution by Planning Phase				
Jurisdiction and Representative	**Planning Process**	**Risk Assessment**	**Mitigation Strategy**	**Plan Maintenance**
City of Mesquite Al Litman, City of Mesquite, Mayor	• Participated in MPSC • Provided information on critical facilities, hazards, POCs • POC and jurisdiction lead for the MPSC	• Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment	• Proposed mitigation projects • Prioritized mitigation projects using STAPLE+E approach	• Will participate in the MPSC as prescribed in Section 2 – Plan Maintenance
City of North Las Vegas Pamela Goynes-Brown, City of Las Vegas, Mayor	• Participated in MPSC • Provided information on critical facilities, hazards, POCs • POC and jurisdiction lead for the MPSC	• Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment	• Proposed mitigation projects • Prioritized mitigation projects using STAPLE+E approach	• Will participate in the MPSC as prescribed in Section 2 – Plan Maintenance
Las Vegas Paiute Tribe Deryn Pete, Las Vegas Paiute Tribe, Chairwoman	• Participated in MPSC • Provided information on critical facilities, hazards, POCs • POC and jurisdiction lead for the MPSC	• Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment	• Proposed mitigation projects • Prioritized mitigation projects using STAPLE+E approach	• Will participate in the MPSC as prescribed in Section 2 – Plan Maintenance
Moapa Band of Paiutes Gregory Anderson Sr., Moapa Band of Paiutes, Chairman	• Participated in MPSC • Provided information on critical facilities, hazards, POCs • POC and lead jurisdiction for the MPSC	• Completed hazard history documentation • Completed risk assessment questionnaire • Reviewed risk assessment	• Provided mitigation projects and actions history • Proposed mitigation projects • Prioritized mitigation projects using STAPLE+E approach	• Will participate in the MPSC as prescribed in Section 2 – Plan Maintenance

Mitigation Planning Steering Committee Role

The role of the Mitigation Planning Steering Committee (MPSC) was to perform the review, coordination, research, and planning element activities required to update the 2018 MJHMP. Attendance by each participating jurisdiction was required at the Mitigation Planning Steering Committee meetings as they were structured to progress through the planning process. Steps and procedures for updating the MJHMP were presented and discussed at each Mitigation Planning Steering Committee meeting, and assignments for data collection were provided. Each meeting built on information discussed and assignments given at the previous meeting. Members of the Mitigation Planning Steering Committee also had the responsibility of:

- Providing supporting data;
- Conveying information and assignments received at the Steering Committee meetings to other involved parties within their respective jurisdictions such as those involved in public engagement;
- Ensuring that requested assignments were completed and returned on a timely basis;
- Reviewing the draft MJHMP;
- Coordinating official adoption of the MJHMP.

Prior to the planning process, the County identified members for the Mitigation Planning Steering Committee by initiating contact with as much of the previous Steering Committee as possible. Contact was made by sending invitations to participate on the Steering Committee via email and via personal contacts. The invitation explained the importance of the Plan to build resilience and make communities safer.

Prior to the beginning of the plan update process, Constant Associates delivered a presentation that provided a review of the current MJHMP and detailed the update process. The target audience was the agencies/individuals invited to participate on the Mitigation Planning Steering Committee. The purpose was to provide an understanding of the Plan, explain its purpose and its benefits, as well as to provide detailed and realistic expectations of the Plan update process.

Members of the MJHMP Steering Committee are listed in the following table. To ensure manageable meeting sizes, each jurisdiction sent a limited number of representatives to MJHMP Steering Committee meetings. The remainder supported the planning process through the data collection and informal planning efforts of their given jurisdiction.

Stakeholders and Mitigation Planning Steering Committee (MPSC) Members

Table 6: Plan Stakeholders and MPSC Members

Plan Stakeholders and MPSC Members			
Name	**Organization**	**Position**	**Collaboration/Invitation**
Principal Plan Developers			
Michelle Constant	Constant & Associates	CEO + Founder	Executive Management
Jayson Kratoville	Constant & Associates	Director, Operations	Executive Management
Mona Bontty	Constant & Associates	Project Sponsor/Project Manager	Provided project oversight and management, provided additional support and input; coordinated mitigation planning steering committee meetings and open comment steering committee meeting
Dan Smith	Constant & Associates	Deputy Project Manager	Provided additional support and input; plan reviewer and editor
Emily Long	Constant & Associates	Subject Matter Expert	Mitigation Specialist, plan writer
Casey Moes	Constant & Associates	Project Support	Provided additional support and input; coordinated mitigation planning steering committee meetings
Amanda Ozaki-Laughon	Constant & Associates	Project Support	Provided additional support and input; coordinated kickoff meeting
Holly Mann	Constant & Associates	Project Support	Provided additional support and input; coordinated kickoff meeting
Lee Rosenberg	Constant & Associates	Project Support	Provided additional support and input; coordinated kickoff meeting
Local Governments			
Misty Richardson	Clark County Office of Emergency Management & Homeland Security	Assistant Emergency Manager	Mitigation Planning Steering Committee Chair, represented jurisdiction, and provided additional support and input
Josie Ross	City of Henderson	Emergency Management Officer	Mitigation Planning Steering Committee Co-Chair, represented jurisdiction, and provided additional support and input
Leigh Ann Anders	Clark County	Administrative Services	Represented jurisdiction; provided additional support and input
Jim Anderson	Clark County Animal Control	Director, Code Enforcement Animal Protection Service	Represented jurisdiction; provided additional support and input
Travis Anderson	City of North Las Vegas	Deputy Fire Chief / Emergency	Represented jurisdiction

Plan Stakeholders and MPSC Members			
Name	**Organization**	**Position**	**Collaboration/Invitation**
		Manager	
Travis H. Anderson	City of Mesquite	Public Works Director	Represented jurisdiction; Provided additional support and input
Jayson Andrus	City of Mesquite	Fire Chief	Represented jurisdiction; Provided additional support and input
Brian Arboreen	City of Henderson	Fire Battalion Chief	Represented jurisdiction
Michael “Mike” Atherall	Las Vegas Metropolitan Police Department/Southern Nevada Counter Terrorism Center	Analyst- P#19539	Represented jurisdiction; Provided additional support and input
Samantha “Sam” Baker	Clark County	Department of Environment and Sustainability	Represented jurisdiction; Provided additional support and input
Solome Barton	City of North Las Vegas	Assistant Emergency Manager	Represented jurisdiction
Everett Bates	Las Vegas Metropolitan Police Department	Detective	Represented jurisdiction
Jae Beasley	Clark County School District	Director of School Safety	Represented jurisdiction, Provided additional support and input
Tori Begay	University Medical Center	Emergency Prepareness Coordinator	Represented jurisdiction
Edward Burmiester	Clark County GISMO Information Technology Department	GIS Analyst	Represented jurisdiction
Gregory “Greg” Chesser	City of Boulder City	Deputy Fire Chief	Represented jurisdiction; Provided additional support and input
Ariel Choinard	Clark County	Contractor	Represented jurisdiction; Provided additional support and input
Aj Cieplenski	Harry Reid International Airport (LAS)	Airport Emergency Administrator	Represented jurisdiction
Jeremy Crawford	Kern River Gas Transmission Co.	Technician	Represented jurisdiction
Kristen Cooper	Clark County Social Service	Assistant Manager	Represented jurisdiction
Stephanie Daus	NV Energy	Emergency Management Specialist	Represented jurisdiction
Guy DeMarco	City of Las Vegas	City of Las Vegas OEM	Represented jurisdiction
Gil Doucet	CAEP-Olin Chemical Factory	Safety Officer	Represented jurisdiction
Skye Dunfield	Clark County Water Reclamation District	Emergency Management Intern	Represented jurisdiction; Provided additional support and input

Plan Stakeholders and MPSC Members			
Name	**Organization**	**Position**	**Collaboration/Invitation**
Mark Escobedo	City of North Las Vegas Development and Flood Control	Manager	Represented jurisdiction; Provided additional support and input
Geir Gabrielson	City of Boulder City	Manager	Represented jurisdiction
Ronald Glenn	City of Henderson	Marketing Information Officer	Represented jurisdiction; Provided additional support and input
Matthew Griebel	City of Henderson	Senior Marketing Information Officer	Represented jurisdiction; Provided additional support and input
Gerald Gunny	City of Henderson Community Development	Structural Engineer	Represented jurisdiction; Provided additional support and input
Catherine Huang Hara, MSW	Clark County Social Service	Senior Management Analyst	Represented jurisdiction; Provided additional support and input
Jeff Harper	Moapa Paiute Tribe	EM (Acting Chief of Police)	Represented Jurisdiction
Pamela “Pam” Hatty	Clark County Office of Emergency Management & Homeland Security	Administrative	Represented jurisdiction; Provided additional support and input
Werner Hellmer	Clark County	Manager, Plans Examination	Represented jurisdiction; Provided additional support and input
John Hines	Las Vegas Valley Water District	Corporate Security Services Manager	Represented Jurisdiction
Warren Hull	Clark County School District	Interim Director of Emergency Management	Represented Jurisdiction
Jeremy Hynds	City of Henderson	Emergency Manager	Represented jurisdiction; Provided additional support and input
Jeremy Hynds	North Las Vegas Fire Department	Emergency Management Specialist	Represented jurisdiction; Provided additional support and input
Bradley “Brian” Iverson	City of Las Vegas, Office of Emergency Management	Assistant Emergency Manager	Represented jurisdiction; Provided additional support and input
Albert Jankowiak	City of Henderson Public Works Department	Project Engineer III	Represented jurisdiction; Provided additional support and input
Jim Keane	City of Boulder City	City Engineer	Represented jurisdiction; Provided additional support and input
Phil Klevorick	Clark County Nuclear Waste	Principal Management Analyst	Represented Jurisdiction
Norman “Dean” Kiernan	Clark County School District-Office of Emergency Management	Director II- Maintenance Production Management Center/Emergency Management	Represented jurisdiction; Provided additional support and input

Plan Stakeholders and MPSC Members			
Name	**Organization**	**Position**	**Collaboration/Invitation**
Carolyn Levering	City of Las Vegas	Emergency Manager	Represented Jurisdiction
Spencer Lewis	City of Mesquite Fire and Rescue	Captain	Represented jurisdiction; Provided additional support and input
Jason Manzo	Southern Nevada Area Communications Council	Administrator	Represented jurisdiction
Craig McDougall	Clark County, Regional Flood	Senior Hydrologist	Represented jurisdiction
Dean Mosher	Clark County	Public Works	Represented jurisdiction
Jason Moyer	Las Vegas Metropolitan Police Department	Detective (Retired)	Represented Jurisdiction
Todd Myers	Clark County Regional Flood Control District (CCRFCD)	Engineering Director/Floodplain Management t	Represented Jurisdiction; Provided additional support and input
Cheryl Nagy	Clark County OEM	Preparedness/Recovery Coordinator	Represented Jurisdiction
Stephen Neel	Moapa Valley Fire District	Fire Chief	Represented Jurisdiction
Jeffrey “Jeff” Ohs	University of Las Vegas (UNLV)	Emergency Management Coordinator	Represented Jurisdiction
Brian O’Neal	Clark County Fire Department Rural Division	Assistant Chief, Rural Division	Represented Jurisdiction; Provided additional support and input
Bryan Ostaszewski	Voluntary Organizations Active in Disasters	Nevada Chair for VOAD	Represented Jurisdiction
Jim Owens	Las Vegas Paiute Tribe	Police Chief	Represented Jurisdiction
Sam Palmer	Clark County	Assistant Director	Represented Jurisdiction
Harriet Parker	Las Vegas Paiute Tribe	Safety Officer/ EM Coordinator	Represented Jurisdiction; Provided additional support and input
Steve Parish	Clark County Regional Flood Control District (CCRFCD)	General Manager/Chief Engineer	Represented Jurisdiction; Provided additional support and input
Arthur Perillo	City of Las Vegas Fire & Rescue	Assistant Chief	Represented Jurisdiction
Brad Poulson	Kern River Gas Transmission Co.	Las Vegas District Manager	Represented Jurisdiction
Carlito Rayos	Clark County Fire Department	Hazmat Coordinator	Represented Jurisdiction, Provided additional support and input
Michael Richardson	Nevada Division of Environmental Protection, HW & SW Compliance and Enforcement Branch	Electrician	Represented jurisdiction

Plan Stakeholders and MPSC Members			
Name	**Organization**	**Position**	**Collaboration/Invitation**
Misty Robinson	Southern Nevada Health District	Public Health Supervisor	Represented Jurisdiction
James Rogers	Clark County Office of Public Safety	Chief of Public Safety	Represented Jurisdiction
Corey Ross	Las Vegas Valley Water District	Emergency Management Coordinator	Represented Jurisdiction, Provided additional support and input
Melanie Rouse	Clark County Coroner / Medical Examiner	Coroner	Represented Jurisdiction
Billy Samuels	Clark County Fire Department / OEM	Deputy Fire Chief / Emergency Manager	Represented Jurisdiction; Provided additional support
Dustin Schelin	Las Vegas Fires & Rescue	Training Officer, Technical Rescue and HAZMAT	Represented Jurisdiction
Brian Scroggins	City of Las Vegas Charter Schools	Emergency Manager	Represented Jurisdiction
Tami Sedivy-Shroder	Clark County Coroner/ Medical Examiner	Assistant Coroner	Represented Jurisdiction
Madeline Skains	City of Henderson	Senior Public Information Coordinator	Represented Jurisdiction; Provided additional support and input
Rachel Skidmore	Las Vegas Metropolitan Police Department	Emergency Manager	Represented Jurisdiction; Provided additional support and input
Sander Smiles	Voluntary Organizations Active in Disasters	Nevada Co-Chair of VOAD	Represented Jurisdiction
Clint Spenser	Clark County Road Division	Manager	Represented Jurisdiction; Provided additional support and input
Chris Sproule	Las Vegas Fire & Rescue	Strategic Planning – Accreditation Manager	Represented Jurisdiction
Tina Stephanitch	American Red Cross	No title listed	Represented Jurisdiction
Angeline Syzmanski	Clark County Water Reclamation District	Emergency Management Coordinator/ Management Analyst I	Represented Jurisdiction; Provided additional support and input
John Turner	Vegas Public Broadcasting Service	Chief of Broadcast Operations and Emergency Services – Vegas PBS	Represented Jurisdiction
Robert Vega	Clark County	Deputy Chief Information Officer	Represented Jurisdiction
Myles Walimaa	Clark County GISMO Information Technology Department	GIS Analyst	Represented Jurisdiction; Provided additional support and input
Christi Wiegman	American Red Cross	Disaster Program Manager	Represented Jurisdiction
Michael Wilson	Clark County School Districts	Emergency Manager	Represented Jurisdiction

Plan Stakeholders and MPSC Members			
Name	**Organization**	**Position**	**Collaboration/Invitation**
Sarah Wright	Clark County GISMO Information Technology Department	Operations Administrator	Represented Jurisdiction; Provided additional support and input

State and Federal Agencies			
Karen Beckley	US Environmental Protection Agency	Director	Represented Agency
Daniel “Dan” Berc	NOAA/ National Weather Service	Warning Coordination Meteorologist	Represented Agency
Ryan Gerchman	Nevada Division of Emergency Management/Homeland Security	Hazard Mitigation Planner	Represented Agency; provided additional support and input
Kendall Herzer	Lower Colorado Basin	US Bureau of Reclamation	Represented Agency
Brian Mitchell	Nellis Air Force Base	Nellis Installation Emergency Manager	Represented jurisdiction
Lucas Basham Murphy	Nevada National Security Site	Supervisor Emergency Management Coordinators	Represented Jurisdiction
Brian Richmond	State of Nevada	No title listed	Represented Agency
Janelle Woodward	Nevada Division of Emergency Management / Homeland Security	State Hazard Mitigation Officer / Grant Projects Analyst II / Earthquake Program Manager	Represented Agency; provided additional support and input

Mitigation Planning Steering Committee Activities

Seven (7) meetings were held with the Mitigation Planning Steering Committee. Representatives from the County and participating organization shared the responsibility of chairing the Mitigation Planning Steering Committee. The County Office of Emergency Management also copied documents for review and sent out meeting notices. The following table lists milestone Mitigation Planning Steering Committee activities. A full description of Steering Committee activities with documentation is contained in Appendix B - Mitigation Planning Steering Committee Documentation.

Table 7: Steering Committee Planning Activities

Steering Committee Planning Activities		
Date	**Activity/Meeting**	**Purpose**
4/18/2022	MJHMP Steering Committee Kickoff Meeting	Introduction of Steering Committee members, discussion of update process, and review of critical tasks necessary for the planning effort.
5/09/2022	MJHMP Steering Committee Meeting	Discussion of Mitigation Planning Committee Steering Committee Meeting Cadence (Quarterly), Upcoming Project Community Involvement and Engagement Process, and Project SharePoint Site Access
5/24/2022	MJHMP Steering Committee Quarterly Meeting	Review project schedule and timeline, SharePoint site access and use, and public engagement and hazard mitigation planning questionnaire.
8/16/2022	MJHMP Steering Committee Quarterly Meeting	Review project progress update, review outstanding data requirements, move into the mitigation strategy phase.
11/29/2022	MJHMP Steering Committee Meeting	Introduce new project team, new timeline and overview on New Mitigation Action Worksheet.
2/15/2023	MJHMP Steering Committee Meeting	Update to Mitigation Action Worksheet status, Introduce Capabilities Assessment, introduce Open Comment Period and MJHMP submission
4/26/2023	MJHMP Steering Committee Open Comment Period Review Meeting	Review of the Open Comment Review Period and MJHMP Submission to the State of NV and FEMA

Stakeholder Participation

The Clark County MPSC is made up of stakeholders working together for the development and ongoing maintenance of this plan update. The participants are grouped into actively participating representatives from the participating jurisdictions with Clark County.

- **Mitigation Planning Steering Committee (MPSC):** This group consists of the jurisdictional representatives from the planning area, the State of Nevada Division of Emergency Management, supporting state and federal agencies, and CONSTANT Associates.
- **Outreach to Vulnerable Communities:** There were members of this group that included some of the jurisdictional representatives that serve and support vulnerable populations in the planning area like Clark County School District, Clark County Animal Control, Clark County Department of Environment and Sustainability, Clark County Senior Services, Southern Nevada Homelessness Continuum of Care, Southern Nevada Health District, the American Red Cross, Voluntary Organizations Active in Disasters (VOAD), participating jurisdiction Fire & EMS departments, and the Tribal Nations of Las Vegas Paiute and Moapa Band of Paiute.
- **Other Stakeholders**: This group consists of interested parties from the local community, vulnerable populations and local universities. This plan was developed with the support and input from various commercial interests.
- **Members from the pubic-at-large**: FEMA requires the planning effort to be open to constant input from interested citizens in compliance with Sunshine Laws. In Nevada, public meetings must comply with the State's Open Meeting Act, unless established by statutory exemption. Therefore, any individual citizen who wishes to be involved in this effort to mitigate future disasters is encourages to attend MPSC meetings and solicit relevant comments to be included in the draft sections of the written plan.

Community Engagement

Once the planning process commenced, the Mitigation Planning Steering Committee provided the opportunity for neighboring communities, agencies, businesses, academia, non-profits, and other interested parties to be involved in the mitigation planning process. The public was notified of open meetings via the Clark County and its participating jurisdiction websites, Facebook, and/or Twitter accounts. CONSTANT and CCOEM invited all non-covered jurisdictions (Special Districts) to participate in the plan update. Any jurisdictions or special districts not covered in this MJHMP update is either covered under another plan or declined to participate.

Local and Regional Agencies and their representatives of participating jurisdictions, including Mayors, Public Officials, Planning, Building and Zoning, GISMO, Coroner, Health District, Department of Environment and Sustainability, and Fire Department were notified of the MPSC meeting via email and phone. Participating jurisdictions were notified by of the MPSC meetings via email and phone by CCOEM. Emergency Managers from neighboring Nevada counties (Lincoln and Nye), neighboring California counties (San Bernadino and Inyo), neighboring Arizona county (Mohave), were personally invited to attend the kick-off and public draft review meeting.

For the two-three weeks prior to each public meeting, an announcement was placed on the Clark County Government (https://www.clarkcountynv.gov/news_detail_T28_R742.php) and LEPC website

(https://www.clarkcountynv.gov/government/departments/fire/local_emergency_planning_committee_meetings_(lepc).php). For documentation, see Appendix C – Public Engagement Documentation.

At the first public planning (virtual) meeting, attendees ranked and identified hazards, created a community profile, prioritized mitigation projects, and completed an online community risk assessment

questionnaire (https://www.surveymonkey.com/r/ClarkCountyMJHMP2023). During this meeting, and the latter public review meeting, concerned citizens and other parties were invited to review the most current draft, provide any input of feedback, and ask any relevant questions of the Clark County MPSC and CONSTANT. The online community risk assessment questionnaire received input from the 803 responders was used to select hazards and rank their affects. Climate Change and Drought were ranked as the two top hazards. This input was also used to inform the Calculated Priority Risk Indices (CPRI) and Probability of Future Events contained in Section 4 – Hazard Analysis and Risk Assessment. Finally, survey input was used to select mitigation actions. Input from posting the draft HMP was used to refine the MJHMP and prepared it for submission and review. Appendix C – Public Engagement Documentation provides documentation of community engagement efforts and public participation.

Due to the COVID-19 pandemic, and COVID-19 Safe Practices for Clark County and the cities of Boulder City, Henderson, Las Vegas, North Las Vegas, Las Vegas Paiute Tribe, Moapa Band of Paiutes, Clark County Water Reclamation District, Clark County School District, and Las Vegas Valley Water District, the Public Review Period of the plan draft was held virtually. MPSC members and the public were invited to review a draft copy of the Clark County MJMHP (update) posted to Clark County's website (Clark County, NV (clarkcountynv.gov) to help address any questions or concerns. The MPC, stakeholders, and the public provided feedback and input on the plan draft by completing feedback questionnaire.

Open Comment Survey: (https://www.surveymonkey.com/r/ClarkCountyMJHMP23)

Relevant federal, regional, state, and local governments as well as any private and non-profit organizations were invited to provide input and technical expertise. The entities, who volunteered, either in person or by providing hazard data, are listed in the following.

Table 8: Partner Involvement by Entity

Partner Involvement by Entity		
Entry Classification	**Entity**	**Entity Input**
Federal Agencies	U.S Census Bureau, Center for Disease Control and Prevention, Federal Drug Administration (FDA), National Oceanic and Atmospheric Administration/National Centers for Environmental Information (NOAA/NCEI), U.S. Army Corps of Engineers (USACE), United States (U.S.) Bureau of Reclamation, U.S. Department of Homeland Security (DHS), U.S. Federal Bureau of Investigation (FBI), USDA, National Agricultural Statistics Service, U.S. Geological Survey (USGS), U.S. Geological Survey (USGS) National Center for Earth Resources Observation and Science (EROS), U.S Geological Survey (USGS) National Water Information, U.S. Occupational Safety and Health Administration (OSHA), U.S. Department of Transportation (USDOT), U.S. Drought Monitor/Drought.gov, FEMA HAZUS® Database, FEMA National Risk Index, FEMA Flood Map Service Center; National Park Service, Medlineplus.gov; The National Weather Service	Provided census data, weather data, dam data, land use data, and geological data
State Agencies	Nevada Division of Emergency Management, Nevada Department of Agriculture, Nevada Seismological Laboratory (Seismo Lab), Nevada Health Response, Nevada Department of Transportation (NDOT), Nevada Bureau of Mines and Geology, Nevada Resources and Fire Information Portal Public Viewer, Southern Nevada Counter-Terrorism Center (Fusion Center)	Provided oversight and technical assistance; provided geological data; provided hazard record and data; provided dam data; provided land use data

Partner Involvement by Entity		
Entry Classification	**Entity**	**Entity Input**
Local Governments	Clark County Office of Emergency Management (CCOEM), Clark County School District (CCSD), Clark County Comprehensive Planning Department, Clark County Fire, Clark County Department of Environment and Sustainability; Clark County Regional Flood Control District; Clark County Water Reclamation District, Las Vegas Valley Water District, Southern Nevada Health District; Participating Municipalities (Cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas; Tribal Nations of Las Vegas Paiute and Moapa Band of Paiute Tribe); Las Vegas Metropolitan Police Department Homeland Security Division; Regional Transportation Commission of Southern Nevada (RTC)	Provided input as MPSC members/principal subjects; Provided input – GIS maps; Provided hazard record and data; provided land use data; provided input from various interests
Private Organizations	Constant Associates, American Society of Civil Engineers (ASCE), Las Vegas Valley Water District, Las Vegas Review Journal, Nevada Weed Management Association (NWMA), National Geographic; The Nature Conservancy; Vaisala U.S. National Lightening Detection Network; Science Sparks	Directed planning efforts as principal mitigation planners; provided input from various interests; Provided input – HAZUS report
Academia	Columbia School of Public Health, Nevada State Climate Office at the University of Nevada at Reno	Provided input from various interests
Vulnerable Populations Data	FEMA RISK Map, Clark County Department of Sustainability and Environment, Help Hope Home/Southern Nevada Homelessness Continuum	Provided input from various interests;

Local Procedures and Resources

Available Resources/Documentation Resources

The MPSC conducted a comprehensive review of Clark County, NV, and the plan update's participating jurisdictions; the cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, and the Tribal Nations of Las Vegas Paiute and Moapa Band of Paiutes, to determine the availability of existing emergency management and preparedness information.

Clark County Critical Facilities List

The Clark County Mitigation Planning Steering Committee in conjunctions with Clark County Office of Emergency Management and Clark County GISMO Information Technology Department assessed the list of critical facilities used throughout the MJHMP plan update and is the based off the vulnerability assessment and loss estimated. The complete list is available in Appendix D – Critical Facilities & Infrastructure. Clark County GISMO Information Technology Department staff updated this list to produce updated GIS maps located with the County for this plan update.

Clark County Emergency Operations Plan (EOP) – November 2019

CCOEM developed a countywide EOP as an all-hazard plan that describes how the County will organize and respond to emergencies and disasters in the community. It is based on, and is compatible with, Federal, State of Nevada, and other applicable laws; regulations; plans; and policies, including Presidential Policy Directive 8, the National Response Framework (NRF), and Nevada Division of Emergency Management (NDEM) plans. A primary responsibility of government is response to emergency or disaster conditions to maximize the safety of the public and minimize property damage. It is the goal of the County that responses to such conditions are conducted in the most organized, efficient, and effective manner possible. Therefore, this EOP utilizes the National Incident Management System (NIMS) for managing emergencies involving multiple jurisdictions and agencies. Consisting of a Basic Plan, Emergency Support Function (ESF) Annexes, and Incident Annexes, this EOP provides a framework for coordinated response and recovery activities during a large- scale emergency.

Clark County Local Emergency Planning Committee, Hazardous Materials Emergency Response Plan – January 2022

This plan is the product of cooperative efforts by the members of the Local Emergency Planning Committee (LEPC) and fulfills a federal requirement of the Superfund Amendments and Reauthorization Act of 1986 (SARA) under Title III, "Emergency Planning and Community Right-To-Know". This document provides guidance for hazardous materials emergency response and represents a consensus by the LEPC upon which to base future planning and training.

Clark County Multi-Jurisdictional Hazard Mitigation Plan

Clark County is currently covered by a FEMA-approved local multi-jurisdictional hazard mitigation plan. The current MJHMP (August 2018) has been reviewed and incorporated throughout this plan per FEMA requirements.

Clark County Master Plan – Adopted November 17, 2021

The Clark County Master Plan is a long-term, general policy plan for the physical development of unincorporated Clark County, satisfying the requirements of Nevada Revised Statute (NRS) 278.160. The plan is a living document and its elements are updated according to the planning process.

Clark County, NV and Incorporated Areas Flood Insurance Study

The Clark County Flood Insurance Study (FIS) revises and updates information on the existence an severity of flood hazards in the geographic area of Clark County, including the Cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, and the unincorporated areas of Clark County (referred to collectively herein as Clark County) and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

Clark County's Sustainability and Climate Action Plan

In 2019, the Clark County Board of Commissioners made recommendation that Clark County develop and adopt its first ever Sustainability and Climate Action Plan. The impacts of climate change are very real, and they are upon us. This plan recognizes those unique challenges of climate change with the goal of working harder to build resilience into our social, economic and environmental systems.

Clark County, Nevada Climate Vulnerability Assessment – September 2022

The purpose of the Clark County Vulnerability Assessment (CVA), a project of the All-in-Clark County Initiative, was to assess the current and future potential impacts of climate change in Clark County, Nevada, and to develop strategies that reduce those risks to create a more sustainable and resilient future for all. This report summarizes the process and results of the assessment to understand the vulnerabilities of key systems, services, and people to a changing climate.

Clark County Regional Flood Control District (CCRFCD) Master CIP Plan – 2020

The Regional Flood Control District Board of Directors (Board) approved the Ten-Year Construction Program plan (TYCP) at its June 9 meeting. The plan includes $991 million in total projected revenue, with $187 million eligible in the first year, beginning July 1, 2022. The TYCP revenues are derived from the District's one-quarter of one percent sales tax revenue, interest revenues, and bond proceeds from the issuance of debt. The Board adopted the prioritization of projects based on factors Including the affected population, assessed land value impacted, public perception of need, emergency access, general inconvenience, and coordination with other projects. Read more about the projects in the plan. The District has completed 677 miles of channel, 104 detention basins built, or 75 percent of its master plan. When all projects on the 10-year plan are completed, another 8 detention basins and 76 miles of conveyance will be added.

Colorado River Drought Contingency Plan – 2019

As part of an agreement with the federal government and the other Colorado River Basin states, Southern Nevada's Colorado River water supplies were reduced by 3 percent beginning in 2020 due to low water levels in Lake Mead. Under the Lower Basin Colorado River Drought Contingency Plan, Nevada, Arizona, California and Mexico reduced the amount of water diverted from the Colorado River to reduce risks from ongoing drought.

State of Nevada Enhanced Hazard Mitigation Plan – 2018

The State Enhanced Hazard Mitigation Plan is the official statement of Nevada's statewide hazard mitigation goals, strategies, and priorities. Hazard mitigation can be defined as any action taken to reduce or eliminate long-term risk to life and property from natural and human-caused disasters. The standard version of the State Hazard Mitigation Plan was originally submitted by the Nevada Division of Emergency Management and approved by FEMA in 2004; it was updated in 2007, updated and enhanced in the 2010 iteration. Since 2010, the Nevada Hazard Mitigation Planning Committee, Nevada Hazard Planning

Subcommittee, Nevada Division of Emergency Management staff, and Nevada Bureau of Mines and Geology staff at the University of Nevada, Reno contributed to the 2013 update and the current 2018 update of the Enhanced State Hazard Mitigation Plan.

State of Nevada Climate Strategy

The State Climate Strategy is an integrated, economy-wide roadmap for the Silver State to accelerate climate action necessary to achieve Nevada's climate goals and capture the health and economic benefits of the clean energy and technology revolution. The Strategy is just the beginning of future climate action in Nevada. As a living document, the Strategy will be adapted and updated as the impacts of climate change evolve and new climate-friendly technologies become available.

Nevada Threats and Hazards – September 2020

The Nevada Threats and Hazards document is a document created by the State of Nevada Division of Emergency Management (DHS)/Office of Homeland Security (DHS). Within the documents statement of purpose, the reason for this document was that upon further research, FEMA, state agencies, and local jurisdictions were using various terms to define specific threats and hazards. In order to support this effort, DEM has developed a standardized list of threats and hazards to be used in the planning process. The standardized list of terms combines FEMA definitions with a list of hazards specific to geography and industry in Nevada. This document is also a tool that may be used for jurisdictions to facilitate THIRA/SPR planning, plan development and updates (such as the MJHMP update), and grant applications through DEM and DHS.

Federal Guidelines for Dam Safety

These guidelines apply to management practices for dam safety of all Federal agencies responsible for the planning, design, construction, operation, or regulation of dams. They are not intended as guidelines or standards for the technology of dams. The basic principles of the guidelines apply to all dams. However, reasonable judgments need to be made in their application commensurate with each dam's size, complexity, and hazard. The Federal agencies have a good record and generally sound practices on dam safety. These guidelines are intended to promote management control of dam safety and a common approach to dam safety practices by all the agencies. Although the guidelines are intended for and applicable to all agencies, it is recognized that the methods of the degree of application will vary depending on the agency mission and functions.

Southern Nevada Water Authority (SWNA), Water Resource Plan – 2023

The SNWA's 2023 Plan provides a comprehensive overview of water resources and demands in Southern Nevada and discusses factors that will influence resource availability and use over a 50-year planning horizon. The plan does not intend to specifically address all aspects of water resource management and development; rather, it serves as a companion to other detailed planning documents like SWNA major construction and capital plan, SWNA Conservation Plan, regional water quality plan for the Las Vegas Valley Watershed, Annual Operating plan for the Las Vegas Valley Watershed, SWNA Financial Budget and Comprehensive Annual Financial Report, SNVS Operating Plan, and SWNA Water Budget.

Clark County Planning Documents

Clark County's participating jurisdictions provided a host of planning, zoning development-related documents. These documents were reviewed, assessed, and cataloged to compile Section 5.3 – Capabilities as well as Section 5.5 – Planning Integration of this HMP.

Technical Resources

The Clark County MPSC employed a variety of technical resources in its plan development. These technical resources were instrumental in completing vulnerability and risk assessments.

CONSTANT Associates

Founded in 2004, CONSTANT Associates (CONSTANT) mission is to make the world a safer place. CONSTANT was the principal plan writer for this MJHMP update.

ArcGIS Pro

Each map developed for this plan was created using ESRI's ArcGIS Pro.

FEMA DFIRM – Map Center

FEMA's National Flood Hazard Layer (NFHL) data was instrumental in mapping floodplain locations and estimating potential flood impacts and loss estimates.

FEMA National Risk Index for Natural Hazards (National Risk Index Map) Dataset Update 1.19.0 – 3/23/2023

The National Risk Index (NRI) is an easy-to-use, interactive tool that shows which communities are most at risk to natural hazards. It includes data about the expected annual losses to individual natural hazards, social vulnerability and community resilience, available at county and Census tract levels. Also, the National Risk Index Maps are interactive maps to visually explore natural hazard risk data across the United States (https://hazards.fema.gov/nri/map).

Data Set Update Information: https://hazards.fema.gov/nri/updates

HAZUS®

FEMA's HAZUS® is a nationally applicable standardized methodology that contains models for estimating potential losses from earthquakes, floods, and hurricanes. HAZUS® uses Geographic Information Systems (GIS) technology to estimate the physical, economic, and social impacts of disasters. CONSTANT Associates developed the Global Risk Reports for Earthquake and Flooding within the plan update.

National Oceanic and Atmospheric Administration/National Center for Environmental Information (NOAA/NCEI)

Weather data and historical events were primarily provided by NOAA/NCEI, which is formerly known as the National Climatic Data Center (NCDC) (https://www.ncdc.noaa.gov/stormevents/).

Continued Public Involvement

Clark County is dedicated to involving the public in the continual shaping of its mitigation plan and the development of its mitigation projects and activities.

The Clark County MPSC will continue to keep the public informed about its hazard mitigation projects and activities through CCOEM's website. The public will also be invited to participate in annual MPSC meetings to review and discuss the mitigation related events of the past year.

Copies of the updated Clark County MJHMP will be available online through CCOEMs website and distributed to the participating jurisdictions of Clark County Departments, Clark County Unincorporated Areas and the Cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, and the Tribal Nations of Las Vegas Paiute and Moapa Band of Paiutes, as well as the special districts of, Clark County School District, Southern Nevada Health District, Clark County Water Reclamation District and Las Vegas Valley Water Authority.

Plan Maintenance

Elements of this section include:

- Monitoring, evaluating, and updating the MJHMP;
- Incorporation into existing plans and procedures;
- Continued public participation.

Table 9: FEMA Regulation Checklist: Plan Maintenance

FEMA Regulation Checklist: Plan Maintenance	
44 CFR § 201.6(c)(1)	**Documentation of Plan Maintenance:** The plan shall include documentation of 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.
Elements	
D1.	Is there discussion on how the community will continue public participation in the plan maintenance process? 44 CFR 201.6(c)(4)(iii)
D2.	Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? 44 CFR 201.6(c)(4)(i)
D3.	Does the plan describe a process by which each community will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, where appropriate? 44 CFR 201.6(c)(4)(ii)

Data Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April 19, 2023.

Implementation and maintenance of the MJHMP is critical to the overall success of hazard mitigation planning. This section details the process that the County and cities / tribes will use to monitor, update, and evaluate the plan within the five-year cycle of the plan's revision to ensure the MJHMP remains an active and relevant document. The format of the plan aligns with the regulation checklist and is divided into sections of information. When it is time to maintain or revise the MJHMP, data can be easily located and incorporated, resulting in an easy method to keep the plan current and relevant.

The Clark County MPSC has developed a method to ensure monitoring, evaluation, and updating of its mitigation plan. Upon adoption of the Clark County MJHMP Update, CCOEM will utilize its Local Emergency Planning Committee (LEPC) to provide plan updates, revisions, and data collection for future MJHMP planning purposes. The LEPC chair will utilize the created MPSC for proposed mitigation projects comprised of CCOEM's Assistant Emergency Manager and jurisdictional representatives from the MPSC. The CCOEM Assistant Emergency Manager will be determined by a vote in the MPSC. Additional members may be added based on necessity. The MPSC will submit a quarterly report to the LEPC, which in turn, will submit an annual report to CCOEM. Refer to the Clark County MJHMP Update Quarterly Report form at the end of this section for additional details.

CCOEM may request a non-scheduled report on the monitoring, evaluation, or updating of any portion of the MHMP plan due to irregular progress on mitigation actions and or projects, in the aftermath of a hazard event, or for any reason deemed appropriate.

Plan Monitoring and Situational Change

The goals of this phase of plan maintenance are:

Plan Monitoring: regularly report on the progress of mitigation projects/actions from start to finish.

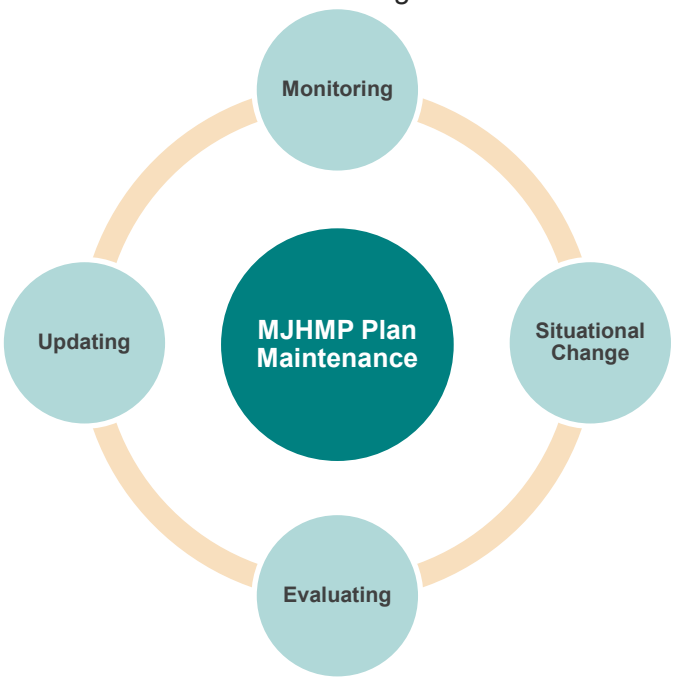
Situational Change: Plan change(s) due to training, drills, exercises, project completions, hazard events, etc.

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

A monitoring report will be written and submitted for review to the MPSC/LEPC and after the quarterly MPSC meeting or when triggered by situational change. The monitoring report answers the following questions:

- Is the mitigation project under, over, or on budget?
- Is the mitigation project behind, ahead of, or on schedule?
- Are there any changes in Clark County's capabilities which impact the MJHMP plan?
- Are there any changes in Clark County's hazard risk?
- Impact of the hazard on the vulnerable population in Clark County?
- Has the mitigation project/action has been initiated or its initiation planned?
- Is the current process of prioritizing mitigation projects/actions appropriate and accurate?
- Has the current method of incorporating mitigation project/actions yielded a comprehensive action and project strategy to address seen and unforeseen hazards?
- If applicable, has participation in a mitigation action's collaboration been regular?
- Was a negative result caused directly or indirectly by insufficient levels of public outreach?
- If any, what plan updates occurred, why they occurred, and what is their impact?

The plan maintenance process is cyclical and maintenance items can operate simultaneously within the process.



Plan Evaluation

A plan evaluation is a rigorous and independent assessment of either completed or ongoing activities to determine the extent to which they are achieving stated objectives and contributing to decision making. An evaluation report (see example on the pages 41-42) will be written and submitted to Clark County's MSPC when the situation dictates.

The following situations are typical examples of when an evaluation will be necessary.

- Post hazard event
- Post training event
- Post tabletop or drill exercise

The goal of plan evaluation is meaning to answer questions like "is the current mitigation plan sufficient, helpful or relevant?" are imperative and valuable during the evaluation period.

Significant change or completion of a mitigation project/action (e.g., funding source, responsible party, estimated timeline, and cost estimate)

- An evaluation report will ask the following questions to the previously listed events.
- Do the mitigation objectives and goals continue to address the current hazards?
- Are there new or previously unforeseen hazards?
- Does a change in hazard vulnerability demand a change of or addition of mitigation actions or projects?
- Clark County OEM and Clark County MPSC will review and assess any and all mitigation projects/actions to ensure vulnerable populations are included in those updates.
- Does a change in the mitigation strategy demand a change of or addition of mitigation actions/projects?
- Are current resources appropriate for implementing a mitigation project?
- Was the outcome of a mitigation action/project expected?
- Are there implementation problems?
- Was the public engaged (including agencies that support vulnerable populations) to the point where they were satisfied with current engagement strategies?
- Did the public participate in a number that produced a positive yield on the plan, action, or project?
- Are there coordination problems?

Plan Updating

Typically, a MJHMP update is initiated upon the completion of a plan evaluation and even then, only when the evaluation determines an update is appropriate. A plan update also occurs every five years per FEMA guidelines. Additionally, when new hazard data becomes available, it will be added to the MJHMP.

The goal of plan updating is to provide an update, if necessary, if any deficiencies are found during the plan evaluation phase.

New data will be confirmed or denied at quarterly MPSC meetings.

For whatever reason, a MJHMP update can be written any time it is deemed necessary by CCOEM.

According to FEMA/DMA 2000 guidelines for mitigation planning, Clark County will begin the update process one-year from this plan's adoption. It will do so under the direction of the County's Assistant Emergency Manager. CCOEM will coordinate and facilitate quarterly meetings within the five-year cycle with stakeholders from the participating jurisdictions, Clark County (incorporated and unincorporated), the Cities of Boulder City, Henderson, Las Vegas, Mesquite, North Las Vegas, Tribal Nations of Las Vegas Paiute and Moapa Band of Paiutes, County and participating jurisdiction agencies/departmentss representing vulnerable populations (i.e Clark County Senior Services, American Red Cross, and Southern Nevada Homelessnes Continuum of Care), neighboring Nevada counties (Lincoln and Nye), neighboring California counties (San Bernadino and Inyo), neighboring Arizona county (Mohave), and plan stakeholders (Clark County Water Reclamation District, Clark County School District, and Las Vegas Valley Water District). These meetings will allow CCOEM, the LEPC Chair, MPSC members, and stakeholders from Clark County (incorporated and unincorporated), the Cities of Boulder City, Henderson, Las Vegas, Mesquite, North Las Vegas, Tribal Nations of Las Vegas Paiute and Moapa Band of Paiutes, to gather relevant information needed for the next plan update. These meetings will ensure the appropriate status of certain goals (mitigation activities and projects) identified in mitigation strategy are up to date, as required by FEMA, in the next five-year plan update (202X).

Table 10: Sample-Clark County, NV MJHMP Evaluation Progress Report

202X CLARK COUNTY, NV, MJHMP- MITIGATION PROJECT PROGRESS REPORT	
Progress Report Period From (Date):	
Project Title:	
Project ID:	
Description of Project	
Implementing Department/Agency	
Supporting Department/Agency:	
Contact Name	
Contact E-Mail	
Contact Phone Number:	
Grant/Finance Administrator:	
Total Project Cost:	
Anticipated Cost Overrun/Underrun:	
Date of Project Approval:	
Project Start Date:	
Anticipated Completion Date:	
SUMMARY OF PROJECT PROGRESS FOR THIS REPORTING PERIOD	
What was accomplished during this reporting period?	
What obstacles, problems or delays did the project encounter, if any?	
How were the problems resolved?	
Does this project affect vulnerable populations like the underserved, homeless, senior citizens, etc.?	

Table 10: Sample Clark County, NV MJHMP Evaluation Progress Report (continued)

202X CLARK COUNTY, NV, MJHMP- MITIGATION PROJECT PROGRESS REPORT				
MJHMP SECTION	**QUESTIONS**	**YES**	**NO**	**COMMENTS**
PLANNING PROCESS	Has your county department/agency (or other type of organization) done any public outreach activities regarding the MJHMP or a mitigation project? If yes, please describe.			
	Has your county department/agency (or other type of organization) integrated any of the MJHMP elements into other plans or policies? If yes, please describe.			
HAZARD IDENTIFICATION	Has a disaster occurred in this reporting period that affected your department/agency (or other type of organization?			
	Do you know of new hazard studies, reports and/or mapping available for Clark County? If so, what are they?			
RISK ASSESSMENT	Does your county department/agency have any new critical assets that should be included in the 2027 MJHMP risk assessment			
	Have there been changes in development trends that could create additional risks?			
MITIGATION STRATEGY	Are there different or additional resources (financial, technical and human) that are now available for mitigation planning?			

Section 3: Planning Area Description

Formed in 1909 in the name of Senator William Andrews Clark , Clark County, NV, is located on the southernmost tip of the State of Nevada and encompasses 7,891.7 square miles of land area and is the sixth County in Nevada by total area and reported a population of 2,265,461 people in the 2020 U. S. Census (It borders the Nevada counties of Lincoln (north) and Nye (west) and the California counties of San Bernadino (south) and Inyo (southwest), and Mohave County in Arizona.

For hazard mitigation planning purposes, Clark County encompasses the jurisdictions of Clark County, NV (incorporated and unincorporated); the cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas; and the Tribal Nations of the Las Vegas Paiute Tribe and Moapa Nand of Paiutes.

As written on the County website, Clark County is a dynamic and innovative organization dedicated to providing quality service with integrity, respect, and accountability. Covering an area, the size of New Jersey, Clark is home to the nation's 7th-busiest airport and the state's largest public hospital, University Medical Center. The County also provides municipal services to 1 million residents in the unincorporated area. The famed Las Vegas Strip sits at the heart of Clark County, which features unparalleled attractions; Las Vegas boasts more than 147,000 hotel rooms and is among the world's top convention destinations.

As of 2019, Clark County is the nation's 11th most populous county in the United States and provides extensive regional services to more than 2.3 million citizens and more than 45.6 million visitors a year. Clark County is the most populous of Nevada's 17 counties and holds 70 percent of the state's population. According to the U.S. 2020 Decennial Census, Clark County has 917,656 housing units and 16,307 building permits issued in 2021 (U.S Census Quick Facts). The median list price for a home in Clark County was reported by MLS of sold properties over the last year (April 2022 – April 2023) is as $425,000 with a 56.7% homeownership rate (as reported by data.census.gov).

The following table provides a structural summary by sector for Clark County, as identified by FEMA HAZUS database.

Table 11: Structural Summary, Clark County

Structural Summary							
Jurisdiction	Agriculture	Commercial	Government	Industrial	Residential	Education	Religious
Clark County	$553,513	$84,269,222	$2,844,342	$15,521,346	$273,125,235	$15,258,628	$3,733,172

Data Source: FEMA HAZUS Database

Related to Education, the Clark County School District (CCSD) was established in 1956 and is the nation's fifth (5th) largest school district. The school district educates 305,000 students in the County and has one of the top magnet programs in the Country. The 2022-2023 CCSD Pocket Guide indicates that the district operates 372 school programs in 344 CCSD facilities on 337 campuses within the County. More detail on these facilities within the CCSD will be in the Critical Facilities Summary.

Clark County residents and visitors are served and protected by the Clark County Sheriff's Department, the Las Vegas Metropolitan Police Department, the City of North Las Vegas Police Department, and the City of Henderson Police Department. As mentioned on the Las Vegas Metropolitan Police Department website, prior to July 1, 1973, the police agencies in Clark County consisted of five; namely, the Clark County Sheriff's Department, City of Las Vegas Police Department, City of North Las Vegas Police Department, City of Henderson Police Department and Boulder City Police Department. The cities policed their incorporated areas and the Sheriff's Department provided police services to the unincorporated areas of the County of Clark. The Las Vegas Police Department was the largest police agency in the State of Nevada, with approximately 500 personnel (both commissioned and civilian).

The Clark County Office of Emergency Management's mission is to mitigate, prepare for, respond to, and recover from emergencies within the County. The mission of the Clark County Office of Emergency Management (OEM) is to facilitate and support the resources that will enable Clark County to mitigate, prepare for, respond to, and recover from emergencies. CCOEM provides a single point of coordination for Clark County public safety projects. This includes emergency management planning, preparation activities such as training and exercises, response support coordination during emergencies and coordination of recovery programs following emergencies. In this capacity, CCOEM works closely with Clark County public safety organizations to facilitate a coordinated approach to multi-agency activities.

Clark County residents and visitors are served by a seven-member County Commission, elected from geographic districts on a partisan basis for staggered four-year terms. County commissioners biennially elect a chairperson who serves as the Commission's presiding officer. The Commission, in turn, hires a county manager who is responsible for the administrative operations of the County government. Clark County commissioners serve as "ex-officio" as the governing bodies of the Las Vegas Valley Water District, Clark County Water Reclamation District, University Medical Center of Southern Nevada, Big Bend and Kyle Canyon Water Districts, and the Clark County Liquor and Gaming Licensing Board. The County Manager's Office is responsible for the executive oversight of the nation's 11th-largest county, which provides regional services to more than 2.3 million residents and 45 million visitors annually and municipal-like services to more than 1 million residents in the unincorporated County.

Vulnerable residents, like the unhoused and senior citizens, in the County, are supported through Clark County Senior Services and Help Hope Home, the Southern Nevada Homelessness Continuum of Care. The Clark County Senior Service Unit provides services to low-income seniors and individuals with disabilities. The services offered include homemaker services, adult day care, and long-term care assistance. These programs are income based, and a yearly eligibility determination/re-determination to qualify is required. Social Workers on staff assist clients with questions related to needed services in the community and assess specific homemaker services to remain in their homes. For the unhoused population, Help Hope Home, the Southern Nevada Homelessness Continuum of Care is comprised of local governments and other agencies, religious organizations, advocacy groups, and others concerned with the issues of homelessness and affordable housing through a coordinated and regional approach to planning service provision. Their recent 2022 Homeless Census found 5,645 people living in shelters or on the streets and estimated that nearly 14,000 people experienced homelessness in Southern Nevada at some point during the year.

The four municipalities within Clark County—the Cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas —have their own local governing bodies in place. These consist of an elected mayor and city council and an appointed City Manager who oversees the day-to-day operations of their respective city's functions, e.g., zoning, code enforcement, building permits, site inspections, business licenses, public safety, and others. There are also two (2) Tribal Nations within the County — the Las Vegas Paiute Tribe and the Moapa Band of Paiute Indians. Both tribes have a Tribal Government and department that oversee the day-to-day operations of their respective Tribal Nations.

Table 12: Clark County, Participating Jurisdictions

Clark County, Participating Jurisdictions			
Cities	**Clark County Unincorporated Jurisdictions**	**Special Districts**	**Tribal Nations**
• Boulder City • Henderson • Las Vegas • Mesquite • North Las Vegas	• Arden • Cactus Springs • Cottonwood Cove • Coyote Springs • Glendale	• Clark County Water Reclamation District • Clark County School District • Southern Nevada Health District	• Las Vegas Paiute Tribe • The Moapa Band of Paiutes

Clark County, Participating Jurisdictions			
Cities	**Clark County Unincorporated Jurisdictions**	**Special Districts**	**Tribal Nations**
	• Jean • Logandale • Mountain Springs • Nelson • Overton • Primm • Sloan • Sutor Census-designated places include: • Blue Diamond • Bunkerville • Cal-Nev-Ari • Crystal • Enterprise • Fort Mojave Indian Reservation (part) • Goodsprings • Indian Springs • Laughlin • Moapa Town • Moapa Valley • Mount Charleston • Paradise • Sandy Valley • Searchlight • Spring Valley • Summerlin South • Sunrise Manor • Whitney • Winchester	• Las Vegas Valley Water District	

A brief description of the four aforementioned municipalities, two Tribal Nations, and three- special health district entities participating in this update to the Clark County Multi-Jurisdictional Hazard Mitigation Plan are provided below. Information specific to the hazard mitigation planning efforts of the aforementioned jurisdictions can be found in Appendix I – Jurisdictional Annex. As previously mentioned, the new, FEMA-approved plan will serve the County for a period of five years.

Municipalities

- **Boulder City, NV:** The City of Boulder City is known to be a small town with big adventure. The Boulder City Visitor Brochure mentions that it's just beyond the glitz and glam is Boulder City, the town that built Hoover Dam. It doesn't take long to feel its thrill-seeking spirit and

welcoming charm. But it may take a while to see all of the recreational and outdoor activities. There are so many ways to explore, whether it be by land, water or air. If you're passing through, or staying a while, welcome.

- **Henderson, NV**: The City of Henderson was officially incorporated on April 16, 1953. According to the city's website, today, the City of Henderson has grown to more than 103 square miles and is the second largest city in Nevada. Henderson is often referred to as having small town values with big city efficiencies. The city's official slogan "Henderson-a Place to Call Home" reflects a community that enjoys small town values while benefiting from big city efficiencies. Henderson is also located just a few miles from Harry Reid International Airport (previously known as McCarran International Airport), and the Henderson Executive Airport, has completed major renovations and serves as a reliever airport to Harry Reid International Airport. With the I-215 highway into Henderson, the City is just minutes away from the famous Las Vegas Strip.
- **Las Vegas, NV:** The City of Las Vegas began with a land auction in 1905 and has grown into a world-class city with a rich history. The history portion of the City of Las Vegas website mentions that Las Vegas was founded as a city on May 15, 1905, when 110 acres of land situated between Stewart Avenue on the north, Garces Avenue to the south, Main Street to the west, and Fifth Street (Las Vegas Boulevard) to the east, were auctioned off by the railroad company. Also, Las Vegas was incorporated on June 1, 1911. On that day, voters in the unincorporated township of Las Vegas went to the polls and voted on the issue of incorporation.
- **Mesquite, NV:** Since incorporation Mesquite has experienced rapid growth, at one time being named "The fastest growing city in America" for its size. The population stands at 25,000. Per its website, since its incorporation, with this growth has come an increase of businesses and services never before enjoyed by residents of the area. A new hospital, medical and dental clinics brought care that had only been possible by traveling outside the valley. Stores, restaurants, movie theaters, art galleries, golf courses, hotels and casinos are providing employment and services for the lifestyle that has become a trademark of Mesquite. The construction of a new high school, a new middle school and two new elementary schools reflect the increase of young families in the population. Housing developments are creating beautiful neighborhoods for residents of all ages. Access to newly opened land west of Mesquite has been made possible by the addition of a new I-15 interchange encouraging the construction of new light industry. Mesquite has long been a stop on a busy western highway but now it is a destination!
- **North Las Vegas, NV:** The City of North Las Vegas has become one of the fastest growing cities within the State of Nevada. As indicated on its website, https://www.cityofnorthlasvegas.com/our-city/about-north-las-vegas, North Las Vegas is a premier place to live, work and play, the City of North Las Vegas leads Southern Nevada in both new home construction and economic development. Our fast-and-faster, business-friendly approach has made the City a top destination nationally for development opportunities. The City of North Las Vegas has become a hub for new job creation and economic diversification, attracting multiple fortune 500 and global brands, including Amazon, Sephora, Ball Corp., Crocs Inc. and Kroger. This success has enabled the city to reinvest in the community with expanded police and fire service, new parks, roads and amenities, and additional programming to serve residents' diverse needs.

Tribal Nations

- **Las Vegas Paiute Tribe:** The Tudinu (or Desert People), ancestors of the Las Vegas Paiute Tribe, occupied the territory encompassing part of the Colorado River, most of Southeastern Nevada and parts of both Southern California and Utah. Per their website, https://www.lvpaiutetribe.com, the tribe established the Las Vegas Paiute Colony on December 30, 1911, ranch owner Helen J. Stewart deeded 10 acres of her land in downtown Las Vegas to the Paiutes, establishing the Las Vegas Paiute Colony. The Paiutes became a Sovereign Tribal Nation when the Indian Reorganization Act of June 18, 1934, in conjunction with the Las Vegas Paiute Tribal Constitution, approved on July 22, 1970, recognized the Tribe as a Sovereign nation.
- **Moapa Band of Paiutes:** As Moapa Paiutes strive to preserve our legends, songs and dances. However, cultural disruption during the past two centuries have threatened the continuation of traditional life. With the mission statement to advance the Moapa Band of Paiutes and preserve our homeland by building an independent and self-governing community that provides an opportunity for all peoples who have made a commitment to this mission. The Moapa Band of Paiutes (https://www.moapabandofpaiutes.com/tribal-history) created a Constitution and bylaws in 1941 along with a Business council which established the governing body of the Tribe.

Special Districts

- **Clark County Water Reclamation District**: Per their website, the Clark County Water District is responsible for the collection, treatment and reclamation of wastewater for more than 240,000 business and residential accounts in Southern Nevada. The District's collection network includes more than 2,200 miles of pipeline and 23 pumping stations to deliver wastewater from homes and businesses to one of six treatment facilities. Our largest treatment facility, the Flamingo Water Resource Center, ensures wastewater is treated to the highest standard allowing the reclaimed water to be discharged back into Lake Mead. Lake Mead is the drinking water source for more than 95% of the population and businesses in Clark County. The stringent treatment standards are set to protect the community's drinking water supply as well as the recreational use of Lake Mead and the downstream communities along the Colorado River. The District operates the Flamingo Water Resource Center and the Laughlin Water Resource Center. The District also operates treatment facilities in Searchlight, Moapa Valley, Blue Diamond and Indian Springs. It is the largest wastewater agency in the State of Nevada.
- **Clark County School District**: The Cark County School District (CCSD) was established in the planning area in 1956. Per their website (https://www.ccsd.net/), the Clark County School District (CCSD) is the number one choice for families and students. As the nation's fifth-largest school district, we educate 305,000 students – offering a variety of nationally recognized programs, including Magnet Schools, Career and Technical Academies, and Advanced Placement programs. CCSD educates 64 percent of the students in Nevada and works closely with community partners and business leaders to educate students to compete in a global economy.
- **Las Vegas Valley Water District**: Per their website, the Las Vegas Valley Water District (LVVWD) (https://www.lvvwd.com/about/water-district/index.html) provides reliable, quality water to our desert community for more than 60 years. A not-for-profit utility, LVVWD began providing water in 1954 to a service area of around 45,000 residents. In the more than 60 years since, change has been the only constant. The Water District has kept pace, building and responsibly maintaining the city's water delivery system and serving customers through

periods of extraordinary growth and community development—using sustainable technologies such as solar power and alternative-fueled fleets to increase efficiencies and manage costs of water delivery in the desert. Today, the district delivers reliable, quality water—tested and treated in state-of-the-art facilities—to more than 1.5 million people. In addition to a service area that includes metropolitan Las Vegas and areas of unincorporated Clark County, the LVVWD also serves the communities of Blue Diamond, Coyote Springs, Jean, Kyle Canyon, Laughlin (Big Bend Water District) and Searchlight. The Clark County Commissioners serve as the LVVWD Board of Directors and also oversee the additional community water systems.

- **Southern Nevada Health District:** The mission of the Southern Nevada Health District is "to assess, protect, and promote the health, the environment, and the well-being of Southern Nevada communities, residents, and visitors." Per their website (https://www.southernnevadahealthdistrict.org/), the Southern Nevada Health District was as created in 1962, following statutory authorization from the Nevada State Legislature to combine the county health department and the health departments of several surrounding cities. Pursuant to Nevada Revised Statute (NRS) Chapter 439 the Health District's powers and jurisdictions are as follows: prevent and control nuisances; regulate sanitation and sanitary protection of water and food supplies; protect and promote the public health generally in the geographical area subject to the jurisdiction to the health district; and improve the quality of health care services for members of minority groups and medically underserved populations. Today, the Southern Nevada Health District is one of the largest local public health organizations in the United States. The health district serves more than 2.2 million residents, which represents 72 percent of Nevada's total population. Additionally, the Health District is charged with safeguarding the public health of more than 42 million visitors to Las Vegas each year. In the past decade, the role of public health has expanded to include oversight and participation in areas such as bioterrorism and disaster and emergency preparedness.

The proceeding table provides a Populations Summary (per the U.S. Census Quick Fact – Clark County, NV) for each jurisdiction participating in the Clark County Multi-Jurisdictional Hazard Mitigation Plan. It should be noted that the recent 2022 Homeless Census found 5,645 people living in shelters or on the streets and estimated that nearly 14,000 people experienced homelessness in Southern Nevada at some point during the year.

Table 13: Population Summary, Clark County

Population Summary		
Jurisdiction	**Housing Units**	**Population**
Clark County (including Unincorporated Area)	917,656	2,265,461
Boulder City (City)	7,423	14,885
Henderson (City)	136,325	317,610
Las Vegas (City)	256,713	20,471
Mesquite (City)	11,198	641,903
North Las Vegas (City)	86,353	262,527

Data Source: US Census Bureau

For electric service, there are 26 utility companies in Clark County, Nevada, serving a population of 2,112,436 people in an area of 7,890 square miles. While NV Energy provides much of the population with electric power, there are numerous water and wastewater districts. Key water districts include Clark County Water Reclamation District, Virgin Valley Water District, Las Vegas Valley Water District, Moapa

Valley Water District, and the Cities of Las Vegas, North Las Vegas, Henderson, Boulder City, and Mesquite. The following table provides transportation and utility lifeline inventory valued at $45,121,000 for Clark County, as identified by FEMA HAZUS database.

Table 14: Transportation System Lifeline Inventory, Clark County, NV

Transportation System Lifeline Inventory			
System	**Component**	**#Location/ #Segements**	**Replacement Value (millions of dollars)**
Highway	Bridges	1,109	$4962.1224
	Segments	208	$6316.1130
	Tunnels	4	$91.2461
		Subtotal	**$11369.4815**
Railways	Bridges	72	$346.6800
	Facilities	1	$2.6330
	Segments	100	$1243.2012
	Tunnels	0	$0.000
		Subtotal	**$1592.5442**
Light Rail	Bridges	0	$0.000
	Facilities	0	$0.000
	Segments	0	$0.000
	Tunnels	0	$0.000
		Subtotal	**$0.00000**
Bus	Facilities	5	$10.3503
		Subtotal	**$10.3503**
Ferry	Facilities	1	1.3310
		Subtotal	**$1.3310**
Port	Facilities	0	$0.000
		Subtotal	**$0.00000**
Airport	Facilities	11	$1730.2360
	Runways	20	$231.0910
		Subtotal	**$1961.3270**
		Total	**$14,935.00**

Table 15: Utility System Lifeline Inventory, Clark County, Clark County

Utility System Lifeline Inventory, Clark County			
System	**Component**	**#Location/ #Segements**	**Replacement Value (millions of dollars)**
Portable Water	Distribution Lines	NA	$395.11101
	Facilities	1	$36.2970
	Pipelines	0	$0.000
		Subtotal	**$434.4071**
Wastewater	Distribution Lines	NA	$237.0661
	Facilities	17	$2473.6581
	Pipelines	0	$0.0000

Utility System Lifeline Inventory, Clark County			
System	**Component**	**#Location/ #Segements**	**Replacement Value (millions of dollars)**
		Subtotal	**$2710.7242**
Natural Gas	Distribution Lines	NA	$158.0440
	Facilities	2	$2014.1360
	Pipelines	34	$1906.0003
		Subtotal	**$2268.1803**
Oil Systems	Facilities	0	$0.0000
	Pipelines	0	$0.0000
		Subtotal	**$0.0000**
Electric Power	Facilities	39	$24770.3682
		Subtotal	**$24770.3682**
Communication	Facilities	50	$5.4500
		Subtotal	**$5.4500**
		Total	**$30,186.10**

Data Source: FEMA HAZUS Database

Related to the economy of the County, is home to many gaming-related companies. Station Casinos is headquartered in unincorporated Clark County, along with Golden Entertainment, American Casino & Entertainment Properties, Bally Technologies, Cannery Casino Resorts, The Majestic Star Casino, LLC, Ameristar Casinos, Archon Corporation, Boyd Gaming, Las Vegas Sands, MGM Resorts International, Wynn Resorts, DBT Online Inc., Two Plus Two Publishing, Gambler's Book Shop / GBC Press, Millennium Management Group, Navegante Group, Pinnacle Entertainment and Tropicana Entertainment.

Clark County's economy grew at a steady pace prior to the COVID-19 pandemic. Emerging industries that assist the region's economic diversification include information technology, logistics, manufacturing, and healthcare. Though these industries currently represent a smaller portion of the region's economy, their promise for future growth is significant. Likewise, their resiliency in the face of the pandemic-induced economic recession speaks to their role in the region's economy moving forward.

The County's largest employers are:

- Encore Spa & Salon
- Nellis Air Force Base
- Flamingo Las Vegas Hotel and Casino
- MGM Grand Lass Vegas
- The Linq Hotel
- Orleans Hotel and Casino
- Las Vegas Sands Corporation
- Mandalay Bay Resort and Casino
- Caesars Palace Las Vegas

Southern Nevada's diversifying economy has led to notable growth in high-paying occupations such as computer systems design and data processing and hosting. Nevertheless, the region's economy remains

dominated by low-wage and low-skill occupations such as food preparation and serving, and retail sales which are the largest employment sectors in the County. Underemployment remains a challenge for much of the region's population.

Key indicators include:

- Median household income (in 2020 dollars), - $61,048
- Per capita income in past 12 months (in 2020 dollars), - $31,651
- Persons in poverty - 13.2%

A current FEMA-approved Hazard Mitigation Plan will help support such initiatives in Clark County over the next five years, which is the normal shelf life of such important community planning document.

Demographics

Of the 17 counties in the State of Nevada, Clark County is ranked as the 6th largest county in the State and has 7,891.7 square miles of land area. According to the U.S. Census Bureau, the population of Clark County increased from 741,368 in 1990 to an estimated 2,205,207 in 2016. This represents a 197.5% increase over a 26-year period. In 2020, the U.S. Census Bureau, Decennial Census reported the population of Clark County to be 2,265, 461.

The following table details the population demographics specific to Clark County and its participating jurisdictions.

Table 16: Community Demographics

Community Demographics							
Jurisdiction	Size (Sq. Mi)	Population			% Population Change		
		2000	2010	2020	2000-2010	2010-2020	2000-2020
Clark County including Clark County Unincorporated	7891.65	1,375,765	1,951,269	2,265,461	41.8%	16.1%	64.7%
Boulder City (City)	208.27	14,966	15,023	14,885	0.381%	0.919%	-0.541%
Henderson (City)	106.23	175,381	257,729	317,610	47%	23.23%	81.1%
Las Vegas (City)	141.83	479,137	583,756	641,903	21.83%	9.96%	34%
Mesquite (City)	31.76	9,389	15,276	20,471	62.7%	34%	118%
North Las Vegas (City)	101.28	115,488	216,961	262,527	87.9%	21%	127.3%

Data Source: U.S. Census Bureau, Nevada: 2010 Population and Housing Unit Count; and U.S. Census Bureau, Profile: data.census.gov; Percent of Population Change Calculation Change: https://www.omnicalculator.com/math/percentage-change#how-to-calculate-the-percent-change

The 2022 U.S. Census provides the additional population data and information related to age and race origin for Clark County:

Table 17: Additional Population Data - Age and Race Origin

Additional Population Data - Age and Race Origin	
Age /Race	**Percentage**
Persons under 5 years, percent	6.2%
Persons under 18 years, percent	23.0%
Person 65 years and over	15.1%
Race and Hispanic Origin Data includes	
White alone, percent	68%
Black or African American, alone	13.6%
American Indian and Alaska Native, alone	1.3%
Asian, alone	10%

Data Source: U.S. Census Bureau, Profile: data.census.gov

Demographics and Hazard Vulnerabilities

Demographic data is crucial to effective hazard mitigation planning. This is especially true for the numbers associated with population and housing, as they, over time, can increase or decrease a planning area's vulnerabilities to any/all identified natural hazards. For example, a decrease in population and/or the number of housing units generally decreases hazard vulnerabilities for people and structures, while an increase in population and/or the number of housing units generally increases the hazard vulnerabilities of people and structures (particularly those located in hazard-prone areas, e.g., floodplains, wildland urban interface areas or WUIs, etc.).

It is important to note, however, that demographic data can fluctuate or even lag in the short term, i.e., one to two years, for a variety of reasons (economic, political, etc.). This often results in temporary increases in population and, at the same time, temporary decreases in the number of housing units (or vice versa). While these numbers tend to self-correct over time, it is best to analyze data from longer periods, such as ten (10) to 20 years, for mitigation planning purposes.

The following table details the Population Summary/Housing, 2010 vs. 2020 specific to Clark County and its participating jurisdictions.

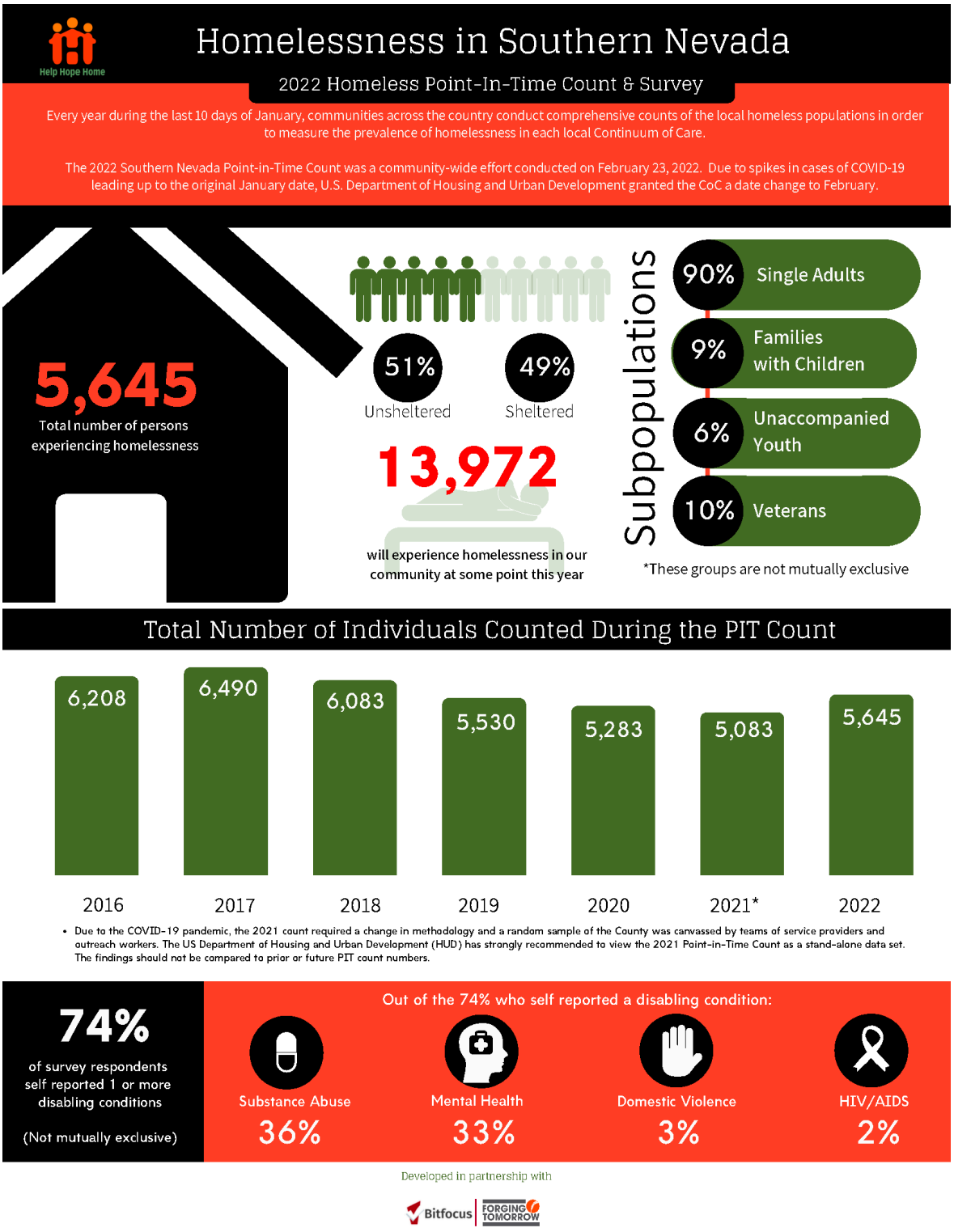
Table 18: Population/Housing Summary, Clark County, NV

Population/Housing Summary, Clark County, NV						
Jurisdiction	**Population (2010 U.S. Census)**	**Population (2020 U.S. Census)**	**% of Population Change (2010-2020)**	**# of Housing Units (2010 Census)**	**# of Housing Units (2020 Census)**	**% of Housing Units (2010 – 2020)**
Clark County including Clark County Unincorporated	1,951,269	2,265,461	16.1%	840,343	917,656	9.2%
Boulder City	15,023	14,885	0.919%	7,412	7,423	0.1484%
Henderson	257,729	317,610	23.23%	113,586	136,325	20%
Las Vegas	583,756	641,903	9.96%	243,701	256,713	5.34%
Mesquite	15,276	20,471	34%	8,911	11,198	25.66%

Population/Housing Summary, Clark County, NV						
Jurisdiction	Population (2010 U.S. Census)	Population (2020 U.S. Census)	% of Population Change (2010-2020)	# of Housing Units (2010 Census)	# of Housing Units (2020 Census)	% of Housing Units (2010 – 2020)
North Las Vegas	216,961	262,527	21%	76,073	86,353	13.5%

Data Source: U.S. Census Bureau, Nevada: 2010 Population and Housing Unit Count; and U.S. Census Bureau, Profile: data.census.gov; Percent of Population Change Calculation Change: https://www.omnicalculator.com/math/percentage-change#how-to-calculate-the-percent-change

Related to the unhoused/homeless population in Clark County, the following infographic provides demographic information from the 2022 Homelessness Census from the [Help Hope Home, the Southern Nevada Homelessness Continuum of Care.]



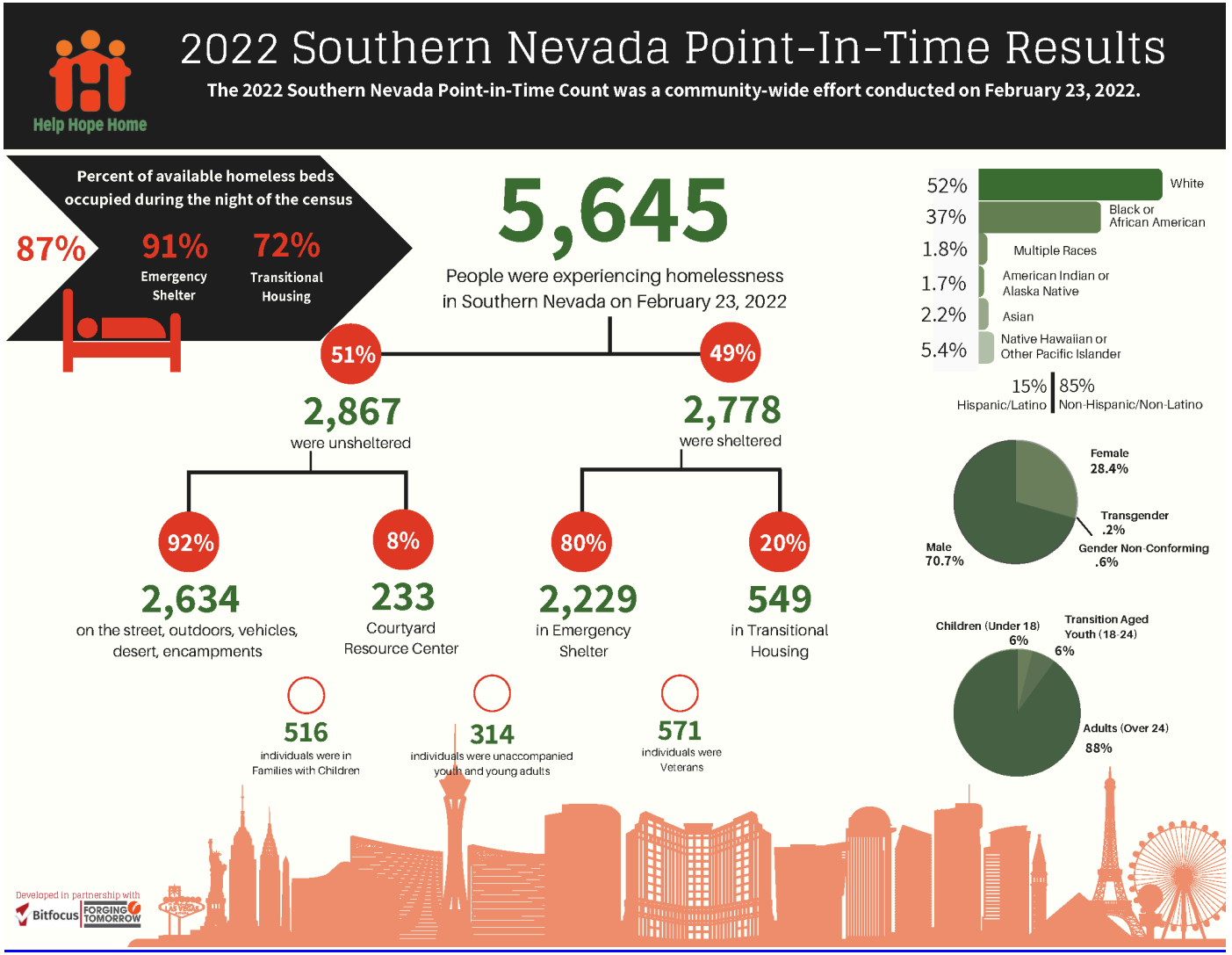
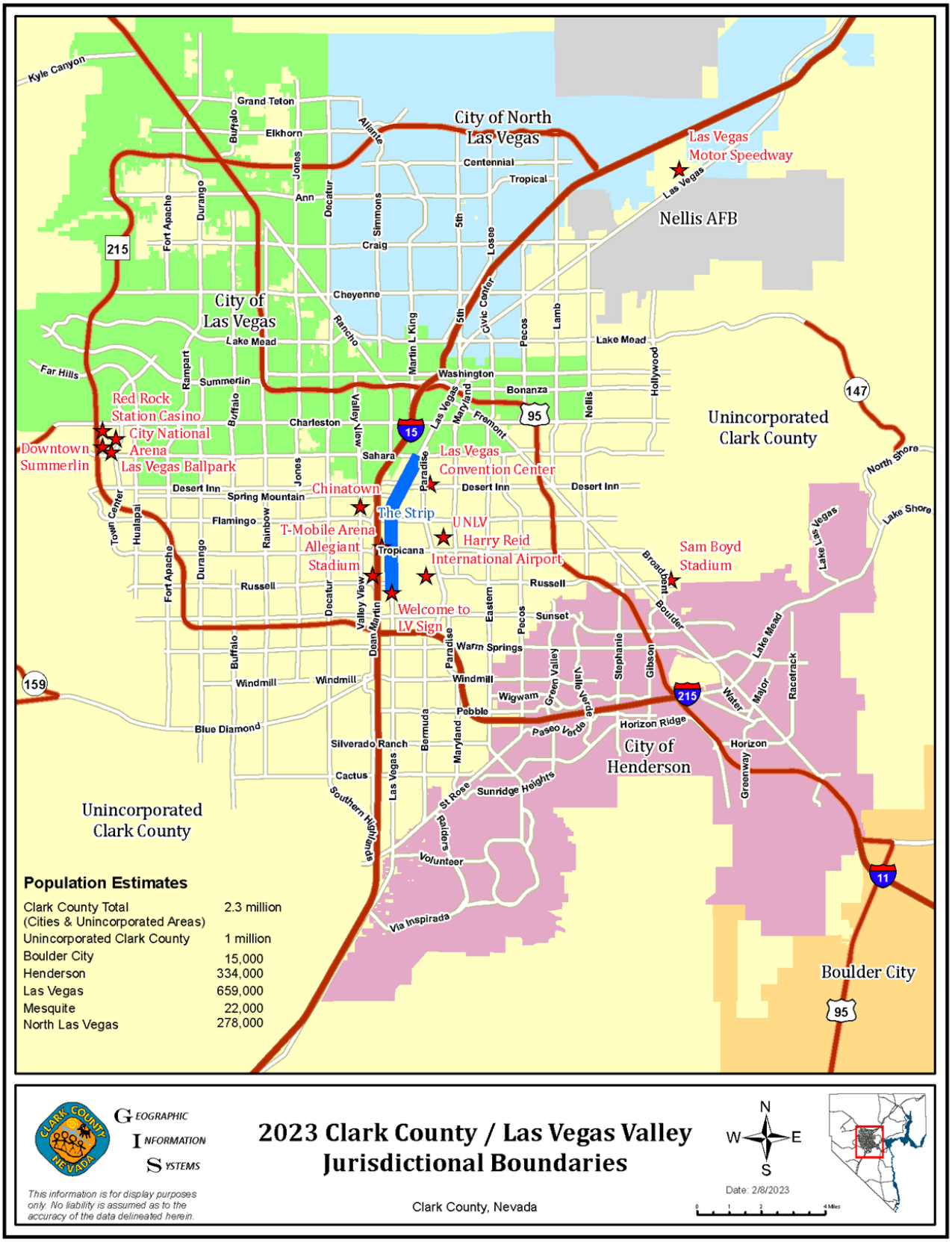
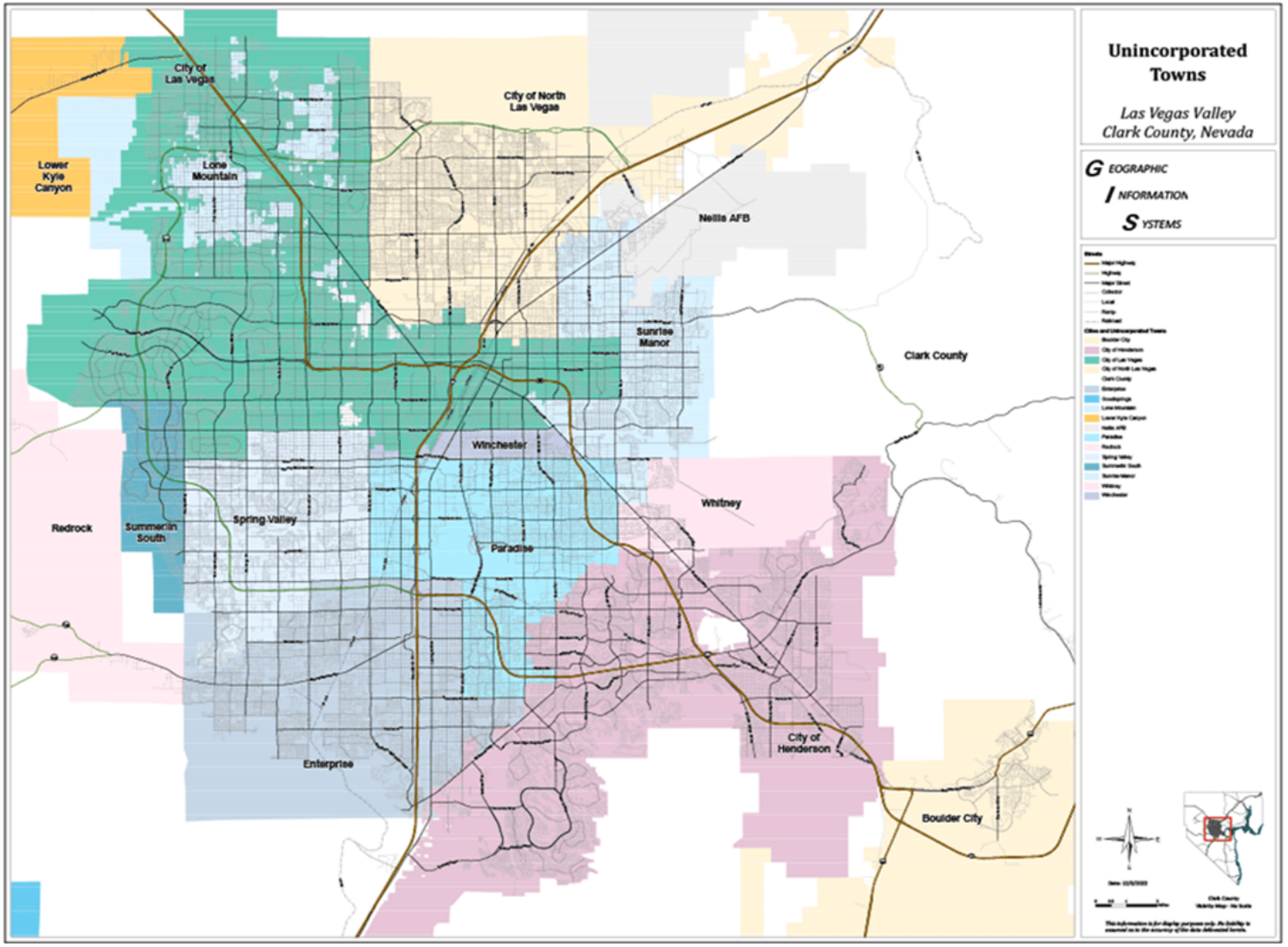

2022 Southern Nevada Point-In-Time Results
The 2022 Southern Nevada Point-in-Time Count was a community-wide effort conducted on February 23, 2022.
Help Hope Home
Percent of available homeless beds occupied during the night of the census
87%
91%
Emergency Shelter
72%
Transitional Housing
5,645
People were experiencing homelessness in Southern Nevada on February 23, 2022
51%
49%
2,867
were unsheltered
2,778
were sheltered
92%
8%
80%
20%
2,634
on the street, outdoors, vehicles, desert, encampments
233
Courtyard Resource Center
2,229
in Emergency Shelter
549
in Transitional Housing
516
individuals were in Families with Children
314
individuals were unaccompanied youth and young adults
571
individuals were Veterans
52% White
37% Black or African American
1.8% Multiple Races
1.7% American Indian or Alaska Native
2.2% Asian
5.4% Native Hawaiian or Other Pacific Islander
15% Hispanic/Latino
85% Non-Hispanic/Non-Latino
Female 28.4%
Transgender .2%
Gender Non-Conforming .6%
Male 70.7%
Children (Under 18) 6%
Transition Aged Youth (18-24) 6%
Adults (Over 24) 88%
Developed in partnership with
Bitfocus
FORGING TOMORROW

Figure 1: Clark County, NV Overview – Jurisdictional Boundary Map



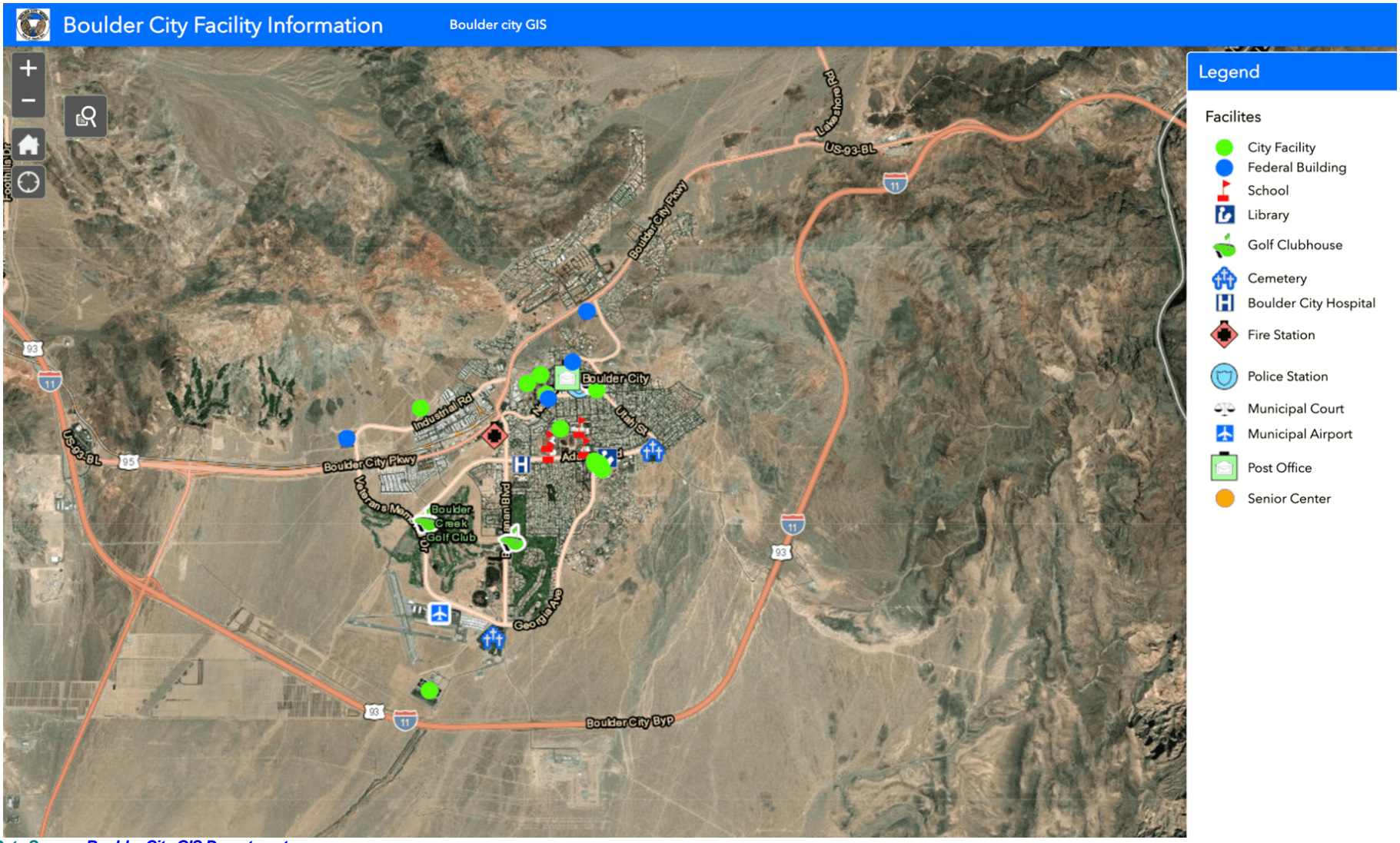
Data Source: Clark County GIS Department

Figure 2: Clark County, NV Unincorporated Township Map



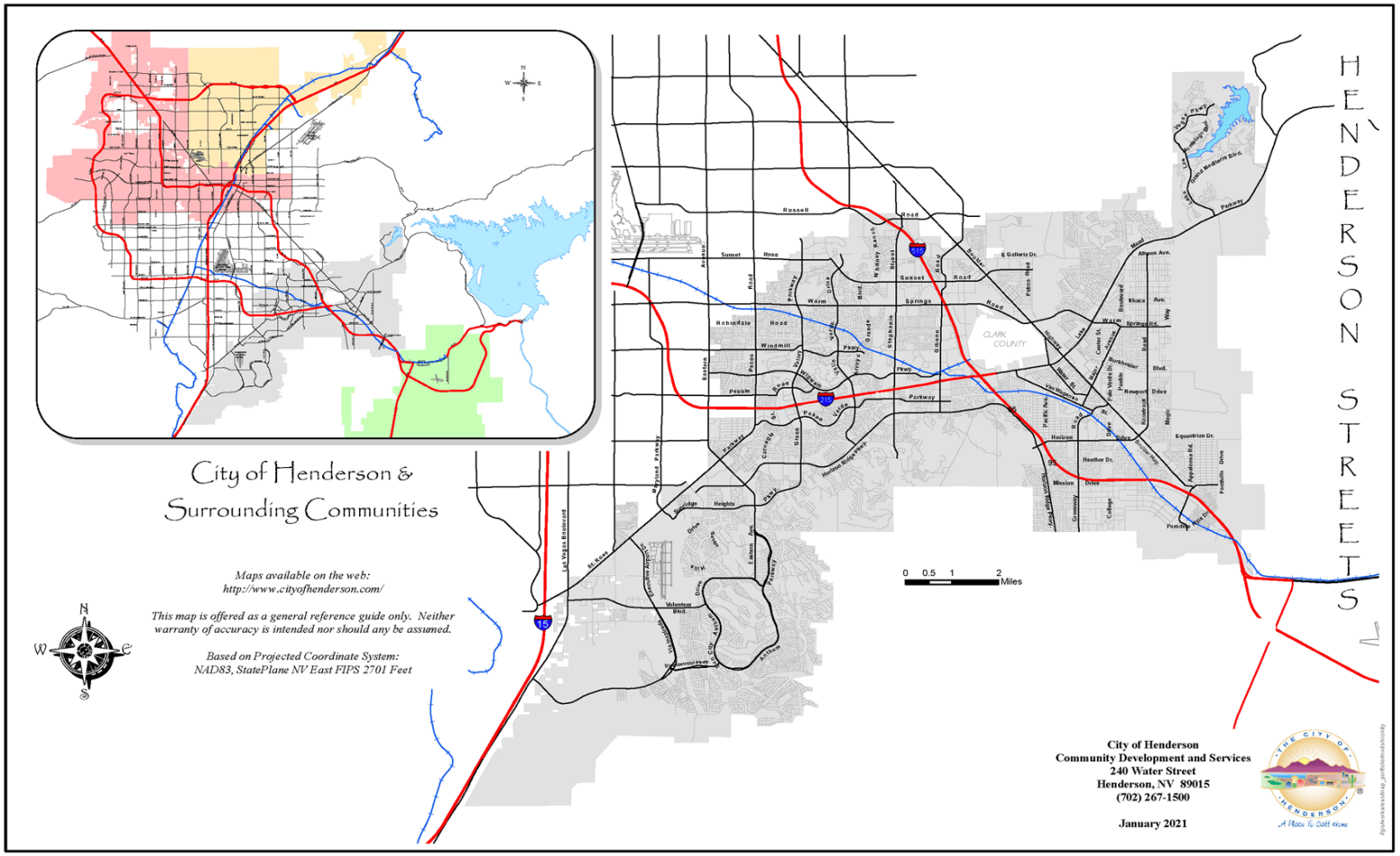
Data Source: [Clark County, NV GIS Department]

Figure 3: City of Boulder City Community Profile Map



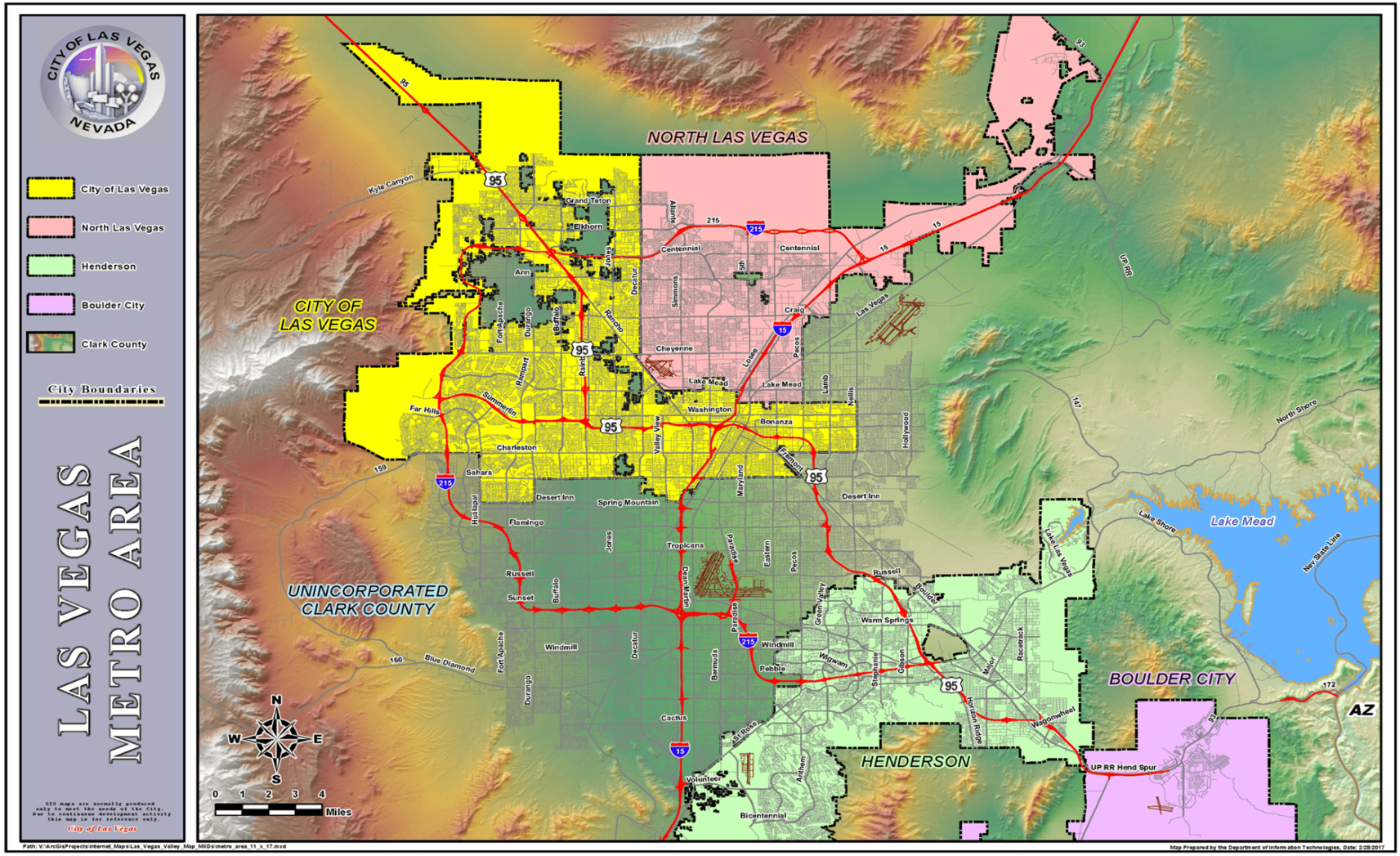
Data Source: [Boulder City GIS Department]

Figure 4: City of Henderson, NV Community Profile Map: City Limits Map



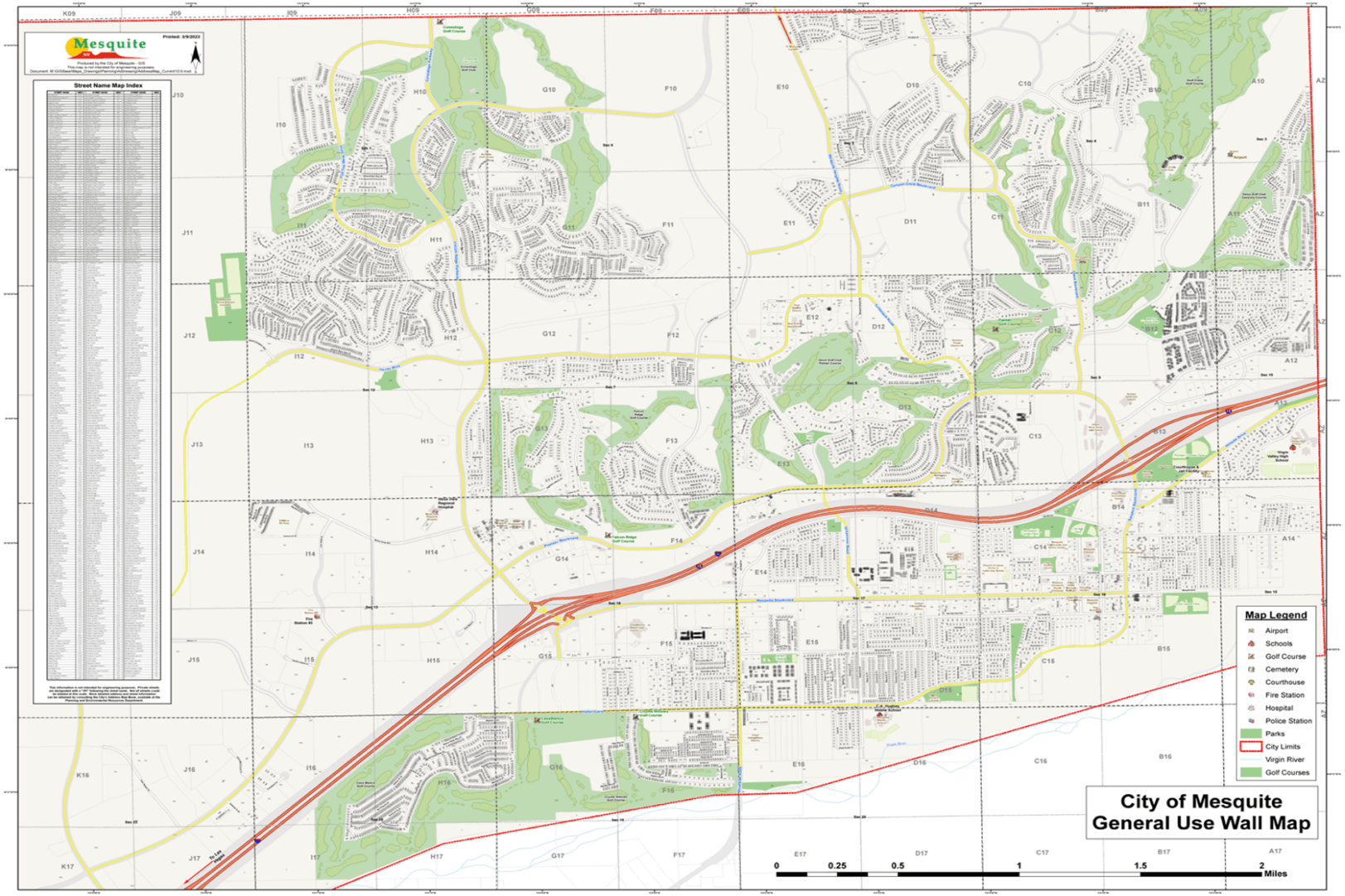
Data Source: City of Henderson GIS Department

Figure 5: City of Las Vegas Map – Metro Area Map



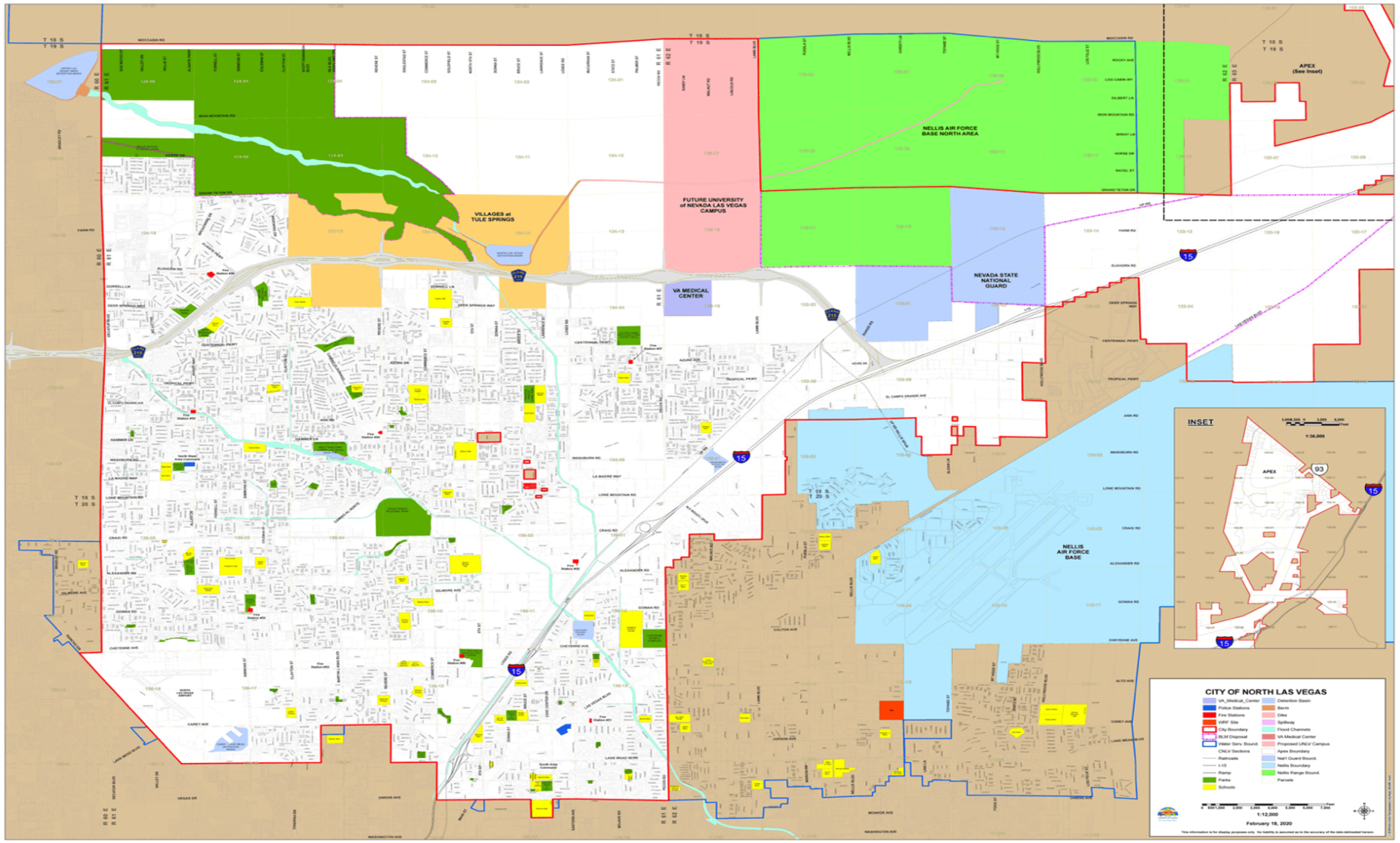
Data Source: LasVegasNV.gov

Figure 6: City of Mesquite Community Profile Map: General Use Map



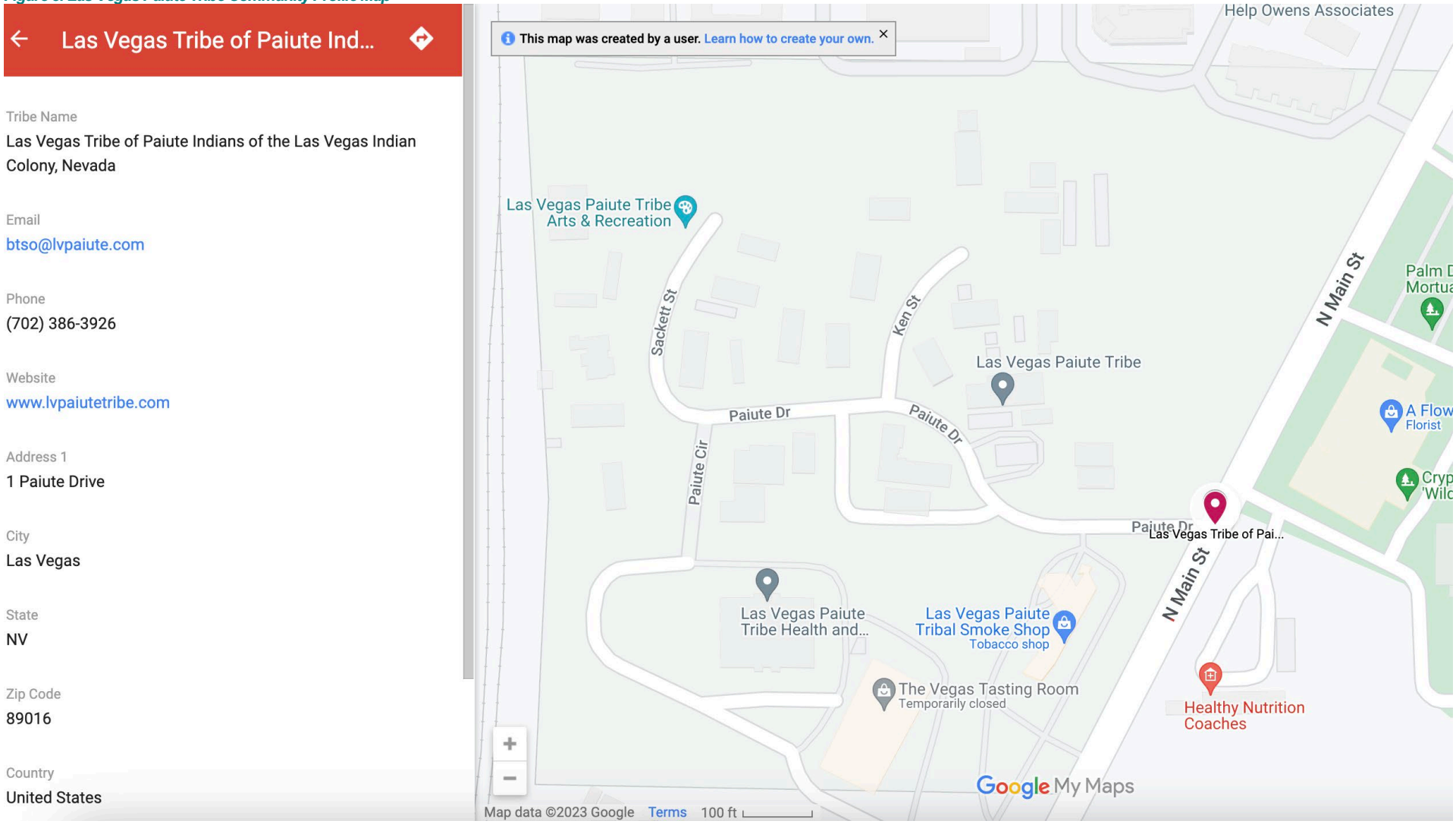
Data Source: [City of Mesquite, NV Map Center]

Figure 7: City of North Las Vegas Community Profile Map: Full City Map



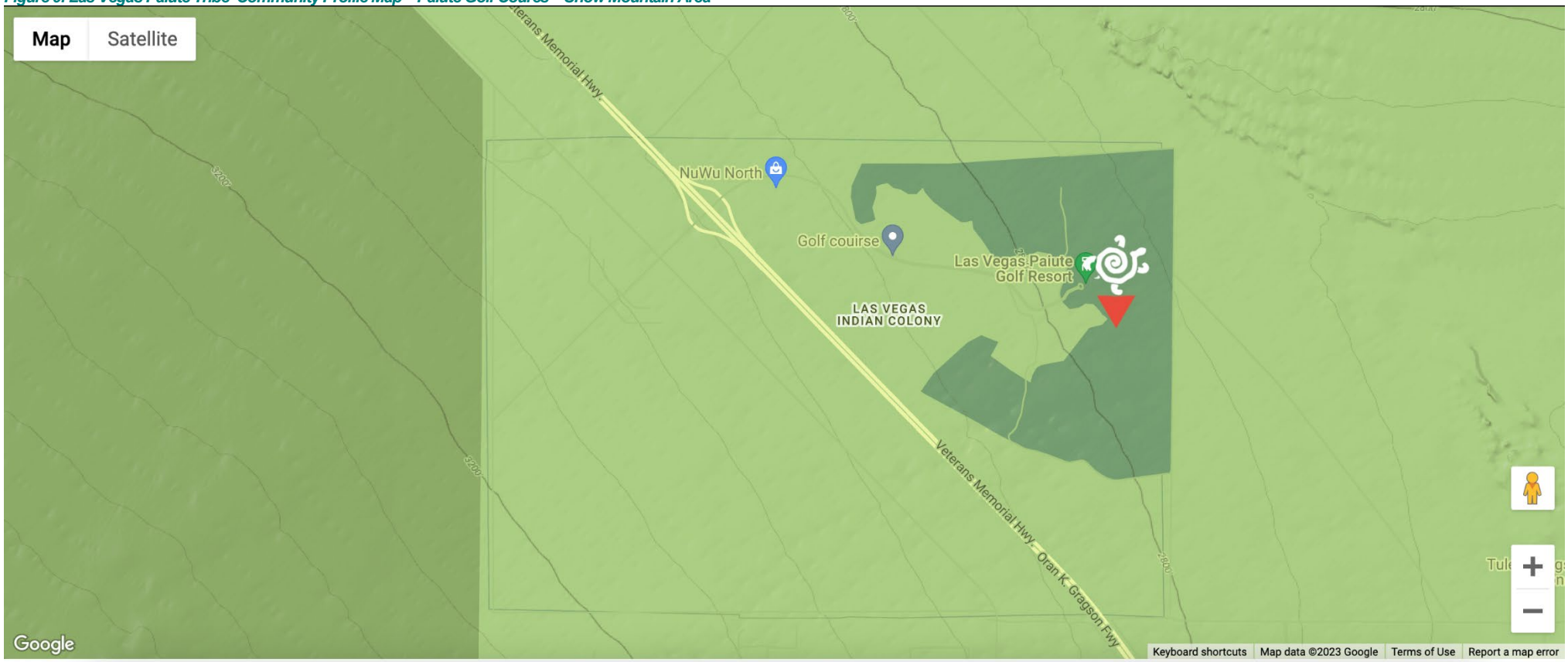
Data Source: [City of North Las Vegas GIS Department]

Figure 8: Las Vegas Paiute Tribe Community Profile Map



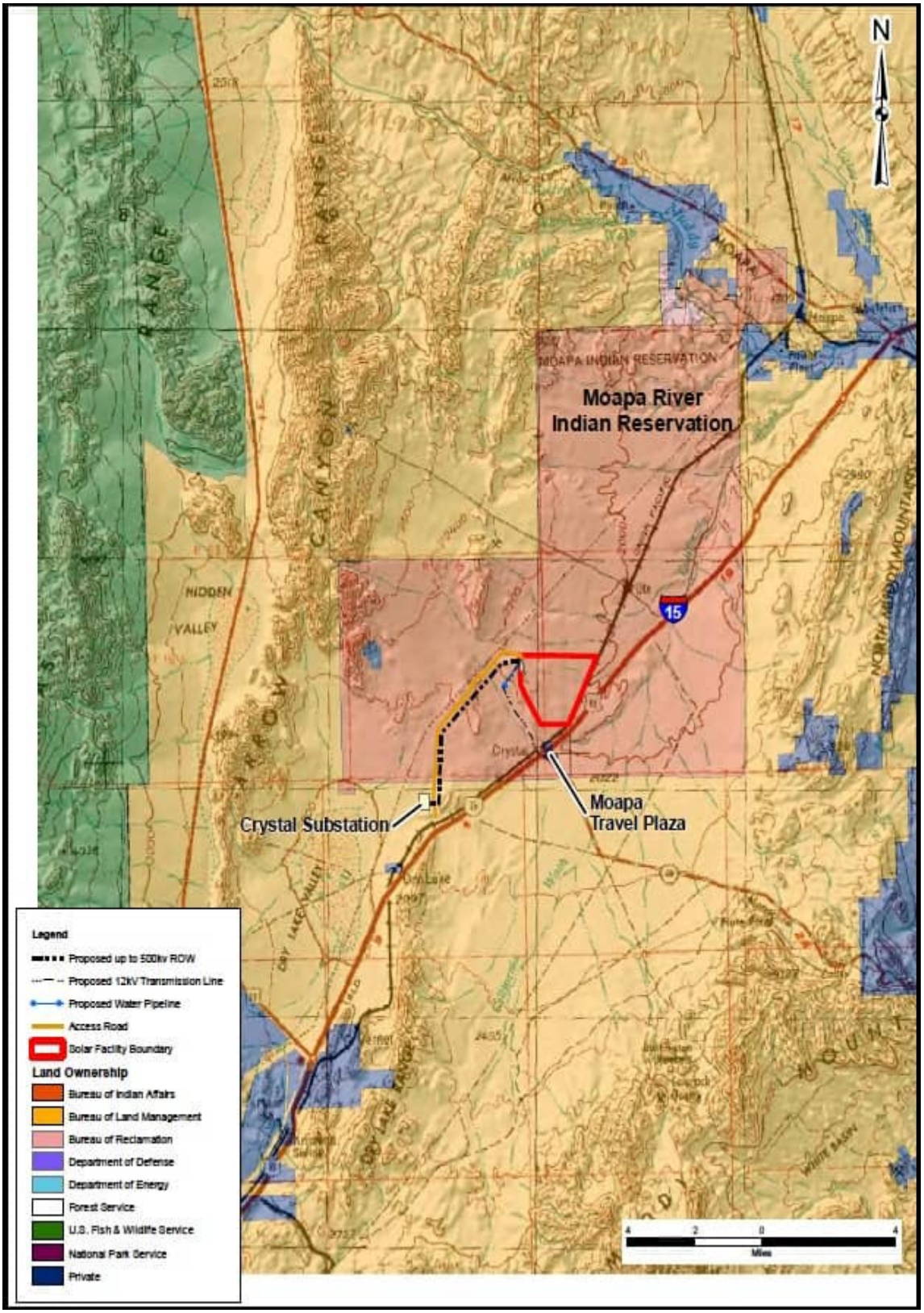
Data Source: U.S Native American Tribes – Google My Maps

Figure 9: Las Vegas Paiute Tribe Community Profile Map – Paiute Golf Coures – Snow Mountain Area



Data Source: *Paiute – Las Vegas Paiute Golf Resort*

Figure 10: Moapa Band of Paiute Tribe Community Profile Map



Data Source: Moapa Band of Paiutes Hazard Mitigation Plan (2015)

Land Use and Development

For land use planning purposes, the County is divided into 11 planning areas: Enterprise, Laughlin, Lone Mountain, Northeast County, Northwest County, South County, Spring Valley, Summerlin South, Sunrise Manor, Whitney, and Winchester/Paradise. To address the unique needs for each planning area, the County maintains area-specific goals, policies, and planned land use maps for each area. These maps can be found in the Clark County Master Plan, Section 4: Area-Specific Goals and Policies.

Historically, the Clark County Mater Plan and each planning area land use plan was updated every 5 (five) years, however some planning areas are rapidly growing and changing while others are experiencing less dramatic change. The table below depicts the required update to land use schedule based on planning area:

Table 19: Required Update to Land Use Schedule

	Evolving	Stable
Planning Area	Enterprise Spring Valley	• Laughlin • Lone Mountain • Northeast County • Northwest County • South County • Summerlin South • Sunrise Manor • Whitney • Winchester/Paradise
Land Use Update Schedule	Every 3-5 years, or as needed based on potential review triggers	Every 5-10 years, or as needed based on potential review triggers
Potential Review Triggers	A significant increase in development proposals from previous year	
	The emergence of unforeseen development pressures (e.g., demolition permits, numerous requests for land use plan amendments	
	A formal request made by the applicable TAB(s) or CAC(s)	
	Expectation of a transformative public or private project within the planning area	

Land use categories applied to individual planned land use maps apply countywide. The land use category descriptions that follow are organized in four groups, each with additional organizational sub-categories:

Neighborhoods

- Outlying Neighborhood
- Edge Neighborhood
- Ranch Estate Neighborhood
- Low-Intensity Suburban Neighborhood
- Mid-Intensity Suburban Neighborhood
- Compact Neighborhood
- Urban Neighborhood

Commercial and Mixed-Use

- Neighborhood Commercial
- Corridor Mixed-Use
- Entertainment Mixed-Use

Employment

- Business Employment
- Industrial Employment

Other

- Agriculture
- Open Lands
- Public Use
- Major Projects (incl. Summerlin South)

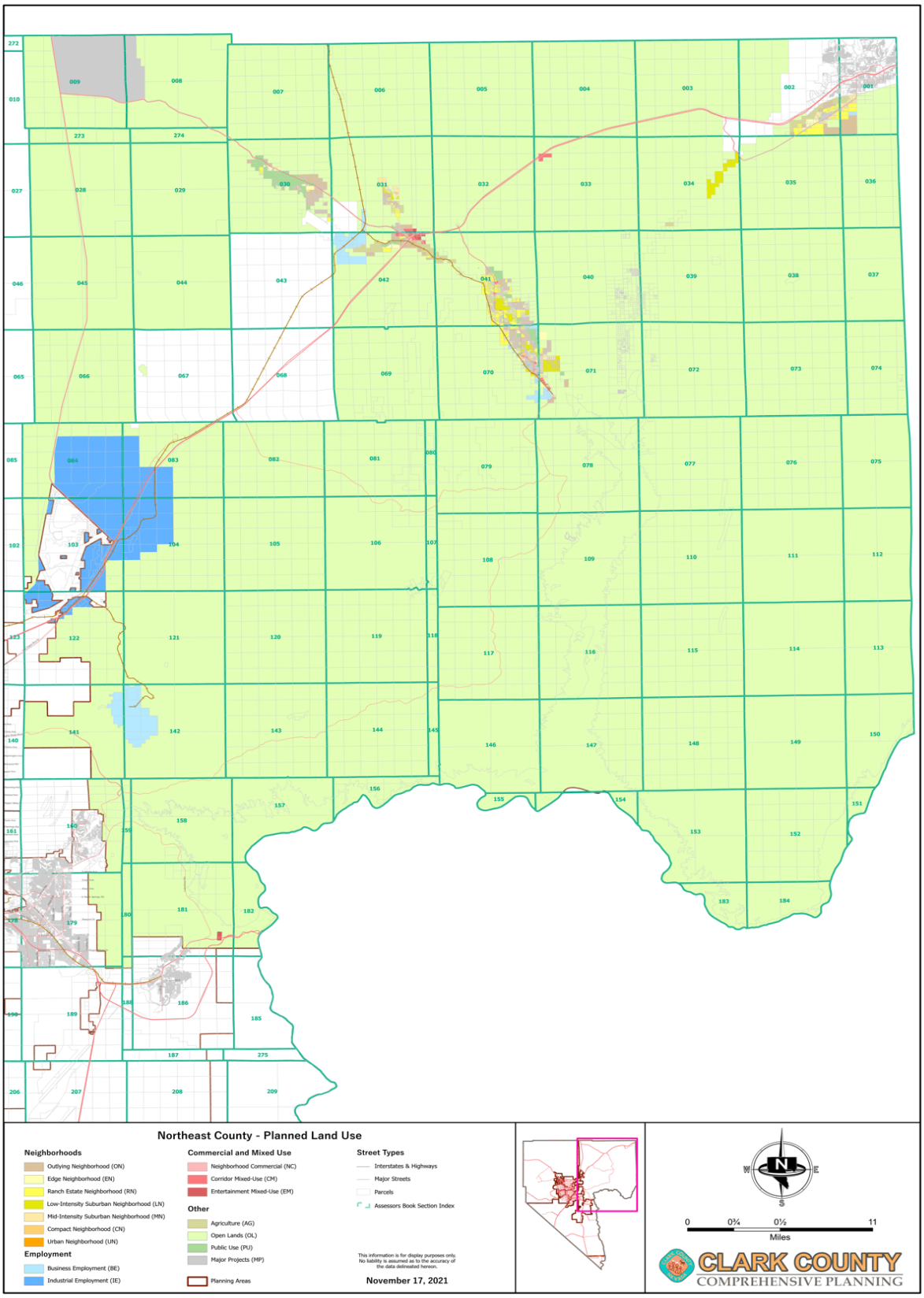
Additional information on these categorical descriptions and Land Use basics can be found in the Clark County Master Plan, Section 3: Growth Framework. Information specific to development trends of the County and participating jurisdictions can be found in Appendix I – Jurisdictional Annex.

Just as the population of Clark County will continue to grow over the coming years, so too will its efforts to make meaningful, long-term decisions for the safety, well-being, prosperity, and enjoyment of its residents. This includes mitigating the hazards that pose risk to all and/or portions of the planning area. While the increasing growth in the population my have positve effects on the County's ecomonmy, it also can increase the hazard vulneability of the are creating new vulnerabilities and risk within the planning area, i.e, Clark County and its participating jurisdictions (which includes Clark County Unincorporated Area and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation). The County and its participating jurisdictions will be able to focus on addressing current vulnerabilities and risk by futher assessing property values, enforcing zoning as well building codes, applying National Flood Insurance Program (NFIP) and other applicable flood standards, etc.

It is important to note that population growth increases a planning area's overall vulnerability to localized hazards while population decline decreases it. Consequently, it is difficult to quantify the exact change in vulnerability in either direction, but it can be depicted as generally directly proportional to the population change itself.

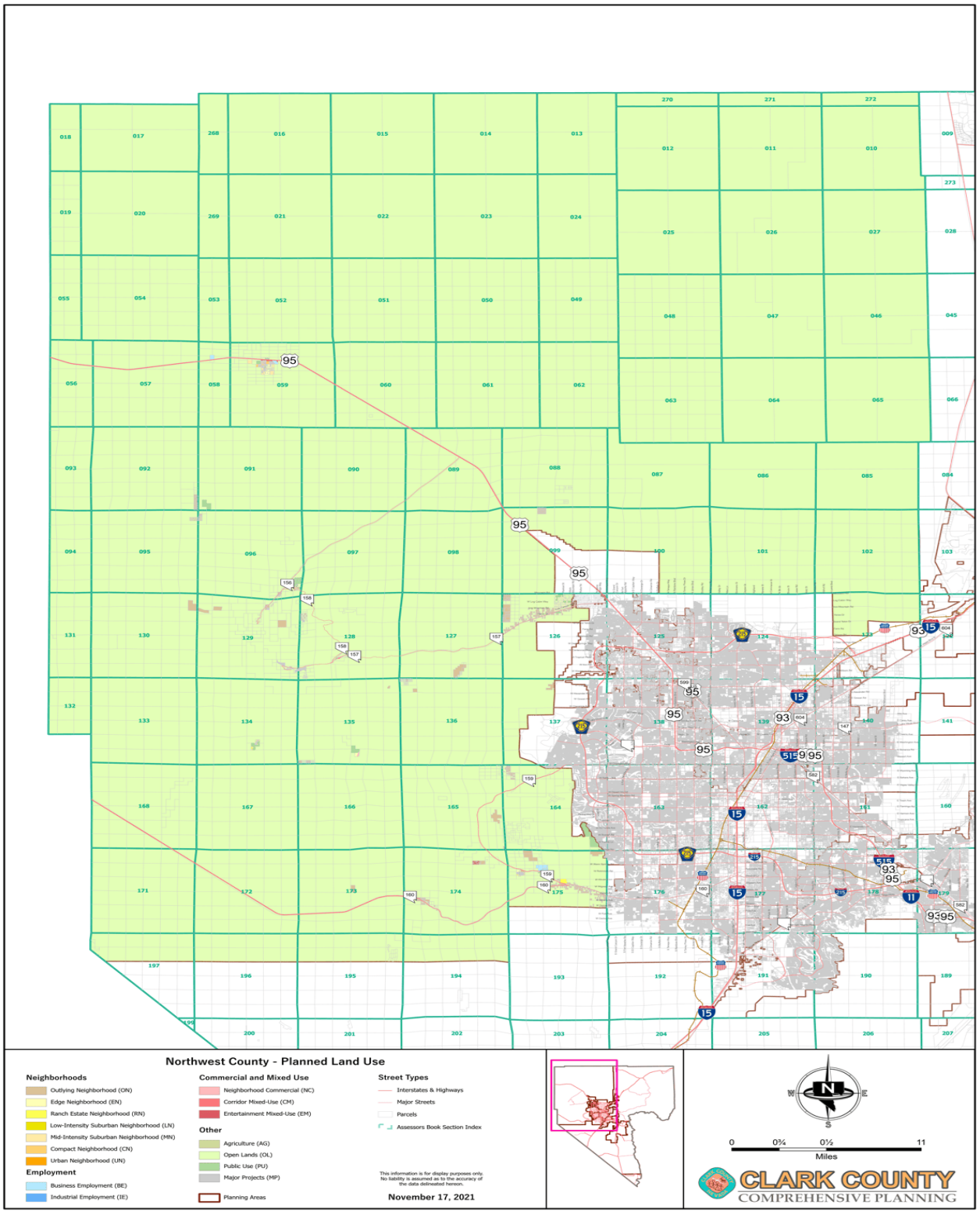
A hazard specific analysis, as it relates to land use and development trends within Clark County, is included within each identified hazard in Section 4 – Hazard Analysis and Risk Assessment.

Figure 11: Clark County, NV Land Use and Development Map – Northeast Planned Land Use



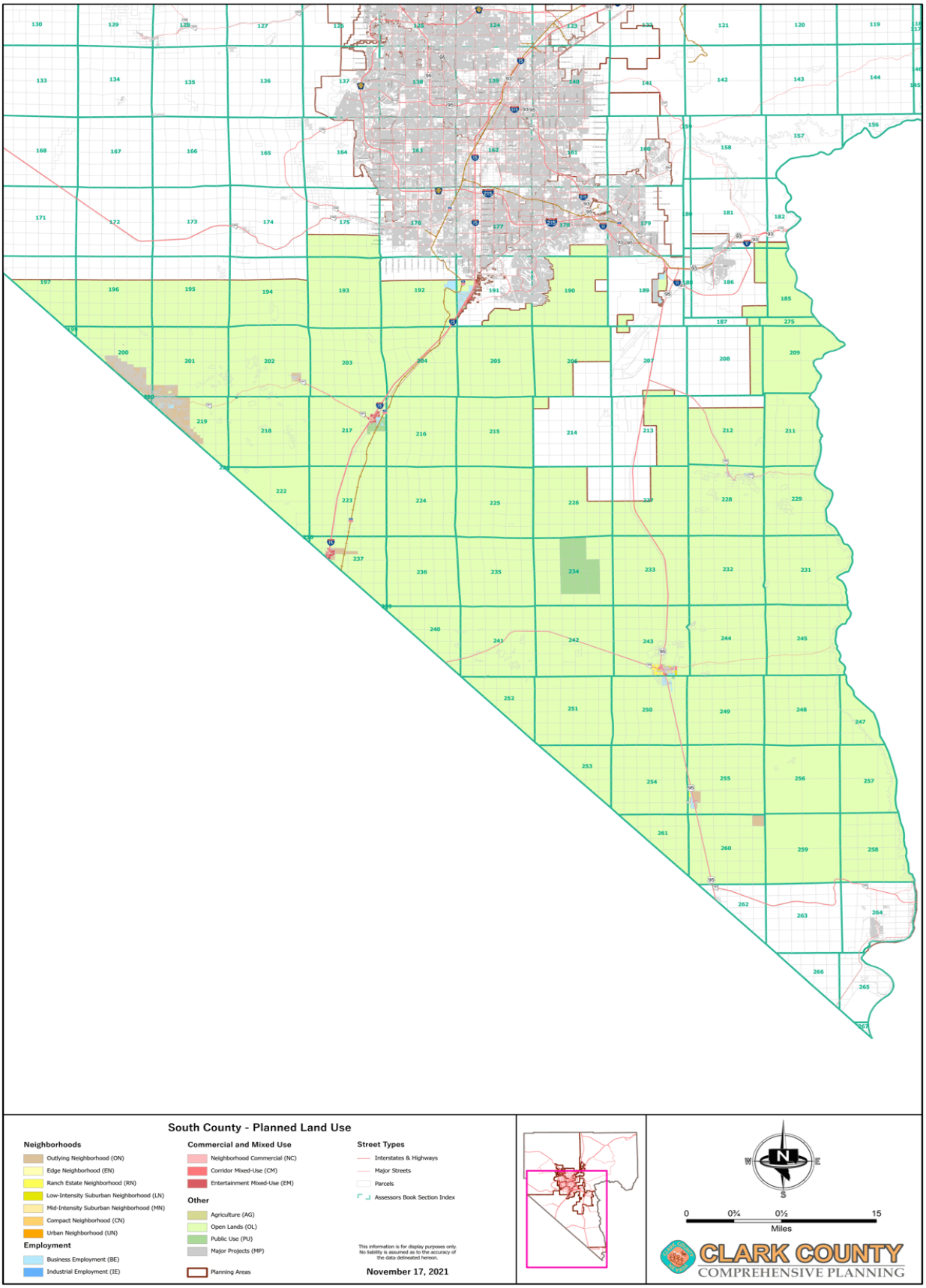
Data Source: [Clark County Comprehensive Planning Department]

Figure 12: Clark County, NV Land Use and Development Map – Northwest County Planned Land Use



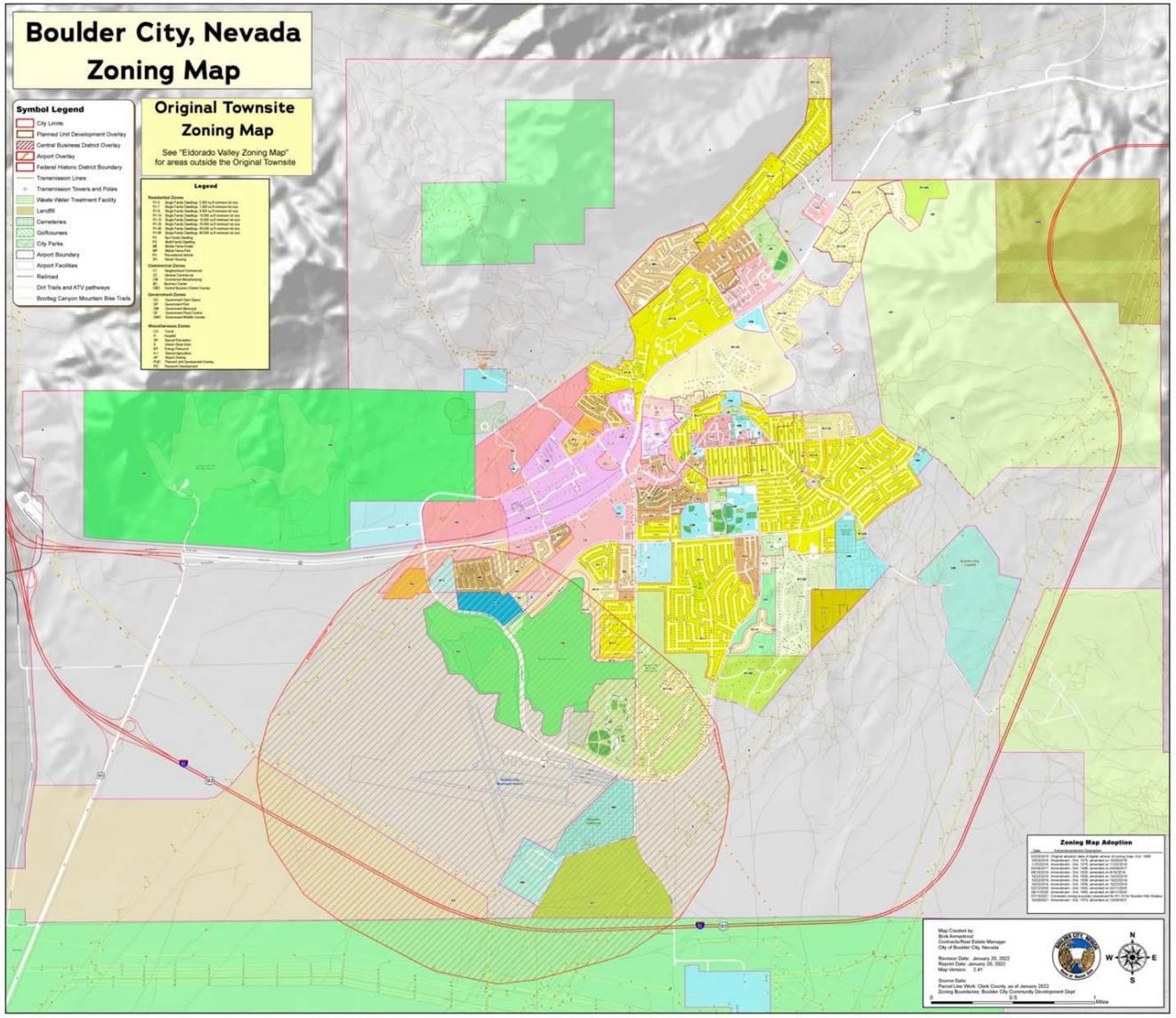
Data Source: [Clark County Comprehensive Planning Department]

Figure 13: Clark County, NV Land Use and Development Map – South County Planned Land Use



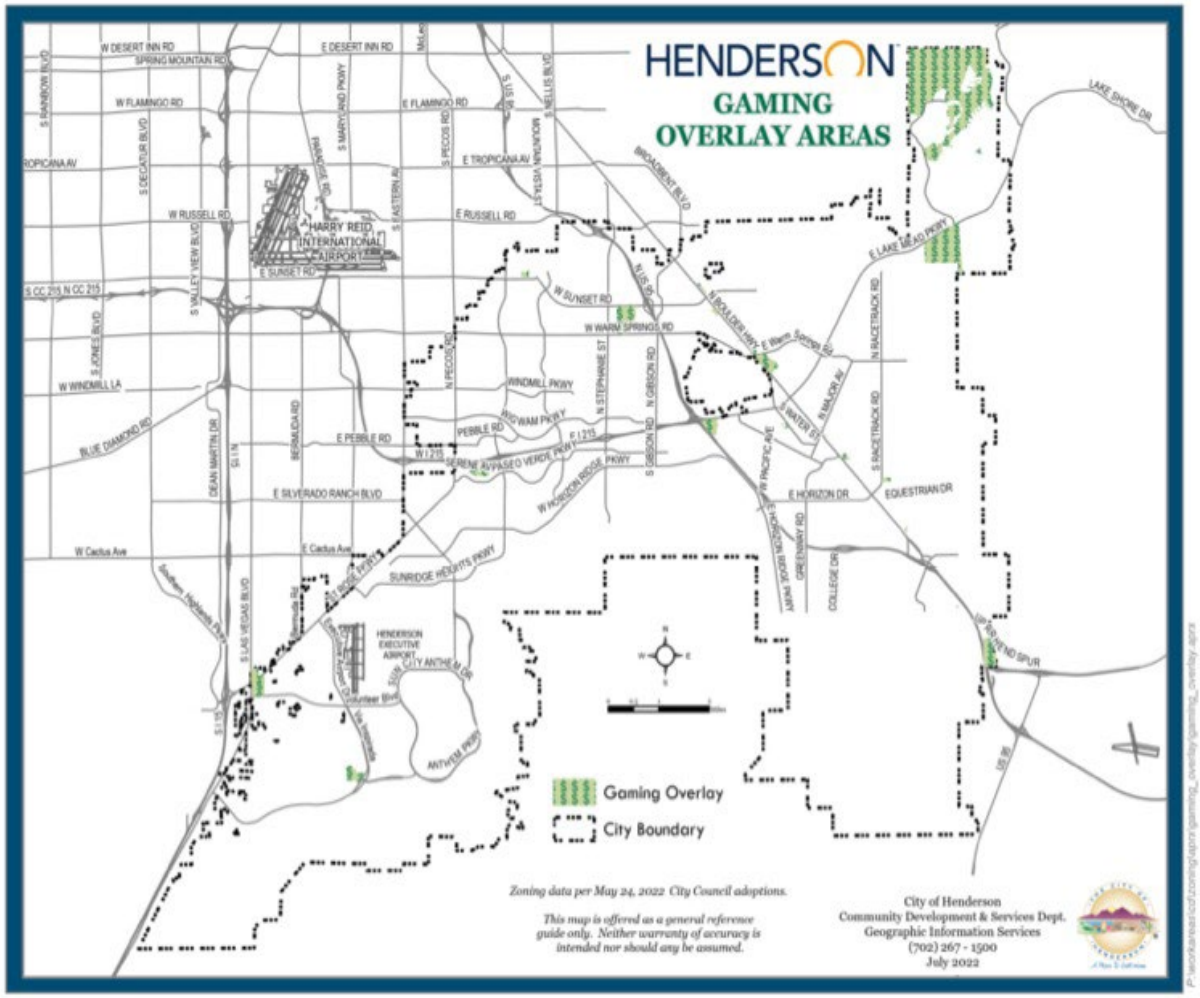
Data Source: [Clark County Comprehensive Planning Department]

Figure 14: City of Boulder City Land Use and Planning Map: Full Zoning Map



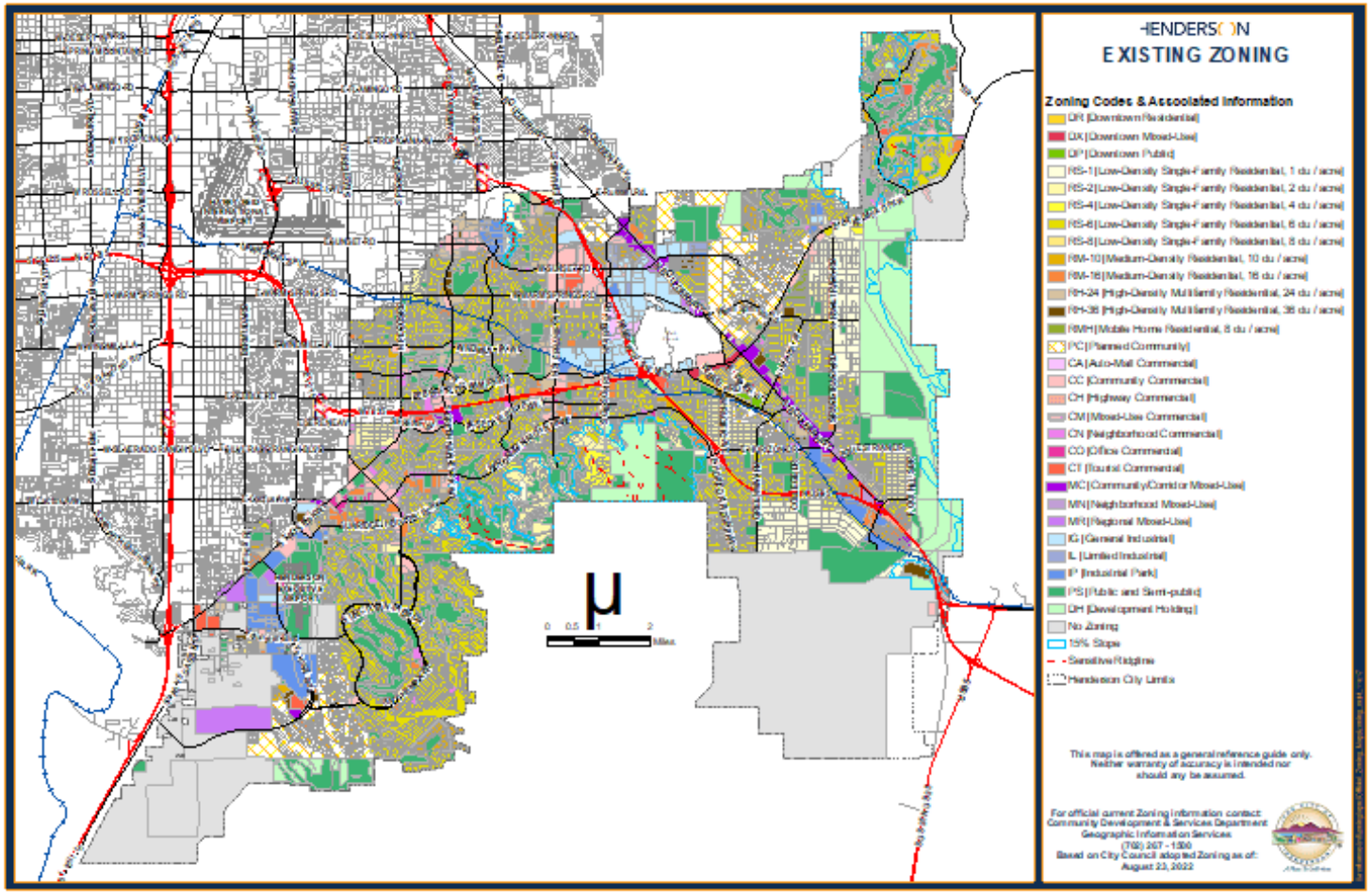
Data Source: [Boulder City Planning Department]

Figure 15: City of Henderson Land Use and Planning Map – Gaming Overlay Areas



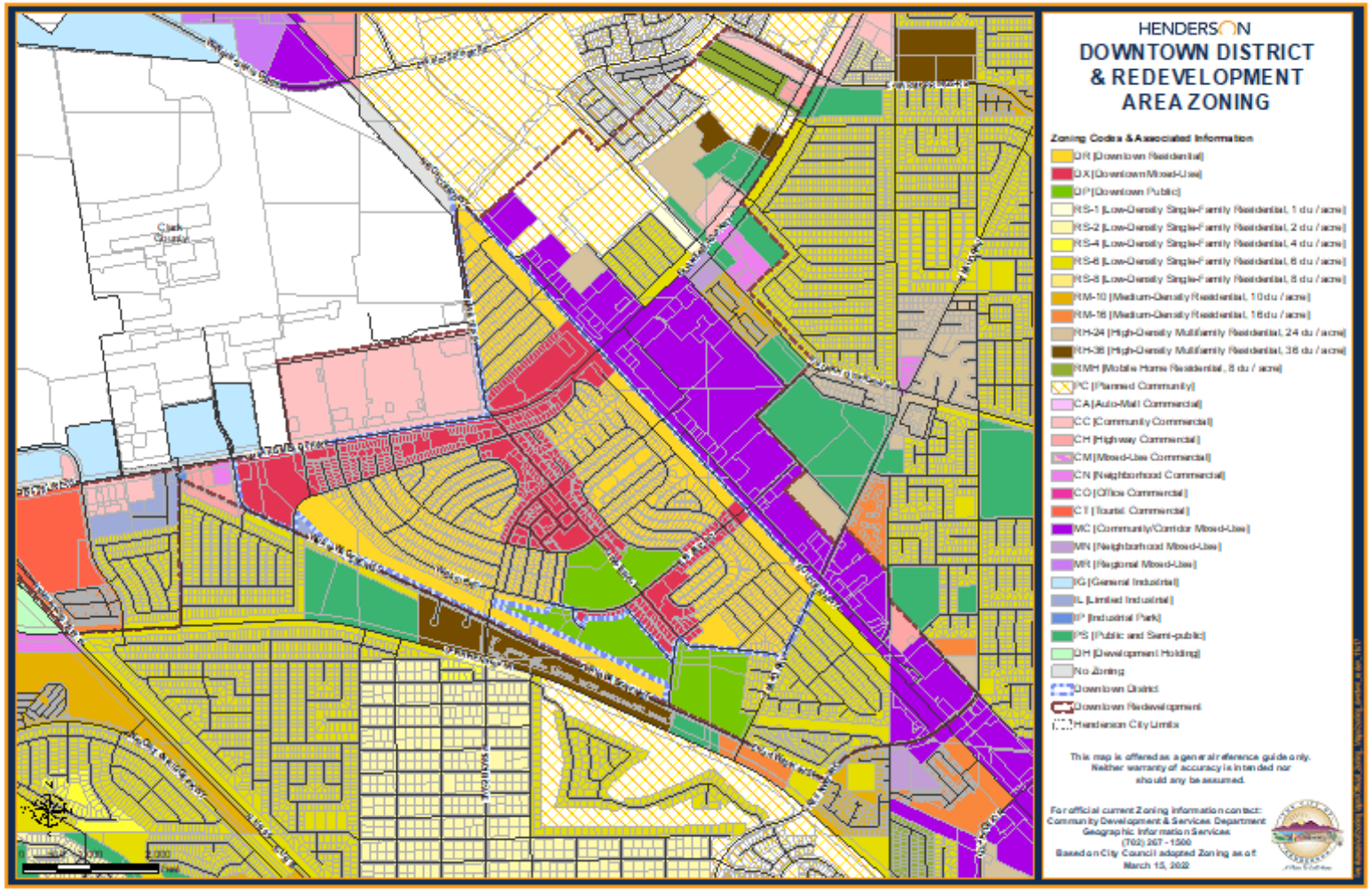
Data Source: City of Henderson GIS Department

Figure 16: City of Henderson Land Use and Planning Map: Existing Zoning Map



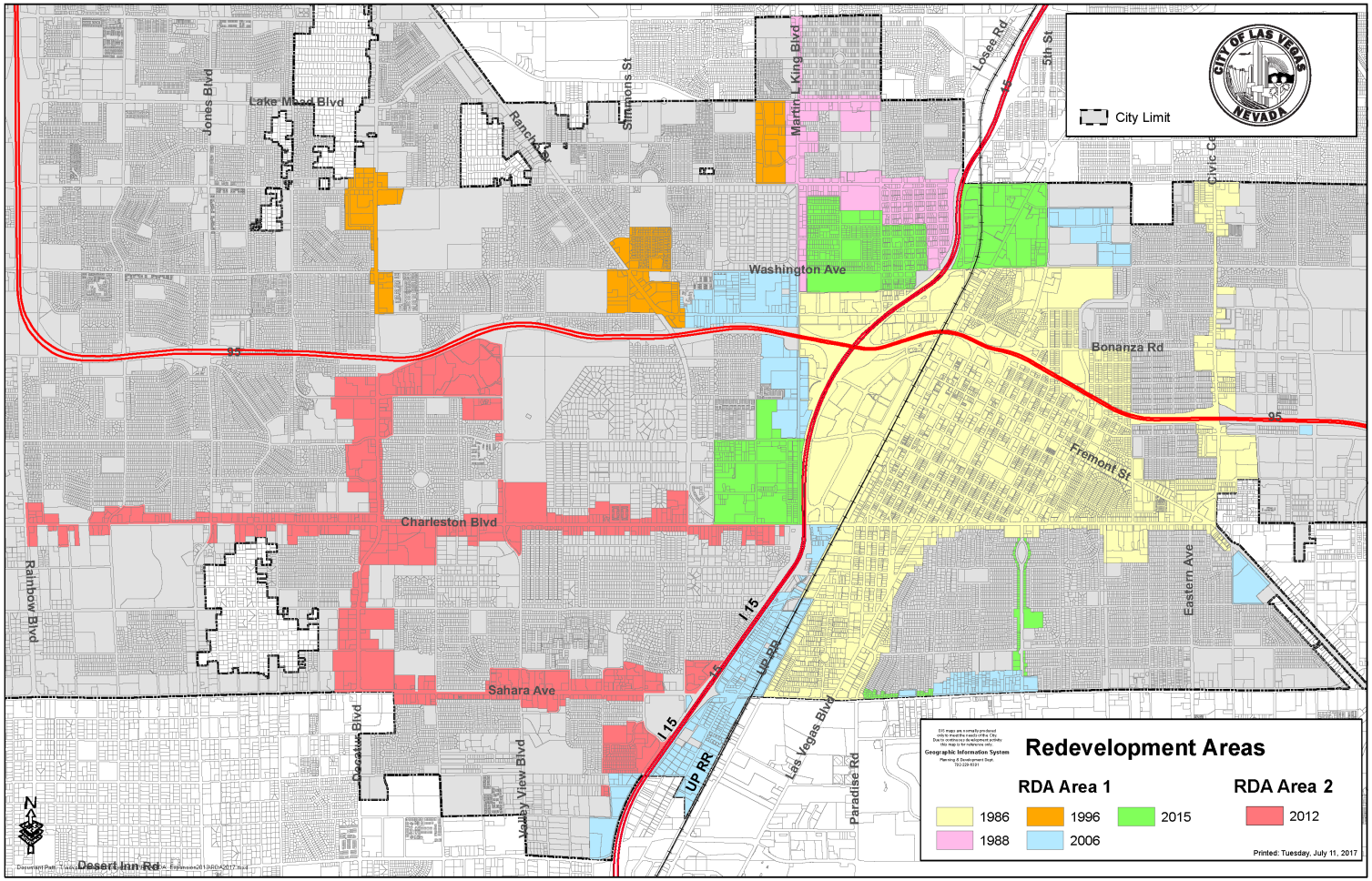
Data Source: City of Henderson GIS Department

Figure 17: City of Henderson Land Use and Planning Map: Downtown District and Redevelopment Area Zoning Map



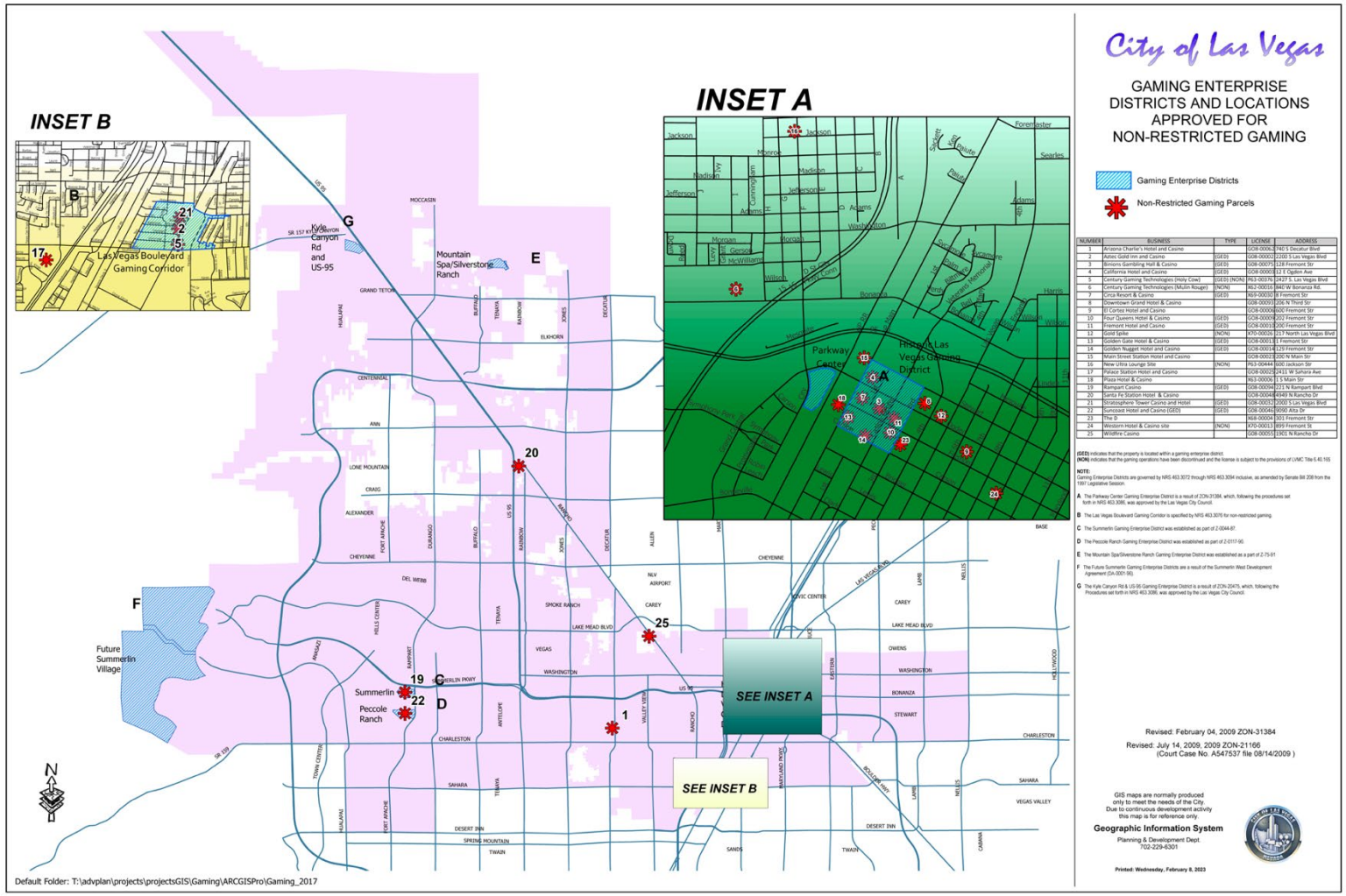
Data Source: [City of Henderson GIS Department]

Figure 18: City of Las Vegas Land Use Map – Planned Streets and Highways, May 2021



Data Source: LasVegasNV.gov

Figure 19: City of Las Vegas – Gaming Enterprise Map



NUMBER	BUSINESS	TYPE	LICENSE	ADDRESS
1	Arizona Charlie's Hotel and Casino		GOB-00062	740 S Decatur Blvd
2	Aztec Gold Inn and Casino	(GED)	GOB-00002	2200 S Las Vegas Blvd
3	Binions Gambling Hall & Casino	(GED)	GOB-00075	128 Fremont Str
4	California Hotel and Casino	(GED)	GOB-00003	12 E Ogden Ave
5	Century Gaming Technologies (Holy Cow)	(GED) (NON)	P63-00076	3427 S. Las Vegas Blvd
6	Century Gaming Technologies (Mulin Rouge)	(NON)	P62-00016	940 W Bonanza Rd.
7	Circa Resort & Casino	(GED)	K69-00030	8 Fremont Str
8	Downtown Grand Hotel & Casino		GOB-00093	206 N Third Str
9	El Cortez Hotel and Casino		GOB-00006	600 Fremont Str
10	Four Queens Hotel & Casino	(GED)	GOB-00009	202 Fremont Str
11	Fremont Hotel and Casino	(GED)	GOB-00010	200 Fremont Str
12	Gold Spike	(NON)	K70-00026	217 North Las Vegas Blvd
13	Golden Gate Hotel & Casino	(GED)	GOB-00011	1 Fremont Str
14	Golden Nugget Hotel and Casino	(GED)	GOB-00014	129 Fremont Str
15	Main Street Station Hotel and Casino		GOB-00002	200 N Main Str
16	New Ultra Lounge Site	(NON)	P63-00444	600 Jackson Str
17	Palace Station Hotel and Casino		GOB-00025	2411 W Sahara Ave
18	Plaza Hotel & Casino		K63-00006	1 S Main Str
19	Rampart Casino	(GED)	GOB-00094	221 N Rampart Blvd
20	Santa Fe Station Hotel & Casino		GOB-00048	4949 N Rancho Dr
21	Stratosphere Tower Casino and Hotel	(GED)	GOB-00053	2000 S Las Vegas Blvd
22	Suncoast Hotel and Casino (GED)	(GED)	GOB-00046	9090 Alta Dr
23	The D		K68-00004	301 Fremont Str
24	Western Hotel & Casino site	(NON)	K70-00013	899 Fremont St
25	Wildfire Casino		GOB-00055	1901 N Rancho Dr

(GED) indicates that the property is located within a gaming enterprise district.
(NON) indicates that the gaming operations have been discontinued and the license is subject to the provisions of LVMC Title 6.40.105

NOTE:
Gaming Enterprise Districts are governed by NRS 463.3072 through NRS 463.3094 inclusive, as amended by Senate Bill 208 from the 1997 Legislative Session

A The Parkway Center Gaming Enterprise District is a result of ZON-31384, which, following the procedures set forth in NRS 463.3086, was approved by the Las Vegas City Council.

B The Las Vegas Boulevard Gaming Corridor is specified by NRS 463.3076 for non-restricted gaming.

C The Summerlin Gaming Enterprise District was established as part of Z-0044-87.

D The Peccole Ranch Gaming Enterprise District was established as part of Z-0117-90.

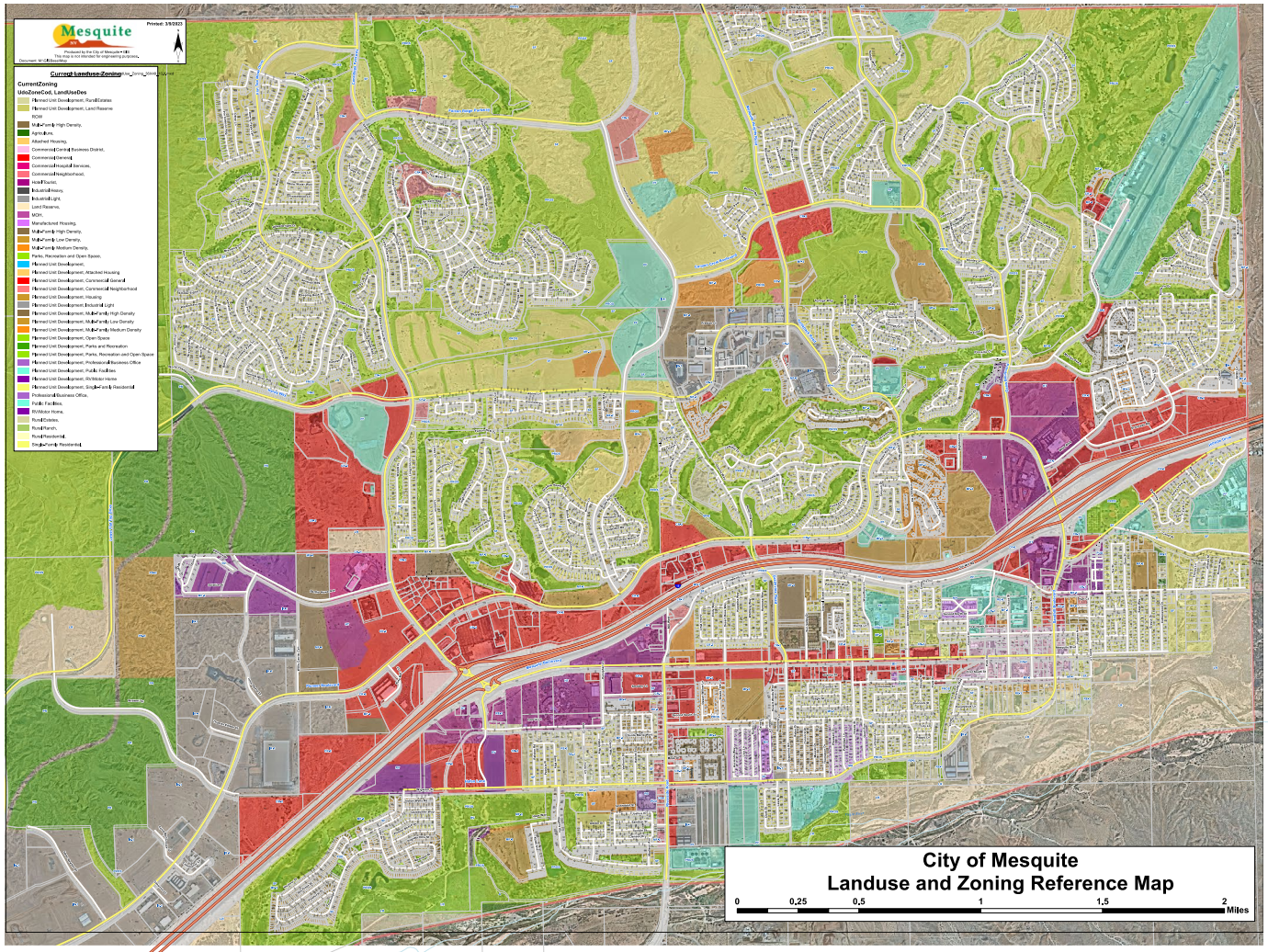
E The Mountain Spa/Silverstone Ranch Gaming Enterprise District was established as a part of Z-75-91

F The Future Summerlin Gaming Enterprise Districts are a result of the Summerlin West Development Agreement (DA-0001-96).

G The Kyle Canyon Rd & US-95 Gaming Enterprise District is a result of ZON-29475, which, following the Procedures set forth in NRS 463.3086, was approved by the Las Vegas City Council.

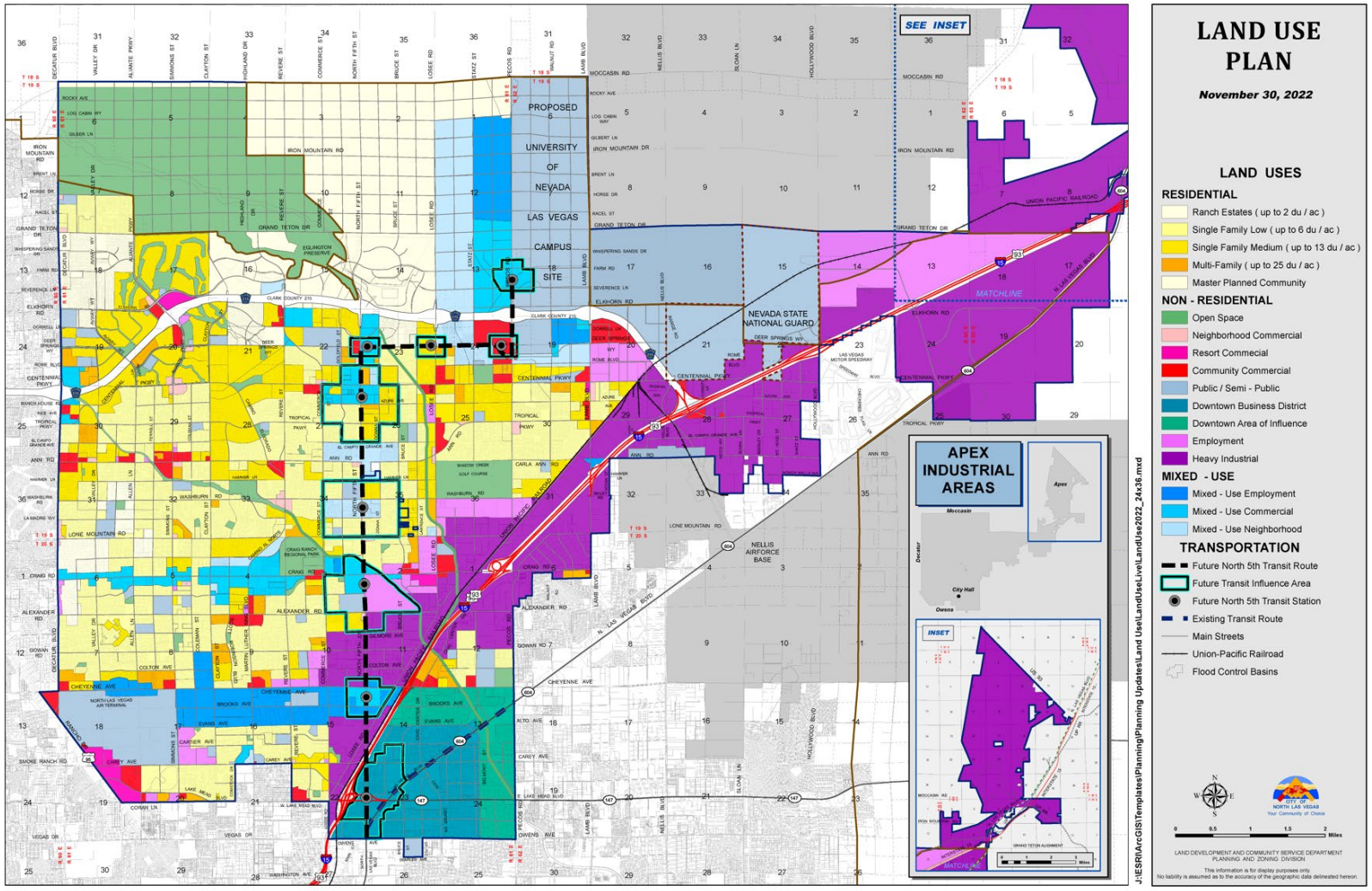
Data Source: LasVegasNV.gov

Figure 20: City of Mesquite Land Use and Planning Map



Data Source: City of Mesquite GIS Department

Figure 21: City of North Las Vegas Land Use and Planning Map



Data Source: City of North Las Vegas

Critical Facilities List

Certain facilities have a net positive value on the community, i.e., they contribute to the public good by facilitating the basic functions of society. These facilities maintain order, public health, and education, and help the economy function. Additionally, there are infrastructure and facilities integral to disaster response and recovery operations. Conversely, some facilities and infrastructure are of extreme importance due to the negative externalities created when they are impacted by a disaster. What fits this definition will vary slightly from community to community, but the definition remains as a guideline for identifying critical facilities and infrastructure. For Clark County and its participating jurisdictions, the table below lists the identified critical facilities and infrastructure. A complete list can be found in Appendix D – Critical Facilities & Infrastructure.

Table 20: Critical Facilities: Clark County and Its Participating Jurisdictions

Critical Facilities: Clark County and Its Participating Jurisdictions																				
	Casinos/Resorts/ Hotels	Child Care	City Hall	Communications	Community Colleges	Correctional Facilities	Court House	Fire Stations	Government Offices	Hazardous Materials	Hospitals	Native Reservations	Natural Gas	Places of Worship	Police	Schools	Solar	Stadiums	Transportation	University	Water/Sewer
City of Boulder City	-	5	1	14	-	-	1	1	24	2	3	-	1	20	1	5	8	-	3	-	22
City of Henderson	18	63	1	66	1	1	1	11	77	5	11	-	-	41	4	69	-	-	3	2	1578
City of Las Vegas	190	264	1	797	1	10	5	69	361	40	99	4	9	591	18	344	5	7	23	2	25106
City of Mesquite	3	2	1	1	1	1	1	3	22	-	2	-	-	3	2	4	-	-	2	-	55
City of North Las Vegas	7	33	1	46	1	3	1	8	44	9	9	-	-	39	3	52	2	-	5	-	1044
Nellis Air Force Base	-	-	-	2	-	-	-	-	3	-	1	-	-	-	-	1	2	-	-	-	5
Total	218	367	5	926	4	15	9	92	531	56	125	4	10	694	28	475	17	7	36	4	27810

***Note**: Individually named Critical Facilities identically names have been consolidated below, the above table depicts exact values for all individually listed sites per jurisdictions.*

Critical Facilities: Tribal Lands - Las Vegas Paiute Tribe																				
	Casinos/Resorts/ Hotels	Child Care	City Hall	Communications	Community Colleges	Correctional Facilities	Court House	Fire Stations	Government Offices	Maintenance	Hospitals\ Medical Clinic	Native Reservations	Natural Gas	Places of Worship	Police	Schools	Power Station	Stadiums	Transportation	University	Water/Sewer
Las Vegas Paiute Tribe	0	1	0	0	0	0	0	0	2	0	1	0	0	0	1	0	1	0	0	0	2
Total	0	1	0	0	0	0	0	0	2	0	1	0	0	0	1	0	1	0	0	0	2

The following maps, generated by Clark County Information Technology, GIS Management Office (GISMO), reflect critical facilities within the planning area:

Figure 22: Clark County, NV MJHMP Critical Facilities - Infrastructure

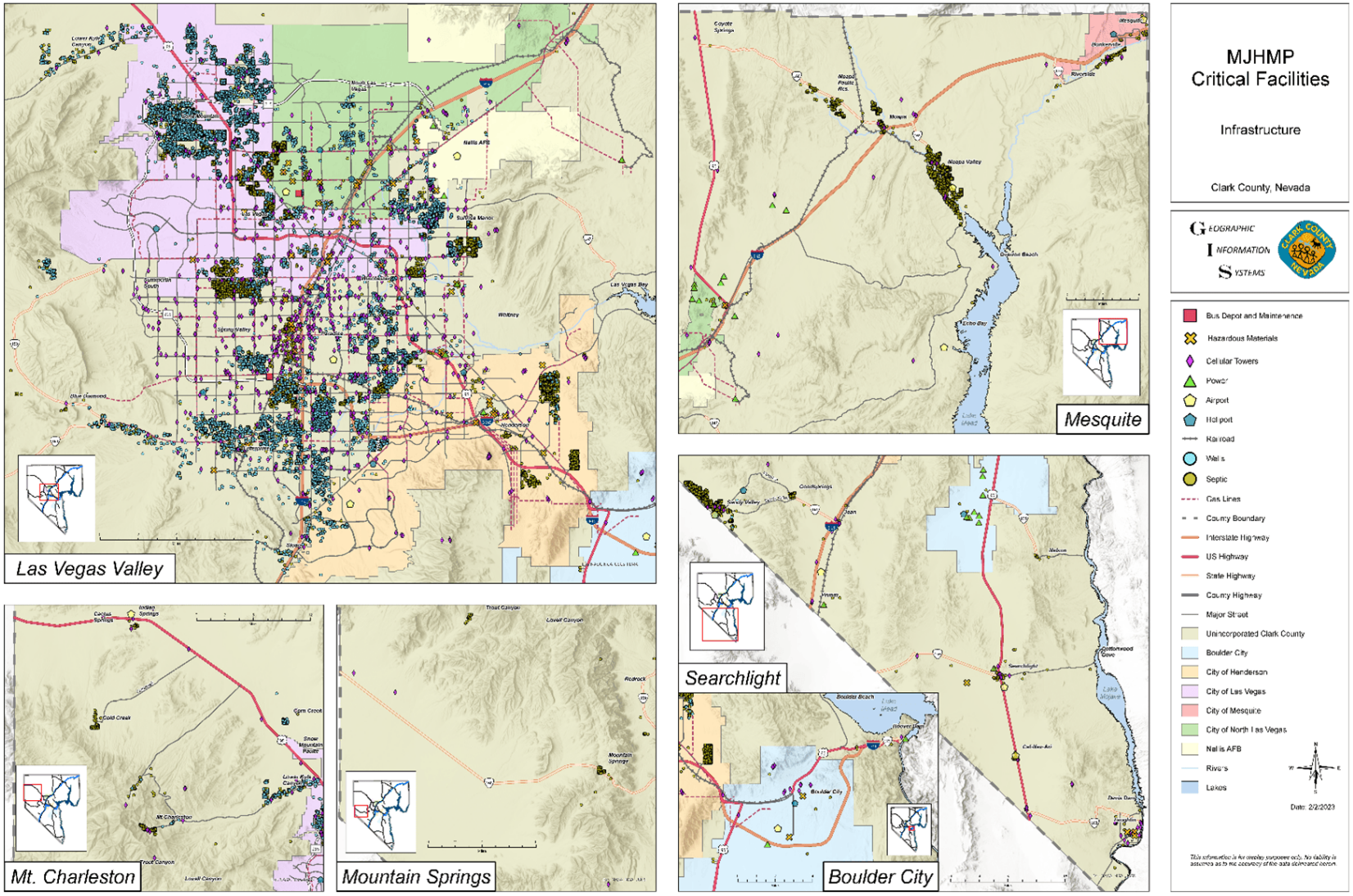


Figure 23: Clark County, NV MJMHMP Critical Facilities – Government and Health

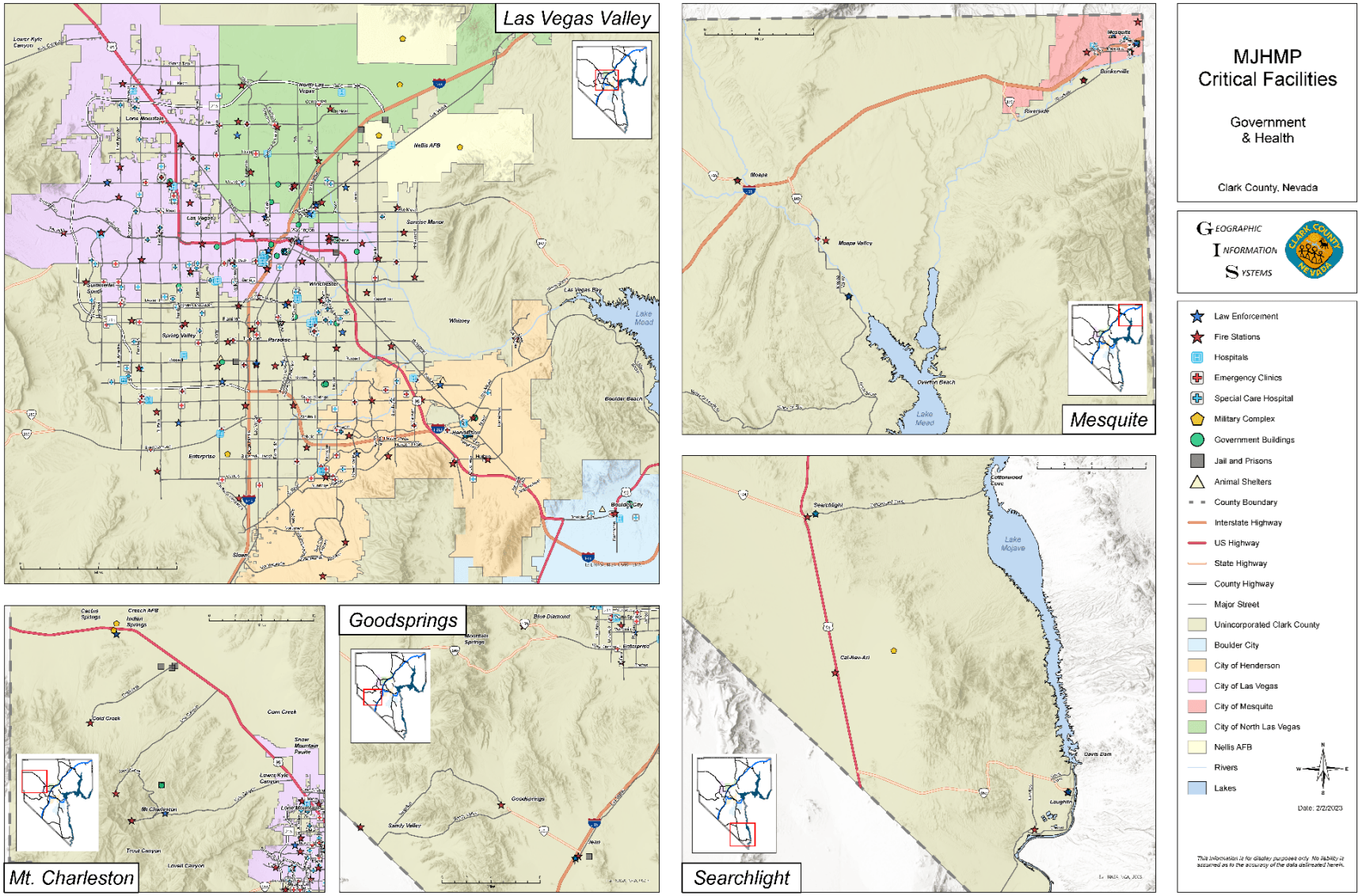


Figure 24: Clark County, NV MJHMP Critical Facilities – Cultural Sites and Tourism

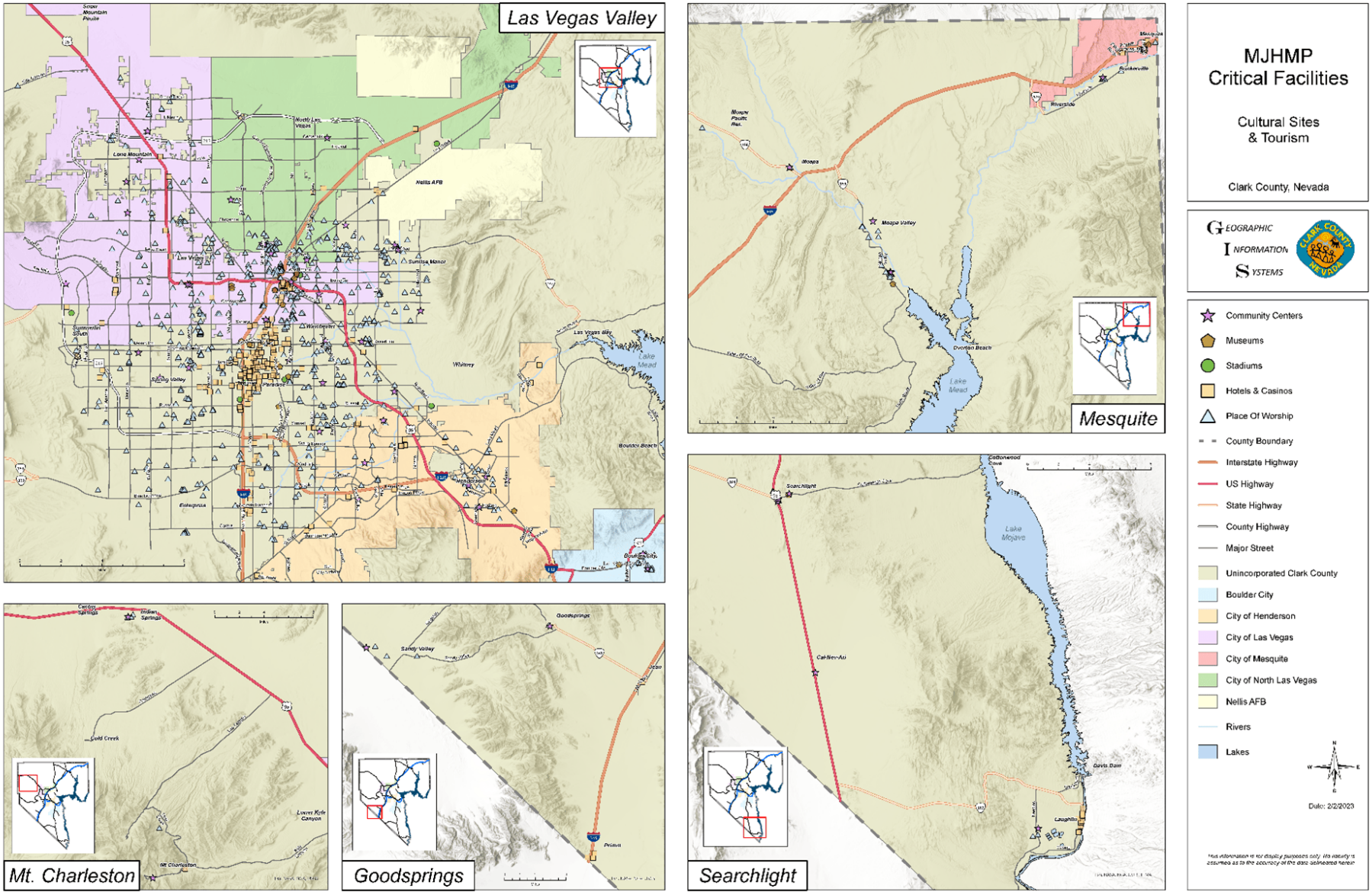
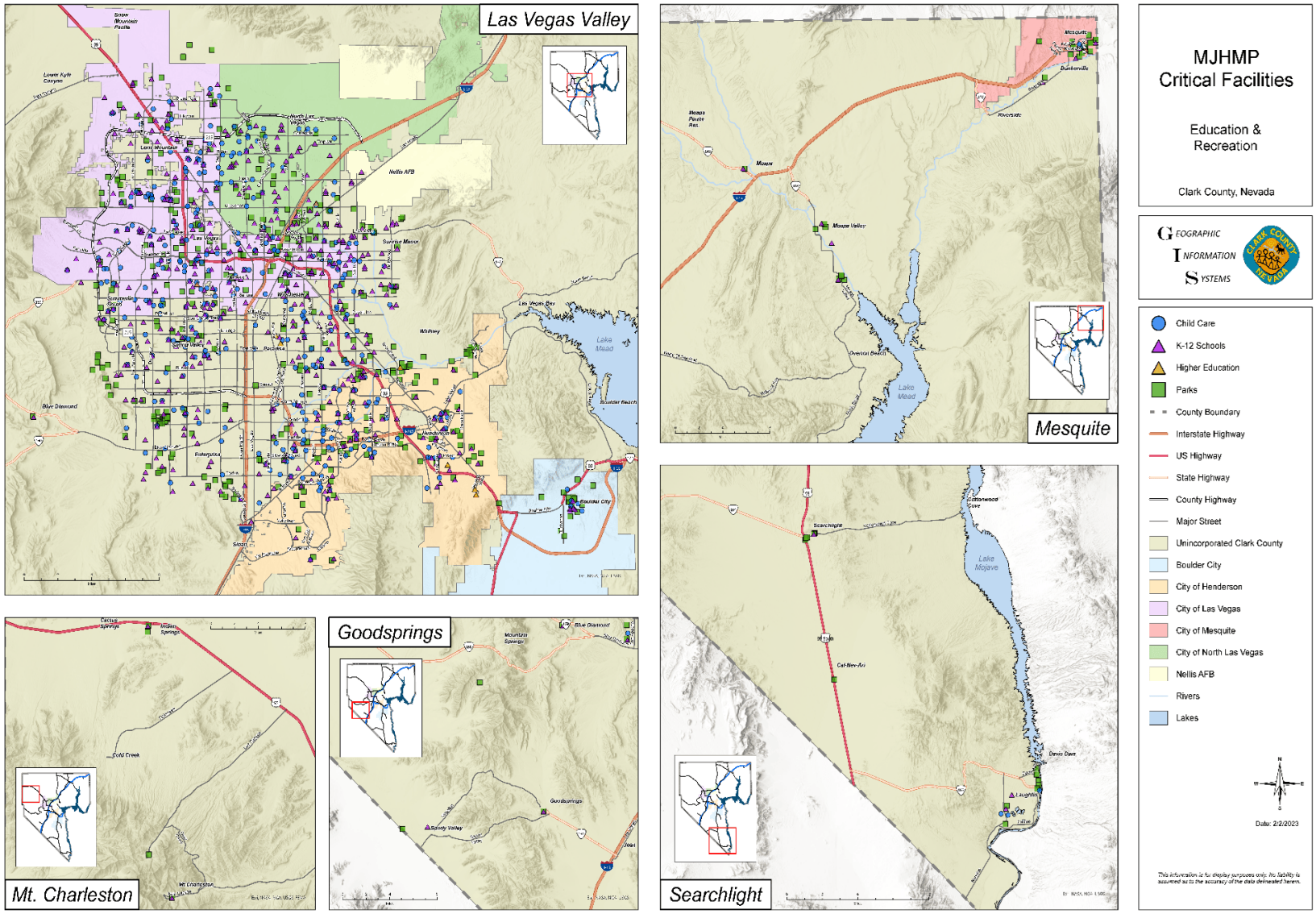


Figure 25: Clark County, NV MJHMP Critical Facilities – Education and Recreation



Section 4: Hazard Analysis and Risk Assessment

Emergency and Disaster Declaration History

The goal of mitigation is to reduce and/or eliminate the future impacts of a hazard, including property damage, disruption to local and regional economies, and the amount of public and private funds spent to assist with recovery. However, mitigation should be based on an assessment of the risk. This Risk Assessment Section evaluates the potential loss from a hazard event by assessing the vulnerability of buildings, infrastructure, and people. It identifies the characteristics and potential consequences of hazards, how much the County and its participating jurisdictions could be affected by a hazard and the impact on the County and participating jurisdictions' area assets.

A review of recently declared disasters, i.e., from 2018 to the present, provides an overview of the hazards facing Clark County and its participating jurisdictions (which includes Clark County Unincorporated Area and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation). This timeframe is referenced because Clark County has a FEMA-approved HMP that will expire on August 14, 2023. Since 2018, Clark County and its participating jurisdictions have experienced one (1) presidentially declared disaster. The disaster declaration was epidemic/pandemic. A list of the declared disasters occurring in Clark County and its participating jurisdictions since 2018 is presented in the following table. Smaller events are more frequent and are not reflected in the table. For documentation of the FEMA Disaster Declaration Maps, see Appendix E – FEMA Presidential Declarations.

Table 21: State and Federal Disaster Declarations for Clark County (2018-Present)

Disaster Declaration	Incident Type	Date	Details
Nevada Covid-19 EM-3443-NV	Pandemic (Biological – Infectious Disease)	March 2020	The Governor of Nevada declared a State of Emergency due to the outbreak of COVID-19.
Nevada Covid-19 Pandemic DR-4523 -NV	Pandemic (Biological – Infectious Disease)	April 2020	The President of the United States approved the state's request for a Presidential Major Disaster Declaration due to the outbreak of COVID-19 in the state.
Records of Disaster Declarations found at: FEMA Disaster Information			

Hazard Identification

Per FEMA Guidance, the first step in developing the Risk Assessment is identifying the hazards that have a reasonable risk of occurring in Clark County and its participating jurisdictions. Proper identification allows for appropriate and well-planned action in order to mitigate the extent and impact of a hazard event. It also helps facilitate emergency response and recovery operations. Further, while not all disaster contingencies can be planned for, applying an all-hazards approach to the mitigation process does yield greater awareness and better preparedness for unforeseen hazard events overall.

The following table lists the fourteen (14) hazards identified in the State of Nevada Enhanced Hazard Mitigation Plan (2018), as well as the justification for their inclusion/exclusion within this Clark County HMP update. Research indicates eleven of the 21 hazards do pose some level of risk to Clark County and/or at least one of its participating jurisdictions. These are, namely, drought, earthquake, epidemic, flood, heat extreme, infestation, severe storms, land subsidence and ground failure, tornado,wildland fire, and windstorm (combined with severe weather. Two additional unnatural or (or human-caused) hazards – hazmat and terrorism/WMD – also pose a risk to Clark County due to the location within the state of Nevada. Clark County is home to the Country's 7th largest airport and world-renowned Casinos, which makes it a famous tourism market coupled with major interstate highway and rail transportation routes within the County as a target for terrorism/WMD. For this reason, hazmat and terrorism are included in this HMP update.

Details for each of these thirteen (13) hazards and their potential impact on Clark County and its participating jurisdictions are in Hazard Risk Summary Section.

Table 22: Summary of Hazards for 20XX, Clark County MJHMP

Summary of Hazards for 2023 Update, Clark County MJHMP					
Hazards	**Clark County 2012 MJHMP Update**	**Clark County 2018 MJHP Update**	**2018 State of Nevada Enhanced Hazard Mitigation Plan**	**Nevada Threats & Hazards September 2020**	**Clark County 2023 MJHMP Update**
Natural Hazards					
Climate Change	Excluded	Included	Excluded	Excluded	Included – Disaster History
Drought	Included	Included	Included	Included as Drought	Included – Disaster History
Earthquake	Included	Included	Included	Included as Geohazards – Earthquakes	Included as Geohazards, Earthquake and Seismic Hazards – Disaster History
Excessive Heat	Excluded	Excluded	Included	Included as Extreme Heat	Included as Extreme/Excessive Heat – Disaster History
Flooding	Included as Flood and Flash Flooding	Included as Flood	Includes as Floods, Flooding due to Dam Failure, and Flooding along Ditches and Canals	Included as Floods, Landslides & Debris Flow	Included as Flood, Landslides & Debris Flow, Flood – Included Disaster History
Subsidence	Included	Included as Subsidence and Fissures	Included as Land Subsidence and Ground Failure	Included as Fissures & Subsidence	Included as Fissures & Subsidence – Disaster History

Summary of Hazards for 2023 Update, Clark County MJHMP					
Hazards	**Clark County 2012 MJHMP Update**	**Clark County 2018 MJHP Update**	**2018 State of Nevada Enhanced Hazard Mitigation Plan**	**Nevada Threats & Hazards September 2020**	**Clark County 2023 MJHMP Update**
Severe Weather	Excluded	Excluded	Included as Severe Weather and Snowfall	Included as Severe Weather	Included as Severe Weather (including Thunderstorms, Lightning, Hail) – Disaster History
Wildfire	Included	Included	Included	Included as Fire, Wildland Urban Interface	Fire, Wildland Urban Interface Included – Disaster History
Human-Caused Hazards					
Dam Failure	Included	Included	Included	Included as Infrastructure, Dam Failure	Included as Infrastructure, Dam Failure
Infestation	Included	Included	Included	Excluded	Included
Epidemic/ Infectious Disease	Included as Epidemic/ Infections Disease	Included as Infections Disease	Included	Included as Infectious Disease – Emerging Disease with Epidemic or Pandemic Potential and Respiratory Virus with Epidemic and Pandemic Potential	Included as Infectious Disease
Hazardous Materials	Excluded	Included as Hazardous Material Events	Included	Included as Chemical, Biological, Radiological, Nuclear & Explosives (CBRNE)	Included as Chemical, Biological, Radiological, Nuclear & Explosives (CBRNE) – Hazardous Materials – Disaster History
Terrorism	Included	Included	Excluded	Included as Terrorism – International Terrorism, Domestic Terrorism, and Complex Coordinated Attack	Included – Disaster History
Utility Failure	Included	Excluded	Excluded	Included as Infrastructure as Power Outage	Excluded

Data Sources: Clark County 2012 MJHMP Update; Clark County 2018 MJMHP Update, 2018 State of Nevada Enhanced Hazard Mitigation Plan; Nevada Threats and Hazards, September 2020 edition

Hazard Risk Profiles

Hazard profiles are outlined in the proceeding sections of the Clark County Hazard Mitigation Plan. For some hazards, the Repetitive Loss (RL) Structures and HAZUS® Models sections are left out due to the lack of applicability to the associated hazard.

Hazard Description

This section describes the general characteristics of the specified hazard.

Location and Extent

This section contains information about the location, i.e., the geographic area(s) within the planning area, that are affected by the hazard, along with the extent (strength and magnitude) of the specific hazard.

Previous Occurrence

This section contains a history of previous hazard events for the profiled hazard.

Methodology

Most of the historical data used in the risk assessment originates from the National Oceanic and Atmospheric Administration/National Centers for Environmental Information (NOAA/NCEI). In most instances, the hazard affects a large geographic area; thus, the hazard data is reported at a county level. This is the best available data for these hazards. The calculations for Previous Occurrences and the Probability of Future Events are also based on county-level data.

Probability of Future Events

Probability of Future Events can be defined in a variety of plans to account for the long term's changes in weather patterns of the identified hazards during the hazard mitigation planning process. Calculating future probability is one of many predictors of future occurrences. This section of the 20XX MJHMP update will utilize both Calculated Risk Priority Index (CPRI) and Calculating Future Probability using Qualitative Data to define the probability of future events for Clark County and its participating jurisdictions.

Calculated Priority Risk Index (CPRI)

The risk for each of these hazards was analyzed using a Calculated Priority Risk Index (CPRI). The CPRI examines four criteria for each hazard (probability, magnitude/severity, warning time, and duration), detailed in the Degree of Risk Chart. The process for conducting the CPRI analysis is described below.

Calculated Priority Risk Index (CPRI) Analysis Process

- Hazards are rated 1 to 4 in whole numbers for each CPRI category using definitions in Table 23: Degree of Risk Chart;
- Each category is weighted by a percentage (see Table 23: Degree of Risk Chart). Ratings and their weighted scores (weight x rating) are captured for each hazard;
- The weighted scores for each hazard are summed to create a cumulative weighted score. This score represents the comparative risk posed by a hazard where 1–1.9 is low risk (L), 2–2.9 is moderate risk (M), 3–3.9 is high risk (H), and 4 is severe risk (S).

Table 23: Calculated Priority Risk Index – Degreee of Risk Chart

CPRI Category	Degree of Risk Chart			Assigned Weight
	Level ID	**Description**	**Index Rating**	
Probability	Unlikely	Extremely rare with no documented history of occurrences or events. Annual probability less than 0.001.	**1**	**45%**
	Possible	Rare occurrences with at least one documented or anecdotal historic event. Annual probability of between 0.01 and 0.001.	**2**	
	Likely	Occasional occurrence with at least two or more documented historical events. Annual probability of between 0.1 and 0.01.	**3**	
	Highly Likely	Frequent events with a well-documented history of occurrence. Annual probability of greater than 0.1.	**4**	
Magnitude-Severity	Negligible	Negligible property damages (less than 5% of critical and non-critical facilities and infrastructure). Injuries or illnesses are treatable with first aid, and there are no deaths. Negligible quality of life lost. Shut down of critical facilities for less than 24 hours.	**1**	**30%**
	Limited	Slight property damages (between 5% and 25%) of critical and non-critical facilities and infrastructure). Injuries and illnesses do not result in permanent disability, and there are no deaths. Moderate quality of life lost. Shut down of critical facilities for more than one day and less than one week.	**2**	
	Critical	Moderate property damages (between 25% and 50%) of critical and non-critical facilities and infrastructures). Injuries or illnesses result in permanent disability and at least one death. Shut down of critical facilities for more than one week and less than one month.	**3**	
	Catastrophic	Severe property damages (>50%) of critical and non-critical facilities and infrastructure). Injuries or illnesses result in permanent disability and multiple deaths. Shut down of critical facilities for more than one month.	**4**	
Warning Time	> than 24 hours	Population receives greater than 24 hours of warning.	**1**	**15%**
	12 to 24 hours	Population receives between 12 and 24 hours of warning.	**2**	
	6 to 12 hours	Population receives between six and 12 hours of warning.	**3**	
	< than 6 hours	Population receives less than six hours of warning.	**4**	
Duration	< than 6 hours	Disaster event will last less than six hours.	**1**	**10%**
	6 to 24 hours	Disaster event will last between six and 24 hours.	**2**	
	24 hrs. to 1 week	Disaster event will last between 24 hours and one week.	**3**	
	> than 1 week	Disaster event will last more than one week.	**4**	

The results of the County CPRI are in Table 24: CPRI Results and provide an overall summary for the planning area. Final hazard selection was based on the individual jurisdiction CPRI, input provided during Steering Committee meetings, and follow-up mitigation activity development. A CPRI for each participant can be found in Appendix I – Jurisdictional Annexes. The results of the County CPRI are in Table 24: CPRI Results and provide an overall summary for the planning area. The process for conducting the CPRI analysis is described below.

Table 24: CPRI Results

Hazard		Category and Weight				Cumulative Weighted Score	Risk Level
		Probability	Magnitude/ Severity	Warning Time	Duration		
Index Rating (R) Weighted Score (WS)		45%	30%	15%	10%		
Avalanche	R	2	2	2	2	2	M
	WS	0.9	0.6	0.3	0.2		
Climate Change	R	4	3	1	4	3.25	H
	WS	1.8	0.9	0.15	0.4		
Dam Failure	R	2	4	4	4	3.1	H
	WS	0.9	1.2	0.6	0.4		
Drought	R	4	3	1	4	3.25	H
	WS	1.8	0.9	0.15	0.4		
Earthquake	R	3	3	4	4	3.25	H
	WS	1.35	0.9	0.6	0.4		
Excessive Heat	R	4	3	1	3	3.15	H
	WS	1.8	0.9	0.15	0.3		
Fire (Wildfire)	R	2	2	4	2	2.3	M
	WS	0.9	0.6	0.6	0.4		
Flood	R	3	3	4	3	3.15	H
	WS	1.35	0.9	0.6	0.3		
High Winds/Tornado	R	4	2	4	2	3.2	H
	WS	1.8	0.6	0.6	0.2		
Severe Weather	R	4	2	3	3	3.15	H
	WS	1.8	0.6	0.6	0.3		
Infestation	R	2	2	1	4	2.15	M
	WS	0.9	0.6	0.15	0.4		
Infectious Disease (Public Health/Pandemic)	R	3	4	1	4	3.1	H
	WS	1.35	1.2	0.15	0.4		
Hazardous Materials	R	3	2	4	3	2.85	M
	WS	1.35	0.6	0.6	0.3		
Fissures & Subsidence	R	2	2	4	4	2.5	M
	WS	0.9	0.6	0.6	0.4		
Terrorism/Active-Shooter	R	2	3	4	4	2.8	M
	WS	0.9	0.9	0.6	0.4		

Table 25: CPRI: Hazard Risk Scoring

Risk Level	Severe	High	Moderate	Low
Rank Score	4.0	3.0 – 3.9	2 – 2.9	1 – 1.9

Each jurisdiction considered which of the analyzed hazards posed a significant enough risk to their specific community to warrant mitigation efforts. Below is a summary of the hazards selected for mitigation by each jurisdiction. These selections are the basis for each jurisdictions' mitigation strategy. Final hazard selection was based on the individual jurisdiction CPRI, input provided during Planning Team meetings, and follow-up mitigation activity development.

Calculating Future Probability using Qualitative Data

This method describes the likelihood, or probability, of the identified hazard actually occurring within the planning area. The yearly probability number will be derived by dividing the number of recorded events (from data from publications like the U.S. Drought Monitor and the NCEI/ NOAA Storm Events Database) by the year range used. This case will use the years between the last plan update in 2018 (5 years). If discrete quantitative data is available, a finite probability will be listed. See the table below for additional information to the probability of future events.

Table 26: Probability Categories/Range Per Year

Probability Categories	Unlikely	Occasional	Likely	Highly Likely
Range (Per Year)	0%	1-10%	11-50%	51-100%

Vulnerability and Impact

This section describes the potential impacts of the hazard for each participating jurisdiction and provides an overall summary of each jurisdiction's vulnerability to the hazard through structures, systems, populations, and community assets that are susceptible to damage/loss from the hazard.

Impact of Climate Change

This section provides a general description of the impact of climate change on that hazard within the participating jurisdictions.

Critical Facilities and Infrastructure

When appropriate, this section details the infrastructure and facilities pertinent to the hazard.

Land Use and Development

This section provides a general description of land use and development trends within the participating jurisdictions.

Unique and Varied Risk

Each jurisdiction's risk, where it varies from the risks facing the entire planning area, is discussed in this section.

Repetitive Loss Structures

If applicable to the profiled hazard, a description of the location types and estimates for the number of repetitive loss properties will be provided in this section.

HAZUS® Models

If applicable to the profiled hazard, HAZUS® models using version 6.0 may be included in this section of the plan. HAZUS® is a GIS (mapping) tool that allows analysts to create a fictional scenario for the planning area using specific details to show what could happen if that scenario were to occur. This type of mapping is helpful to fill in gaps where there is a lack of historical data. It also allows jurisdictions to visualize which facilities and populations would potentially be affected by the profiled hazard.

(CC) Climate Change

Hazard Description

The earth's climate is changing. The state has warmed about two degrees Fahrenheit (°F) in the last century. Throughout the southwestern United States, heat waves are becoming more common, and snow is melting earlier in spring. In the coming decades, changing climate is likely to decrease the flow of water in the Colorado River, threaten the health of livestock, increase the frequency and intensity of wildland fire, and convert some rangelands to desert.

Our climate is changing because the earth is warming. People have increased the amount of carbon dioxide in the air by 40% since the late 1700s. Other heat-trapping greenhouse gases are also increasing. These gases have warmed the surface and lower atmosphere of our planet about one degree during the last 50 years. Evaporation increases as the atmosphere warms, which increases humidity, average rainfall, and the frequency of heavy rainstorms in many places, but contributes to drought in others. Greenhouse gases are also changing the world's oceans and ice cover. Carbon dioxide reacts with water to form carbonic acid, so the oceans are becoming more acidic. The surface of the ocean has warmed about one degree during the last 80 years.

The U.S. Environmental Protection Agency (EPA) describes climate change as "any significant change in the measures of climate lasting for an extended period of time. In other words, climate change includes major changes in temperature, precipitation, or wind patterns, among other effects, that occur over several decades or longer."

Many people confuse climate change with global warming, the recent and ongoing rise in global average temperatures near earth's surface. However, global warming represents only one aspect of climate change. The earth's average temperature has risen by 1.4°F over the past century and is projected to rise another 2°F to 11.5°F over the next hundred years. Rising global temperatures have been accompanied by changes in weather and climate. Many places have seen changes in rainfall resulting in more floods, droughts, or intense rain, as well as more frequent and severe heat waves. The planet's oceans and glaciers have also experienced changes. Oceans are warming and becoming more acidic, ice caps are melting, and sea levels are rising. The effects of these indicators include:

- **Greenhouse Gases** – Human activities have increased the emissions of greenhouse gases. As a result of the increase in emissions, average concentrations of heat-trapping gases in the atmosphere are also increasing.
- **Weather and Climate** – Average U.S. and global temperatures are increasing, while attributes of weather and climate, such as precipitation, drought, and tropical cyclone activity, are changing.
- **Oceans** – Average oceanic temperatures are increasing. Sea levels are rising around the world due to thermal expansion and increases from ice melt, and waters are becoming more acidic.
- **Snow and Ice** – Glaciers in the U.S. and around the world are generally shrinking, while snowfall and snow cover in the U.S. have decreased overall. The extent of the Arctic Sea ice is declining.
- **Health and Society** – Warmer temperatures and later fall frosts allow ragweed plants to produce pollen later into the year, potentially prolonging allergy season. The length of ragweed pollen season has increased at ten out of eleven (10/11) locations studied in the central U.S. and Canada since 1995. The change becomes more pronounced from south to north.
- **Ecosystems** – Many areas are experiencing earlier spring events, such as peak stream runoff and flower blooms. Bird migration patterns are changing, and wildland fire zone size has increased.

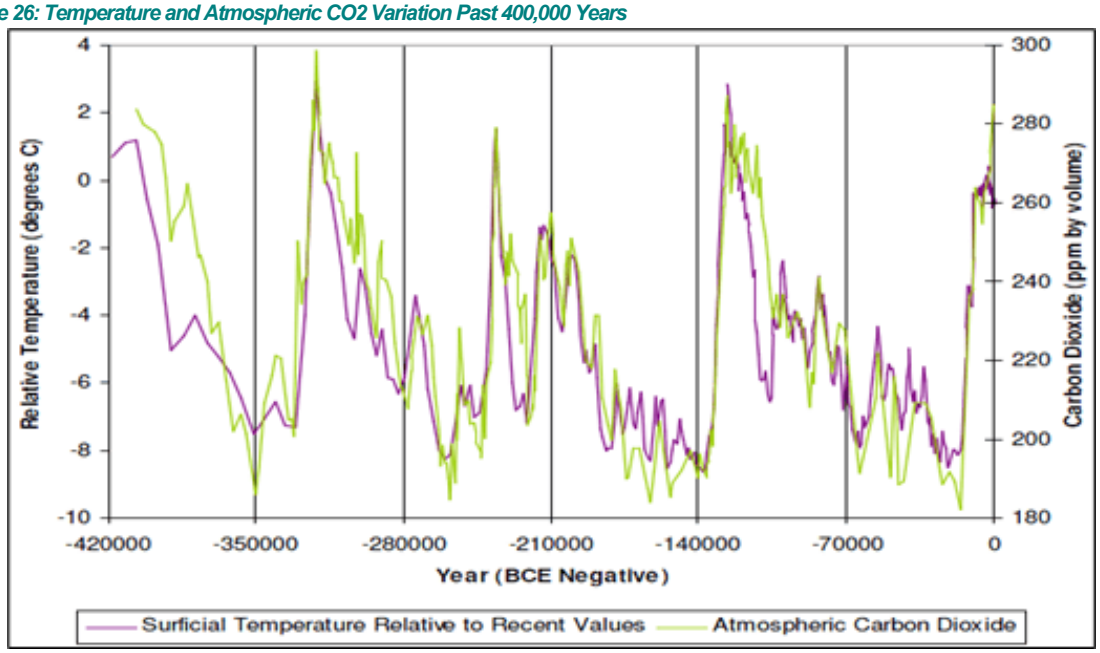
Climate change has occurred throughout the history of the planet. Due to variations in the earth's

inclination to the sun, volcanic activity, and other factors such as asteroid impacts, the amount of solar radiation reaching the earth's surface rises and falls. The temperature of the planet correlates to the amount of solar radiation arriving at the surface and with it the climate.

In relatively recent history, the last glacial period, popularly known as the Ice Age, occurred from c. 110,000 to 12,000 years ago. This most recent glacial period is part of a larger pattern of glacial and interglacial periods known as the Quaternary glaciation (c. 2,588,000 years ago to present). From this point of view, scientists consider this "ice age" to be merely the latest glaciation event in a much larger ice age, one that dates back over two million years and is still ongoing.

During this last glacial period, there were several changes between glacier advance and retreat. The Last Glacial Maximum, the maximum extent of glaciation within the last glacial period, was approximately 22,000 years ago. While the general pattern of global cooling and glacier advance was similar, local differences in the development of glacier advance and retreat make it difficult to compare the details from continent to continent. Generally, the pattern of temperature variation and glaciation has lagged atmospheric carbon dioxide (CO2) content. depicts global variations during the past 400,000 years as a correlation between temperature and atmospheric CO2 content in part per million.

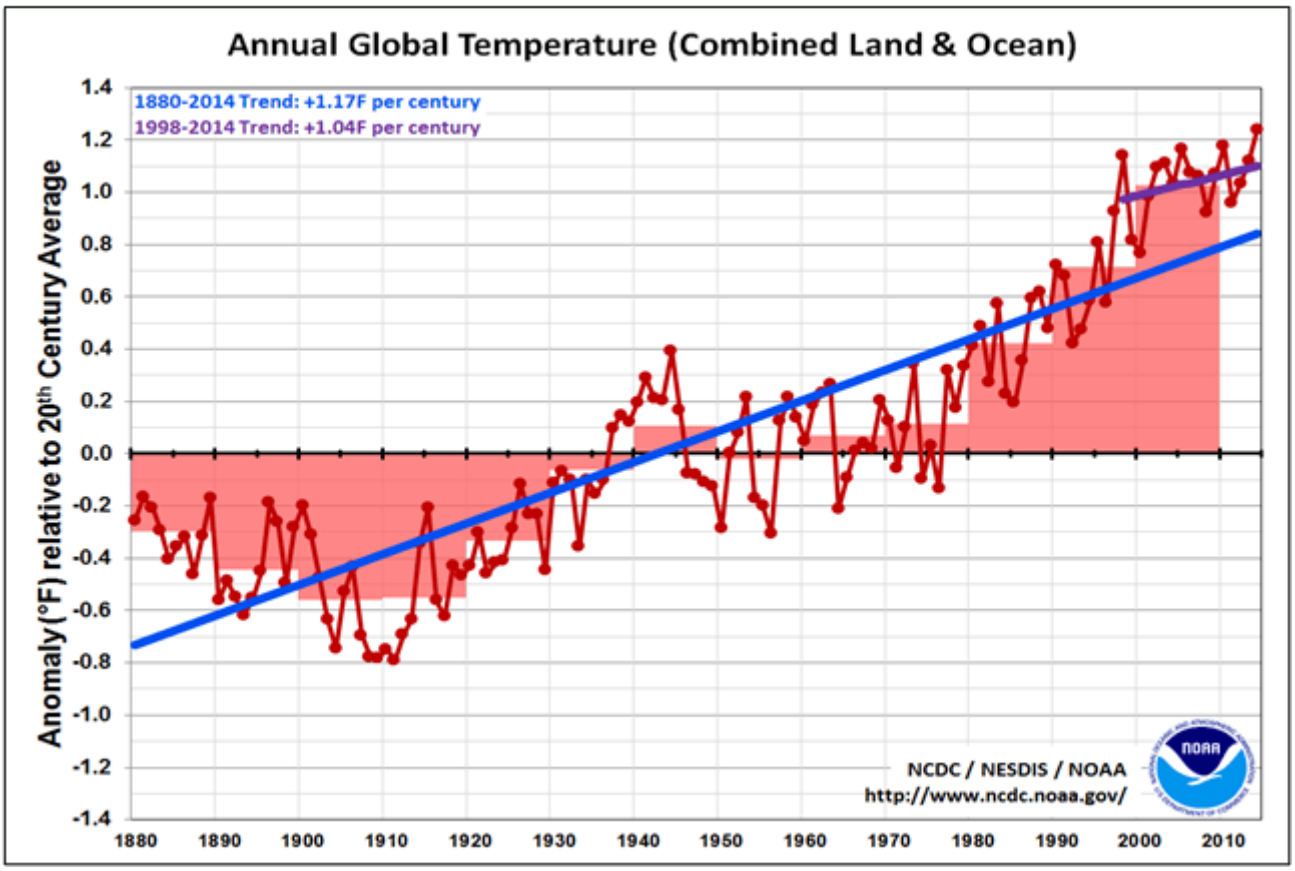
Figure 26: Temperature and Atmospheric CO2 Variation Past 400,000 Years



Starting 22,000 years ago, the planet has slowly warmed and the glaciers retreated to high northern latitudes and mountains. In the last several decades of this period, human activity has likely led to a rapid increase in atmospheric CO2 and a matching rise in global temperature. The result has been that climate change may be accelerating. Figure 4.2 provides a graphical depiction of the history of temperature rise.[2]

2 NOAA, 2010, Global Climate Report

Figure 27: Annual Global Temperature

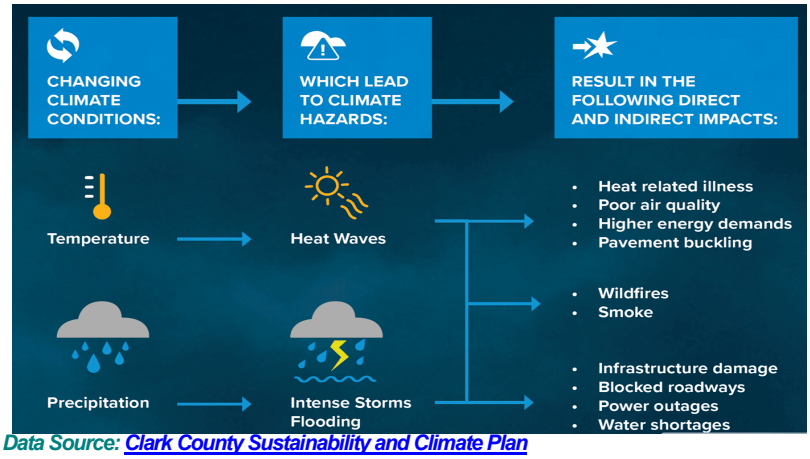


Location and Extent

Warming and climate change are occurring globally with wide variations based on location and latitude. The polar regions have experienced particularly rapid changes in climate with increased ice melt and more sea-ice free days. Climate change affects the entire planning area.

Climate change is likely to affect the entire earth's population. More widespread drought and associated crop failure, movement of invasive species, more frequent wildland fire, increased energy emergencies, and more intense climate events such as storms and extreme heat will occur throughout the County. The Clark County Sustainability and Climate Plan website mentions the impacts of climate change are very real, and they are upon us. 100% of our state's population is experiencing drought, and Las Vegas is the fastest warming city in the country. The following image depicts climate change in Clark County, NV:

Figure 28: Climate Hazard Conditions and Climate Change



Data Source: Clark County Sustainability and Climate Plan

Specific likely impacts the County include:

- Increasing droughts and higher temperatures are likely to affect agricultural products including cattle, dairy, and vegetables. Hot temperatures threaten the health of cows and causes them to eat less, grow more slowly, and produce less milk. Livestock operations could also be impaired by fire, the lack of water, and changes in the landscape from grassland to woody shrubs more typical of a desert. Reduced availability of water would also create challenges for irrigated farms, which account for two-thirds of the water used in the state. The Clark County Climate Vulnerability Assessment indicates the following related to drought and climate change - Clark County is one of the driest counties in the U.S., generally only receiving between 4-8 inches of annual rainfall. Throughout much of 2021, the majority of Clark County experienced “exceptional” drought conditions, as did much of the West due to increasing temperatures and decreasing runoff in the Colorado River Basin driven by climate change. Future climate projections show similar amounts of annual average precipitation, but more pervasive long-term drought conditions (leading to megadrought) and a reduction in snowpack in the Colorado River due to earlier runoff and more precipitation falling as rain instead of snow.
- Wildfires, changing landscapes, higher temperatures, and drought are likely to increase the severity, frequency, and extent of wildfires which could harm property, livelihoods, and human health. The Clark County Climate Vulnerability Assessment states, Climate change is exacerbating wildfire risk in Clark County due to several interrelated factors, including changing precipitation patterns (which causes an intensification of the drying of vegetation and additional fuel for wildfires) and an increase in invasive plants that are more susceptible to wildfire ignition and spreading (e.g., cheatgrass). Research shows that more area will burn when a wet winter is followed by a dry spring and summer30, and projections indicate an increase in winter precipitation throughout Nevada, increasing evaporative demand in spring and summer months, and increasing temperatures.
- Flooding impacts to Climate Change, in Clark County, the Climate Vulnerability Assessment indicates, where monsoons are also tied to flash flood events withing the County, increasing thunderstorm intensity is expected to result in more-severe flooding risks.16 Peak daily runoff, the primary source of flash flood risk in Clark County, is expected to increase over time. There are areas of the county—including the Las Vegas metropolitan area—that may experience as much as a 150-200% increase over historical peak daily runoff averages. Though flood management has significantly improved throughout the region in past decades, projected heavier rainfall events still bring some risks to infrastructure.
- Warmer and drier conditions make forests more susceptible to pests. Drought reduces the ability of trees to mount a defense against attacks from pests such as bark beetles. Temperature controls the life cycle and winter mortality rates of many pests. With higher winter temperatures, some pests can persist year-round and new pests and diseases may

become established.

- Hot days can be unhealthy, even dangerous. Certain people are especially vulnerable, including children, the elderly, the sick, and the poor. High air temperatures can cause heat stroke and dehydration and affect people's cardiovascular, respiratory, and nervous systems. Higher temperatures are amplified in urban settings where paved and other surfaces tend to store heat. Construction crews may have to increasingly operate on altered time schedules to avoid the heat of the day.
- Rising temperatures can increase the formation of ground-level ozone, a key component of smog. Ozone has a variety of health effects, aggravates lung diseases such as asthma, and increases the risk of premature death from heart or lung disease. The U.S. EPA and has been working to reduce ozone concentrations. As the climate changes, continued progress toward clean air will be more difficult.

Previous Occurrence – Climate Change (Extreme Heat and Severe Weather)

Climate change is an ongoing occurrence. Essentially, it has occurred, is occurring and will continue to occur for several decades, centuries or longer. Climate change is ongoing. While individual impacts of climate change may be seen as discreet events such as drought or excessive heat, climate change is a continuous process.

Probability of Future Events – Climate Change (Extreme Heat and Severe Weather)

Based on the Calculated Priority Risk Index conducted for Clark County there is a **high probability/vulnerability (3.0-3.9) of climate change** in the planning area. The following table provides CPRI Rating on climate change for Clark County and its participating jurisdictions.

Table 27: Clark County and Participating Jurisdiction CPRI Rating for Climate Change

Clark County and Participating Jurisdiction CPRI Rating for Climate Change							
Hazard: Climate Change Index Rating (R) Weighted Score (WS)		Category and Weight Probability 45%	Magnitude/ Severity 30%	Warning Time 15%	Duration 10%	CPRI Score	Risk Level
Clark County (including Incorporated and Unincorporated Areas	R	4	3	1	4	3.25	H
	WS	1.8	0.9	0.15	0.4		
Boulder City	R	3	2	1	4	2.5	M
	WS	1.35	0.6	0.15	0.4		
Henderson	R	4	4	1	4	3.55	H
	WS	1.8	1.2	.6	.4		
Las Vegas	R	4	3	1	4	3.25	H

Clark County and Participating Jurisdiction CPRI Rating for Climate Change							
Hazard: Climate Change **Index Rating (R)** **Weighted Score (WS)**		**Category and Weight**				**CPRI Score**	**Risk Level**
		Probability 45%	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**		
	WS	1.8	0.9	0.15	0.4		
Mesquite	R	4	4	1	4	3.55	**H**
	WS	1.8	1.2	0.15	0.4		
North Las Vegas	R	4	4	1	4	3.55	**H**
	WS	1.8	1.2	0.15	0.4		
Special District: Clark County Water Reclamation District	R	4	4	1	4	3.55	**H**
	WS	1.8	1.2	0.15	0.4		
Special District: Clark County School District	R	3	2	2	4	2.65	**M**
	WS	1.35	0.6	0.3	0.4		
Special District: Las Vegas Valley Water District/SWNA	R	4	4	1	4	3.55	**H**
	WS	1.80	1.20	0.15	0.40		
Tribal Nation: Las Vegas Valley Paiute	R	4	4	1	4	3.55	**H**
	WS	1.8	1.2	0.15	0.4		
Tribal Nation: Moapa Band of Paiutes	R	2	1	1	3	1.65	**L**
	WS	0.9	0.3	0.15	0.3		

***Note**: As mentioned above, climate change is an ongoing occurrence and will continue to be an occurrence for the foreseeable future within the County. Based on this fact, the likelihood of a climate change event happening in the planning area is considered highly likely.*

***Note**: Though participating in the planning process, at the time of this update CPRI data for the City of Mesquite was not received. Therefore, the CPRI rating for the City of Mesquite is the same rating as Clark County due to the city being within the planning area.*

***Note**: Though the Tribe participated in the planning process, the Las Vegas Paiute Tribe was unable to provide an update on accurate CPRI Rating for the climate change hazard. However, space has been made available in the above table for the Las Vegas Paiutes to provide input for this plan update (20XX) at a later date.*

Vulnerability and Impact

Climate change by itself is not likely to cause potential losses to infrastructure or affect services to populations. Effects that are secondary to climate change such as greater likelihood of flooding due to more frequent storms or more annual days with excess heat are included in individual hazard such as flood or excess heat. The result is climate change as a standalone hazard is assigned a zero percent loss. The State lists multiple secondary impacts from climate change in the **Error! Reference source not found.**.

Figure 29: Nevada's Climate Strategy

	Heat & Heat Waves	Drought	Loss of Snow	Floods	Wildfire Risk
			CLIMATE SCIENCE		
Historical Trends	Increasing temp; Rates of increase are higher in urban areas than rural areas	Increasing evaporative demand; More drought that not in last 10 years	Decrease between 20-60% from 1955-2016	No historical trends; Most recent flooding events are 2017 and 2006	Between 1984-2017, 4 of the 5 years with the largest area burned have occurred since 2005.
Projected Trend & Confidence	Increase in average temp; Increase in frequency and severity of heat waves ***HIGH Confidence***	Increase in frequency and intensity ***Confident***	By the end of this century, projections indicate a potential 30-50% reduction in April snowpacks,; Earlier snow melt ***HIGH Confidence***	More frequent flooding; ***Confident***	Increase of invasive species, increasing fire spread; Increase drying of fuels; Increase precipitation variability affecting fuel production ***HIGH Confidence***
			IMPACTS		
Public Health	Increased risk of mortality and morbidity; Increase in preterm births	Potential for mental health impacts; Increased dust due to drying and lowered water levels in desert terminal lakes	Greater change of flooding and associated safety risks	Greater risks to public safety, private property, and infrastructure	Wildfire smoke decrease air quality; Increase in respiratory illness; Increases in hospitalizations and emergency room visits
Water Resources	Degradation of water quality; Increased water loss due to higher evaporative demand	Increase in demand and decrease in supply, limiting water availability for all sectors	Loss of a natural reservoir, reduced water storage; More growing days increasing water demand	Decrease in water quality; May limit the ability to capture rainwater for water supply (i.e., too much, too fast)	Potential erosion leading to changes in biogeochemical cycling and water quality
Environment	Species' ranges will shift; Some local extinctions; Negative impacts on wildlife health including higher mortality	Drought impacts to plant health and growth; Potential for plant mortality	Less and earlier-in-the-year availability of surface water and ground water limiting the bioavailablity of water	Increased sheet and river bank erosion affecting Riparian habitats	More cheatgrass, loss of native sagebrush further increasing wildfire risk; Loss of forested areas will impact erosion and sedimentation into watersheds; Negatively impacts wildlife species
Recreation & Hospitality	Decrease in time available to be safely outside; Deterrent to attracting visitors	Partial loss of recreational opportunities due to limited snow pack; Dust to negatively impact tourism	Partial loss of recreational opportunities due to decline of snow pack	Flooding impacts in downtown areas of Reno and Las Vegas; Road closures due to flood and landslide risk following wildfire	Increased fire risk and smoke may lead to loss of tourism and recreation during fire season
Ag and Ranching	Health impacts of being outdoors during heat waves; Heat impacts to livestock health and milk production; Longer growing seasons and new crop varieties; Impacts to plant health and crop production; Delayed or reduced production from adapting to shifting seasons and crop performance	Potential decrease on crop yield and production; Decreased forage quantity, range condition; Water hauling needs; Reduction in use of federal land; Increased need of feeding hay; Reduction in land available for production	Earlier and longer duration of irrigation needs due to decrease in run-off later in the season; Reduced irrigation capacity due to lack of water availability; Reduction in rangeland production	Increase erosion and soil loss; Potential crop loss/damage; Damage to water holding and confinement structures; Microbial contamination of crops	Direct livestock losses; Potential impact on forage production due to wildfire-induced changes in vegetation cover including noxious weeds; Crop and forage loss; Federal land permits closed or temporally closed due to fire; Loss of infrastructure

Vulnerability of Population and Systems

The Clark County Sustainability and Climate Action Plan indicates that for Clark County, an increase in temperatures could lead to more heat-related illness, and strain energy systems as the demand for cooling continues to increase. The State of Nevada and Clark County have put into action the following regulatory measures to mitigate climate change in the planning area:

- The State Governor issued Executive Order 2019-22 which in part requires the administration to identify and evaluate policies and regulatory strategies, including but not limited to those identified pursuant to Senate Bill 254, to achieve reductions in greenhouse gas emissions, consistent with Nevada's commitment as a member of the U.S. Climate

Alliance, across all categories of emission sources, and to further Nevada's resilience to climate change.

- Assembly Bill 383 provided access to the most technologically advanced appliances while removing the least efficient, energy-guzzling, and water-wasting products from the market. In doing so, it saves tens of millions each year through lower utility electricity bills.
- In February 2021, Clark County adopted its Sustainability and Climate Action Plan. This plan is a comprehensive roadmap aimed at increasing the sustainability of our County's internal operations and represents the first step in what will be a multi-phased, multi-year effort. More information about the County's Climate Change efforts can be found online via the All-In Clark County website.

Impact of Climate Change

As described by the National Aeronautics and Space Administration (NASA), climate change is "a long-term change in the average weather patterns that have come to define Earth's local, regional and global climates." Many of the hazards identified within this update to Clark County's MJHMP are, in one way or another, potentially affected by climate change. These include Drought, Excessive Heat, Flood, Earthquake, Infestation, Subsidence and Fissure, and Wildfire. The impact of climate change on the following hazards is included in the Vulnerability section of these hazard profiles in this MJHMP update. This section provides a general description of the impact of climate change on that hazard within Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).

Critical Facilities and Infrastructure

Climate change could pose a risk to critical facilities and infrastructure within Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation). This is true because the Clark County Vulnerability Assessment report assesses how hazard-related climate change can not only affect the populations but also can affect the following infrastructure in the County: telecommunication infrastructure, water treatment facilities, wastewater infrastructure, stormwater/flood protection infrastructure, sanitation facilities, and government/emergency management facilities.

A complete list of critical facilities and infrastructure can be found in Appendix D – Critical Facilities & Infrastructure.

Land Use and Development Trends

Climate change is accelerating. The effects of climate change will become more pronounced as the amount of atmospheric greenhouse gasses increases and global temperatures continue to rise. Programs to reduce greenhouse gas emissions have had only a small impact in slowing the quickening pace of gasses release annually. Additionally, the warming effect of greenhouse gasses lags the actual increase in the amount released, meaning that a return to cooler temperatures will occur long after the maximum concentration of gasses takes place and at a slower pace than the increase. Climate change will result in secondary effects to numerous hazards, in most cases increasing their severity or probability of occurring, or both. The effects will be experienced throughout the planning area and represent increased risk compared to the previous 2018 MJHMP.

Unique and Varied Risk

Losses from climate change are difficult to separate from the hazards that it exacerbates, drought, wildland fire and extreme heat. Losses associated with climate change induced severity and occurrence of these hazards can run into the millions of dollars and result in injuries and fatalities.

Repetitive Loss Structures

Not applicable.

HAZUS® Models

Not applicable.

(DF) Infrastructure, Dam Failure

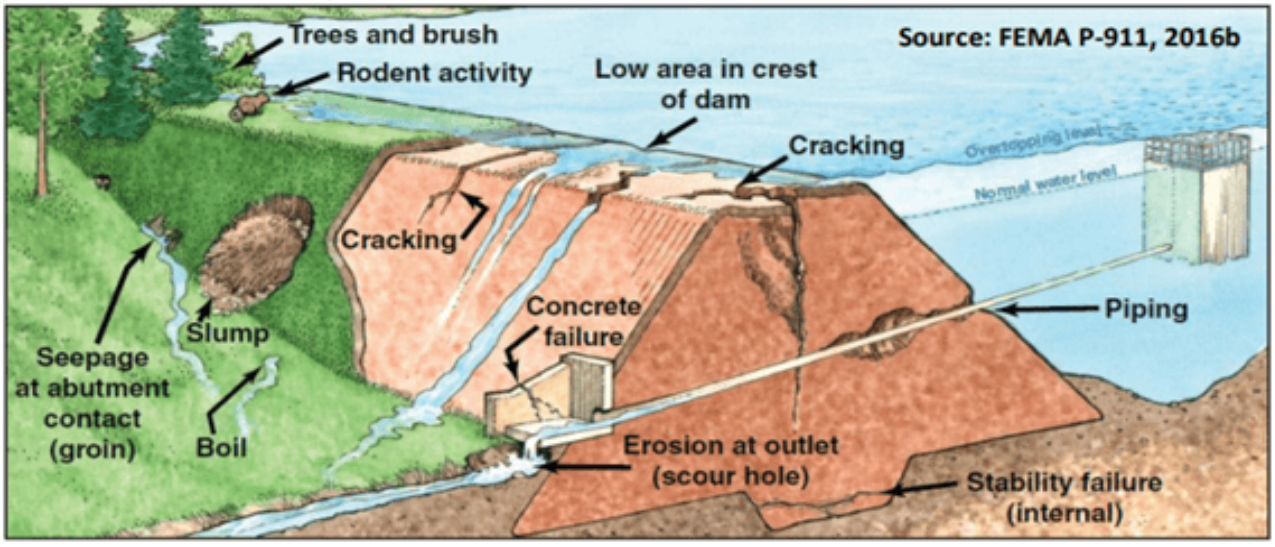
Hazard Description

A dam failure is the structural collapse of a dam that releases the water stored in the impounded reservoir. Dam failures usually result due to the age of the structure, inadequate spillway capacity used in construction, or structural damage caused by an earthquake or flood. When a dam fails, large quantities of water may be suddenly released with a great potential to cause human casualties, economic loss, and environmental damage. This type of disaster is especially dangerous because it can occur suddenly, providing little warning or evacuation time for the downstream communities. The flows resulting from dam failure generally are much larger than the capacity of the downstream channels and therefore lead to extensive flooding. Flood damage occurs because of the momentum of the torrent caused by the sediment-laden water flooding over the channel banks and the impact of debris carried by the flow.

Dam failures are most likely to happen for one of five reasons:

1. Overtopping caused by water spilling over the top of a dam. Overtopping of a dam is often a precursor of dam failure. National statistics show that overtopping due to inadequate spillway design, debris blockage of spillways, or settlement of the dam crest account for approximately 34% of all U.S. dam failures.
2. Foundation Defects, including settlement and slope instability, cause about 30% of all dam failures.
3. Cracking caused by movements like the natural settling of a dam.
4. Inadequate maintenance and upkeep.
5. Piping is when seepage through a dam is not properly filtered, and soil particles continue to progress, and form sink holes in the dam. The following image is an example of a piping failure:

Figure 30: Piping Dam Failure Image



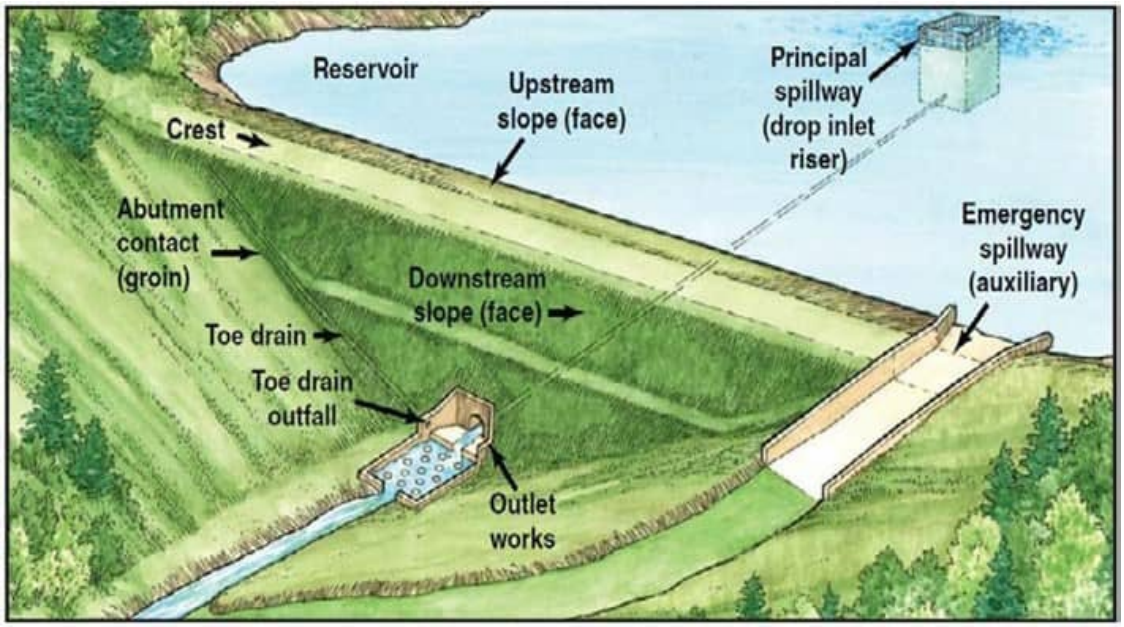
Data Source: Virginia Department of Conversation and Recreation – Dam Safety Education – Dam Failures

Another 20% of U.S. dam failures have been caused by piping (internal erosion caused by seepage). Seepage often occurs around hydraulic structures, such as pipes and spillways; through animal burrows; around roots of woody vegetation; and through cracks in dams, dam appurtenances, and dam foundations.

There are three classifications of dam failure: hydraulic, seepage, and structural. Following is an explanation of each these failure classifications:

1. **Hydraulic:** This failure is a result of an uncontrolled flow of water over and around the dam structure as well as the erosive action on the dam and its foundation. The uncontrolled flow causing the failure is often classified as wave action, toe erosion, or gullying. Earthen dams are particularly susceptible to hydraulic failure because earthen materials erode more quickly than other materials, such as concrete and steel. This type of failure constitutes approximately 40% of all dam failures. The following image is an example of an earthen dam.
2. **Seepage:** Seepage is the velocity of an amount of water controlled to prevent failure. This occurs when the seepage occurs through the structure to its foundation, where it begins to erode within.
3. **Structural:** A failure that involves the rupture of the dam or the foundation by water movement, earthquake, or sabotage. When weak materials construct dams (large, earthen dams) are the primary cause of this failure. Structural failure occurs with approximately 30% of dam failures.

Figure 31: Typical Type of Earthen Dam Image



Data Source: FEMA Dam Awareness Fact Sheet – May 2018

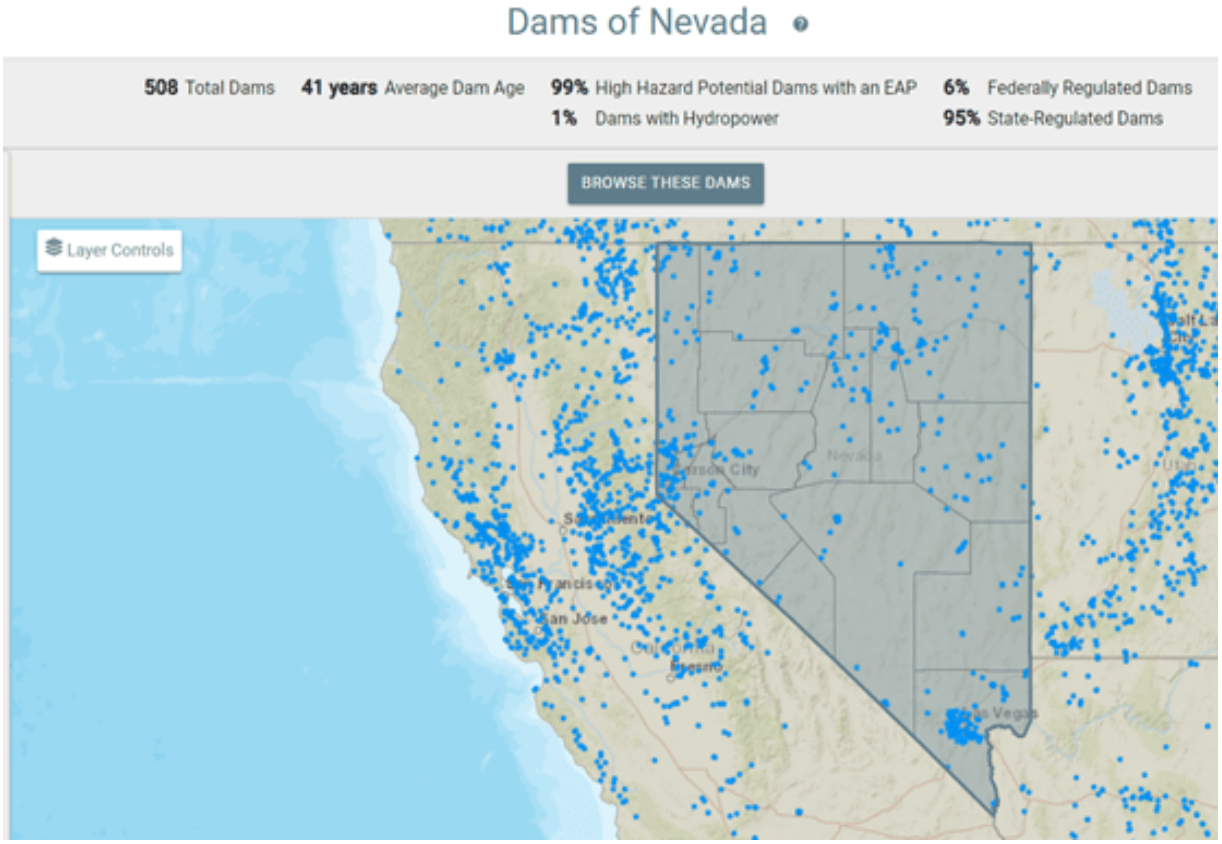
There are now approximately 91,655 dams nationwide with an average age of 61 years. A high number of these dams have received less than favorable Dam Safety Action Classification (DSAC) ratings from the U.S. Army Corps of Engineers (USACE). In fact, FEMA's National Dam Safety Program Overview fact sheet, said there were approximately 15,600 U.S. dams classified as having high-hazard potential (HHP), meaning that their failure could result in loss of life. The worst dam failure in the United States occurred in 1889 in Johnstown, Pennsylvania, when over 2,200 people died, with many more were left homeless.

According to USACE, dams are unique components of the U.S. infrastructure in that most dams are privately owned. Dam owners are solely responsible for keeping their dams safe and financing maintenance, repairs, and upgrades. Most dams are regulated for safety by state and federal governments, much the same way as are bridges, food, drugs, factories, etc. States regulate most dams in the U.S. (about 70%). The federal government regulates the remaining number.

Location and Extent

The National Inventory of Dams indicates that there are 508 total Dams in the State of Nevada, with an average age being 41 years. However, the Nevada Dam Safety Video produced by the State of Nevada Division of Water Resources mentioned that with annual rainfall of (7) inches a year, Nevada is the driest State in the US. The Nevada Dam Safety Video also mentions that many are surprised that Nevada has over 850 dams spread across the State.

Figure 32: State of Nevada, Summary of Dams



Data Source: National Inventory of Dams

Dams in Nevada are built for three primary purposes: industrial, flood control, and storage (http://water.nv.gov/DamTypes.aspx). The State of Nevada Dam Safety Program guides the types of Dams within the State. The types of dams and their characteristics are as follows:

- **Storage:** This is the stereotypical dam; reservoirs used for recreation or irrigation impoundment are examples of this type. Since water will be impounded on a "permanent" basis, the design of the dam is complicated by the fact that water will eventually seep through the dam and must be controlled. A typical storage dam may be an embankment dam with an impermeable clay core surrounded by a granular shell material. A typical zoned embankment dam will have chimney and blanket drains, corresponding filter zones, outlet works with gates, valves, and a drain, seep water collection system, cut-off trench and possibly several spillways. The capacity of the spillway(s) is dependent upon the downstream hazard potential (defined later in this publication) and the size of the area tributary to the dam. Generally, an embankment dam is constructed of soil, usually derived local to the dam site, and quality control as well as proper placement of the material is crucial to the success of the dam. Specifications must clearly define what types of materials can be used, how they are to be placed and what compactive effort must be exerted on each "lift."
- **Flood Control:** Also referred to as a "detention basin," this structure is built upstream or

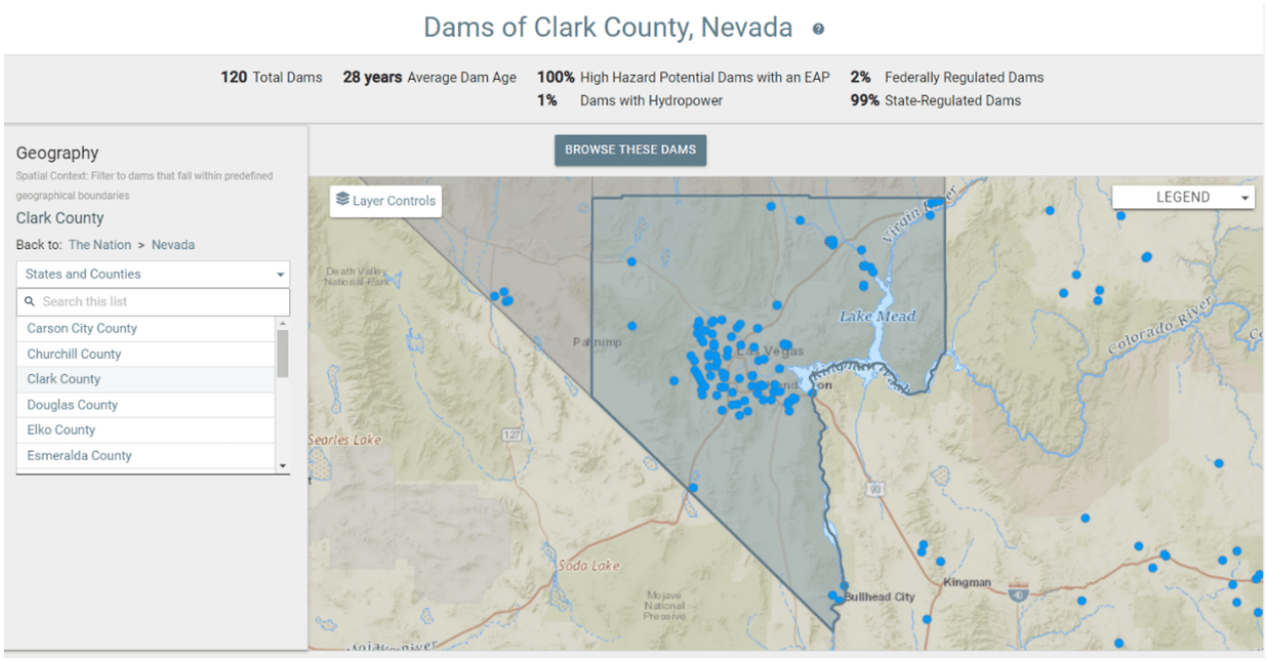
up gradient from a developed area so that an extreme precipitation runoff (flood) is attenuated (reduced) to a manageable level to prevent human or economic loss. Due to the nature of its purpose, a detention basin is categorized as a high hazard structure; thus, the spillway must be designed to pass the probable maximum flood (PMF). Making the design process more challenging, outlet works are usually required to pass some target flow rate established by a local authority (county, city, or town). In many cases, the flow rate is only equivalent to the "25 year" flood. Since a detention basin's primary function is to detain or divert storm flow and reduce downstream flow rates, no gates or valves are allowed on the outlet so that water can never be stored on a long-term basis. Typical retention times in such a basin would be on the order of 24 to 72 hours although some are as long as 5 to 10 days.

- **Tailing:** Although tailings are a mobile material, they are obviously significantly more viscous than water and their physical behavior alters with deposition method and over time. A typical tailings impoundment is lined with high-density polyethylene (HDPE), has a leak detection system and a system of drains beneath the reservoir. Tailings are normally transported as slurry composed of water and tails via pipeline to the reservoir where they are added to the top of previously deposited tails. The water either percolates through the tailings or evaporates, leaving a semi-consolidated mass of tails. Since the inlet is a controlled, the dam is not required to have a spillway, as proper management will not allow the embankment to overtop. A tailings impoundment is designed such that there is enough freeboard to accommodate the probable maximum precipitation storm without overtopping. Most tailings facilities are built in discrete raises or phases on an "as needed" basis. The State Engineer prefers downstream construction for the raises although centerline and upstream raises have been approved as the ability to predict tailings behavior and design methods improve. For an upstream raise to be authorized, the State Engineer must be shown that the tails in the foundation area are sufficiently consolidated, not fully saturated, and suitable for the size of the raise. Liquefaction and slope stability analysis are required, and acceptable factors of safety must be met.

A dam failure within Clark County and its participating jurisdiction(s) could result in significant loss of life and damage to structures, roads, utilities, crops, and livestock. Economic losses could also result from a lowered tax base, lack of utility profits, disruption of commerce and governmental services, and extraordinary public expenditures for food relief and protection.

The National Inventory of Dams indicates 120 total dams in Clark County. Of these dams, the average age is 28 years, and of equal or greater concern, 100 percent are considered high-hazard potential. Given these numbers, the possibility of dam failure and high-velocity flooding clearly exists within the planning area. The following map provides the location of those dams throughout the County.

Figure 33: Clark County, Summary of Dams



Data Source: National Inventory of Dams

The previous Clark County HMP (2018) mentions that most of these structures are flood detention basins that are built to protect residential neighborhoods. The County contains two high-profile dams, Hoover Dam and Davis Dam. Hoover Dam is located about 36 miles southeast of Las Vegas, in the Black Canyon of the Colorado River. The National Park Service describes Hoover Dams as a massive, concrete arch-gravity dam, that is 660 feet thick and wide enough at the crest that traffic on old U.S. 93 coursed right over its top. Some 726 feet in the canyon below, or the equivalent of a 60-story building, the Colorado River lies tamed behind this great concrete wedge, its base as wide as two football fields are long. Hoover Dam stores water that irrigates 2 million acres, not only in the rich farm fields of Southern California's Imperial Valley, but across the state line in Arizona. Hoover Dam generates enough hydroelectric power to serve 1.3 million people each year, provides municipal water for urban centers including Los Angeles, Phoenix, and Tucson, holds back flood waters, provides storage during drought, and takes more than a little credit for the unabashed growth of the desert Southwest. For all that, Hoover Dam is much more; it is an American icon, a monument to the ingenuity of the nation's engineers and the power of its machines. Hoover Dam is the symbol of an era when an urban, industrial America reveled in harnessing its natural resources. According to the United States (U.S.) Bureau of Reclamation, the risk of failure for the Hoover Dam is "very, very low." Below is an aerial image of the Hoover Dam produced by National Geographic.



Davis Dam is located near the town of Laughlin, Nevada. This dam is an earth and rock-filled structure designed to control flash floods and generate hydroelectric power. This energy is used in the Southwest to turn the wheels of industry and pump water from wells to irrigate farmlands and water livestock. Below is an image of the Davis Dam provided by the City of Laughlin, NV.



Further downstream along the Colorado River in Arizona, are the Parker Dam and its reservoir, Lake Havasu. The Parker Dam is a concrete arch structure commonly called the “deepest dam in the world”. The U.S. Bureau of Reclamation mentions that seventy-three percent of the dam's structural height of 320 feet is below the original river bed; only about 85 feet of the dam's structural height is visible (its superstructure rises another 62 feet above the roadway across the top of the dam). Parker Dam has a volume of 380,000 cubic yards of concrete. At its crest, the dam is 856 feet long. Water control is provided by five 50-ft-square gates. Lake Havasu backs up behind the dam for 45 miles and covers more than 20,400 acres (32 square miles). The reservoir's total capacity is 646,200 acre-feet. The Metropolitan Water District`s W. P. Whitsett Intake Pumping Plant for the Colorado River Aqueduct is located on the shore of Lake Havasu about two miles upstream from the dam. The aqueduct begins at the intake pumping plant and extends 242 miles to its terminus at Lake Mathews near Riverside, California. About half of the power generated at Parker Dam is reserved by MWD to pump Colorado River water along the Colorado River Aqueduct. The remaining power is marketed to users in California, Nevada, and Arizona by the Western Area Power Administration. By contract, the use of active storage in Lake Havasu to generate power is limited to the elevation between 440 to 450 feet.

In addition to these high-profile dams, numerous detention basins are scattered throughout Clark County to divert and contain seasonal flood waters. Mill ponds that serve to store large quantities of water from mining operations are also of significant concern. Breach of these structures could also present a threat to lives and property throughout the County.

The National Inventory of Dams (NID) database contains information on approximately 91,655 dams in the 50 states and Puerto Rico, with about 30 characteristics reported for each dam, such as: name, owner, river, nearest community, length, height, average storage, max storage, hazard rating, EAP, latitude, and longitude. The FEMA in the Federal Guidelines for Dam Safety classifies dams as Low, Significant, or High Hazard. The following table provides information related to those classifications:

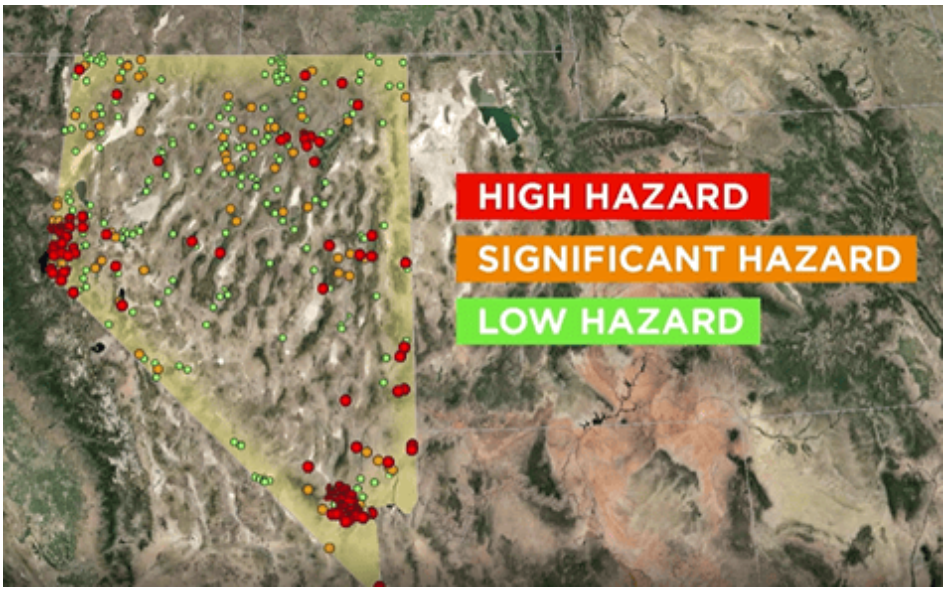
Table 28: Dams Hazards Classifications

Dams Hazard Classifications			
Hazard Potential Classification	**Terminology/Definition**	**Loss of Human Life**	**Economic, Environmental, Lifeline Losses**
Low	Dams assigned the low hazard potential classification are those where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.	None expected	Low and generally limited to owner
Significant	Dams assigned the significant hazard potential classification are those dams where failure or mis-operation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be in areas with population and significant infrastructure.	None expected	Yes
High	Dams assigned the high hazard potential classification are those where failure or mis-operation will probably cause loss of human life.	Probable. One or more expected	Yes (but not necessary for this classification)

Data Source: Association of State Dam Safety Officials and FEMA Federal Guidelines for Dam Safety (2004)

The Nevada Dams and Dam Safety program, which the State of Nevada Division of Water Resources (NDWR), regulates, aims to avoid dam failure and thus prevent loss of life and destruction of property. It is responsible for the careful review of new dam applications, on-site inspection of the dams being built, review of as-built drawings and QA/QC reports, and finally, through periodic visual inspections of the structures themselves. The following map shows the locations of the low, significant, and high hazard classified dams within the State overseen as part of the Dam Safety program.

Figure 34: Map of Dam Classifications in the State of Nevada



Data Source: State of Nevada Dam Safety Video

According to the Nevada Division of Water Resources (NDWR), there are 67 high-hazard structures in Clark County. The previous Clark County HMP (2018) states that a high-hazard designation does not reflect a dam's condition, but rather its potential for destruction in the event of an actual failure. As for February 2017, NDWR stated that approximately 90 percent of the high-hazard dams in Nevada are in satisfactory condition, the highest rating state inspectors give (https://www.reviewjournal.com/local/local-nevada/nevada-california-incidents-highlight-vulnerability-of-nevadas-650-plus-dams/).

The following table provide a summary of the dams within the County and its participating jurisdictions, and their classifications as documented by the Nevada Dam Database.

Table 29: Summary of Dams, Clark County, NV, as of January 25, 2023

Summary of Dams – High Hazard, Clark County, NV						
National ID	**State ID**	**Name**	**Stream**	**Legal Desc**	**Owner**	**High Hazard (H)**
NV10910	J-729	BLUE DIAMOND BUSINESS CENTER DETENTION BASIN DAM #1	Blue Diamond Wash	216 S18 E64 20CC	BLUE DIAMOND BUSINESS CENTER	H
NV10928	J-744	SKYE CANYON DETENTION BASIN 2 DAM		222 S13 E71 21	CENTURY COMMUNITIES	H
NV10895	J-728	SKYE CANYON DETENTION BASIN 1 DAM	N/A	212 S19 E59 12B	CENTURY COMMUNITIES	H
NV10161	J-360	HEMENWAY VALLEY FLOOD CONTROL DAM	HEMENWAY WASH	215 S23 E64 04AB	CITY OF BOULDER CITY	H
NV10583	J-536	AARON WAY DETENTION BASIN DAM	HEMENWAY WASH-TR	215 S22 E64 33CA	CITY OF BOULDER CITY	H
NV10619	J-564	NORTH RAILROAD DETENTION BASIN DAM	UNNAMED WASH	167 S23 E64 07DB	CITY OF BOULDER CITY	H
NV10647	J-575	BOOTLEG DETENTION BASIN DAM	HEMENWAY WASH-TR	215 S23 E64 06D	CITY OF BOULDER CITY	H
NV10930	J-360	TRAIL HEAD DETENTION BASIN DAM	N/A	215 S23 E64 5DA	CITY OF BOULDER CITY PUBLIC WORKS	H
NV10911	J-730	PITTMAN NORTH DETENTION BASIN DAM	PITTMAN WASH	212 S23 E310 09	CITY OF HENDERSON	H
NV10648	J-576	SOUTH EDGE EAST 1 HEADWORKS DETENTION BASIN DAM	PITTMAN WASH-TR	212 S23 E61 25B	CITY OF HENDERSON	H
NV10618	XJ-563	CORNERSTONE DETENTION DAM	LAS VEGAS WASH-TR	212 S22 E61 16AB	CITY OF HENDERSON	H
NV10670	J-599	NORTHEAST C-1 DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S22 E63 10BA	CITY OF HENDERSON	H
NV10426	J-402	MISSION HILLS DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S22 E63 33C	CITY OF HENDERSON	H
NV10518	J-681	EQUESTRIAN DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S22 E63 22CC	CITY OF HENDERSON	H
NV10528	J-498	EAST C-1 DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S22 E63 23A	CITY OF HENDERSON	H
NV10530	J-497	PITTMAN PARK DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S22 E62 09D	CITY OF HENDERSON	H
NV10543	J-504	PITTMAN ANTHEM DETENTION BASIN DAM	PITTMAN WASH-TR	212 S23 E62 20B	CITY OF LAS VEGAS	H

Summary of Dams – High Hazard, Clark County, NV						
National ID	State ID	Name	Stream	Legal Desc	Owner	High Hazard (H)
NV10550	J-516	BLACK MOUNTAIN DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S22 E62 36D	CITY OF LAS VEGAS	H
NV10575	J-531	PIONEER DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S22 E62 11DC	CITY OF LAS VEGAS	H
NV10577	J-533	MCCULLOUGH HILLS PARK DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S23 E62 06AB	CITY OF LAS VEGAS	H
NV10419	J-677	ANGEL PARK SOUTH DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S20 E60 32A	CITY OF LAS VEGAS	H
NV10461	J-433	LONE MOUNTAIN DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S20 E60 07BA	CITY OF LAS VEGAS	H
NV10416	J-396	KYLE CANYON DETENTION DAM	LAS VEGAS WASH-TR	212 S19 E59 13	CITY OF LAS VEGAS	H
NV10151	J-375	GOWAN DETENTION NORTH DAM	LAS VEGAS WASH-TR	212 S20 E60 10CD	CITY OF LAS VEGAS	H
NV10156	J-388	OAKEY DETENTION DAM	LAS VEGAS WASH-TR	212 S21 E60 02CA	CITY OF LAS VEGAS	H
NV00224	J-677	ANGEL PARK NORTH DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S20 E60 29	CITY OF LAS VEGAS	H
NV00233	J-540	MEADOWS DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S20 E61 32BB	CITY OF LAS VEGAS	H
NV10604	J-550	FORT APACHE DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S19 E60 19DA	CITY OF LAS VEGAS	H
NV10652	J-577	ANN ROAD DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S19 E59 26DB	CITY OF LAS VEGAS	H
NV10634	J-375	GOWAN DETENTION SOUTH DAM	LAS VEGAS WASH-TR	212 S20 E60 15BA	CITY OF LAS VEGAS	H
NV10635	J-385	MEADOWS NORTH BASIN DAM	LAS VEGAS WASH-TR	212 S20 E60 15BD	CITY OF LAS VEGAS	H
NV10639	J-584	RANCHO DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S19 E60 28DA	CITY OF LAS VEGAS	H
NV10784	J-632	FLOYD LAMB PARK SOUTH ENHANCEMENT EMBANKMENT DAM	NONE	212 S19 E60 03	CITY OF LAS VEGAS	H
NV10887	J-711	LONE MOUNTAIN-BELTWAY DETENTION BASIN DAM	GOWAN WATERSHED	212 S20 E59	CITY OF LAS VEGAS	H
NV10935	J-632	FLOYD LAMB PARK NORTH ENHANCEMENT EMBANKMENT DAM	NONE	212 S19 E60 03	CITY OF LAS VEGAS	H
NV10656	J-582	ABBOTT WASH DETENTION BASIN DAM	ABBOT WASH	222 S13 E70 08C	CITY OF MESQUITE	H
NV10657	J-583	PULSIPHER WASH DETENTION BASIN DAM	PULSIPHER WASH	222 S13 E70 13A	CITY OF MESQUITE	H
NV10160	J-367	TOWN WASH DAM	TOWN WASH	222 S13 E71 09BD	CITY OF MESQUITE	H
NV10150	J-356	CAREY/LAKE MEAD DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S20 E61 20BA	CITY OF NORTH LAS VEGAS	H
NV10163	J-364	LAS VEGAS WASH UPPER DETENTION	LAS VEGAS WASH	212 S19 E60 01B	CITY OF NORTH LAS VEGAS	H

Summary of Dams – High Hazard, Clark County, NV						
National ID	State ID	Name	Stream	Legal Desc	Owner	High Hazard (H)
		BASIN DAM				
NV10420	J-208	NORTH LAS VEGAS DETENTION BASIN DAM	LAS VEGAS WASH	212 S19 E61 14	CITY OF NORTH LAS VEGAS	H
NV10511	J-473	LAS VEGAS WASH LOWER DETENTION BASIN DAM	LAS VEGAS WASH	212 S19 E61 33AC	CITY OF NORTH LAS VEGAS	H
NV10584	J-538	CHEYENNE PEAKING DETENTION BASIN DAM	LAS VEGAS WASH-TR	212 S20 E61 12CC	CITY OF NORTH LAS VEGAS	H
NV10881	XJ-318	NLV AIR TERMINAL DETENTION BASIN 1	LAS VEGAS WASH-OS	212 S20 E61 17BC	CLARK COUNTY DEPARTMENT OF AVIATION	H
NV10145	J-406	MCCARRAN AIRFIELD DETENTION DAM	LAS VEGAS WASH-TR	212 S21 E61 35DD	CLARK COUNTY DEPARTMENT OF AVIATION	H
NV10862	J-708	F-3 DETENTION BASIN DAM (SUMMERLIN V16A BLM DETENTION BASIN	FLAMINGO TROPICANA WASH	212 S22 E59 01 DB	CLARK COUNTY PUBLIC WORKS	H
NV10789	J-631	FLAMINGO WASH LOWER DETENTION BASIN DAM	FLAMINGO WASH	212 S21 E60 24D	CLARK COUNTY PUBLIC WORKS	H
	JS-173	Blue Diamond Turning Basin	Blue Diamond Wash	212 S22 E60 17A	CLARK COUNTY PUBLIC WORKS	H
NV10947	J-760	FAIRGROUNDS-WHIPPLE DETENTION BASIN DAM	N/A	220 S15 E67 23AD	CLARK COUNTY PUBLIC WORKS	H
	JS-305	BRIDGE CANYON DEBRIS BASIN		213 32S 66E L3	CLARK COUNTY PUBLIC WORKS	H
NV10956	J-772	JIM MCGAUGHEY DETENTION BASIN DAM		212 S20 E62 26BA	CLARK COUNTY PUBLIC WORKS	H
NV10959	J-776	TROPICANA AND UNIVERSITY CENTER DETENTION BASIN DAM	FLAMINGO WASH	T21S R61E SENW Section 27	CLARK COUNTY PUBLIC WORKS	H
NV10934	J-474	SILVERADO RANCH DETENTION BASIN DAM		212 S22 E61 30aa	CLARK COUNTY PUBLIC WORKS	H
NV10526	J-488	WINDMILL WASH DETENTION BASIN DAM	VIRGIN RIVER-TR	222 S13 E70 36BA	CLARK COUNTY PUBLIC WORKS	H
NV10558	J-514	DESERT INN DETENTION LOWER DETENTION DAM	LAS VEGAS WASH-TR	212 S22 E61 21DA	CLARK COUNTY PUBLIC WORKS	H
NV10429	J-404	VAN BUSKIRK CHANNEL DETENTION BASIN - SITE A DAM	LAS VEGAS WASH-TR	212 S21 E61 23DD	CLARK COUNTY PUBLIC WORKS	H
NV10429	J-426	HIKO SPRINGS DETENTION BASIN DAM	HIKO SPRINGS WASH	213 S32 E66 16C	CLARK COUNTY PUBLIC WORKS	H
NV10447	J-422	CONFLUENCE DETENTION BASIN DAM	RANGE WASH & SLOAN CHANNEL	212 S20 E62 10DC	CLARK COUNTY PUBLIC WORKS	H
NV10456	J-319	FLAMINGO WASH UPPER DETENTION	FLAMINGO	212 S21 E60	CLARK COUNTY	H

Summary of Dams – High Hazard, Clark County, NV						
National ID	State ID	Name	Stream	Legal Desc	Owner	High Hazard (H)
		BASIN DAM	WASH	28CD	PUBLIC WORKS	
NV10162	J-256	RED ROCK DETENTION DAM	RED ROCK WASH	212 S21 E59 03D	CLARK COUNTY PUBLIC WORKS	H
NV10640	J-587	THE LAKES DETENTION BASIN DAM	DUCK CREEK	212 S22 E60 26CB	CLARK COUNTY PUBLIC WORKS	H
NV10658	J-552	DUCK CREEK RAILROAD DETENTION BASIN DAM	DUCK CREEK-TR	212 S22 E59 25	CLARK COUNTY PUBLIC WORKS	H
NV10606	J-520	UPPER DUCK CREEK INTERIM DETENTION BASIN DAM	DUCK CREEK-TR	212 S22 E59 25	CLARK COUNTY PUBLIC WORKS	H
NV10562	J-561	TROPICANA DETENTION BASIN DAM	TROPICANA WASH	212 S21 E61 31BD	CLARK COUNTY PUBLIC WORKS	H
NV10617	J-646	INDIAN SPRINGS DETENTION BASIN DAM	UNNAMED WASH	161 S16 E56 08C	CLARK COUNTY PUBLIC WORKS	H
NV10621	J-645	R-4 DETENTION DAM	LAS VEGAS WASH-TR	212 S21 E59 22AA	CLARK COUNTY PUBLIC WORKS	H
NV10622	J-567	BLUE DIAMOND UPPER DETENTION DAM	LAS VEGAS WASH-TR	212 S22 E59 13DA	CLARK COUNTY PUBLIC WORKS	H
NV10625	J-567	F-4 DETENTION BASIN DAM	TROPICANA WASH-TR	212 S22 E60 07D	CLARK COUNTY PUBLIC WORKS	H
NV10768	J-641	LOWER BLUE DIAMOND DETENTION DAM	DUCK CREEK-TR	212 S22 E60 12D	CLARK COUNTY PUBLIC WORKS	H
NV10770	J-643	F-1 DAM DETENTION BASIN	FLAMINGO WASH	212 S21 E59 26A	CLARK COUNTY PUBLIC WORKS	H
NV10771	J-644	F-2 DAM DETENTION BASIN	FLAMINGO WASH-TR	212 S21 E59 36B	CLARK COUNTY PUBLIC WORKS	H
NV10731	J-612	TROPICANA NORTH BRANCH DETENTION BASIN DAM	TROPICANA WASH	212 S21 E61 30AC	CLARK COUNTY PUBLIC WORKS	H
NV10157	XJ-206	MONTE CARLO DAM NO 2	DRY WASH	213 S32 E66 29A	COLORADO ENVIRONMENT	H
NV10158	XJ-207	MONTE CARLO DAM NO 3	DRY WASH	213 S32 E66 20DD	COLORADO ENVIRONMENT	H
NV10672	J-734	COYOTE SPRINGS DETENTION BASIN 1-2 DAM	PAHRANAGAT WASH	210 S13 E63 17	COYOTE SPRINGS NEVADA, LLC	H
NV10952	J-766	GRAND PARK DETENTION BASIN DAM	GOWAN	SE, NW, SEC 22, T. 20, R 59 E	HOWARD HUGHES CORPORATION	H
NV10499	J-770	SUMMERLIN DETENTION BASIN #5 DAM	RED ROCK WASH-TR	212 S20 E59 28D	HOWARD HUGHES CORPORATION	H
NV10547	XJ-510	SUMMERLIN TEMPORARY DETENTION BASIN	FLAMINGO WASH-TR	212 S21 E59 24B	HOWARD HUGHES CORPORATION	H
NV10674	XJ-602	KYLE CANYON GATEWAY DETENTION BASIN 1	LAS VEGAS WASH-TR	212 S19 E59 12	KYLE ACQUISITION GROUP	H

Summary of Dams – High Hazard, Clark County, NV						
National ID	State ID	Name	Stream	Legal Desc	Owner	High Hazard (H)
NV10675	XJ-605	KYLE CANYON GATEWAY DETENTION BASIN 2	LAS VEGAS WASH-TR	212 S19 E59 12	KYLE ACQUISITION GROUP	H
NV10676	XJ-605	KYLE CANYON GATEWAY DETENTION BASIN 3	LAS VEGAS WASH-TR	212 S19 E59 12	KYLE ACQUISITION GROUP	H
NV10908	J-375	GOWAN DETENTION MIDDLE DAM	LAS VEGAS WASH	212 S20 E60 15B	LAS VEGAS PUBLIC WORKS	H
NV00113	J-079	BOWMAN DAM	MUDDY RIVER-OS	220 S15 E67 22A	MUDDY RIVER IRRIGATION DISTRICT	H
NV10159	J-144	SPRING MOUNTAIN RANCH DAM	BLUE DIAMOND WASH-TR	212 S22 E58 03AB	NEVADA DCNR PARKS	H
NV10797	J-665		LAS VEGAS WASH-OS	212 S22 E62 11A	NV ENVIRONMENTAL RESPONSE TRUST	H
NV10671	J-734	COYOTE SPRINGS DETENTION BASIN 1 DAM	PAHRANAGAT WASH-TR	210 S13 E63 20	PARDEE HOMES OF NEVADA	H
NV10672	J-734	COYOTE SPRINGS DETENTION BASIN 2 DAM	PAHRANAGAT WASH-TR	210 S13 E63 17	PARDEE HOMES OF NEVADA	H
NV00157	XNV00157	MOHAVE GENERATION EVAPORATION POND NO 2	COLORADO RIVER-OS	213 S32 E66 23A	SOUTHERN CALIFORNIA EDISON	H
NV00158	XNV00158	MOHAVE GENERATION EVAPORATION POND NO 3	COLORADO RIVER-OS	213 S32 E66 23Aa	SOUTHERN CALIFORNIA EDISON	H
NV10601	JS-246	BOSTICK WEIR 5.4 DAM	LAS VEGAS WASH-TR	212 S22 E63 22A	SOUTHERN NEVADA WATER AUTHORITY	H
NV10859	J-705	GW-1 POND DAM	N/A	212 S22 E62	TITANIUM METALS CORPORATIONS	H
NV10122		HOOVER DAM	COLORADO RIVER	215 S22 E65 29AD	USDI BUREAU OF RECLAMATION-LOS ANGELES DISTRICT	H

Table 30: Summary of Dams – Significant and Low Hazard, Clark County, NV

Summary of Dams – Significant and Low Hazard, Clark County, NV						
National ID	**State ID**	**Name**	**Stream**	**Legal Desc**	**Owner**	**Hazard Significant (S) and Low (L)**
NV10927	J-743	SLOAN QUARRY WATER STORAGE POND DAM	N/A	212 23S 60E 13	Aggregate Industries SWR, INC.	S
NV10418	J-398	WEST RANGE WASH DIVERSION DIKE DAM	WEST RANGE WASH	212 S19 E61 12	CITY OF NORTH LAS VEGAS	S
NV10948	J-761	SPEEDWAY DETENTION BASIN #2 DAM	OFF-STREAM	212 019S 062E 26	CITY OF NORTH LAS VEGAS	S
NV10630	XJ-565	RUSSELL ROAD TEMPORARY DETENTION BASIN	LAS VEGAS WASH-TR	212 S21 E61 26CD	CLARK COUNTY DEPARTMENT OF AVIATION	S
NV00166	XNV00166	MILL 2 POND D	MUDDY RIVER-OS	220 S16 E67 11CD	EAGLE VIEW CONTRACTORS;U.S.D.I. BUREAU OF RECLAMATION BC	S
NV00167		MILL 2 POND E DAM	MUDDY RIVER-OS	220 S16 E67 11CB	EAGLE VIEW CONTRACTORS;U.S.D.I. BUREAU OF RECLAMATION BC	S
NV00140	XNV00140	MILL 2 POND A	MUDDY RIVER-OS	220 S16 E67 11DB	EAGLE VIEW CONTRACTORS;U.S.D.I. BUREAU OF RECLAMATION BC	S
NV00164	XNV00164	MILL 2 POND B	MUDDY RIVER-OS	220 S16 E67 11DB	EAGLE VIEW CONTRACTORS;U.S.D.I. BUREAU OF RECLAMATION BC	S

Data Source: State of Nevada Division of Water Resource, Nevada Dam Database

Previous Occurrence – Infrastructure, Dam Failure

The State of Nevada Enhanced Hazard Mitigation Plan (2018) mentions that in Nevada's history, there have not been any incidents resulting in dam failure emergency or disaster declarations which will include no declarations for Clark County. The previous Clark County MJHMP (2018) states that though there were no dam failure declarations in the County, there are have been the following incidents on record:

- In 2005, rainfall runoff overtopped the Schroeder Dam in Beaver Dam State Park located in eastern Nevada by one foot. The top surface of the dam was not damaged, but the downstream face of the dam was severely eroded. Erosion in several of the gullies may have reached as far as the core material. The dam was an earth-fill dam with a 35-foot concrete spillway on the east side. Prior to this event the dam was considered a low-hazard dam.
- In 2006, failure of the Rogers Dam occurred as a result of very high flows in the Humboldt River. Concrete control sections of the dam were undermined making it useless. The concrete portion of the dam was completely undercut by four to five feet allowing the river to flow unimpeded underneath the dam. No injuries or property damage was reported. The main result of the Rogers Dam failure was that the reservoir behind the dam has been

diverted into a canal which provides water to 60 percent of the ranches in the valley, representing about 20,000 acres of land.

- On September 9, 2014, three dams on the Moapa Indian Reservation and three dams off the reservation breached. The dam failures contributed to major damages to the Moapa Band of Paiutes reservation lands and infrastructure.

Many dams in Nevada suffer from poor design or encroachment of development into the potential floodplain below the dam. As a result, many dams fail to pass an Inflow Design Flood (IDF) inspection commensurate with their hazard potential and size. There is no record of dams located in or affecting Clark County that have this deficiency.

Probability of Future Events, Infrastructure, Dam Failure

The previous Clark County MJHMP (2018) mentions Dam failure can result from numerous natural or human activities. Earthquakes, internal erosion, improper siting, structural and design flaws, or rising floodwaters can all result in the collapse or failure of a dam. A dam failure may also be a result of the age of the structure or inadequate spillway capacity. While it has been mentioned that a number of dams have failed to pass an IDF inspection, the State has taken an active role in remediating the deficient dams. Calculated Priority Risk Index (CPRI) conducted for Clark County and its participating jurisdictions, there is a **high probability (rank score of 3.0-3.9) of infrastructure, dam failure** for the planning area. The following table provides CPRI Rating on Infrastructure, Dam Failure for Clark County and its participating jurisdictions.

Table 31: Clark County and Participating Jurisdiction CPRI Rating for Infrastructure, Dam Failure

Clark County and Participating Jurisdiction CPRI Rating for Infrastructure, Dam Failure							
Hazard: Infrastructure, Dam Failure Index Rating (R) Weighted Score (WS)		Category and Weight Probability 45%	Magnitude/ Severity 30%	Warning Time 15%	Duration 10%	CPRI Score	Risk Level
Clark County (including Incorporated and Unincorporated Areas	R	2	4	4	4	3.1	H
	WS	0.9	1.2	0.6	0.4		
Boulder City	R	1	1	1	1	1	L
	WS	0.45	0.3	0.15	0.1		
Henderson	R	2	2	2	3	2.10	M
	WS	.9	.6	.3	.3		
Las Vegas	R	2	3	2	3	2.4	M
	WS	0.9	0.9	0.3	0.3		
Mesquite	R	2	4	4	4	3.1	H
	WS	0.9	1.2	0.6	0.4		
North Las Vegas	R	1	4	4	4	2.65	M
	WS	0.45	1.2	0.6	0.4		
Special District: Clark	R	1	1	3	1	1.3	L

Clark County and Participating Jurisdiction CPRI Rating for Infrastructure, Dam Failure							
Hazard: Infrastructure, Dam Failure		**Category and Weight**				**CPRI Score**	**Risk Level**
Index Rating (R) Weighted Score (WS)		**Probability 45%**	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**		
County Water Reclamation District	WS	0.45	0.30	0.45	0.10		
Special District: Clark County School District	R	1	2	2	2	1.55	L
	WS	0.45	0.6	0.3	0.2		
Special District: Las Vegas Valley Water District/SWNA	R	1	2	2	2	1.55	L
	WS	0.45	0.60	0.30	0.20		
Tribal Nation: Las Vegas Valley Paiute	R	1	1	1	1	1	L
	WS	0.45	0.3	0.15	0.1		
Tribal Nation: Moapa Band of Paiutes	R	4	3	4	3	3.6	H
	WS	1.8	0.9	0.6	0.3		

Note: *Though the Tribe participated in the planning process, the Las Vegas Paiute Tribe was unable to provide an update on accurate CPRI Rating for the infrastructure, dam failure hazard. However, space has been made available in the above table for the Las Vegas Paiutes to provide input for this plan update (2023) at a later date.*

Calculating future probability is not the only predictor of future occurrences. In the last five years, Clark County and its participating jurisdictions (which included the Clark County Unincorporated area and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) do not have any documented cases of dam failure incidences. Though the County has experience occurrences that were listed in its HMP update (2018), the likelihood of a infrastructure, dam failure event happening in the planning area is considered **occasional.**

Vulnerability and Impact

Clark County and its participating jurisdictions (which included the Clark County Unincorporated area and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) have recorded no incident of dam failure since the last mitigation plan update (2018). Still, a dam failure could have a tremendous impact on the planning area, including the environment, much like a flood event.

Vulerability of Facilities

Facilities during a dam failure will have a similar vulnerability to a flood event in the planning area. As mentioned in the flooding section of this plan update, critical facilities and infrastructure can be rendered unusable or permanently destroyed, producing a significant impact on a jurisdiction's ability to conduct day-to-day operations. Also, like a flood, a dam failure can cause considerable damage to residential and/or commercial structures that can irrevocably damage a community and its economy by creating economic hardship.

Clark County and its participating jurisdictions' critical structures are valued at $395,335,458.

Vulerability of Population

The greatest vulnerability of a jurisdiction's population is the inability to predict a dam failure due to it being uncontrollable by humans. Clark County and its participating jurisdictions (which included the Clark County Unincorporated area and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) have a total population of 2,265,461 in 840,343 housing units that would be at risk for a dam failure in the planning area.

Impact of Climate Change

Climate change is not likely to have a primary impact on dam failure. Potential increases in the intensity of storm events may result in greater runoff and raise the likelihood of a dam being overtopped.

Critical Facilities and Infrastructure

All critical facilities and infrastructure within the planning area are equally at risk of a dam failure incident. This is especially true for homes, businesses, and critical facilities that in close proximity to a dam. A complete list of critical facilities and infrastructure can be found in Appendix D – Critical Facilities & Infrastructure.

Land Use and Development

Dam failure places downstream populations at risk. In addition to the flow of water released from the reservoir, the inundation stream picks up large debris which results in a scouring effect that compounds damage. The flood protection afforded by dams in the County has encouraged development of lands immediately downstream of the structures. However, prohibition of development in these areas is not feasible. Instead, public awareness measures such as notices on final plats and public education on dam safety are mitigation efforts employed by local county and city/town officials.

Unique and Varied Risk

As dams continue to age, there is an increased potential of failure due to undesirable woody vegetation on the embankment, deteriorating concrete, and other structural factors that can cause issues over time. A failure could cause widespread flooding, putting the entire planning area at risk, particularly those living near dam. Fortunately, with the Nevada Dams and Dam Safety program, which the State of Nevada Division of Water Resources (NDWR), regulates provides monitoring and compliance of the dams within the Clark County, the probability of failure is unlikely.

Table 32: Unique and Varied Risk – Infrastructure, Dam Failure

Unique and Varied Risk – Infrastructure, Dam Failure	
Jurisdiction	**Risk Characteristics**
Clark County	Low risk with continued inspection and maintenance on dams within the planning area

Repetitive Loss Structure

Not applicable.

HAZUS® Models

Not applicable.

(D) Drought

Hazard Description

Drought originates from a deficiency of precipitation over an extended period, usually one or more seasons. Drought can result in a water shortage for some activity, group, or environmental sector. Drought is a complex natural hazard, which is reflected in the following four definitions commonly used to describe it:

- **Agricultural** – drought is defined principally in terms of naturally occurring soil moisture deficiencies relative to water demands of plant life, usually arid crops.
- **Hydrological** – drought is related to the effects of precipitation shortfalls on stream flows and reservoir, lake, and groundwater levels.
- **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.
- **Socioeconomic** – drought associates the supply and demand of economic goods or services with elements of meteorological, hydrologic, and agricultural drought. Socioeconomic drought occurs when the demand for water exceeds the supply as a result of weather-related supply shortfall. It may also be called a water management drought.

Figure 35: Drought Conditions in Las Vegas



Photo Source: Las Vegas Review-Journal

Periods of drought can have a major impact and consequences on a region's environment, agriculture, health, and economy. Although the climate is a primary contributor to hydrological drought, other factors such as changes in land use (e.g., deforestation), land degradation, and dam construction all affect the basin's hydrological characteristics. Since hydrologic systems interconnect regions, the impact of meteorological drought may extend well beyond the borders of the precipitation-deficient area. The effects vary depending on vulnerability and regional characteristics. Changes in land use upstream may alter hydrologic characteristics such as infiltration and runoff rates, resulting in more variable streamflow and a higher incidence of hydrologic drought downstream. These incidences can reduce water quality through a decreased ability for natural rivers and streams to dilute pollutants and decrease contamination. The most common effects are diminished crop yields, increased erosion, dust storms, ecosystem damage, reduced ability to produce electricity that limits water flow through hydroelectric dams, the shortage of water for industrial production, and increased risk of wildfires.

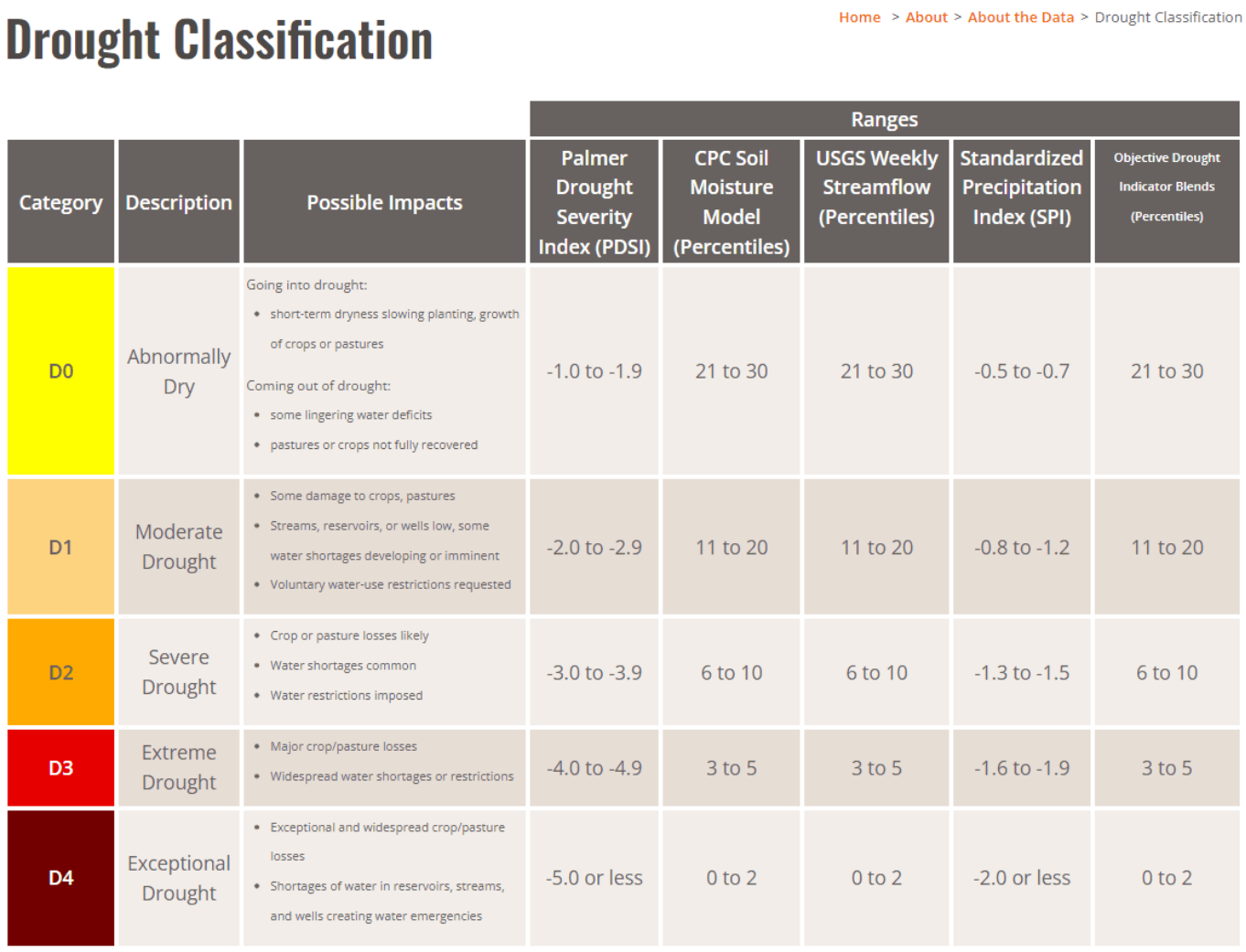
Droughts are regularly monitored by multiple federal agencies using a number of different indices and classifications. Among them are the U.S. Drought Monitor, the Palmer Drought Index, and the Standardized Precipitation Index, as described next. The U.S. Drought Monitor summarizes drought conditions across the U.S. and Puerto Rico and is developed and maintained by the National Drought Mitigation Center (www.drought.unl.edu). Often described as a mix of science and art, the map is updated weekly by combining a variety of drought databases and indicators and local expert input into a single composite drought indicator.

The Palmer Drought Severity Index (PDSI) is the primary indicator of drought for the U.S Drought Monitor. PDSI is a commonly used index that measures the severity of drought for agriculture and water resource management. In other words, It uses temperature and precipitation data to circulate water supply and demand, incorporates soil moisture, and is considered most effective for unirrigated cropland. It primarily reflects long-term drought and has been used extensively to initiate drought relief. However, the PDSI needs to be considered consistent enough to characterize the risk of drought nationwide (FEMA, 1997) and is not well suited to the dry, mountainous areas in the western U.S.

The Standard Participation Index (SPI) is also used by The National Drought Mitigation Center (NDMC) to identify emerging drought months sooner than the PDSI. It is computed on various time scales to monitor moisture supply conditions. The SPI is the number of standard deviations in the precipitation value that would deviate from the long-term mean.

The table below provides is the drought severity classification table by The U.S. Drought Monitor. This table shows the ranges, like PDSI and SPI, for each indicator for each dryness level.

Figure 36: Drought Classification Chart



Home > About > About the Data > Drought Classification

Drought Classification

			Ranges				
Category	Description	Possible Impacts	Palmer Drought Severity Index (PDSI)	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)	Objective Drought Indicator Blends (Percentiles)
D0	Abnormally Dry	Going into drought: • short-term dryness slowing planting, growth of crops or pastures Coming out of drought: • some lingering water deficits • pastures or crops not fully recovered	-1.0 to -1.9	21 to 30	21 to 30	-0.5 to -0.7	21 to 30
D1	Moderate Drought	• Some damage to crops, pastures • Streams, reservoirs, or wells low, some water shortages developing or imminent • Voluntary water-use restrictions requested	-2.0 to -2.9	11 to 20	11 to 20	-0.8 to -1.2	11 to 20
D2	Severe Drought	• Crop or pasture losses likely • Water shortages common • Water restrictions imposed	-3.0 to -3.9	6 to 10	6 to 10	-1.3 to -1.5	6 to 10
D3	Extreme Drought	• Major crop/pasture losses • Widespread water shortages or restrictions	-4.0 to -4.9	3 to 5	3 to 5	-1.6 to -1.9	3 to 5
D4	Exceptional Drought	• Exceptional and widespread crop/pasture losses • Shortages of water in reservoirs, streams, and wells creating water emergencies	-5.0 or less	0 to 2	0 to 2	-2.0 or less	0 to 2

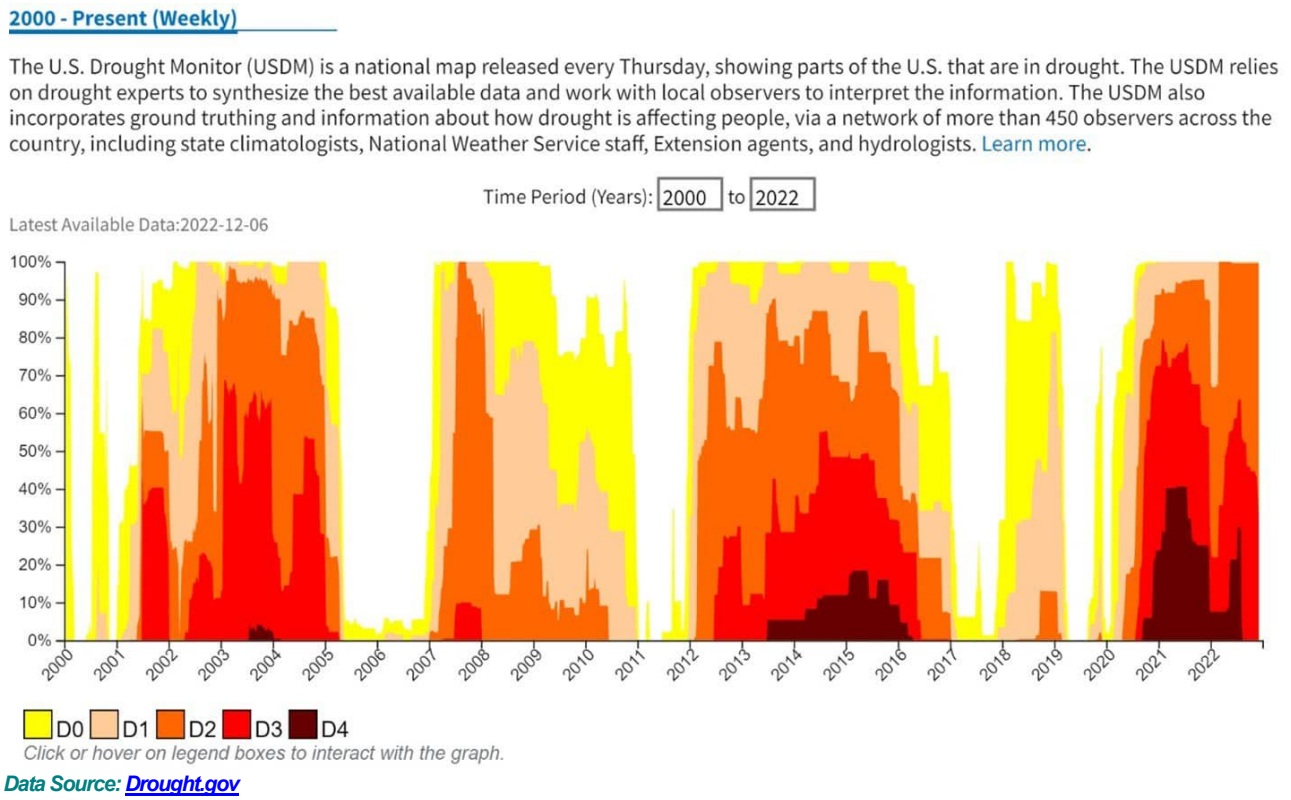
Data Source: Drought Monitor

Drought is a persistent problem across the nation, as evidenced by its widespread presence in 2018. Early in the year (February 2018), the U.S. Drought Monitor reported that 38.4% of the continental U.S. was in drought. That was the highest percentage since the 40% recorded in May 2014. Additionally, consider there is technically no longer a “fire season” for the State of California, as it has become a tinderbox for drought-related wildfires year-round. Other states across the country are, unfortunately, following suit. The State of Nevada is no stranger to drought. As mentioned in the 2018 State of Nevada Enhanced Mitigation plan, drought has been a major cause of economic and environmental damage throughout the history of the State of Nevada.

Location and Extent

Per the U.S. Drought Monitor, since 2000, the most prolonged drought duration in the State of Nevada lasted 269 weeks beginning on December 27, 2011, and ending on February 14, 2017.

Figure 37: Drought in Nevada from 2000-2002

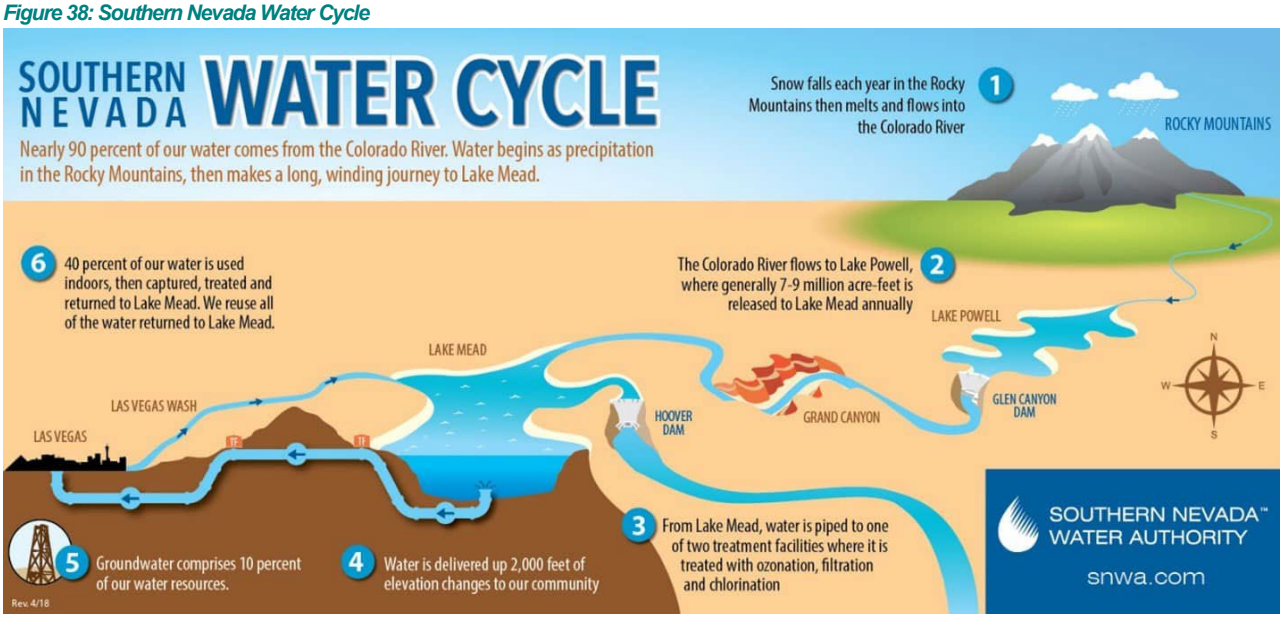


Data Source: Drought.gov

The most intense drought period occurred on July 7, 2021, which affected 40.63% of Nevada's land. In the year 2000, NOAA/NCEI recorded 0 events of drought for Clark County; however, the previous 2012 HMP states that from 2002 through the beginning of 2010, Nevada, and Clark County, were in a prolonged period of drought. Implications from this drought include an increased risk of wildfires and water shortages as reservoirs drop to their lowest recorded levels.

Drought typically does not have a direct impact on critical facilities and infrastructure. However, possible losses/impacts to them can include the loss of critical functions due to low water supply levels. Severe drought can negatively impact drinking water supplies. Should a public water system be affected, the losses could total into millions if water must be purchased and shipped from other locations. Severe drought could also pose a significant risk to public health if water sources become scarce or, worse, contaminated. This is especially true for those who get their water from private wells. Per the Centers for Disease Control and Prevention (CDC), viruses, such as E. coli and salmonella, as well as protozoa and bacteria, can pollute groundwater and surface water when rainfall decreases. Additionally, acute respiratory and gastrointestinal illnesses are more easily spread from person to person when a perceived or real lack of available water compromises hand washing. As stated in the Clark County's previous MJHMP (2012), nearly 70 percent of Nevada's total water supply is derived from surface water, with 90 percent of water for the Las Vegas region coming from the Colorado River. However, Nevada only receives 1.8 percent of the water drawn from the river. The flows of the Colorado River are dependent on snowmelt and runoff in the Rocky Mountains of the Upper Colorado River Basin. The figure below illustrates the Water Cycle that occurs in Southern Nevada.

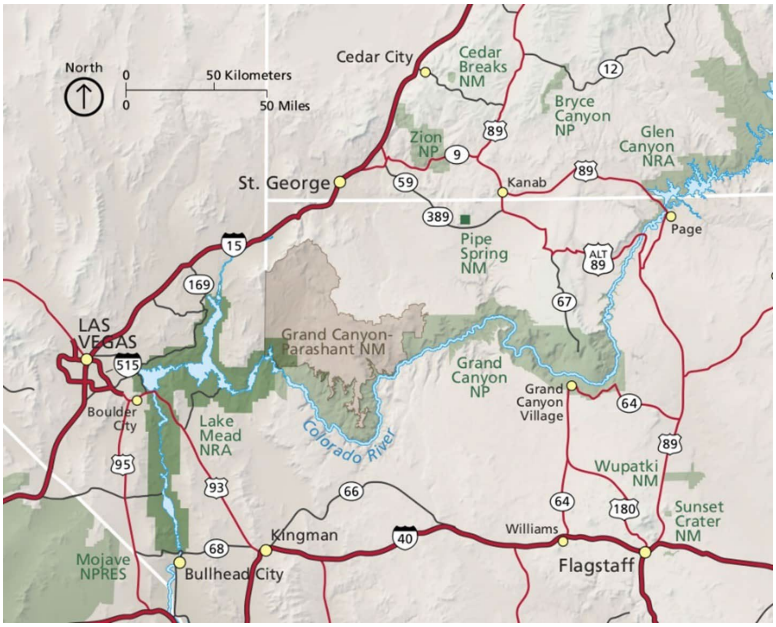
Figure 38: Southern Nevada Water Cycle



Data Source: Southern Nevada Water Authority

Below-average snowpack in the Colorado Rocky Mountains results in below-average runoff to the Colorado River. Lake Mead and Lake Powell are the two primary storage reservoirs in the Colorado River system. The Southern Nevada Water Authority indicates that the Colorado River pools behind the Hoover Dam to create Lake Mead. This lake is the source of 90% of Southern Nevada's water and is under constant scrutiny to ensure the quality of the water (https://www.snwa.com/water-quality/watershed/lake-mead.html). The previous Clark County HMP plan (2012) states that since 1999, the elevation of Lake Mead has declined by more than 75 feet or approximately three water years of allocation for the state of California. Lake Powell is also at historic low levels, with only 40 percent of its water storage available. The last decade saw drought conditions reduce Colorado River system inflows to 69 percent of average, and Lake Mead water storage has declined by more than 50 percent.

Figure 39: Lake Mead (NV) Regional Map

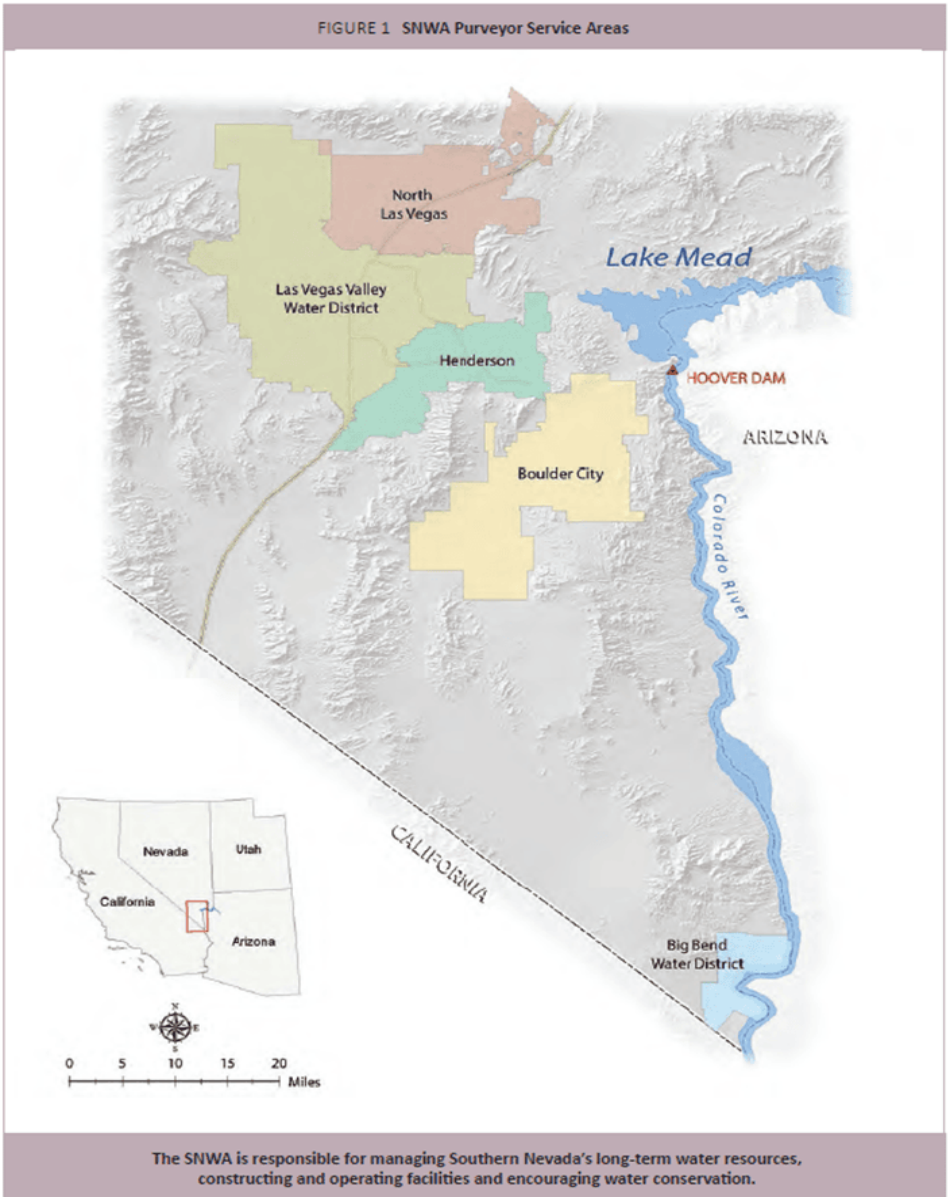


Data Source: National Park Maps

Also, groundwater provides the remainder of the water supply used in Nevada. In Las Vegas, groundwater pumping occurs primarily in the summer months as a supplement to meet peak water

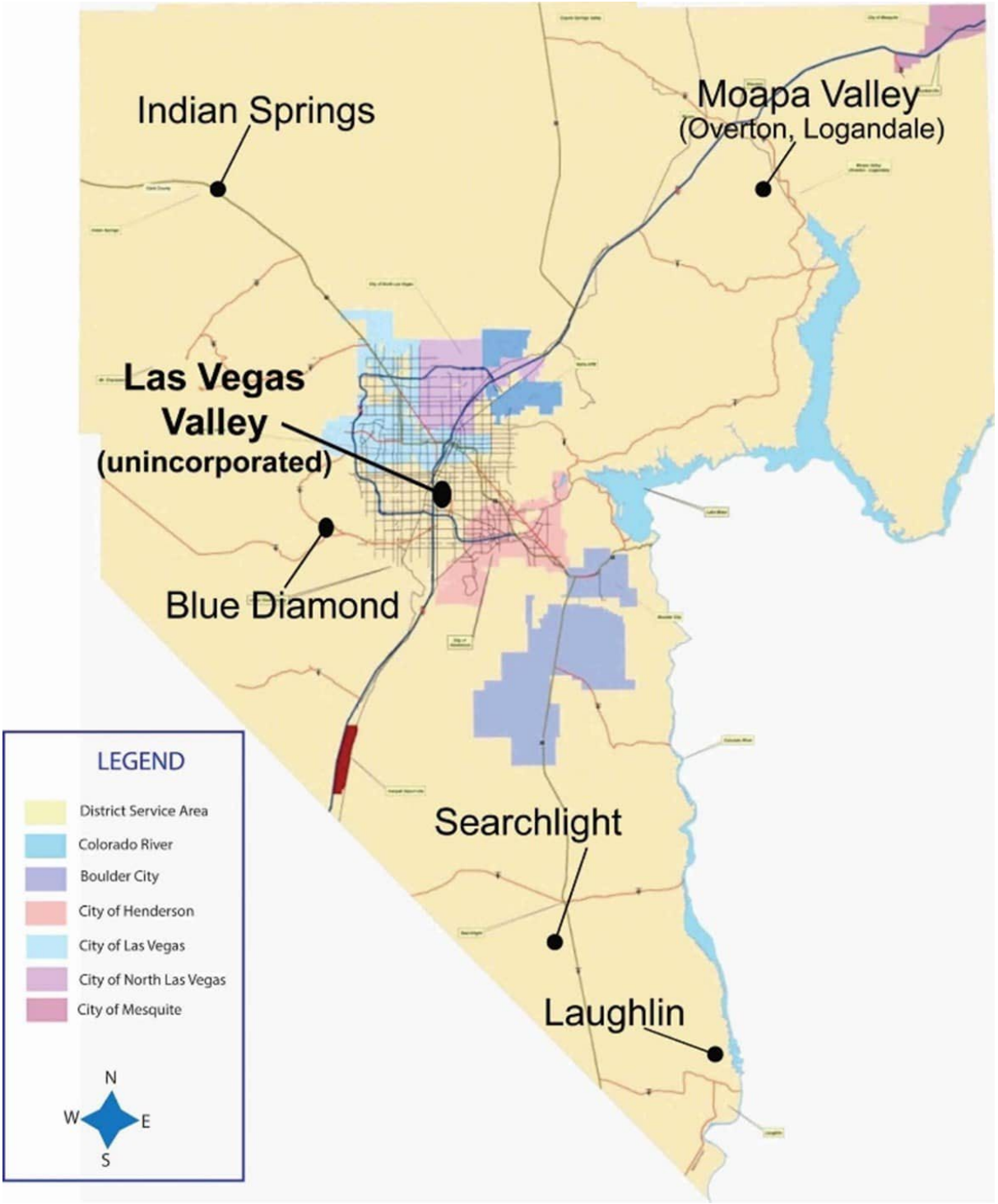
use demands. The Las Vegas Groundwater Management program indicates that about 10% of Southern Nevada's water supply comes from groundwater sources. For instance, most of the wells in the Las Vegas area draw water from the confined aquifer system, which is several hundred feet thick. Because this is the essential part of the aquifer system, it's sometimes called the "principal" aquifer. The member agencies of the SWNA supporting the waters issues in Clark County and its participating agencites are as follows: Big Bend Water District (Laughlin), Boulder City, Clark County Water Reclamation District, Henderson, Las Vegas, Las Vegas Water Valley District (Metropolitan Las Vegas and areas of unincorporated Clark County, the communities of Blue Diamond, Coyote Springs, Jean, Kyle Canyon, and Searchlight), North Las Vegas. The following maps show the SNWA and how they support Clark County and their participating jurisdictions. The Southern Nevada Water Authority (SNWA) is the regional water purveyor for Clark County and its participating jurisdictions.

Figure 40: SWNA Purveyor Map



Data Source: 2023 Water Resource Plan, Southern Nevada Water Authority

Figure 41: Clark County Water Reclamation District Map



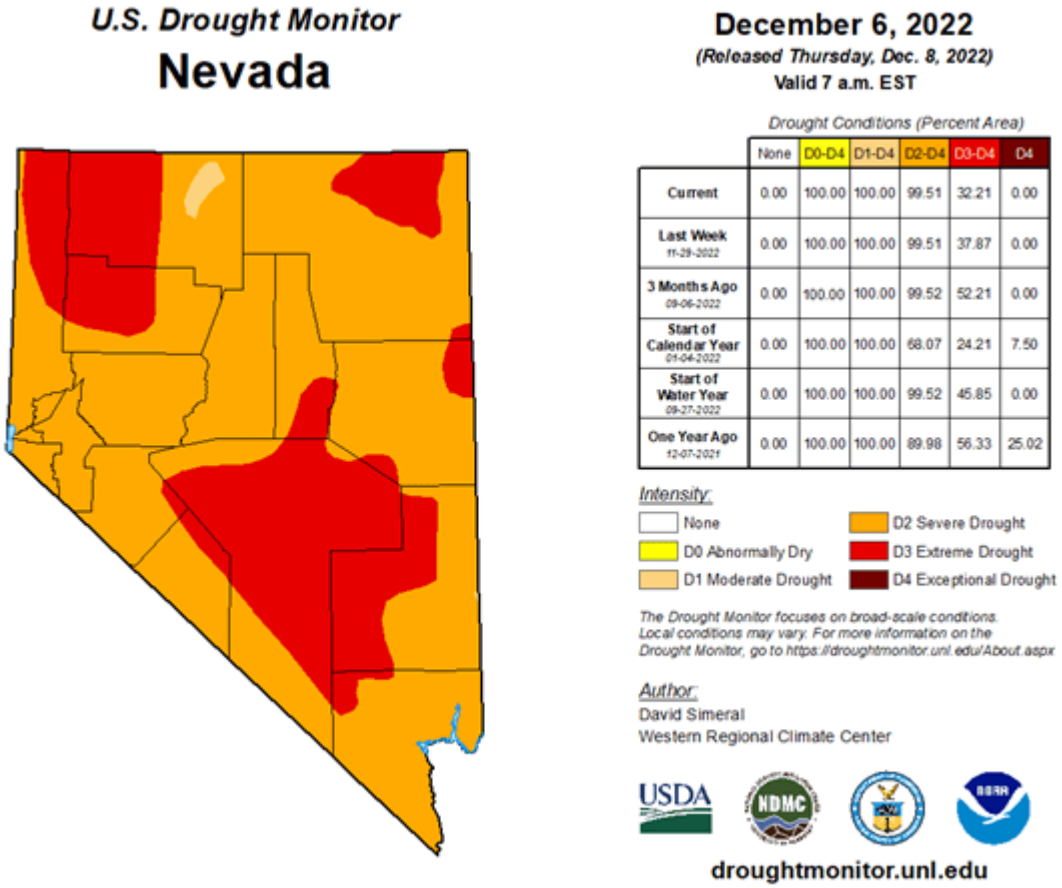
Data Source: Clark County Water Reclamation District

As stated previously, drought affects people and infrastructure and can exacerbate other climate hazards like drought within the planning area. Drought, especially those areas that experience severe or extreme drought, can also increase an area's vulnerability to wildfire due to dry vegetation. Dry, hot, and windy weather combined with dry vegetation and a spark, whether through human intent, accident, or lightning, can trigger a blaze. The Clark County Climate Vulnerability Assessment (2022) indicates that Southern Nevadans are no strangers to drought, drought have increased in duration and intensity since the start of the 21st century.

In March 2022, Drought.gov (https://www.drought.gov/drought-status-updates/california-nevada-drought-status-update-3-15-22) indicated that after a soggy start, California and Nevada remain in a

drought as wet weather comes to a close. January and February 2022 were the driest for much of the California and Nevada region for those two months. The dry January and February have decreased the odds of reaching normal water year precipitation and have led to the continuation of drought throughout the region. As of December 14, 2022, according to U.S Drought Monitor, 100% of the State of Nevada is abnormally dry, and 99.5% is in severe drought, including Clark County.

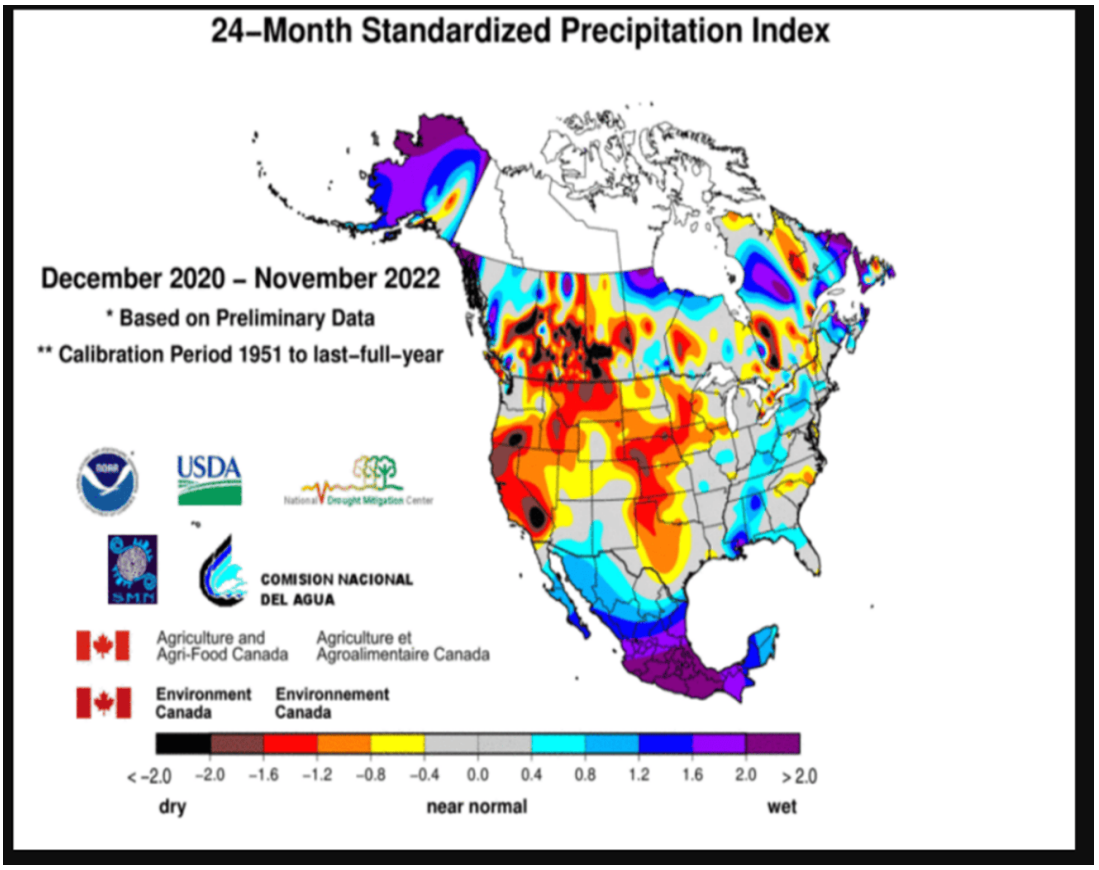
Figure 42: Drought Conditions for the State of Nevada and Clark County, NV, December 2022



Data Source: U.S. Drought Monitor/Drought.gov

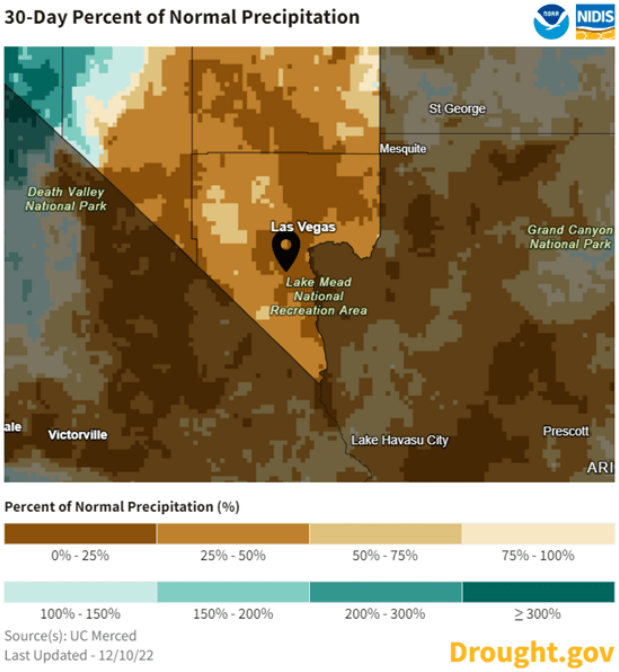
Related to the Standardized Participation Index (SPI), a drought event occurs any time the SPI is continuously negative and reaches an intensity of -1.0 or less. The event ends when the SPI becomes positive. Each drought event, therefore, has a duration defined by its beginning and end and intensity for each month the event continues. The positive sum of the SPI for all the months within a drought event can be termed the drought's magnitude. As shown in the Figures below, the 24-month SPI through the end of November 2022 and the 30-day percent of normal precipitation maps show Clark County experiencing minimal precipitation and moderately dry.

Figure 43: 24-Month Standardized Precipitation Index, U.S. – December 2020-November 2022



Data Source: NOAA/NCEI

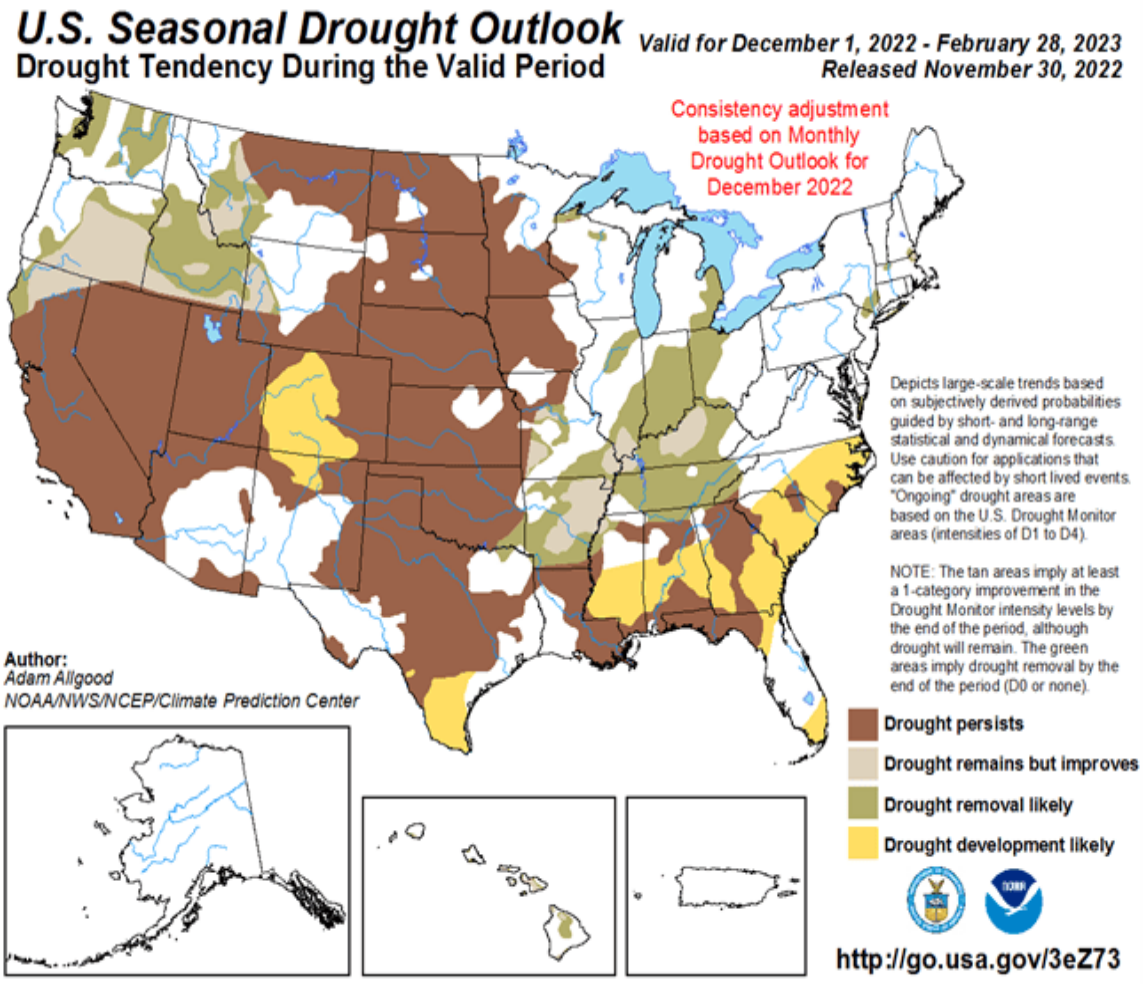
Figure 44: 30-day Percent of Normal Precipitation – Clark County, NV



Data Source: Drought.gov

Also, due to the nature of drought conditions, all participating jurisdictions within Clark County are expected to be impacted equally due to moderate to extreme drought conditions. An illustration of this impact can be seen in the following map of US Drought Outlook:

Figure 45: Drought Conditions for the State of Nevada and Clark County, NV, December 2022



Data Source: U.S. Drought Monitor/Drought.gov

Previous Occurrence

As previously mentioned, this plan update to the Clark County MJHMP (August 2018) covers a date range from January 1, 2018, to the present. At the time of this plan update, the Drought Monitor, Weeks in Drought report indicated that Clark County and its participating jurisdiction experienced D0-D2, severe drought conditions from 2017-2022 and "extreme drought conditions (D3-4) from 2021-2022 with the consecutive number of weeks in drought being 760 weeks. From January 1, 2018, to November 2022, NOAA/NCEI recorded zero (0) events in Clark County. However, this data contradicts what the previous HMP (2018) indicates: from 2000-2016; Clark County experienced D3-D4 "extreme" drought conditions over five periods in 2003, 2004, 2007, 2014, and 2015.

Probability of Future Events, Drought

Calculating future probability is one of many predictors of future occurrences**.** Based on the Calculated Priority Risk Index (CPRI) conducted for Clark County and its participating jurisdictions, there is a **high probability (rank score of 3.0-3.9)** of drought for the planning area. The following table provides CPRI Rating on climate change for Clark County and its participating jurisdictions.

Table 33: Clark County and Participating Jurisdiction – CPRI Rating for Drought

Clark County and Participating Jurisdiction CPRI Rating for Drought							
Hazard: Drought		**Category and Weight**				**CPRI Score**	**Risk Level**
Index Rating (R) Weighted Score (WS)		**Probability 45%**	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**		
Clark County (including Incorporated and Unincorporated Areas	R	4	3	1	4	3.25	H
	WS	1.8	0.9	0.15	0.4		
Boulder City	R	4	3	1	4	3.25	H
	WS	1.8	0.9	0.15	0.4		
Henderson	R	4	4	4	4	4.0	S
	WS	1.8	1.2	.6	.4		
Las Vegas	R	4	3	1	4	3.25	H
	WS	1.8	0.9	0.15	0.4		
Mesquite	R	4	3	1	4	3.25	H
	WS	1.8	0.9	0.15	0.4		
North Las Vegas	R	4	4	4	4	4	S
	WS	1.8	1.2	0.6	0.4		
Special District: Clark County Water Reclamation District	R	4	3	1	4	3.25	H
	WS	1.8	0.9	0.15	0.4		
Special District: Clark County School District	R	3	3	1	4	2.8	M
	WS	1.35	0.9	0.15	0.4		
Special District: Las Vegas Valley Water District/SWNA	R	4	4	1	4	3.55	H
	WS	1.8	1.20	0.15	0.4		
Tribal Nation: Las Vegas Valley Paiute	R	4	3	3	4	3.55	H
	WS	1.8	0.9	0.45	0.4		
Tribal Nation: Moapa Band of Paiutes	R	4	3	1	4	3.25	H
	WS	1.8	0.9	0.15	0.4		

Note: *Also, based on the "Weeks in Drought" data pulled from Drought.gov, Clark County and its participating jurisdictions experienced 760 weeks of consecutive drought from 2018 - the present. Though there is no record of drought in the planning area using data from the NOAA/NCEI Storm Database since the last plan update (2018), Clark County and its participating jurisdictions will likely experience drought events in the future.*
Note: *Though participating in the planning process, at the time of this update, the CPRI data for the City of Mesquite was not received. Therefore, the CPRI rating for the City of Mesquite is the same rating as Clark County due to the city being within the planning area.*

Vulnerability and Impact

Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) experienced 760 weeks of consecutive drought in 2018-present; the range and magnitude were between "slightly dry" and "extremely dry, " making it vulnerable to drought conditions now and in the future. Therefore, based on the Clark County Climate Vulnerability Assessment, drought could pose a risk to critical facilities and/or infrastructure in Clark County or its participating jurisdictions. However, no standardized methodology exists for estimating losses due to drought and drought does not generally have a direct impact on critical and non-critical facilities and building stock. A direct correlation to loss of human life due to drought is improbable for the County.

Vulnerability of Population

Drought itself poses no direct injury or death for Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation). However, a drought could pose a risk to the vulnerable populations within the planning area. The FEMA National Risk Index map provides data on social vulnerability and community resilience related to hazards. Both of these factors impact the vulnerability of a population for a hazard event like drought. FEMA National Risk Index defines Social Vulnerability as the susceptibility of social groups to the adverse impacts of natural hazards, including death, injury, loss, or disruption of livelihood. FEMA defines Community Resilience as the ability for a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruption. The scoring of these FEMA National Risk Index categories are for all hazards, including drought are as follows:

- Community Resilience: the higher community resilience score results in a lower risk index score. The Community Resilience score for Clark County is 49.9, meaning communities within the County have a Very Low ability to prepare for anticipated natural hazards, adapt to conditions, and withstand and recover rapidly from disruptions compared to the rest of the U.S.
- Social Vulnerability: a higher social vulnerability score results in a higher Risk Index score. Social groups in Clark County, NV, have a Relatively High susceptibility to the adverse impacts of natural hazards compared to the rest of the U.S. The Social Vulnerability score for Clark County is 48.59

The following maps provide a snapshot of community resilience and social vulnerability scoring related to all hazards including drought for Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).

Figure 46: FEMA National Risk Index Maps, Social Vulnerability - Clark County, NV

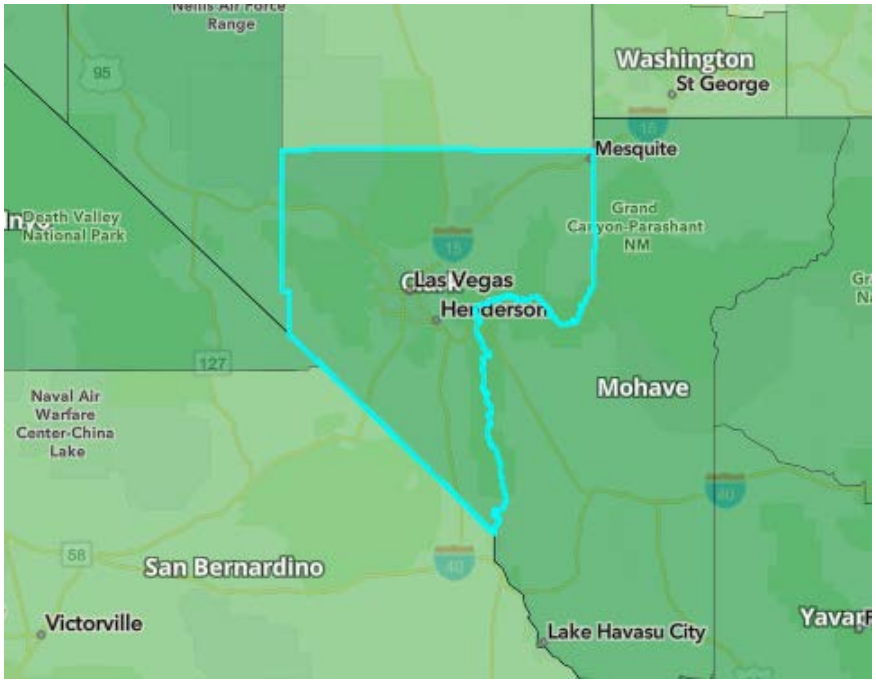
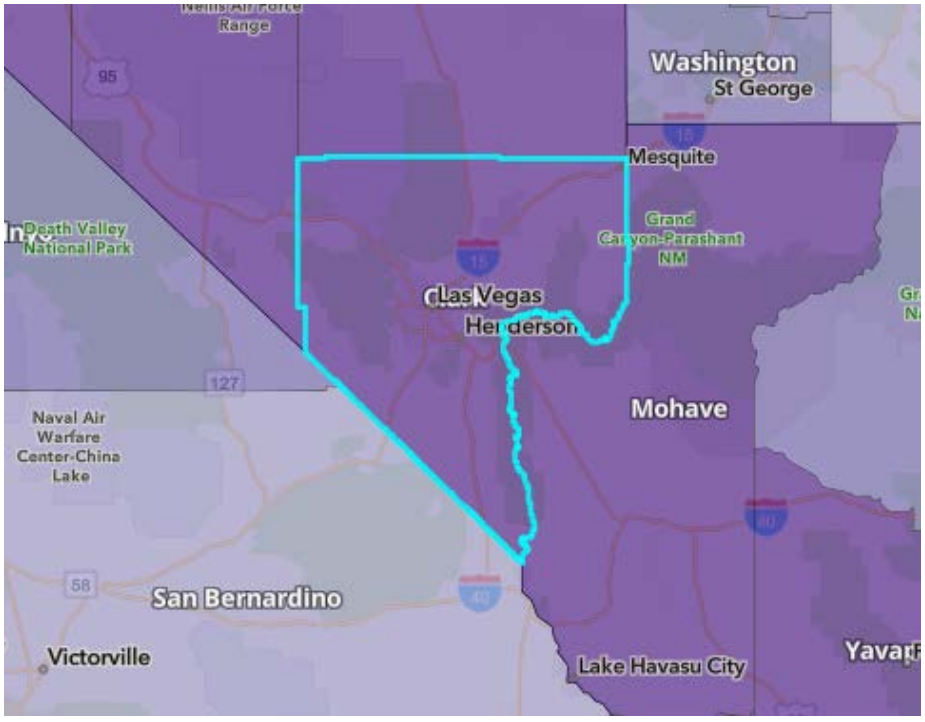


Figure 47: FEMA National Risk Index Maps, Community Resilience Map – Clark County, NV



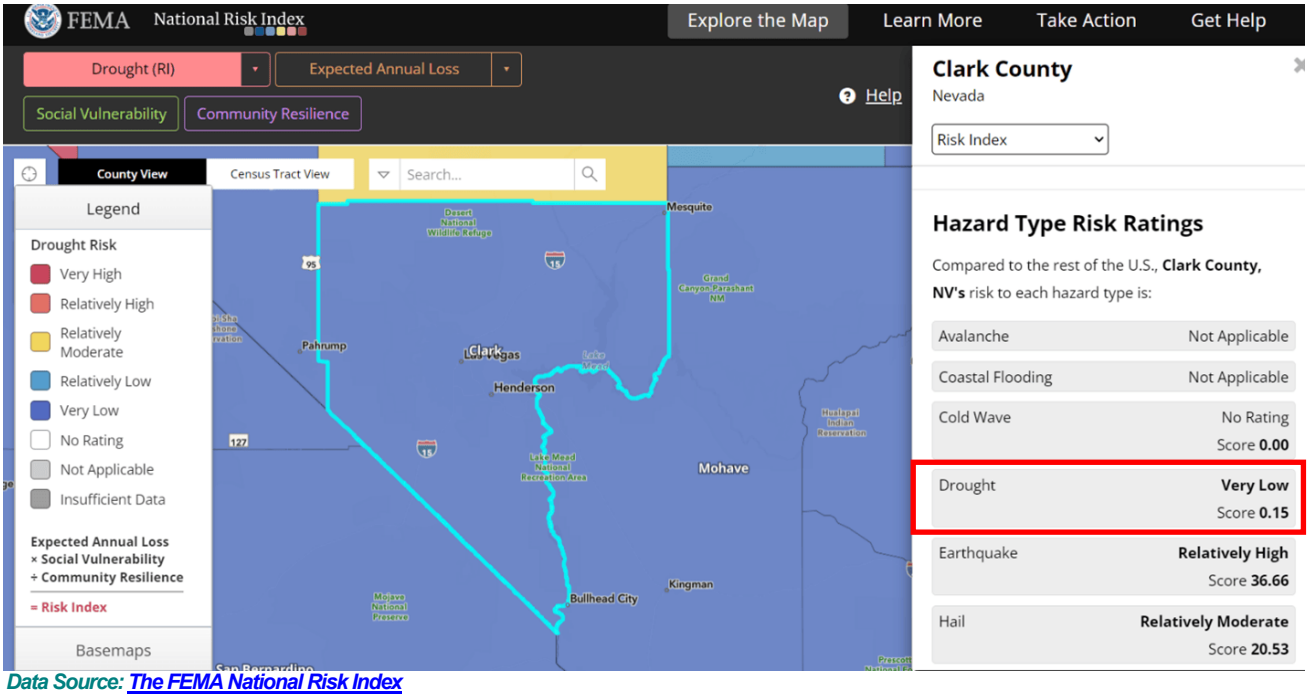
Data Source: The FEMA National Risk Index

Also, all residents of Clark County are at risk due to lack of water and the needs for water conservation during a drought event. The Clark County Climate Vulnerability Study mentions the following related to drought and housing populations within Clark County: Housing development, including much-needed affordable housing development, could be affected by demand-management strategies triggered by water shortages. Housing can also increase water usage, exacerbating drought exposure and impacts, though high-density housing tends to be more efficient. Additionally, options to significantly temper water usage can be challenging, especially housing in rural areas. The moderate-high sensitivity and low-moderate adaptive capacity of Clark County's housing system compounds the sensitivity of its residents, especially low- and fixed-income, unhoused, or rural residents.

Vulerability of System

Drought can have a significant effect on a planning areas agriculture and tourism economies. The FEMA National Risk Index. All jurisdictions throughout Clark County are susceptible to drought effects, including water usage and damage to crops/vegetation. Drought, however, can significantly affect a jurisdiction's agriculture and tourism economies. Farmers will struggle to grow crops and feed livestock if the precipitation levels are below normal. The FEMA National Risk Index for Natural Hazards is an online mapping system that identifies communities most at risk to 18 natural hazards. Related to drought, In the National Risk Index, a Drought Risk Index score and rating represent a community's relative risk for Droughts compared to the rest of the United States. Clark County has a drought risk score of **0.15 (very low)** compared to the rest of the Country. The map below illustrates that score visually.

Figure 48: FEMA National Risk Index Drought Map – Clark County, NV



Data Source: The FEMA National Risk Index

Impact of Climate Change

Climate change is affecting drought conditions in the State of Nevada, including Clark County and its participating jurisdictions. Climate change is already profoundly impacting Nevada water resources, as evidenced by changes in snowpack, sea level, and river flows. These changes are expected to continue in the future, and more precipitation will likely fall as rain instead of snow. This potential change in weather patterns will add additional challenges for water supply reliability.

The snowpack from the Sierra and Rocky Mountains provides as much as a third of Nevada's water supply by accumulating snow during wet winters and releasing it slowly during the spring and summer when the need is the greatest. Warmer temperatures will cause snow to melt faster and earlier, making it more challenging to store and use. Because of this, the Clark County Climate Vulnerability Assessment indicates that the County is projected to experience more extreme long-term drought conditions like megadroughts (multi-decadal droughts 30-40 years long) will become more likely. All in all, the climate changes issues related to drought have significant implications for the current and future residents and visitors of Clark County.

Critical Facilities and Infrastructure

Drought could pose risk to critical facilities and infrastructure within Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas

Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation). A complete list of critical facilities and infrastructure can be found in Appendix D – Critical Facilities & Infrastructure.

Land Use and Development

Two areas that affect Land Use and Development Trends concerning drought events are the impact of agriculture and water conservation. Droughts impact individuals (farm owners, tenants, and farm laborers), the agricultural industry, other agriculture related sectors, and other industries such as tourism and recreation. There is increased danger of forest and wildland fires. Loss of forests and trees increases erosion, causing serious damage to aquatic life, irrigation, and power development by heavy silting of streams, reservoirs, and rivers.

Combinations of low precipitation and unusually high temperatures could occur over several consecutive years. Intensified by such conditions, extreme wildland fires could break out throughout the County, increasing the need for water. Surrounding communities, also in drought conditions, could increase their demand for water supplies relied upon by the planning partnership, causing social and political conflicts. If such conditions persisted for several years, the economy of the County could experience declines, especially in water-intensive industries such as agriculture. Instead, drought vulnerability is primarily measured by its potential impact to certain sectors of the County economy and natural resources to include:

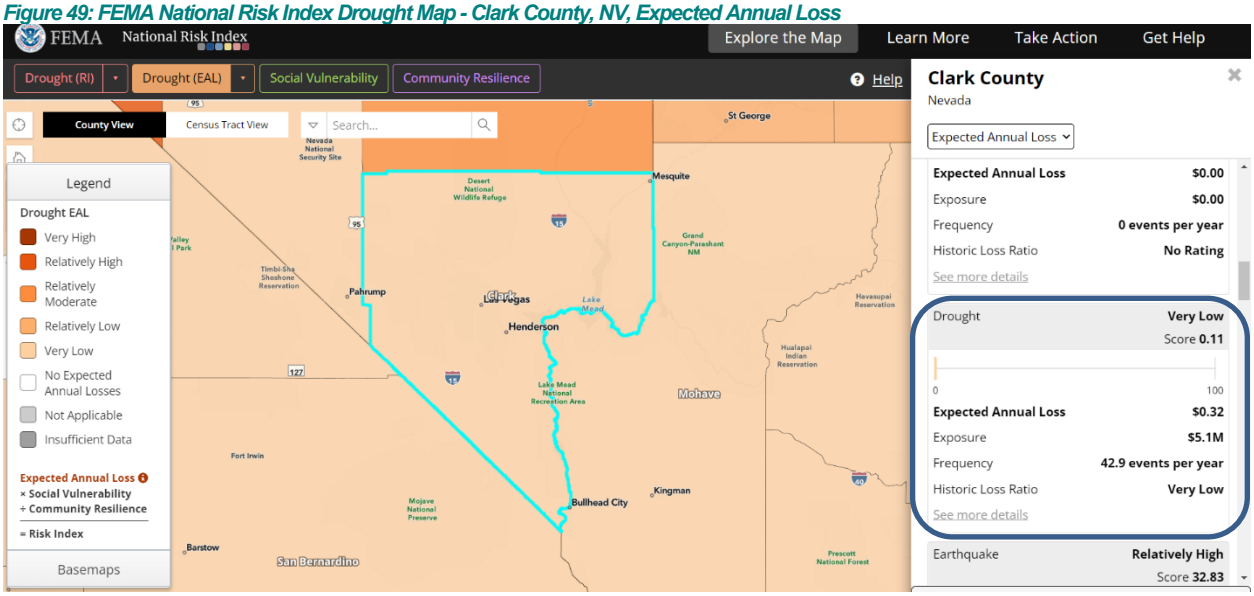
- Crop and livestock agriculture
- Municipal and industrial water supply
- Recreation/tourism
- Wildlife and wildlife habitat

The Drought Risk Index score on the FEMA National Risk Index website states the drought expected annual loss score (represents the average economic loss in dollars resulting from natural hazards each year). The rating also represents a community's relative level of expected agriculture loss each year due to droughts compared to the rest of the United States. For Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation), the expected loss of data related to drought is as follows:

- Expected Annual Loss Score: 0.11 – Very Low
- Expected Annual Loss: $0.32
- Exposure: $5.1 M
- Frequency: 42.9 events per year
- Historic Loss Ratio: Very Low

The following map illustrates the expected annual loss for drought in the planning area:

Figure 49: FEMA National Risk Index Drought Map - Clark County, NV, Expected Annual Loss



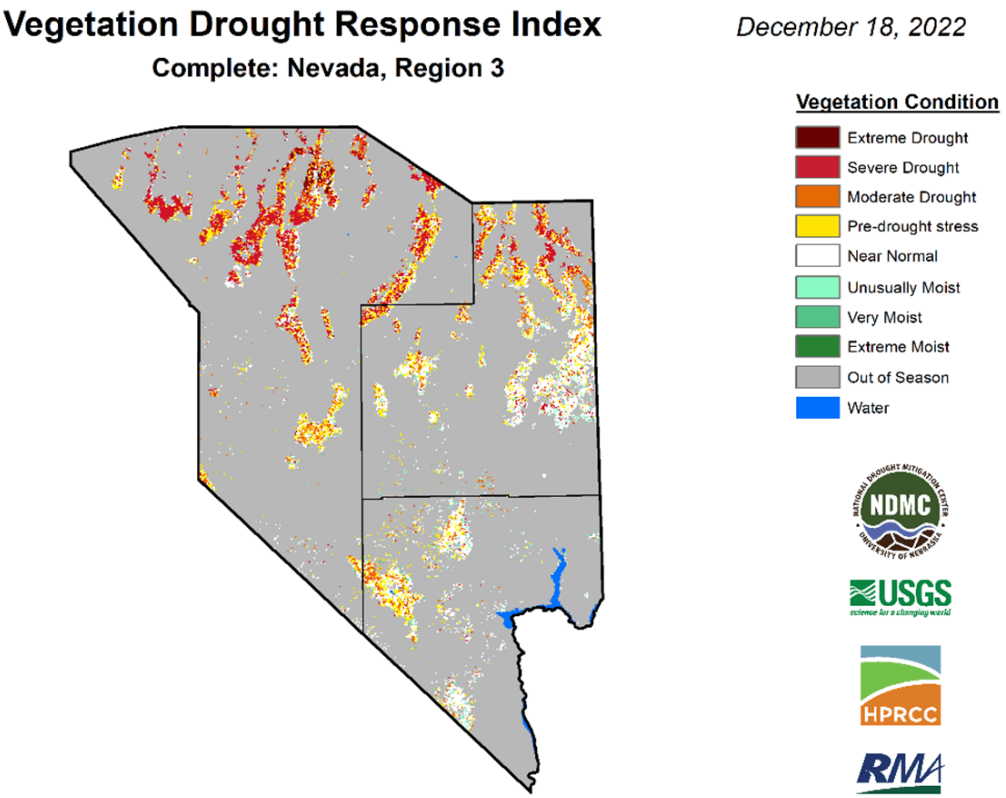
Data Source: The FEMA National Risk Index

The previous Clark County MJHMP (2018) mentions drought vulnerability impacts include a shortfall of water supply, often referred to as a water management drought, and an increase in wildfire risk in the County's wildland urban-interface areas. Also, sustained drought conditions will also have secondary impacts to other hazards such as fissures, flooding, subsidence and wildland fire. Since the last plan update, water conservation due to drought conditions has been a significant trend for Clark County and its participating jurisdictions'. Extended drought may weaken and dry the grasses, shrubs, and trees of wildland fire areas, making them more susceptible to ignition. Drought also tends to reduce the vegetative cover in watersheds, and hence decrease the interception of rainfall and increase the flooding hazard. Subsidence and fissure conditions are aggravated when lean surface water supplies force the pumping of more groundwater to supply the demand without the benefit of recharge from normal rainfall. Since the last plan update (2018), representatives within the County have worked towards ensuring water conversation efforts in the planning area to stretch the available water supply within the community. In 2019, the Upper Basin and Lower Basin Drought Contingency Plans were signed to address the ongoing historic drought in the Colorado River Basin in which the County lies. The plans were designed to reduce for ongoing drought and the impact of declining water levels in Lake Mead and Lake Powell. More information about the Drought Contingency Plans can be found here (https://www.usbr.gov/dcp/).

Unique and Varied Risk

Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) have significant agricultural vegetation areas at risk to drought. The Vegetation Drought Response Index, or VegDRI, is a bi-weekly depiction of vegetation stress across the contiguous United States. VegDRI is a fine resolution (1-km2) index based on remote sensing data and incorporates climate and biophysical data to determine the cause of vegetation stress. Development of the VegDRI map and associated products is a joint effort by the National Drought Mitigation Center (NDMC), the U.S. Geological Survey's (USGS) National Center for Earth Resources Observation and Science (EROS), and the High Plains Regional Climate Center (HPRCC). Figure 48 illustrates the VegDRI results for Clark County and its participating jurisdictions for December 18, 2022.

Figure 50: Vegetation Drought Response Index Map, Region 3 Nevada



Data Source: Vegetation Drought Response Index - VegDRI

To show the unique and varied risk to drought in the planning area, the 2012 Census of Agriculture indicates that Clark County contained 252 farms, covering 15,620 acres of land. Crop sales accounted for $3,291,000 and livestock sales accounted for $3,535,000 in 2012. As of the 2017 Census of Agriculture, Clark County contains 179 farms. This version of the Census of Agriculture did not include data for total acres data was withheld. The footnote indicated that this information was not included to avoid disclosing data for individual operations. Crop sales for the County accounted for $11,416,000 in 2017. If a severe drought affects Clark County and its participating jurisdictions in the future, the losses could be as much as $12,651,000. This number represents the total market value of agriculture products sold (crops and livestock) from the 2017 Census of Agriculture for Clark County.

Repetitive Loss Structure

Not applicable.

HAZUS® Models

Not applicable.

(GE) Geohazards, Earthquake, and Seismic Hazards

Hazard Description



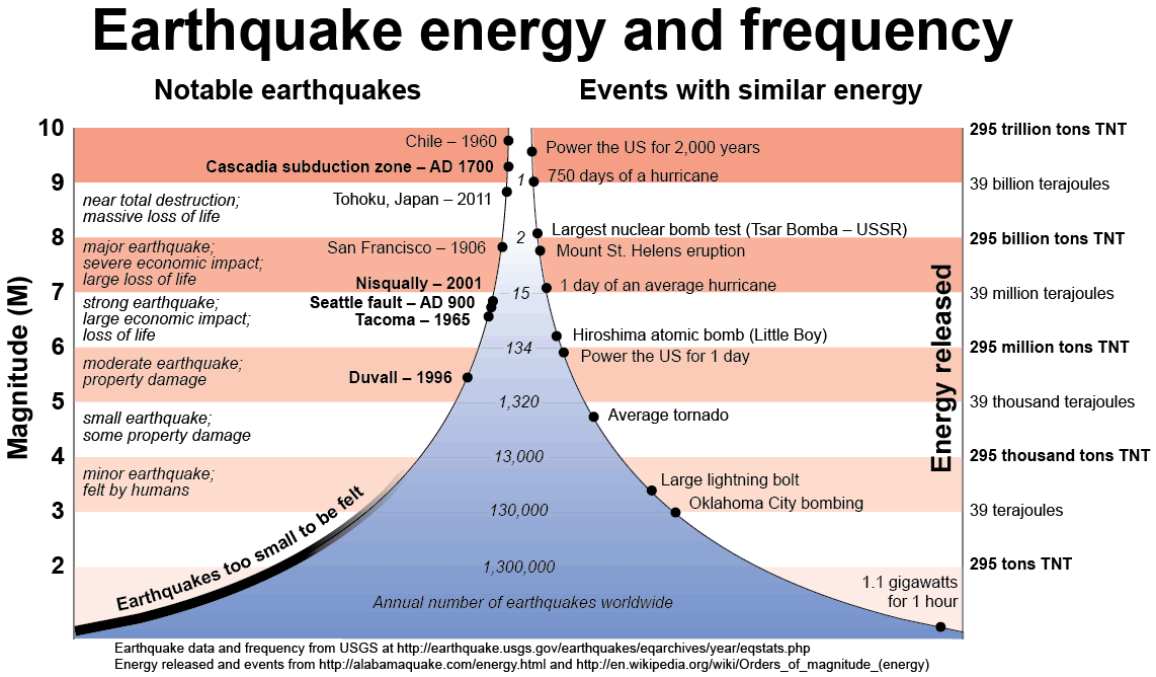
Earthquake in NV Photo Source: The Nevada Independent

An earthquake is a sudden, rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. For hundreds of millions of years, the forces of plate tectonics have shaped the earth as the huge plates that form the earth's surface move slowly over, under, and past each other. Sometimes the movement is gradual. At other times, the plates are locked together, unable to release the accumulating energy. Earthquakes can strike suddenly, without warning. Earthquakes can occur at any time of the year and at any time of the day or night. On a yearly basis, 70 to 75 damaging earthquakes occur throughout the world earthquakes occur in the middle of plates. Ground shaking from earthquakes can collapse buildings and bridges; disrupt gas, electric, and phone service; and sometimes trigger landslides, avalanches, flash floods, fires, and huge, destructive ocean waves (tsunamis). Buildings with foundations resting on unconsolidated landfill and other unstable soil, and trailers and homes not tied to their foundations are at risk because they can be shaken off their mountings during an earthquake. When an earthquake occurs in a populated area, it may cause deaths and injuries and extensive property damage.

There are numerous characteristics measured when observing earthquake activity; however, four of them—force, depth, peak ground acceleration and the distance to the epicenter—are most influential in determining damage. Two scales are used when referring to earthquake activity: the Richter Scale, which estimates the total force of the earthquake; and the Modified Mercalli Intensity Scale, which categorizes the observed damage from the earthquake.

The Richter scale is often used to rate the strength of an earthquake and is an indirect measure of seismic energy released. The previous Clark County HMP update (2012) mentions that the scale is logarithmic, with each one-point increase corresponding to a ten-fold increase in the amplitude of the seismic shock waves generated by the earthquake. However, in actual energy released, each one-point increase on the Richter scale corresponds to about a 32-fold increase in energy released. Therefore, a magnitude (M) 7.0 earthquake is 100 times (10×10) more powerful than an M5 earthquake and releases 1,024 times (32×32) the energy. The measurements of the Richter Scale using the following USGS illustration of earthquake energy and frequency illustration:

Figure 51: Earthquake Frequency and Energy from USGS



Data Source: [Washington State Department of Natural Resources]

The Modified Mercalli Intensity (MMI) scale, as shown in Table 34 quantifies the intensity of ground shaking. Intensity in this scale is a function of distance from the epicenter (the closer a site is to the epicenter, the greater the intensity at that site), ground acceleration, duration of ground shaking, and degree of structural damage. The MMI rates earthquake severity by the amount of damage and perceived shaking.

Table 34: Modified Mercalli Intensity Scale

MMI Value	Shaking Severity	Summary Damage	Description
I	Micro	Little to none	Not felt except by few under especially favorable conditions.
II	Minor	Little to none	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
III	Minor	Hanging objects move	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration similar to the passing of a truck. Duration estimated.
IV	Light	Hanging objects move	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed. Walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Light	Pictures move	Felt by nearly everyone. Many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Moderate	Objects fall	Felt by all, many frightened. Some heavy furniture moved. Few instances of fallen plaster. Damage slight.
VII	Strong	Nonstructural damage	Damage negligible in buildings of good design and construction, slight to moderate in well-built ordinary structures. Considerable damage in poorly built or badly designed structures. Some chimneys broken.
VIII	Very strong	Moderate damage	Damage slight in specially designed structures. Considerable damage in ordinary buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, walls, factory stacks, columns, monuments. Heavy furniture overturned.
X	Very violent	Extreme damage	Damage considerable in specially designed structures. Well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
XI	Very violent	Extreme damage	Some well-built wooden structures destroyed. Most masonry and frame structures destroyed with foundations. Rails bent.
XII	Very violent	Total damage	Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.

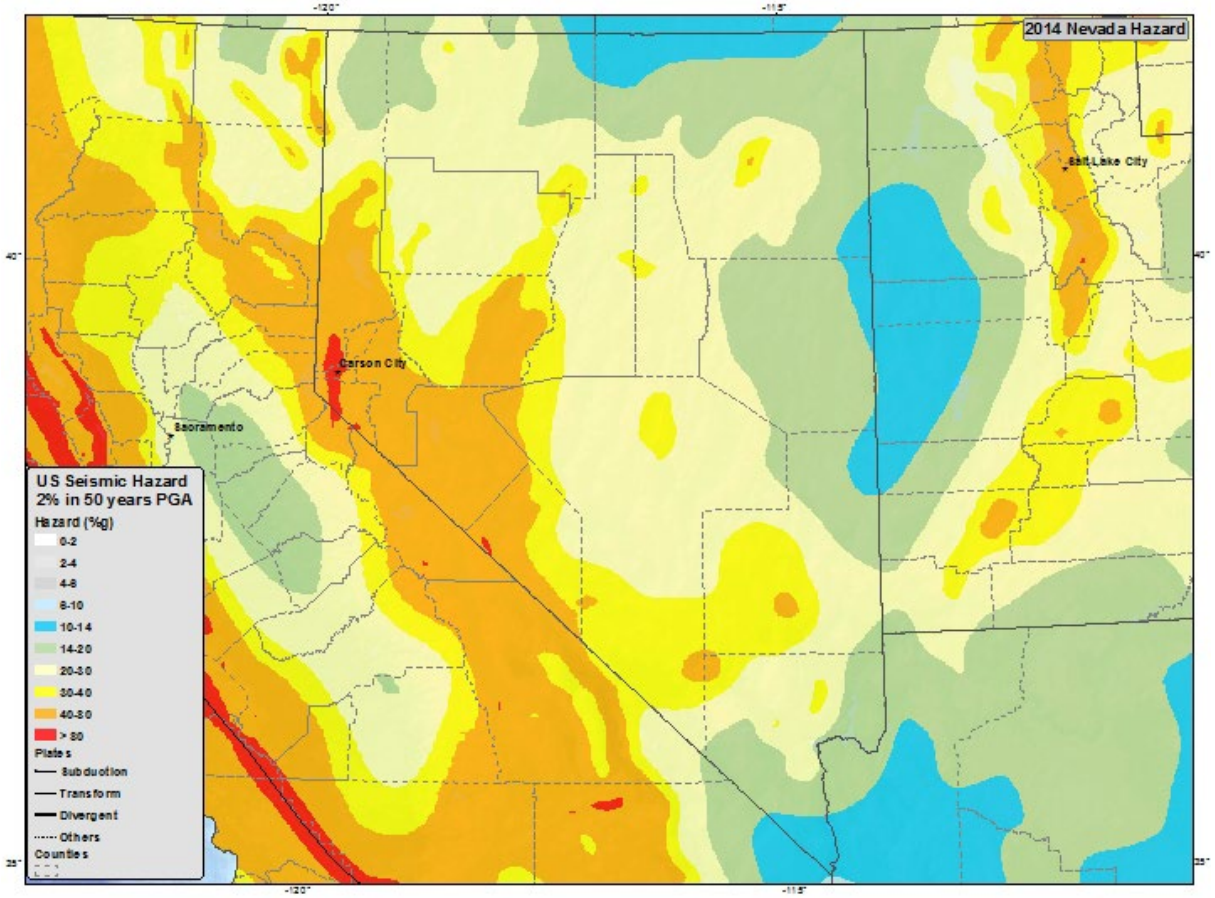
Data Source: United States Geological Survey, 2016

Earthquakes can last from a few seconds to over five minutes; they may also occur as a series of tremors over several days. The actual movement of the ground in an earthquake is seldom the direct cause of injury or death. Casualties generally result from falling objects and debris, because the shocks shake, damage or demolish buildings and other structures. Disruption of communications, electrical power supplies and gas, sewer and water lines should be expected. In addition, ground shaking, landslides, liquefaction, and amplification are the specific hazards associated with earthquakes. The severity of these hazards depends on several factors, including soil and slope conditions, proximity to the fault, earthquake magnitude and depth, and the type of earthquake:

- **Ground Shaking** – Ground shaking is the motion felt on the earth's surface caused by seismic waves from an earthquake. It is the primary cause of earthquake damage. The strength of ground shaking depends on the magnitude of the earthquake, the type of fault, and distance from the epicenter. Buildings on poorly consolidated and thick soils will typically see more damage than buildings on consolidated soils and bedrock.
- **Amplification** – Soils and soft sedimentary rocks near the earth's surface can modify ground shaking caused by earthquakes. One of these modifications is amplification. Amplification increases the magnitude of the seismic waves generated by the earthquake. The amount of amplification is influenced by the thickness of geologic materials and their physical properties. Buildings and other structures built on soft and unconsolidated soils can face greater risk. Amplification can also occur in areas with deep sediment-filled basins and ridge tops.
- **Earthquake-Induced Landslides** – Earthquake-induced landslides are secondary earthquake hazards that occur from ground shaking. They can destroy the roads, buildings, utilities, and other critical facilities necessary to respond and recover from an earthquake and are common in areas with steep slopes.
- **Liquefaction** – Liquefaction, a secondary earthquake hazard, occurs when ground shaking causes wet granular soils to change from solid to liquid. This results in the loss of soil strength and ability to support the weight. Buildings and their occupants are at risk when the ground can no longer support these buildings and structures. In some cases, this ground may be subject to liquefaction, depending on the depth of the water table. Liquefaction occurs primarily in saturated and loose, fine- to medium-grained soils in areas where the groundwater table lies within 50 feet of the ground surface. The previous Clark County MJHMP update (2012) mentions that liquefaction was a new secondary earthquake hazard for Las Vegas Valley at the time of that plan update.

According to the U.S. Geological Survey (USGS), it is estimated that there are 500,000 detectableearthquakes in the world each year; 100,000 of those can be felt, and 100 of them cause damage. The 2018 State of Nevada Enhanced Mitigation Plan states the State of Nevada is one of the most seismically active states in the Union.

Figure 52: 2014 Seismic Hazard Map - Nevada



Data Source: USGS

It ranks in the top three states subject to the largest earthquakes over the last 150 years, with only Alaska and California having experienced more events. Figures 49-50 shows the locations of magnitude ≥4 earthquakes in Nevada and adjacent parts of California from the 1840's to 2015. The following map shows the history of earthquakes in Nevada greater than magnitude ≥4:

Figure 53: Earthquakes in Nevada ≥4

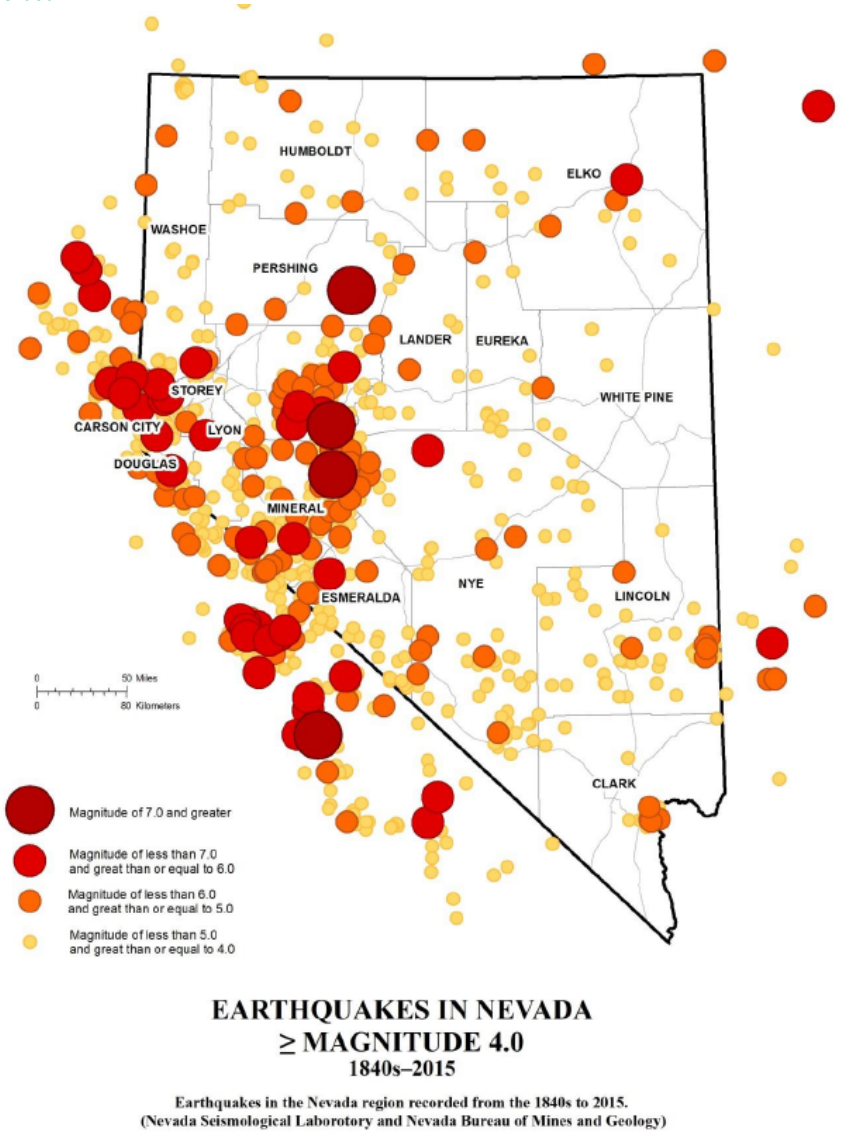


Figure 3-13. Earthquakes of magnitude ≥4 in Nevada and Adjacent States, 1840s-2015.

Data Source: The 2018 State of Nevada Enhanced Hazard Mitigation Plan

Earthquakes are much less common in the eastern United States than in California, with most events imperceptible by the public. This leads to a dangerous complacency that may be unwarranted.

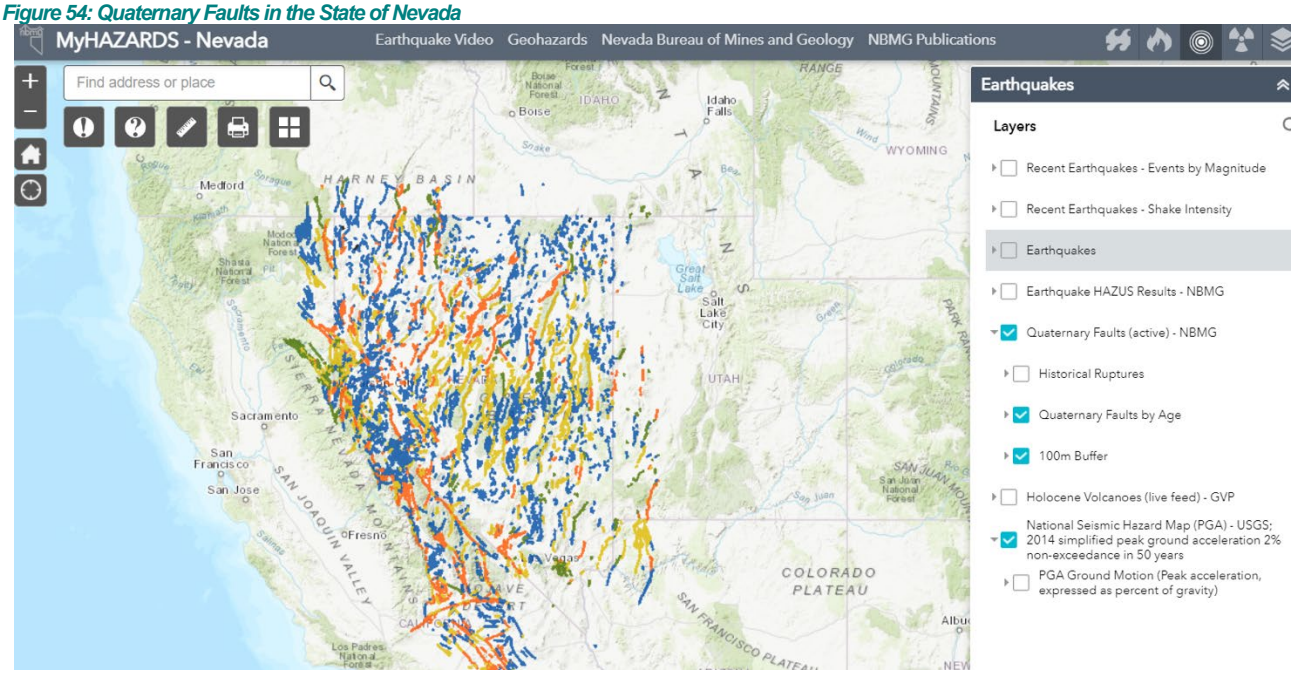
Location and Extent

According to the Great Nevada Shake Out, the State of Nevada is in "earthquake country". It lies within the Basin and Range Province, one of the most seismically active regions in the United States. Nevada, along with California and Alaska are the top three states that are subject to the largest earthquakes over the last 150 years. As mentioned in the State of Nevada Enhanced Hazard Mitigation Plan (2018) the Nevada Seismological Laboratory (Seismo Lab) records between 8,000 and 17,000 background earthquakes each year in Nevada. The largest earthquakes were over magnitude 7 and shook the entire state. More than 25 Nevada communities have experienced damage from earthquakes during this same period, at least eight of these communities experienced repetitive earthquake damage, and every community has felt significant shaking.

Based on seismicity, the State of Nevada experiences two natural earth forces that cause stress,

which creates earthquakes: extension and force. The State of Nevada Enhanced Hazard Mitigation Plan (2018) mentions that extension occurs throughout Nevada and force occurs from the boundary between the Pacific Plate and the North American plate. The North American Plate is located primarily along the coast of California (where there is also an earthquake hazard). This boundary displays lateral motion and creates strike-slip faults. About a fifth of this plate boundary motion is accommodated in western Nevada in a region known as the Walker Lane belt. This region has experienced large strike-slip and normal dip-slip earthquakes. The following map illustrates the USGS's current active fault within the State of Nevada.

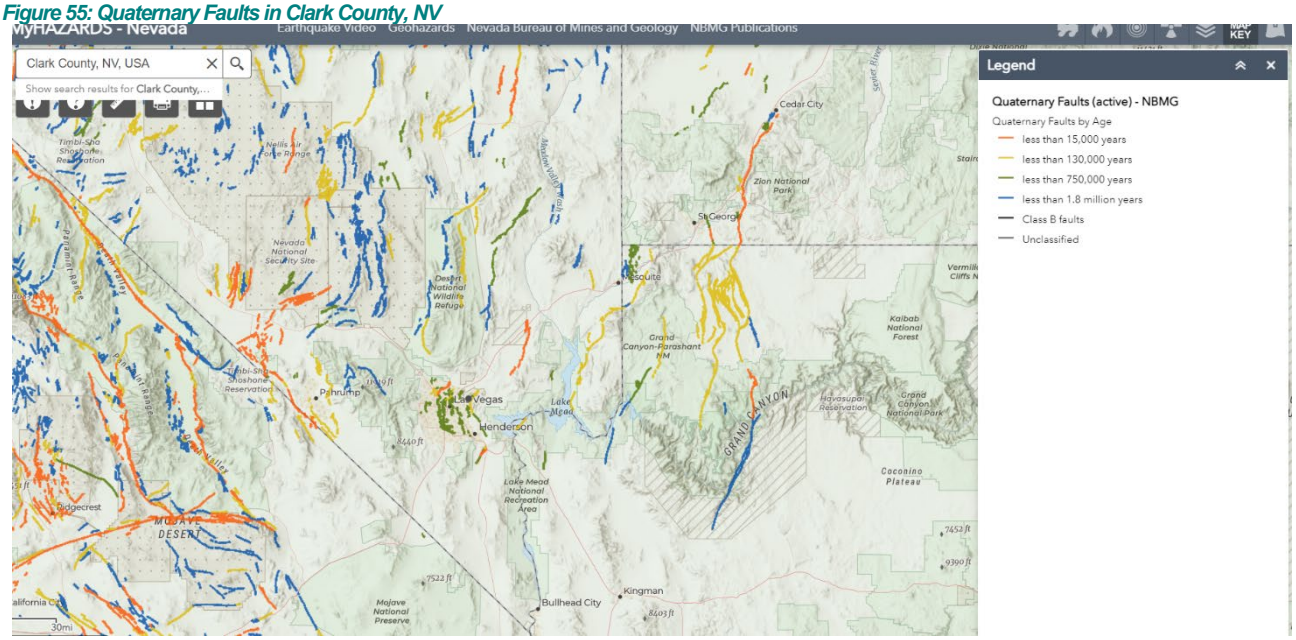
Figure 54: Quaternary Faults in the State of Nevada



Data Source: My Hazards Nevada - Nevada Bureau of Mines and Geology

For Clark County, it lies in the Las Vegas basin. This area also experiences shaking due to distant earthquakes in western and northern Nevada, southern California, and western Utah. Earthquakes in western and northern Nevada and western Utah ranging from M5.0 to 6.0 were widely felt throughout the basin in 1902, 1916, and 1966. The Great Nevada Shake Out mentions that earthquakes in Clark County are created by tectonic extension, that is pulling the land apart and forms normal faults, and lateral motion from the Pacific-North American plate-boundary, that forms strike-slip faults. When an earthquake occurs on a normal fault, the ground is offset vertically, with one side dropping down and the other side going up. An example of a normal fault would be the fault that bounds the western side of Frenchman Mountain, just east of Las Vegas. Earthquakes along strike-slip faults, such as the Stateline fault in Pahrump Valley, have horizontal movement. The following map shows the current fault maps for Clark County and its participating jurisdictions.

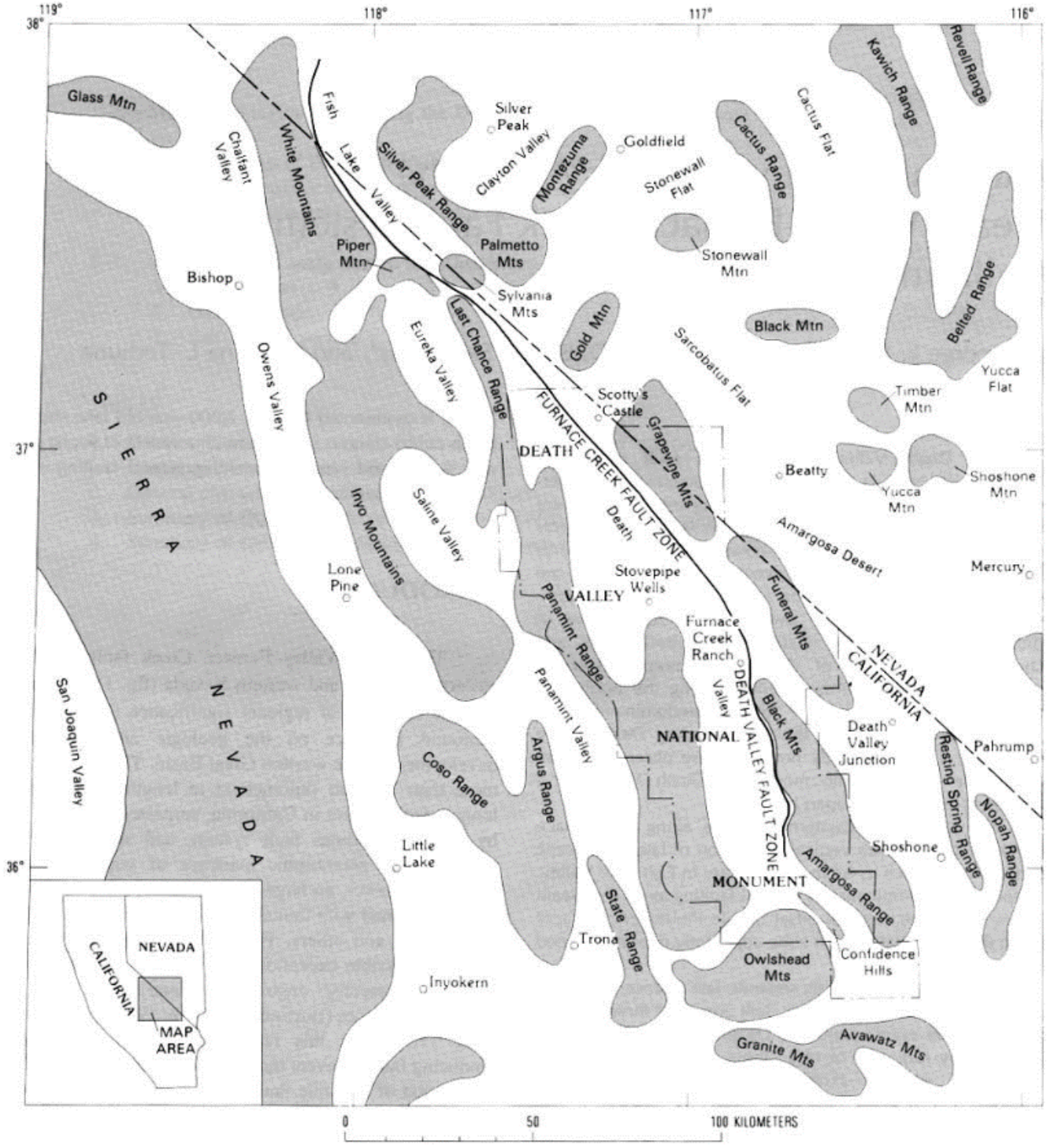
Figure 55: Quaternary Faults in Clark County, NV



Data Source: My Hazards Nevada - Nevada Bureau of Mines and Geology

The magnitude of any earthquake is directly related to the length of the rupture of the earthquake producing fault. Length of the fault does not predict the measure of ground movement. Ground movement and resulting shaking is determined by the depth of the earthquake hypocenter, directionality of the rupture propagation and amplifying or dampening effects of the geomorphology of soils of the affected region. The relatively small M6.3 earthquake that struck Christchurch, New Zealand in 2011 resulted in severe damage and loss of life due to its very shallow hypocenter. Distance from the fault lessens potential ground shaking subject to the factors previously cited. The previous HMP plan update (2018), states despite the large amount of seismic activity within Nevada, experts continue to identify Furnace Creek Fault in Death Valley California as the highest most likely seismic threat to Clark County. The illustration below is a map from the 1991 Geological Survey Bulletin about the location of the Furnace Creek Fault within California and Nevada:

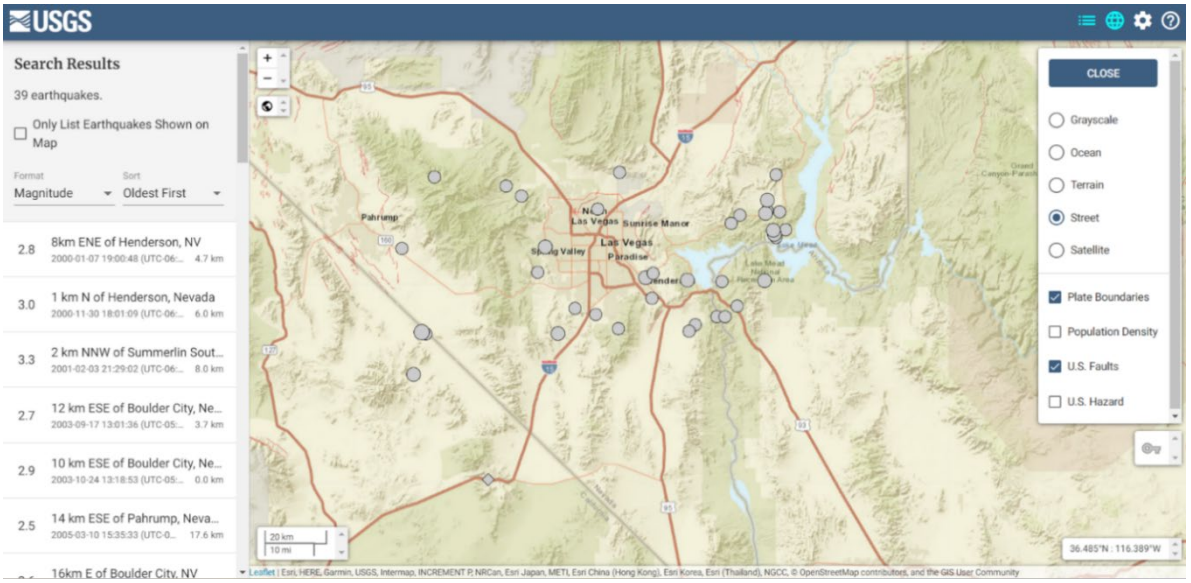
Figure 56: Map of the Furnace Creek Fault - 1991



Data Source: USGS Geological Survey Bulletin

Earthquakes large enough to cause damage can be felt in most, if not all, of Nevada's counties. An online query of the USGS database for 39 earthquakes greater than 2.5 in intensity from 2000-2022 within the planning areas revealed the greatest activity around the greater Las Vegas-Henderson metropolitan area. There were 39 earthquake events in the planning area from January 1, 2000 - December 22, 2022. The following maps provides an illustration of that activity:

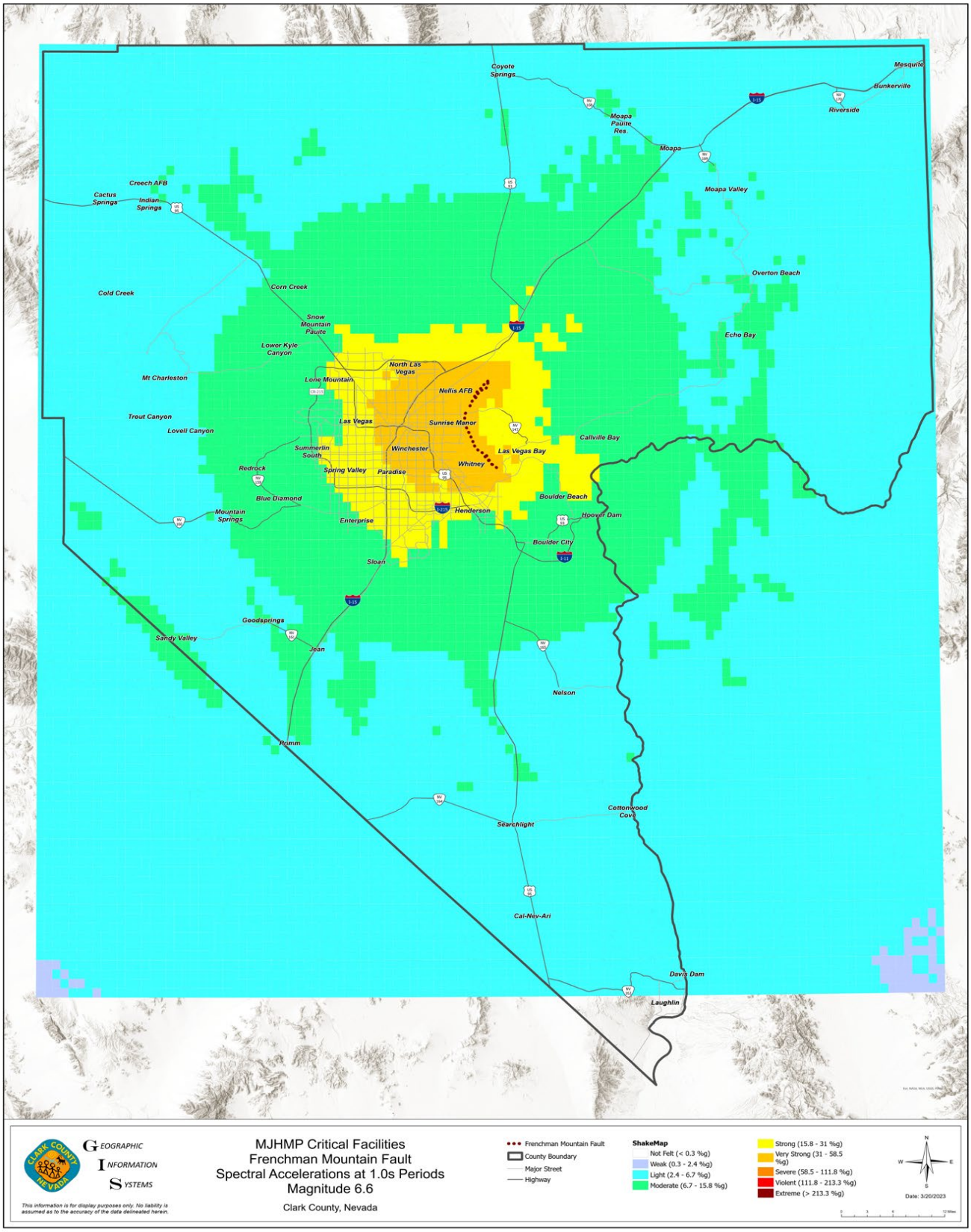
Figure 57: Clark County, NV, Earthquake >2.5 Intensity, January 1, 2000 – December 2022



Data Source: USGS

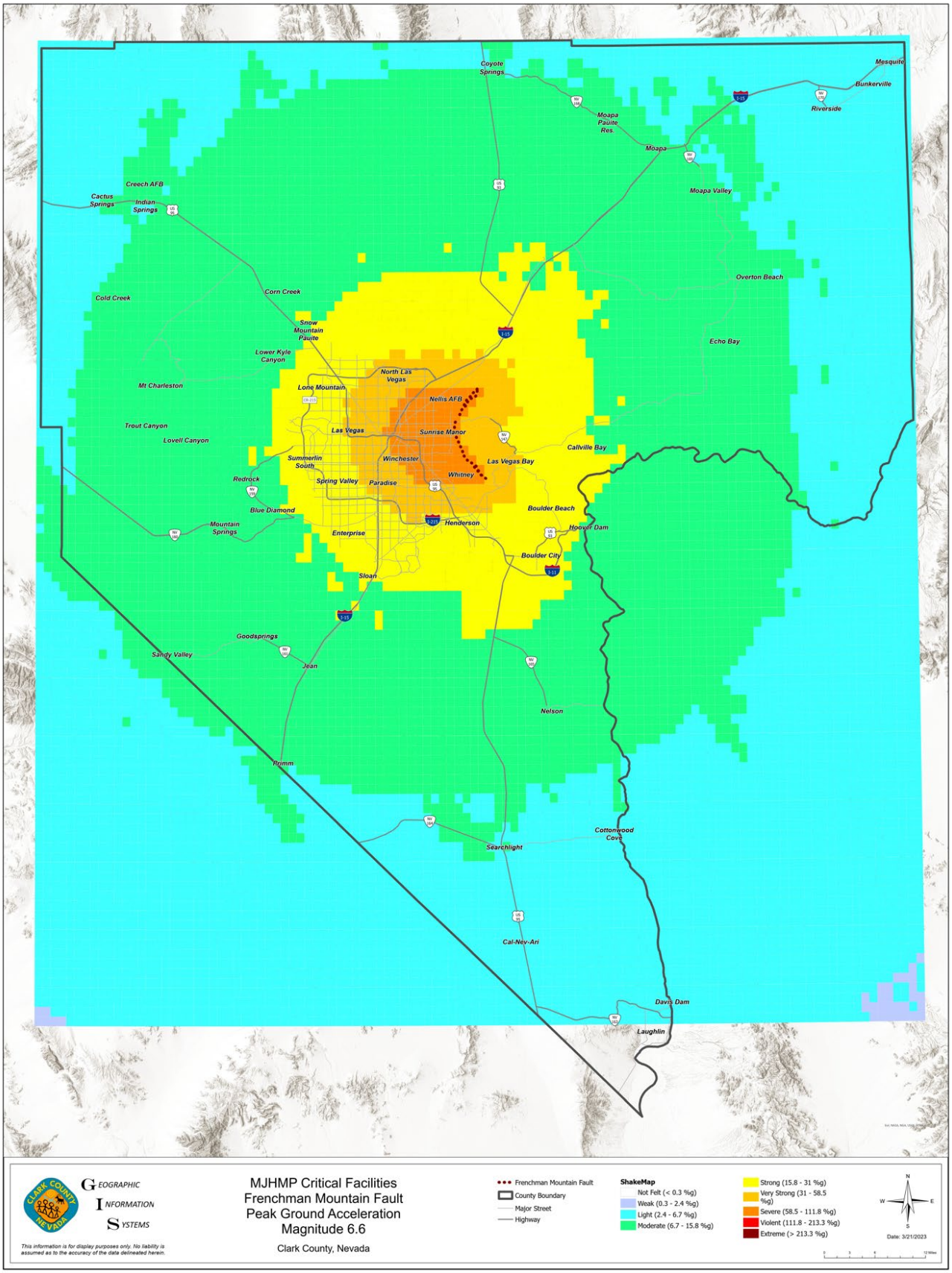
However, the analysis based completed by CONSTANT Associates provides an assessment of the severity a Magnitude 6.6 Earthquake over the Frenchman Mountain Fault within the planning area.

Figure 58: Clark County, Earthquake: Spectral Accelerations at 0.3s Period



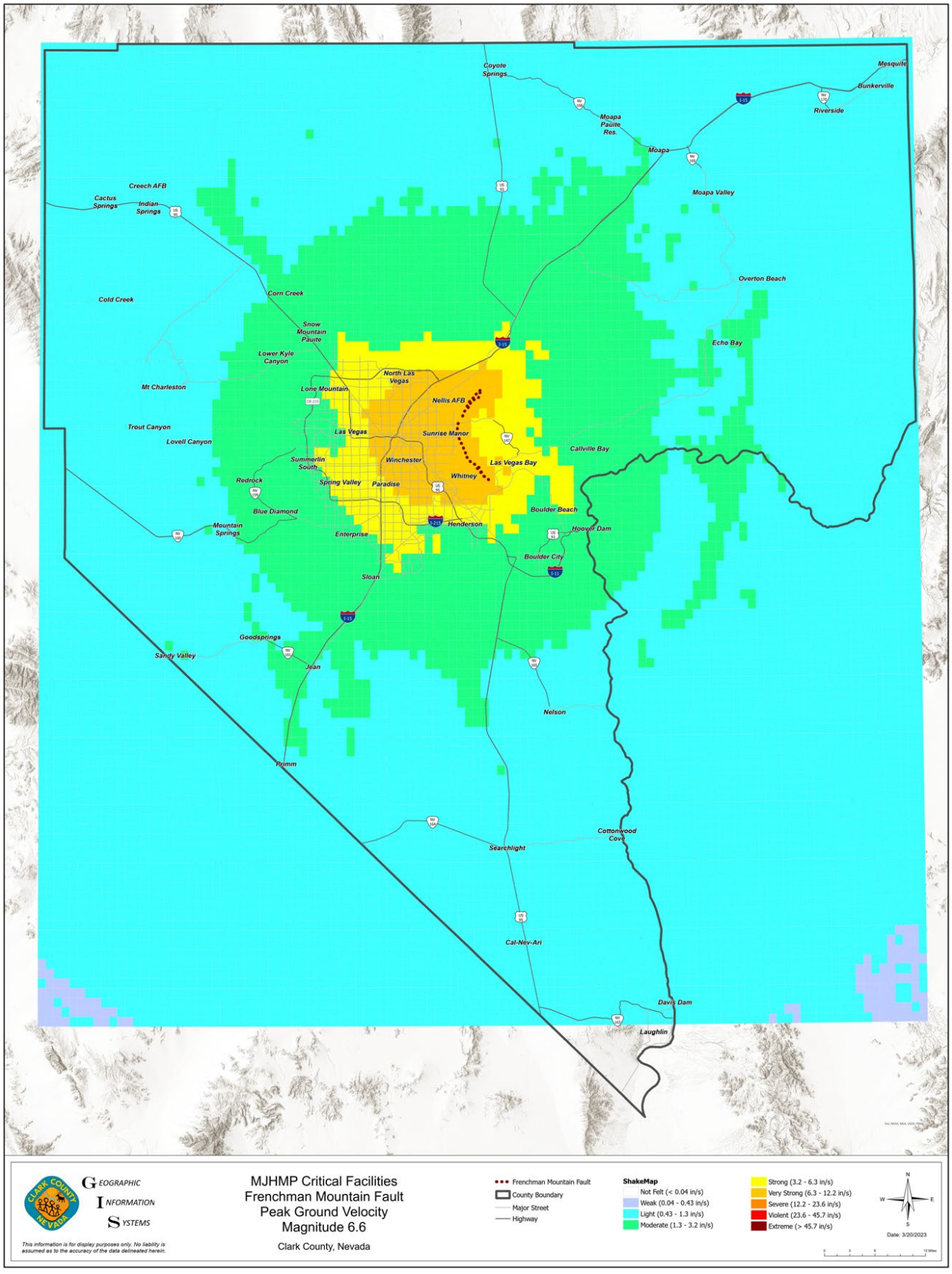
Data Source: CONSTANT Associates and Clark County GIS Department

Figure 59: Clark County, Earthquake: Peak Ground Acceleration Map



Data Source: CONSTANT Associates and Clark County GIS Department

Figure 60: Clark County, Earthquake: Peak Ground Velocity Map



Data Source: CONSTANT Associates and Clark County GIS Department

Previous Occurrence

The previous Clark County HMP (2018) indicates The Las Vegas basin also experiences shaking due to distant earthquakes in western and northern Nevada, southern California, or western Utah. Earthquakes in western and northern Nevada and western Utah ranging from M5.0 to 6.0 were widely felt throughout the basin in 1902, 1916, and 1966. More recently, the 1992 Landers earthquake (M7.3) and the 1999 Hector mine earthquake (M7.1), which occurred more than 100 miles away, were felt strongly throughout the valley. As mentioned above, since the plan update (January 1, 2018 – December 23, 2022), the United States Geological Survey (USGS) reports there have been thirty-nine (39) earthquakes in or around the planning area.

Probability of Future Events, Earthquake

As mentioned in the previous Clark County HMP (2018), in the Las Vegas Valley, Seismologists say there is a roughly 1 in 10 chance that an M 6.0 earthquake — one large enough to cause significant damage — will strike the valley in the next 50 years. However, calculating future probability is one of many predictors of future occurrences. Based on the Calculated Priority Risk Index (CPRI) conducted for Clark County and its participating jurisdictions, there is a **high probability (rank score of 3.0-3.9)** of earthquakes for Clark County. The following table provides CPRI Rating for earthquakes related to Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).

Table 35: Clark County and Participating Jurisdiction CPRI Rating for Geohazards - Earthquake and Seismic Hazard

Clark County and Participating Jurisdiction CPRI Rating for Geohazards – Earthquake and Seismic Hazard							
Hazard: Geohazards – Earthquake and Seismic Hazard Index Rating (R) Weighted Score (WS)		Category and Weight Probability 45%	Magnitude/ Severity 30%	Warning Time 15%	Duration 10%	CPRI Score	Risk Level
Clark County (including Incorporated and Unincorporated Areas	R	3	3	4	4	3.25	H
	WS	1.35	0.9	0.6	0.4		
Boulder City	R	1	2	4	4	2.05	M
	WS	0.45	0.6	0.6	0.4		
Henderson	R	3	3	4	4	3.25	H
	WS	1.35	.9	.6	.4		
Las Vegas	R	4	3	4	4	3.7	H
	WS	1.8	0.9	0.6	0.4		
Mesquite	R	3	3	4	4	3.25	H
	WS	1.35	0.9	0.6	0.4		
North Las Vegas	R	2	4	4	4	3.1	H
	WS	0.9	1.2	0.6	0.4		

Clark County and Participating Jurisdiction CPRI Rating for Geohazards – Earthquake and Seismic Hazard							
Hazard: Geohazards – Earthquake and Seismic Hazard Index Rating (R) Weighted Score (WS)		Category and Weight Probability 45%	Magnitude/ Severity 30%	Warning Time 15%	Duration 10%	CPRI Score	Risk Level
Special District: Clark County Water Reclamation District	R	2	4	4	1	2.8	M
	WS	.9	1.2	.6	.1		
Special District: Clark County School District	R	3	3	4	2	3.05	H
	WS	1.35	0.9	0.6	0.2		
Special District: Las Vegas Valley Water District/SWNA	R	1	4	4	4	2.65	M
	WS	0.45	1.20	0.60	0.40		
Tribal Nation: Las Vegas Valley Paiute	R	4	3	4	4	3.7	H
	WS	1.8	0.9	0.6	0.4		
Tribal Nation: Moapa Band of Paiutes	R	2	1	4	1	1.9	L
	WS	0.9	0.3	0.6	0.1		

Note: *Though participating in the planning process, at the time of this update CPRI data for the City of Mesquite was not received. Therefore, the CPRI rating for the City of Mesquite is the same rating as Clark County due to the city being within the planning area.*
Note: *Though the Tribe participated in the planning process, the Las Vegas Paiute Tribe was unable to provide an update on accurate CPRI Rating for the geohazards – earthquake and seismic hazard. However, space has been made available in the above table for the Las Vegas Paiutes to provide input for this plan update (20XX) at a later date.*

Also, based on the United States Geological Survey (USGS) reports, there have been thirty-nine (39) earthquakes in or around the planning area since the last plan update; Clark County and its participating jurisdictions will likely experience seismic events in the future.

Vulnerability and Impact

Since an earthquake cannot be predicted, the entire planning area, i.e., Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation), is vulnerable to an earthquake incident occurring within or even outside County/State lines.

Vulnerability of Facilities

Clark County's vulnerability to earthquake is varied throughout the county as noted in the County and participating jurisdictions CPRI score in Section 4.3.4 – Probability of Future Events. Building to modern seismic building codes can be an influencing factor in saving lives in the event of an earthquake in the planning area. FEMA mentions that some provisions within the IBC, IRC, and IEBC are intended to ensure that structures can adequately resist seismic forces during an earthquake. The 2020 NEHRP Provisions Volume I and II along with FEMAs companion documents titled Earthquake Resistant Design Concepts – FEMA P-749 are valuable resources for the technical and non-technical explanation background based on past earthquake events.

Clark County and its participating jurisdictions critical structures are valued at $395,335,458. Since earthquakes can threaten the entire planning, all municipal structures are considered exposed and vulnerable. The analysis based on a Magnitude 6.6 Earthquake over the Frenchman Mountain Fault

completed by CONSTANT Associates estimates approximately 90,396 buildings will be at least moderately damaged which is over 12.0% of the building in the planning area. The following table provides a breakdown of these values by facility type.

Table 36: Expected Building Damage by Occupancy

Expected Building Damage by Occupancy					
Occupancy Type	**None**	**Slight**	**Moderate**	**Extensive**	**Complete**
Agriculture	654.86	165.51	142.94	59.73	10.96
Commercial	23963.94	8461.96	9114.17	4063.32	756.61
Education	586.21	180.74	179.99	76.96	13.09
Government	541.16	186.47	256.97	136.45	30.95
Industrial	4390.82	1505.79	1810.17	887.90	173.32
Other Residential	28554.64	11712.27	9337.19	3662.18	661.72
Religion	879.54	305.11	315.18	139.59	24.59
Single Family	473918.82	133308.17	49927.48	8056.83	558.70
Total	553,490	155,826	71,084	17,083	2,320

Data Source: HAZUS® Earthquake Global Risk Report for Clark County produced by CONSTANT Associates

Table 37: Expected Building Damage by Building Type (All Design Levels)

Expected Building Damage by Occupancy					
Design Levels	**None**	**Slight**	**Moderate**	**Extensive**	**Complete**
Wood	486344.74	141512.55	51402.41	6841.04	449.75
Steel	6332.27	1889.84	2736.70	1284.10	334.10
Concrete	6289.46	2368.47	2336.43	1081.94	172.83
Precast	4723.80	1516.88	2459.33	16624.86	287.10
Reinforced Masonry (RM)	20412.14	4596.85	6659.61	3665.50	366.42
Unreinforced Masonry (URM)	1225.59	680.20	740.57	405.75	193.05
Manufactured Home (MH)	8161.99	3261.21	4422.04	2179.78	426.70

Expected Building Damage by Occupancy					
Design Levels	None	Slight	Moderate	Extensive	Complete
Total	553,490	155,826	71,084	17,083	2,320

Data Source: HAZUS® Earthquake Global Risk Report for Clark County produced by CONSTANT Associates

Vulnerability of Population

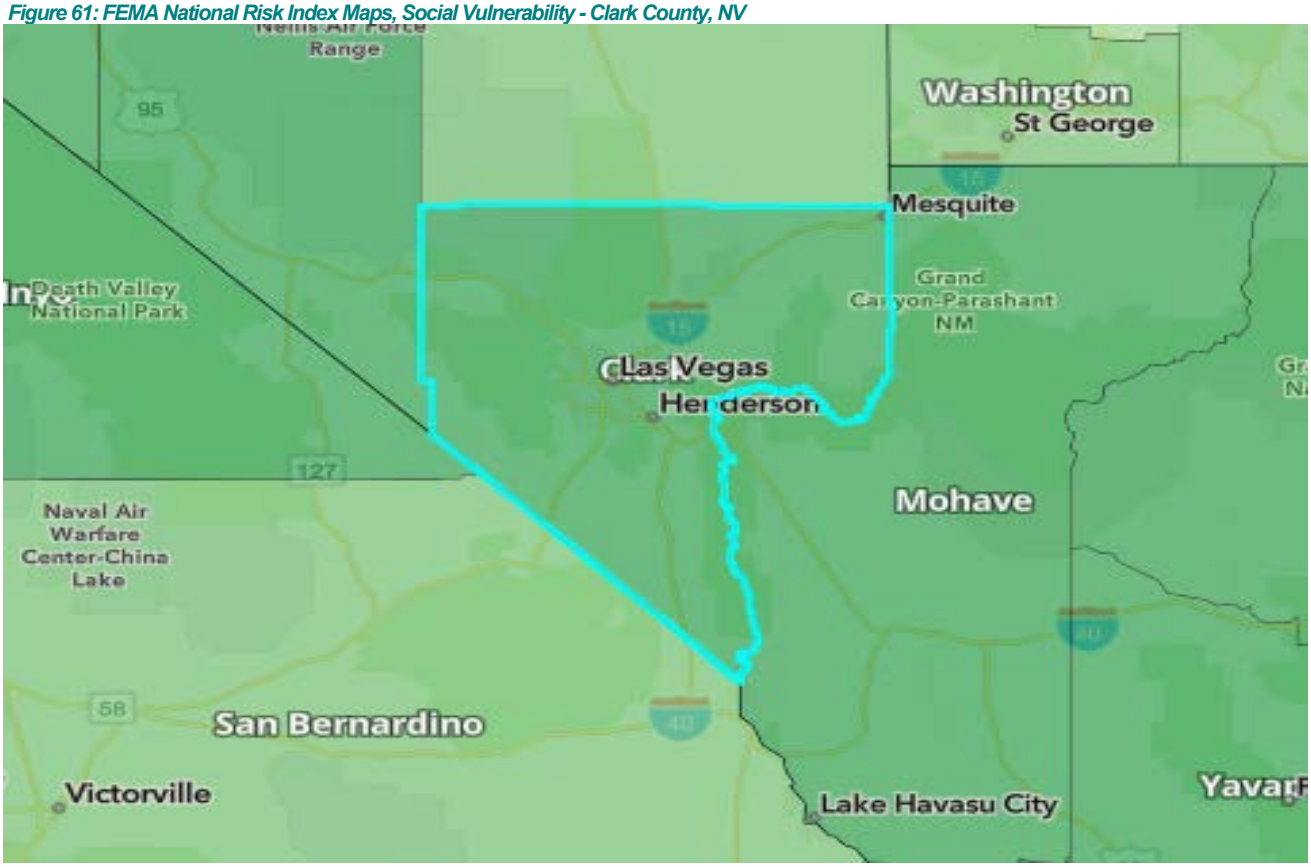
The entire population of Clark County is vulnerable to the hazard of earthquake. Clark County has a total population of 2,265,461 with 840,343 housing units, all of which are highly vulnerable and at-risk to earthquakes.

The FEMA National Risk Index map provides data on social vulnerability and community resilience related to hazards. Both of these factors impact the vulnerability of a population for a hazard event like earthquake. FEMA National Risk Index defines Social Vulnerability as the susceptibility of social groups to the adverse impacts of natural hazards, including death, injury, loss, or disruption of livelihood. FEMA defines Community Resilience as the ability for a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruption. The scoring of these FEMA National Risk Index categories are for all hazards, including geohazards and earthquake are as follows:

- **Community Resilience**: the higher community resilience score results in a lower risk index score. The Community Resilience score for Clark County is 49.9, meaning communities within the County have a Very Low ability to prepare for anticipated natural hazards, adapt to conditions, and withstand and recover rapidly from disruptions compared to the rest of the U.S.
- **Social Vulnerability:** a higher social vulnerability score results in a higher Risk Index score. Social groups in Clark County, NV, have a Relatively High susceptibility to the adverse impacts of natural hazards compared to the rest of the U.S. The Social Vulnerability score for Clark County is 48.59.

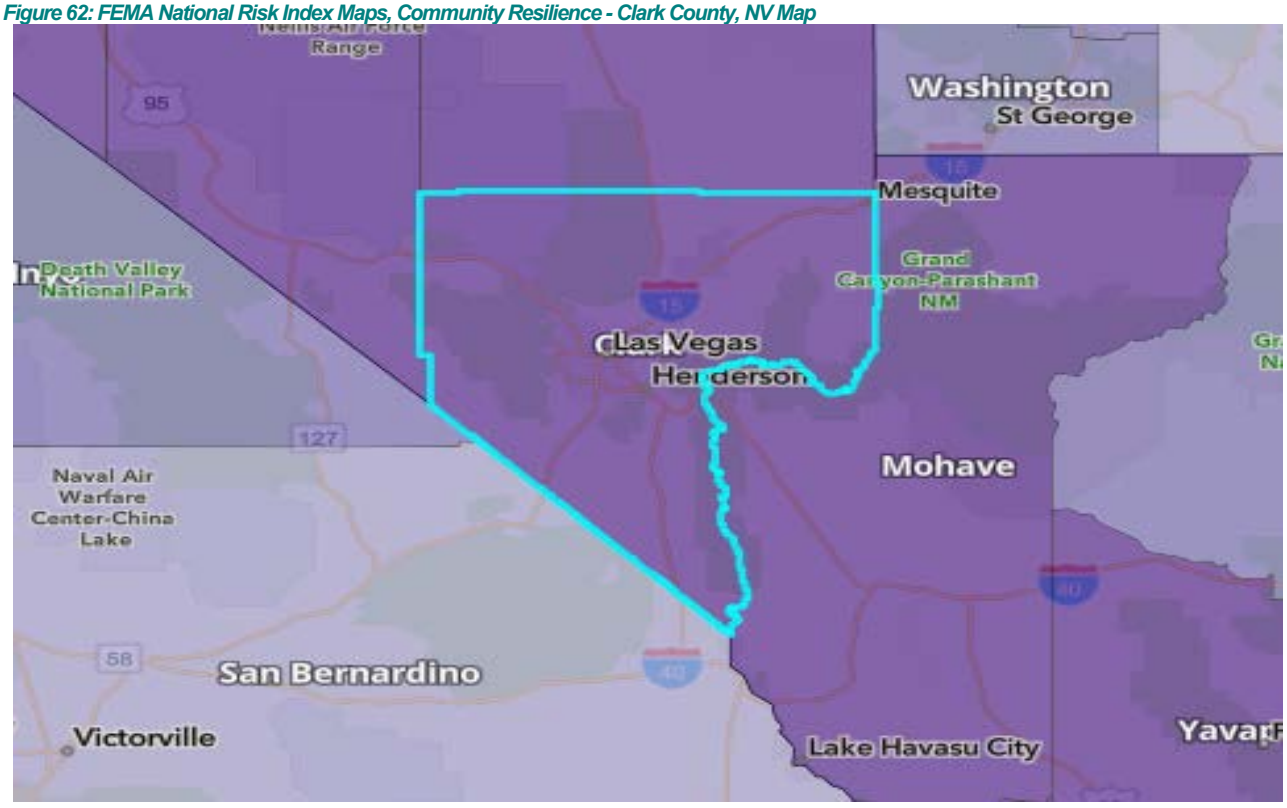
The following maps provide a snapshot of community resilience and social vulnerability scoring related to all hazards including earthquake for Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).

Figure 61: FEMA National Risk Index Maps, Social Vulnerability - Clark County, NV



Data Source: The FEMA National Risk Index

Figure 62: FEMA National Risk Index Maps, Community Resilience - Clark County, NV Map

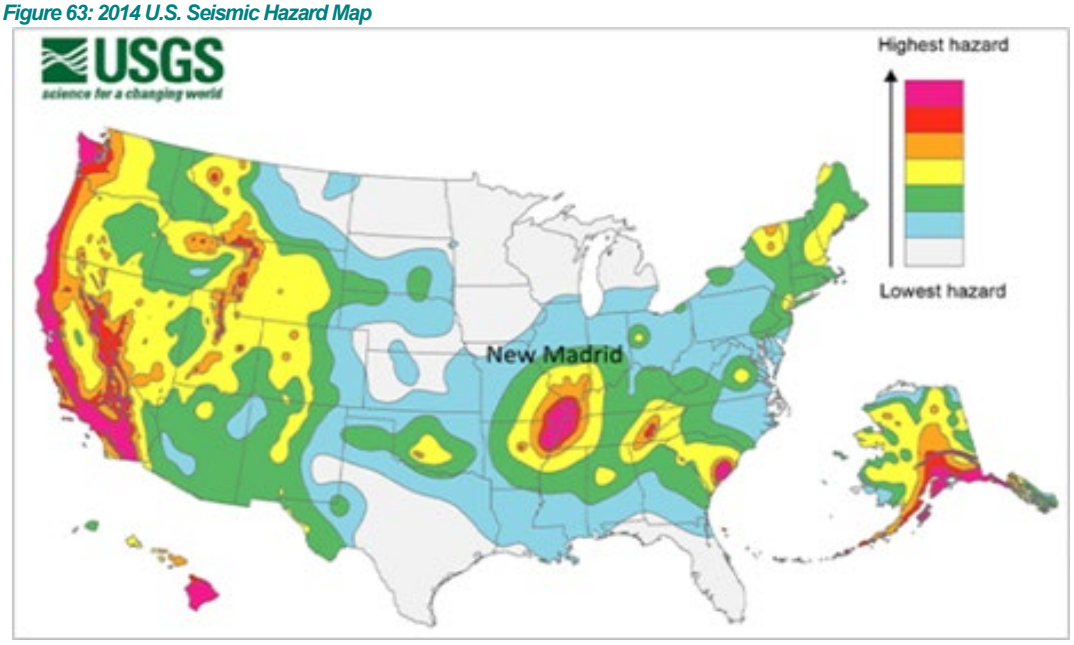


Data Source: The FEMA National Risk Index

Vulnerability of System

All of the County is vulnerable to seismic incidents. The map below depicts that most of the County is at moderately to low risk. The following USGS map depicts that most of the County is at moderate risk.

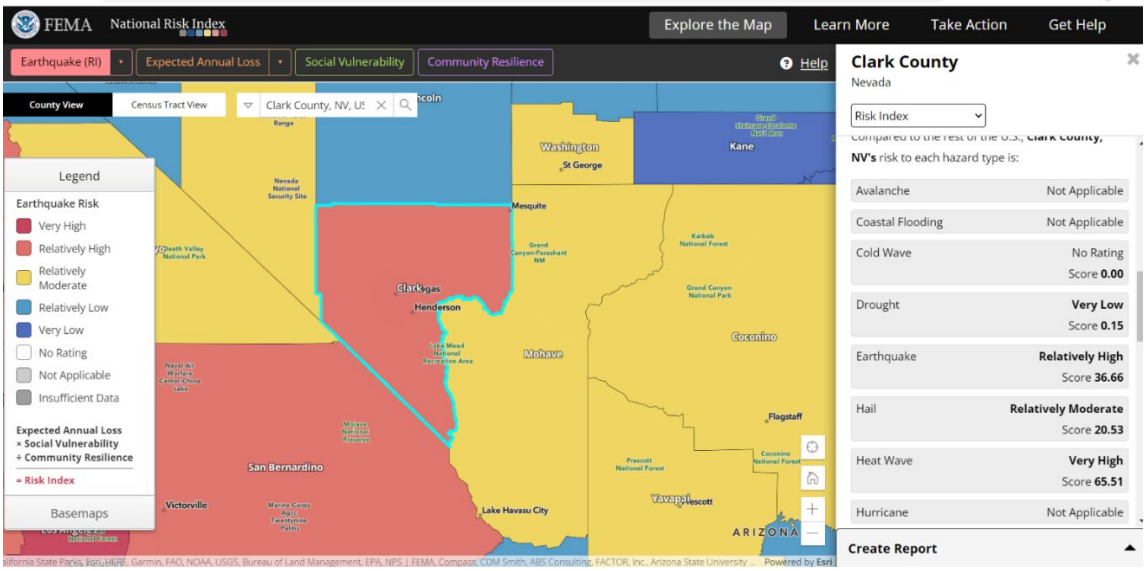
Figure 63: 2014 U.S. Seismic Hazard Map



Data Source: USGS

The previous Clark County HMP (2018) mentions, similar to the 2012 HMPs vulnerability analysis, all of Clark County is vulnerable to shaking from an earthquake; 98.7 percent of the County (7,961.5 square miles) is located within the strong to very strong shaking range for an earthquake. According to the USGS, very strong shaking has the potential for moderate damage. The remaining 1.3 percent of the County, an area northeast of North Las Vegas, is located in the severe shaking range which could cause moderate to severe damage. However, there are no residents or buildings in the area of severe shaking. The FEMA National Risk Index for Natural Hazards is an online mapping system that identifies communities most at risk to 18 natural hazards. Related to earthquake, an earthquake risk index score and rating represent a community's relative risk for earthquakes when compared to the rest of the United States. Clark County has an earthquake risk score of 36.66 (relatively high) compared to the rest of the Country. The map below illustrates that score visually.

Figure 64: FEMA National Risk Index Earthquake



Data Source: FEMA National Risk Index

Impact of Climate Change

Climate change does not have a correlation to seismic activity.

Critical Facilities and Infrastructure

Earthquakes could pose a risk to critical facilities and infrastructure within Clark County and its participating jurisdictions (which includes the Clark County Unincorporated areas and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation). The community assets like critical facilities and infrastructure within the planning area can be vulnerable to even a small magnitude earthquake. A complete list of critical facilities and infrastructure can be found in Appendix D – Critical Facilities & Infrastructure.

Vulnerability of Facilities, Critical Facilities Inventory

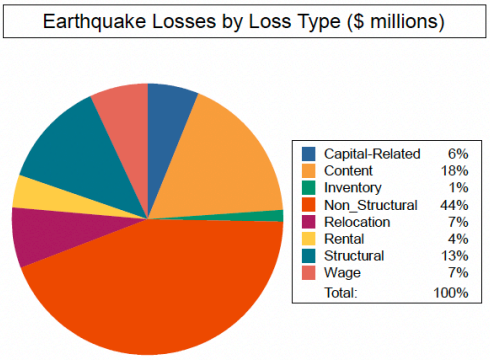
According to HAZUS® - Earthquake Global Risk Report, an analysis depicting the scenario of a 6.6M earthquake near the Frenchman Mountain Fault affecting Clark County and its participating jurisdictions. Such impacts can include structural and utility failure and loss of facility functionality. This information is from the HAZUS® - Earthquake Global Risk Report, developed by CONSTANT Associates.

Shelter Requirements

HAZUS® estimates the number of households expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary shelters. Displaced households represent 16,195 individuals within the planning area of which 10,887 may require temporary public shelter. This information is from the HAZUS® - Earthquake Global Risk Report provided by CONSTANT Associates.

Building-Related Losses

Building losses are broken into two categories: direct building and business interruption. Direct building losses are the estimated costs to repair or replace damage to the building and its contents. Business interruption losses are associated with the inability to operate a business because of the damage sustained during the earthquake. The following is a summary of losses associated with building losses related to earthquake for the planning area:



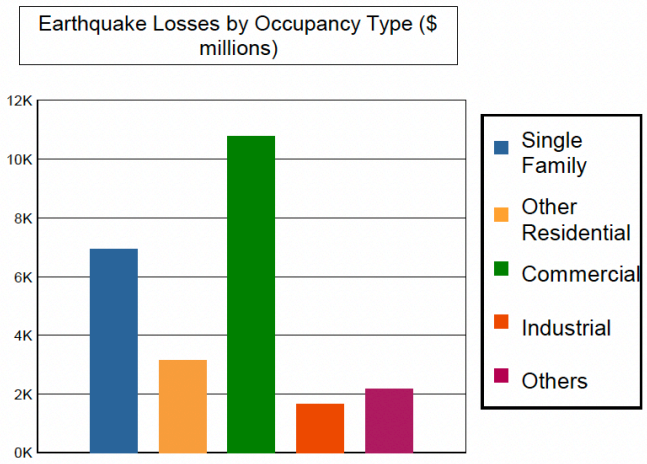


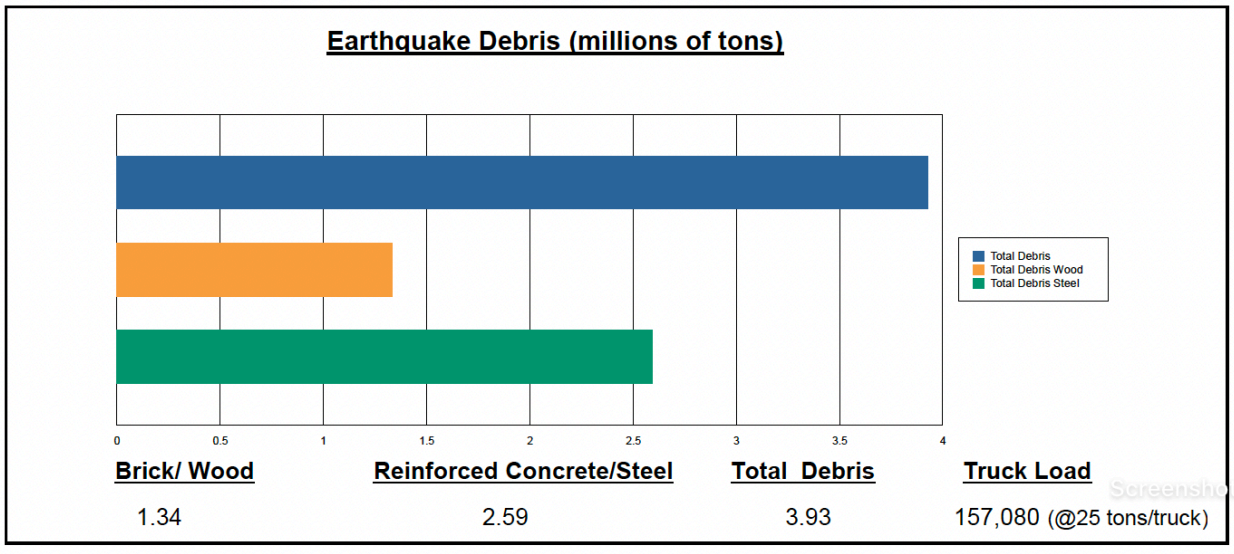
Table 11: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.0000	162.0267	1411.4848	28.8659	86.2821	1,688.6595
	Capital-Related	0.0000	68.8320	1375.4200	17.3535	20.2693	1,481.8748
	Rental	129.6992	254.1057	511.5884	16.8004	35.7749	947.9686
	Relocation	473.9996	128.2867	789.9862	84.1688	305.8007	1,782.2420
	Subtotal	**603.6988**	**613.2511**	**4088.4794**	**147.1886**	**448.1270**	**5900.7449**
Capital Stock Losses							
	Structural	858.6080	331.7903	1395.7896	266.6996	322.4051	3,175.2926
	Non_Structural	4090.4764	1751.6399	3350.6037	709.5143	917.1641	10,819.3984
	Content	1393.3503	440.4278	1654.5283	474.2551	466.5157	4,429.0772
	Inventory	0.0000	0.0000	282.7939	70.9668	10.0154	363.7761
	Subtotal	**6342.4347**	**2523.8580**	**6683.7155**	**1521.4358**	**1716.1003**	**18787.5443**
	Total	**6946.13**	**3137.11**	**10772.19**	**1668.62**	**2164.23**	**24688.29**

Data Source: HAZUS® Earthquake Global Risk Report for Clark County produced by CONSTANT Associates

Earthquake has the potential to inflict significant damage to Clark County. HAZUS® Analysis by CONSTANT Associates, estimated that 3,927,000 tons of debris may be generated from an earthquake event. If this debris tonnage is converted to an estimated number of truckloads, it will require 157,080 truckloads to remove the debris generated by the earthquake. The following graph illustrates the breakdown of earthquake debris by debris type.



Also, earthquakes can cause minimal damage or complete destruction to facilities, transportation and utility systems, taking them offline for days to years depending upon the resources available after an event. Clark County's critical facilities are valued at $395,335,458 and transportation and utility lifelines systems are valued at $45,121,000. Since earthquakes threaten the entire planning area, all structures are considered exposed and vulnerable.

Table 38: Expected Damage to Essential Facilities, Earthquake

Expected Damage to Essential Facilities, Earthquake				
Classification	**Total**	**At Least Moderate >50%**	**Complete Damage >50%**	**With Functionality >50% on day 1**
Hospitals	50	10	0	33
Schools	530	101	0	338
Emergency Operations Centers (EOCs)	7	2	0	14
Police Stations	34	9	0	14
Fire Stations	78	9	0	57

Data Source: HAZUS® Earthquake Global Risk Report for Clark County produced by CONSTANT Associate

Table 39: Expected Utility System Facility Damage, Earthquake

Expected Utility System Facility Damage, Earthquake					
System	**Total**	**At Least Moderate Damage**	**With Complete Damage**	**With Functionality >50%**	
				After Day 1	After Day 7
Portable Water	1	1	0	0	1
Waste Water	17	8	0	8	17
Natural Gas	2	0	0	2	2
Oil Systems	0	0	0	0	0
Electrical Power	39	10	0	33	39
Communication	50	5	0	50	50

Data Source: HAZUS® Earthquake Global Risk Report for Clark County produced by CONSTANT Associates

Table 40: Expected Utility System Pipeline Damage (Site Specific), Earthquake

Expected Utility System Pipeline Damage (Site Specific), Earthquake			
Classification	**Total Pipeline Length (miles)**	**Number of Leaks**	**Number of Breaks**
Portable Water	12,276	420	105
Wastewater	7,365	211	53
Natural Gas	336	0	0
Oil	0	0	0

Data Source: HAZUS® Earthquake Global Risk Report for Clark County produced by CONSTANT Associates

Table 41: Expected Portable Water and Electric Power System Performance, Earthquake

Expected Damage to Essential Facilities, Earthquake						
Hospitals	**Total # of Households**	**Number of Household without Service**				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Portable Water	845,888	153	0	0	0	0
Electric Power		162,687	96,524	34,819	2,184	228

Data Source: HAZUS® Earthquake Global Risk Report for Clark County produced by CONSTANT Associates

Table 42: Expected Damage to Transportation Systems, Earthquake

Expected Damage to Transportation Systems, Earthquake						
System	**Component**	**Number of Locations**			**With Functionality >50%**	
		Location/ Segments	With at Least Mod. Damage	With Complete Damage	After Day 1	After Day 7
Highway	Segments	208	0	0	208	208
	Bridges	1,106	0	0	1,106	1,106
	Tunnels	4	0	0	4	4
	Segments	100	0	0	100	100

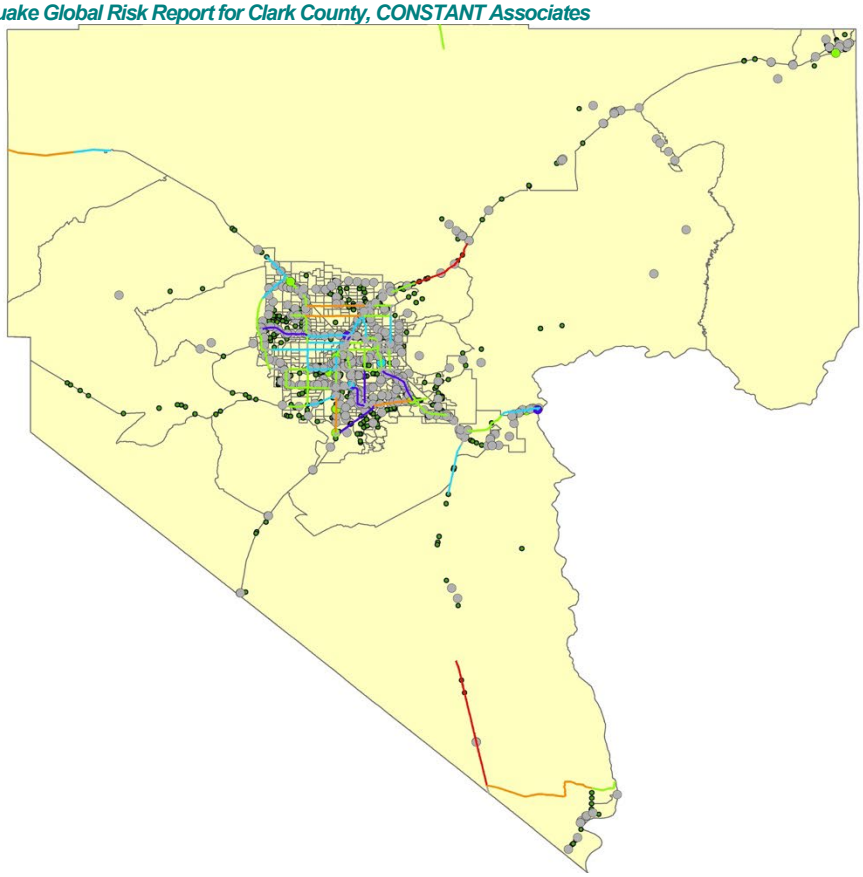
Expected Damage to Transportation Systems, Earthquake						
System	Component	Number of Locations			With Functionality >50%	
		Location/ Segments	With at Least Mod. Damage	With Complete Damage	After Day 1	After Day 7
Highway	Segments	208	0	0	208	208
	Bridges	1,106	0	0	1,106	1,106
	Tunnels	4	0	0	4	4
Railways	Bridges	72	0	0	72	72
	Tunnels	0	0	0	0	0
	Facilities	1	0	0	1	1
Light Rail	Segments	0	0	0	0	0
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	0	0	0	0	0
Bus	Facilities	5	0	0	1	1
Ferry	Facilities	1	0	0	1	1
Port	Facilities	0	0	0	0	0
Airport	Facilities	11	0	0	11	11
	Runways	20	0	0	20	20

Notes: *Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.*

Data Source: HAZUS® Earthquake Global Risk Report for Clark County produced by CONSTANT Associates

The following map illustrates estimated transportation lifeline damage from the scenario within the planning area:

Figure 65: HAZUS® Earthquake Global Risk Report for Clark County, CONSTANT Associates



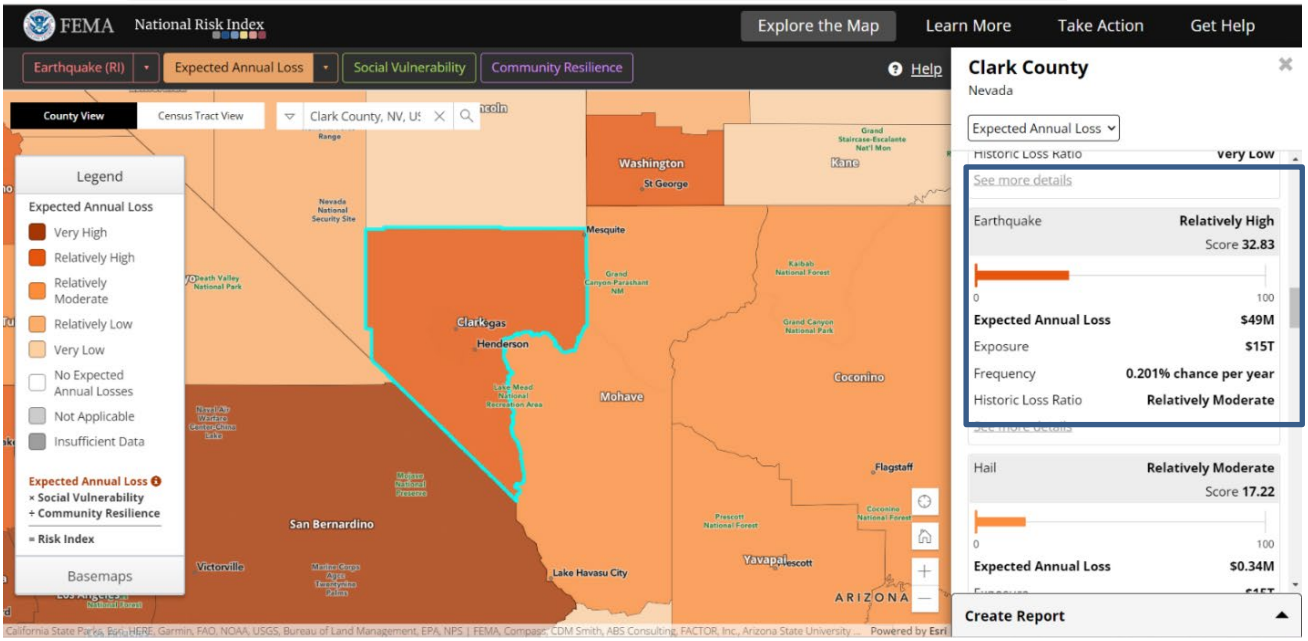
Land Use and Development

Currently, Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) have no land use or development trends related to earthquakes. However, the Earthquake Risk Index score on the FEMA National Risk Index website states the earthquake expected annual loss score (represents the average economic loss in dollars resulting from natural hazards each year) and rating represent a community's relative level of expected building and population loss each year due to Earthquakes when compared to the rest of the United States. For Clark County and their participating jurisdictions, the expected loss of data related to earthquake is as follows:

- Expected Annual Loss Score: 32.83 – relatively high
- Expected Annual Loss: $49 M
- Exposure: $15T
- Frequency: 0.201% chance
- Historic Loss Ratio: Relatively Moderate

The following map illustrates the expected annual loss for earthquake in the planning area:

Figure 66: FEMA National Risk Index Earthquake Annual Expected Loss



Data Source: [FEMA National Risk Index]

Unique and Varied Risk

The entire planning area has the potential to be affected by the profiled hazard, whether directly or indirectly. There are no significant differences between Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).in terms of risks and vulnerabilities associated with earthquakes. Earthquakes potentially can negatively affect all of Clark County. As mentioned above, all of the County is vulnerable to seismic incidents. The map below depicts that most of the County is at moderately to low risk.

Repetitive Loss Structure

Not applicable.

HAZUS® Models

A Magnitude 6.6 Frenchman Mountain Fault Earthquake was modeled in Maps 54-57, 62 and Tables 36-42.

(EH) Extreme/Excessive Heat

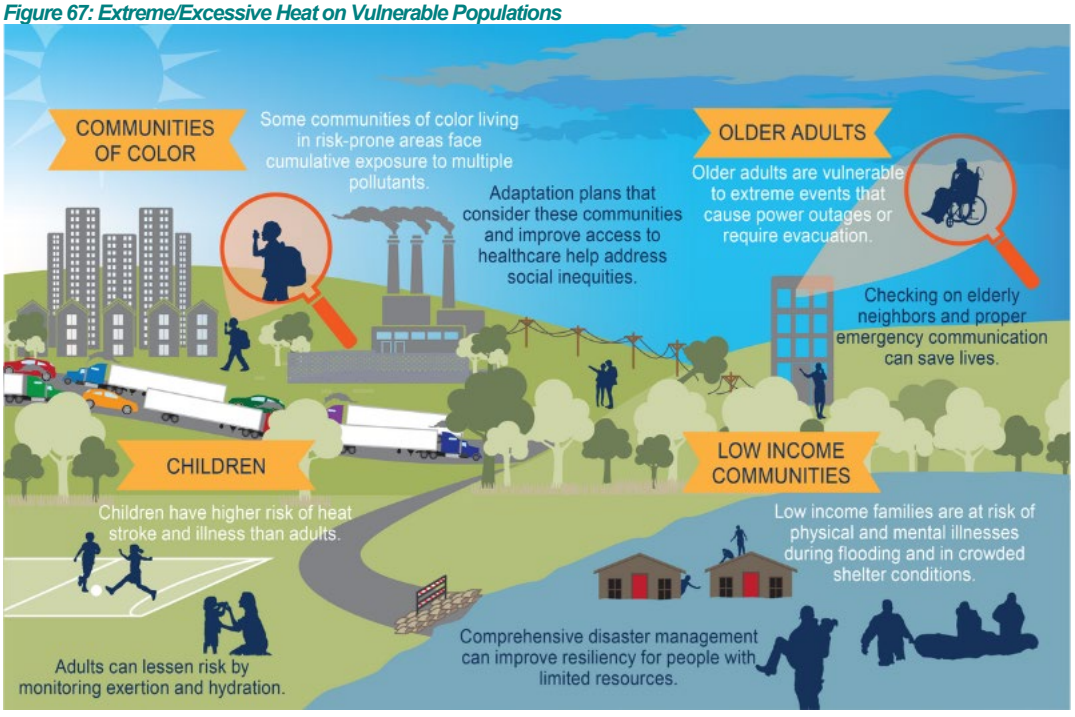
Hazard Description

The National Weather Service (NWS) indicates that two or more consecutive days with unusually high or Extreme/Excessive Heat conditions is referred to as a heat wave. Extreme/Excessive Heat is defined as a period of high heat and humidity with temperatures above 90 degrees for at least two or three days. The summer can cause much hotter and/or more humid temperatures than average. However, some areas of the country can experience hotter temperatures than others. Also, humid and muggy conditions can make it seem hotter than it really is

(https://www.cdc.gov/disasters/extremeheat/heat_guide.html).

Extreme/Excessive Heat can cause an increased heat related illness within a community. The State of Nevada Enhanced Mitigation Plan (2018) mentions that excessive heat during the night time hours can be a predictors of heat related illness. The CDC mentions that though heat-related illnesses are preventable, around 618 people in the United States are killed by Extreme/Excessive Heat each year. Heat waves are also predicted to cause two to three times more heat-related deaths by the mid-century. Heat-related illnesses include heat cramps, heat exhaustion, and life-threatening heat stroke. Heat-related illness results from the "body's inability to dissipate heat produced by metabolic activity, often as a result of increased ambient temperature ."Heat.gov indicates that extreme temperatures associated with heat waves can make everyone uncomfortable. High temperatures can also become a health concern when combined with conditions such as high humidity, sun exposure, stagnant air, and poor air quality. Socially vulnerable communities will experience the worst of these effects; these include impacts on individuals with access and functional needs, including aging populations, the elderly, children, people with chronic illness, and those sensitive to heat exposure. The following infographic provides a visual description of how these communities are affected by Extreme/Excessive Heat conditions.

Figure 67: Extreme/Excessive Heat on Vulnerable Populations



Data Soure: Heat.gov

When combined with populations with inequities, such as poverty, housing, and language limitations, these populations are at a higher risk of heat-related illness and death.

Related to infrastructure, The National Weather Service indicates that Extreme/Excessive Heat also

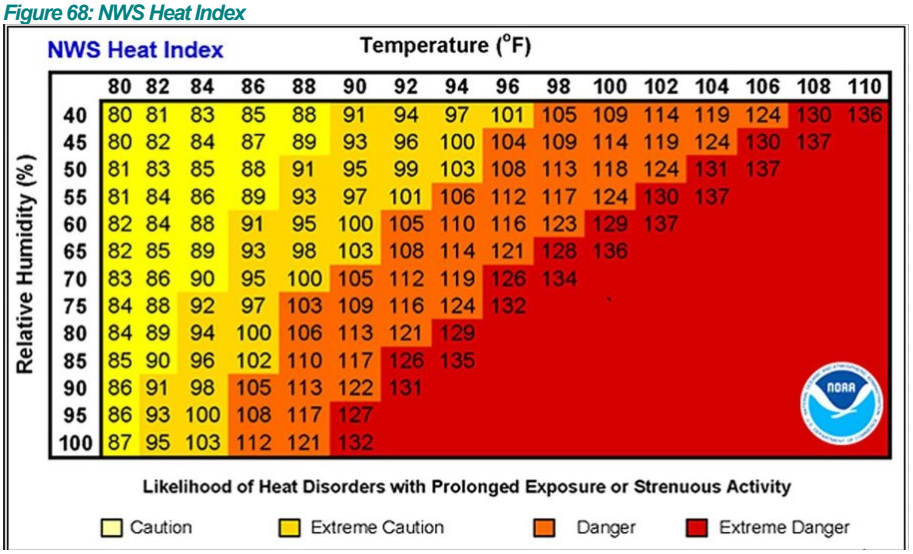
impacts our infrastructure - from transportation to utilities to clean water and agriculture. High heat can deteriorate and buckle pavement, warp or buckle railway tracks, and exceed certain types of aircraft operational limits. Electricity usage increases as air conditioning and refrigeration units in homes and offices work harder to keep indoors cooler. Transmission capacity across electric lines is reduced during high temperatures, further straining the electrical grid. Water resources are also tested as conventional power plants require large quantities of water for cooling, crops may need increased water consumption, and people increase water consumption to stay hydrated and cool. Heat can have lasting impacts as crops may be damaged, reducing production, which leads to short supply and or increased cost to the farmers and consumers.

Location & Extent

Southern Nevada has among the hottest climates in the U.S. and has been identified as one of the fastest-warming regions in the country. The State of Nevada Enhanced Mitigation Plan (2018) mentions that Las Vegas is located in a broad desert valley in extreme southern Nevada extending over about 600 square miles elongated from northwest to southeast. Mountains surrounding the valley rise 2,000 to 10,000 feet above the valley floor. The valley is bounded on the north by the Sheep Range, while Boulder City and the Lake Mead National Recreation Area are considered its southern extent. To the west are the Spring Mountains, which include Mt. Charleston, the region's highest peak at 11,918 feet. Several smaller ranges line the valley's eastern rim, including the Muddy Mountains, the Black Mountains, and the Eldorado Range.

Official weather observations in the planning area began in 1937 at what is now Nellis Air Force Base. In late 1948, the U.S. Weather Bureau moved to McCarran Field, now Harry Reid International Airport (McCarran). To measure Extreme/Excessive Heat temperatures, the NWS has a system to initiate alert procedures (advisories, watches, and warnings) when high temperatures are expected to impact public safety significantly. The heat index as depicted in the image illustrates how the heat-humidity combination makes the air feel. As relative humidity increases, the air seems warmer than it actually is because the body is less able to cool itself via the evaporation of sweat.

Figure 68: NWS Heat Index



Data Source: National Weather Service

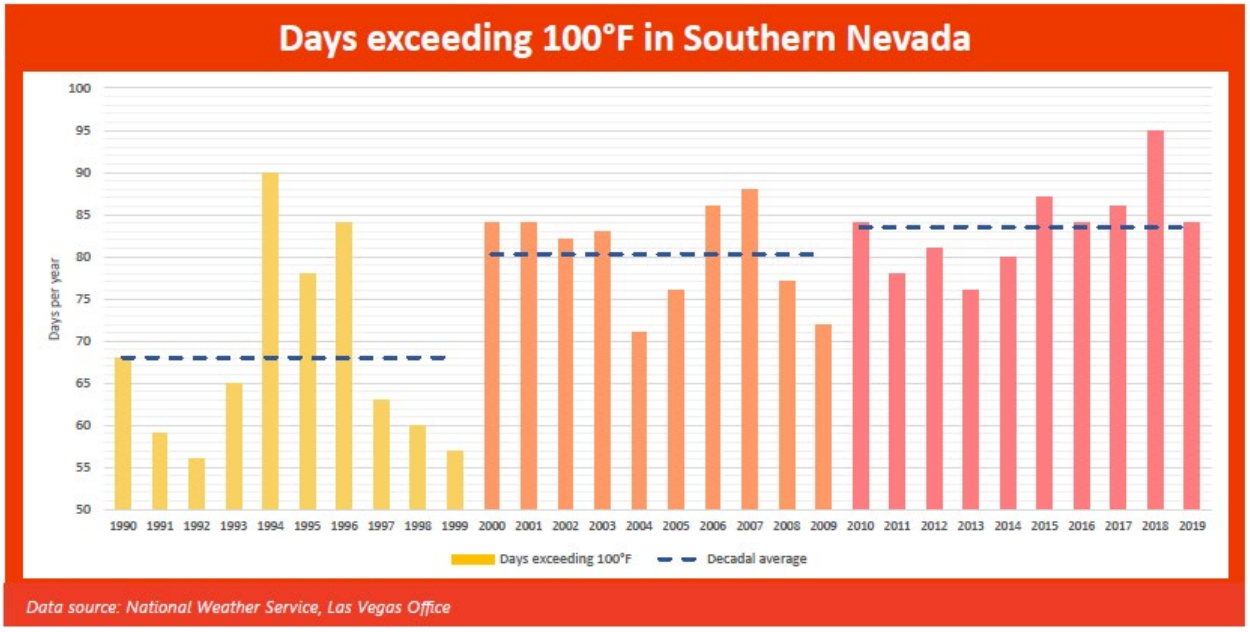
As the heat index rises, so de health risks. Specifically:

- When the heat index is 90°F, heat exhaustion is possible with prolonged exposure and/or physical activity.
- When it is 90° to 105°F, heat exhaustion is probable with the possibility of sunstroke or heat cramps with prolonged exposure and/or physical activity.
- When it is 105° to 129°F, sunstroke, heat cramps or heat exhaustion is likely, and heatstroke

is possible with prolonged exposure and/or physical activity.

- When it is 130°F and higher, heatstroke and sunstroke are extremely likely with continued exposure. Physical activity and prolonged exposure to the heat increase the risks.

The Nevada State Climate Office at the University of Nevada at Reno mentions in the southern part of Nevada, average high temperatures range from the 50s in the winter to nearly 100°F in July and August. Those are monthly averages. Daily high temperatures can be higher, like the state record high temperature of 125°F. Recent research predicts the region will experience a significant increase in the frequency and intensity of Extreme/Excessive Heat events in the coming decades.The following figure provides the number of days exceeding 100° in Southern Nevada:



Data Source: Stay Cool Clark County – ClarkCountyNV.gov

Previous Occurrence, Extreme/Excessive Heat

Stay Cool in Clark County mentions extreme heat days—days with temperatures exceeding 106° F—are projected to increase in Clark County. Currently, we experience about four extreme heat days per year. By 2064, that number could increase to 23 – 30 extreme heat days.

To gain a better understanding of previous occurrences and accurately calculate future probability, the following information was taken into consideration. From January 1, 2018, to January 31, 2023, NOAA/NCEI recorded 132 extreme/excessive heat events in Clark County (including its participating jurisdiction and Clark County Unincorporated Area and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).

Table 43: Extreme/Excessive Heat Events, Clark County, NV, NOAA/NCEI Database

Extreme/Excessive Heat Events, Clark County, NV: 2018-2023					
Location	**Date**	**Event Type**	**Deaths/Injuries**	**Property Damage**	**Crop Damage**
Las Vegas Valley (Zone)	06/04/2018	Extreme/Excessive Heat	2/0	0.00K	0.00K
Las Vegas Valley (Zone)	06/12/2018	Extreme/Excessive Heat	2/0	0.00K	0.00K

Extreme/Excessive Heat Events, Clark County, NV: 2018-2023					
Location	Date	Event Type	Deaths/Injuries	Property Damage	Crop Damage
Northeast Clark (Zone)	06/12/2018	Extreme/Excessive Heat	1/0	0.00K	0.00K
Las Vegas Valley (Zone)	06/21/2018	Extreme/Excessive Heat	2/0	0.00K	0.00K
Las Vegas Valley (Zone)	07/06/2018	Extreme/Excessive Heat	8/0	0.00K	0.00K
Las Vegas Valley (Zone)	07/24/2018	Extreme/Excessive Heat	14/0	0.00K	0.00K
Las Vegas Valley (Zone)	08/06/2018	Extreme/Excessive Heat	4/0	0.00K	0.00K
Western Clark/Southern Nye County	06/11/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	06/11/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	06/11/2019	Extreme/Excessive Heat	5/0	0.00K	0.00K
Las Vegas Valley (Zone)	07/29/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	08/03/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	08/03/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	08/03/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	08/14/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	08/14/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K

Extreme/Excessive Heat Events, Clark County, NV: 2018-2023					
Location	Date	Event Type	Deaths/Injuries	Property Damage	Crop Damage
Lake Mead/Lake Mohave National Recreation Area	08/14/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	08/14/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	08/14/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	08/20/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	08/20/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	08/20/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley Zone	08/20/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	08/26/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	08/26/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	08/26/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	08/26/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	08/26/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	09/01/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K

Extreme/Excessive Heat Events, Clark County, NV: 2018-2023					
Location	Date	Event Type	Deaths/Injuries	Property Damage	Crop Damage
Western Clark/Southern Nye County	09/01/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	09/01/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	09/01/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	09/01/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	09/03/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	09/04/2019	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	5/27/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	5/27/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	5/27/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	5/27/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	05/27/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	06/03/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	06/04/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K

Extreme/Excessive Heat Events, Clark County, NV: 2018-2023					
Location	Date	Event Type	Deaths/Injuries	Property Damage	Crop Damage
Las Vegas Valley (Zone)	06/04/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	06/04/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	07/11/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	07/11/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	07/11/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	07/11/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	07/11/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	07/30/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	07/30/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	07/30/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	07/30/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	08/01/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	08/01/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave	08/01/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K

Extreme/Excessive Heat Events, Clark County, NV: 2018-2023					
Location	Date	Event Type	Deaths/Injuries	Property Damage	Crop Damage
National Recreation Area					
Las Vegas Valley (Zone)	08/01/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	08/01/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	08/14/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	08/14/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave Recreational Area	08/14/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	08/14/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	08/14/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave Recreational Area	08/24/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	08/25/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	08/25/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	08/25/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	08/25/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	09/04/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K

Extreme/Excessive Heat Events, Clark County, NV: 2018-2023					
Location	Date	Event Type	Deaths/Injuries	Property Damage	Crop Damage
Southern Clark (Zone)	09/04/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	09/04/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	09/04/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	09/04/2020	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	06/02/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	06/02/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	06/02/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	06/02/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	06/14/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	06/14/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	06/14/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	06/14/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	06/14/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K

Extreme/Excessive Heat Events, Clark County, NV: 2018-2023					
Location	Date	Event Type	Deaths/Injuries	Property Damage	Crop Damage
Western Clark/Southern Nye County	06/27/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	07/07/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	07/07/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave Recreational Area	07/07/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	07/07/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	07/07/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave Recreational Area	08/03/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	08/04/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	08/04/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	08/04/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	08/04/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	08/15/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	08/26/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K

Extreme/Excessive Heat Events, Clark County, NV: 2018-2023					
Location	Date	Event Type	Deaths/Injuries	Property Damage	Crop Damage
Northeast Clark (Zone)	08/28/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	08/28/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	08/28/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	08/29/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	09/06/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	09/06/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreational Area	09/06/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Spring Mountains (Zone)	09/06/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	09/06/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	09/06/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreational Area	09/12/2021	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	06/09/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	06/09/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K

Extreme/Excessive Heat Events, Clark County, NV: 2018-2023					
Location	**Date**	**Event Type**	**Deaths/Injuries**	**Property Damage**	**Crop Damage**
Lake Mead/Lake Mohave National Recreational Area	06/09/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	06/09/2022	Extreme/Excessive Heat	4/0	0.00K	0.00K
Western Clark/Southern Nye County	06/09/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	07/21/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	07/21/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	07/21/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	07/21/2022	Extreme/Excessive Heat	3/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreational Area	07/21/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreational Area	08/30/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	08/30/2022	Extreme/Excessive Heat	1/0	0.00K	0.00K
Western Clark/Southern Nye County	08/30/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	08/30/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K

Extreme/Excessive Heat Events, Clark County, NV: 2018-2023					
Location	**Date**	**Event Type**	**Deaths/Injuries**	**Property Damage**	**Crop Damage**
Southern Clark (Zone)	08/30/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	09/01/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	09/01/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	09/01/2022	Extreme/Excessive Heat	4/0	0.00K	0.00K
Lake Mead/Lake Mohave Recreational Area	09/01/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	09/01/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Northeast Clark (Zone)	09/05/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Western Clark/Southern Nye County	09/05/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Las Vegas Valley (Zone)	09/05/2022	Extreme/Excessive Heat	1/0	0.00K	0.00K
Lake Mead/Lake Mohave National Recreation Area	09/05/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Southern Clark (Zone)	09/05/2022	Extreme/Excessive Heat	0/0	0.00K	0.00K
Total – 132 Extreme/Excessive Heat Events			**56/0**	**0.00K**	**0.00K**

Note: *The NOAA/NCEI Storm Events Database identifies the location of the extreme/excessive heat events within County into the following zones: Northeast Clark County, Western Clark and Southern Nye County, Sheep Range, Spring Mountains-Red Rock Canyon, Las Vegas Valley, Lake Mead National Recreation Area, and Southern Clark County*

Data Source: NOAA/NCEI Storm Events Database

Based on the information obtained from the NOAA/NCEI, 132 incidents of Extreme/Excessive Heat occurred in Clark County between January 1, 2018, and January 31, 2023. NOAA/NCEI details of the events are provided below:

June 4, 2018, Las Vegas Valley (Zone), Extreme/Excessive Heat

Temperatures reached excessive heat warning levels in Las Vegas. There were no injuries but four deaths associated with the event, and no damage were reported.

June 12-13, 2018, Northeast Clark (Zone) and Las Vegas Valley (Zone), Extreme/Excessive Heat ***One incident occurred on the same day but in two different locations in the planning area and will be counted as one hazard event.***

Temperatures reached excessive heat warning levels on the 12th and 13th. There were no injuries but two deaths associated with the event, and no damage were reported.

July 6, 2018, Las Vegas Valley (Zone), Extreme/Excessive Heat

Excessive Heat Warning criteria were reached in Las Vegas on July 6th. There were no injuries but eight deaths associated with the event, and no damage were reported.

July 24-28, 2018, Las Vegas Valley (Zone), Extreme/Excessive Heat

Excessive heat lasted for five days in Las Vegas. There were no injuries, but fourteen deaths associated with the event, and no damage were reported.

August 6, 2018, Las Vegas Valley (Zone), Extreme/Excessive Heat

Extreme Heat Warning criteria was reached in Las Vegas for three day. During that time, there were no injuries, but four deaths associated with the event, and no damage were reported.

June 11, 2019, Western Clark/Southern Nye County, Las Vegas Valley (Zone), and Lake Mead/Lake Mohave National Recreational Area, Extreme/Excessive Heat ***This event represents three locations in the planning area but will be counted as one event.***

Excessive Heat Warning criteria were reached over portions of Clark and Nye Counties that lasted for three days. During that time, there were no injuries, but six deaths associated with the event, and no damage were reported.

July 29, 2019, Las Vegas Valley (Zone), Extreme/Excessive Heat

Excessive Heat Warning criteria were reached in Las Vegas. There were no injuries, no death, and no damage were reported associated with the event.

August 3, 2019, Western Clark/Southern Nye County, Lake Mead/Lake Mohave National Recreational Area, and Las Vegas Valley (Zone), Extreme/Excessive Heat ***This event represents three locations in the planning area but will be counted as one event.***

Excessive Heat Warning criteria were reached in Las Vegas Valley, Lake Mead/Lake Mohave National Recreational Area, Southern Nye and part of Clark County. There were no injuries, no death, and no damage were reported associated with the event.

August 14, 2019, Northeast Clark (Zone), Western Clark/Southern Nye County, Lake Mead/Lake Mohave National Recreational Area, Southern Clark (Zone), Las Vegas Valley (Zone), and Las Vegas Valley (Zone), Extreme/Excessive Heat ***This event represents five locations in the planning area but will be counted as one event.***

Excessive Heat Warning criteria were reached in much of Clark and Southern Nye Counties. There were no injuries, no death, and no damage were reported associated with the event.

August 20, 2019, Northeast Clark (Zone), Western Clark/Southern Nye County, Lake Mead/Lake Mohave National Recreational Area, Southern Clark (Zone), Las Vegas Valley (Zone), and Las Vegas Valley (Zone), Extreme/Excessive Heat ***This event represents five locations in the planning area but will be counted as one event.***

Excessive Heat Warning criteria were reached in much of Clark and Southern Nye Counties. There were no injuries, no death, and no damage were reported associated with the event.

August 26, 2019, Northeast Clark (Zone), Western Clark/Southern Nye County, Lake Mead/Lake Mohave National Recreational Area, Southern Clark (Zone), Las Vegas Valley (Zone), and Las Vegas Valley (Zone), Extreme/Excessive Heat ***This event represents five locations in the planning area but will be counted as one event.***

A prolonged excessive heat episode affected nearly all of the lower elevations of the Mojave Desert in Northeast Clark County. The episode also affected Western Clark and Southern Nye Counties, Southern Clark County, Lake Mead National Recreation Area, and Las Vegas Valley. There were no injuries, no death, and no damage were reported associated with the event.

September 1, 2019, Northeast Clark (Zone), Western Clark/Southern Nye County, Lake Mead/Lake Mohave National Recreational Area, Southern Clark (Zone), Las Vegas Valley (Zone), and Las Vegas Valley (Zone), Extreme/Excessive Heat ***This event represents five locations in the planning area but will be counted as one event.***

A prolonged excessive heat episode affected nearly all of the lower elevations of the Mojave Desert in Northeast Clark County. This episode began in August and affected Western Clark and Southern Nye Counties, Southern Clark County, Lake Mead National Recreation Area, and Las Vegas Valley. There were no injuries, no death, and no damage were reported associated with the event.

September 3-4, 2019, Lake Mead/Lake Mohave National Recreational Area and Las Vegas Valley (Zone, Extreme/Excessive Heat ***This event represents two locations in the planning area but will be counted as one event.***

Excessive Heat conditions briefly returned to the Colorado River Valley, Lake Mead National Recreational Area, and Las Vegas Valley before ending for the season. There were no injuries, no death, and no damage were reported associated with the event.

June 3, 2020, Northeast Clark (Zone), Western Clark/Southern Nye County, Lake Mead/Lake Mohave National Recreational Area, Southern Clark (Zone), and Las Vegas Valley (Zone), Extreme/Excessive Heat ***This event represents four locations in the planning area but will be counted as one event.***

Strong high pressure built over the Mojave Desert, resulting in Excessive Heat Warning criteria being reach in several zones. The excessive heat warning criteria were reached for two straight days. There were no injuries, no death, and no damage were reported associated with the event.

June 4, 2020, Northeast Clark (Zone), Western Clark/Southern Nye County, Lake Mead/Lake Mohave National Recreational Area, and Las Vegas Valley (Zone), Extreme/Excessive Heat
This event represents four locations in the planning area but will be counted as one event.

Strong high pressure built over the Mojave Desert, resulting in Excessive Heat Warning criteria being reach in several zones. The excessive heat warning criteria were reached one day. There were no injuries, no death, and no damage were reported associated with the event.

July 11, 2020, Northeast Clark (Zone), Western Clark/Southern Nye County, Lake Mead/Lake Mohave National Recreational Area, and Las Vegas Valley (Zone), Extreme/Excessive Heat
This event represents four locations in the planning area but will be counted as one event.

Strong high pressure brought dangerously hot temperatures to the Mohave Desert. The excessive heat warning criteria were reached three days in a row. There were no injuries, no death, and no damage were reported associated with the event.

July 30, 2020, Northeast Clark (Zone), Western Clark/Southern Nye County, Lake Mead/Lake Mohave National Recreational Area, Southern Clark (Zone), and Las Vegas Valley (Zone), Extreme/Excessive Heat ***This event represents five locations in the planning area but will be counted as one event.***

Strong high pressure built over the Mojave Desert, leading to dangerously hot temperatures. The episode with these Zones continued into August. There were no injuries, no death, and no damage were reported associated with the event.

August 14, 2020, Northeast Clark (Zone), Western Clark/Southern Nye County, Lake Mead/Lake Mohave National Recreational Area, Southern Clark (Zone), and Las Vegas Valley (Zone), Extreme/Excessive Heat ***This event represents five locations in the planning area but will be counted as one event.***

Strong and nearly stationary high pressure aloft to lead to a week long heat wave which set many record high temperatures in the Mojave Desert. The Excessive Heat Warning Criteria were reached for eight straight days. There were no injuries, no death, and no damage were reported associated with the event.

August 24, 2020, Lake Mead/Lake Mohave National Recreation Area, Extreme/Excessive Heat

Yet again, high pressure strengthened over the Desert Southwest, leading to another period of excessive heat. Excessive Heat Warning criteria were reached for four straight days. There were no injuries, no death, and no damage were reported associated with the event.

September 4, 2020, Las Vegas Valley (Zone), Northeast Clark (Zone), and Western Clark/Southern Nye County, Extreme/Excessive Heat **This event represents three locations in the planning area but will be counted as one event.*

Strong high pressure over the Mohave Desert produced yet another heat wave. Several temperature records were broken, including some records for the month of September. Excessive Heat Warning criteria for these zones were reached for four straight days. There were no injuries, but four deaths associated with the event, and no damage were reported.

June 2, 2021, Las Vegas Valley (Zone), Northeast Clark (Zone), Western Clark/Southern Nye County, and Lake Mead/Lake Mohave National Recreation Center, Extreme/Excessive Heat
****This event represents four locations in the planning area but will be counted as one event.***

Strong high pressure over the Mohave Desert produced yet another heat wave. Several temperature records were broken, including some records for the month of September. Excessive Heat Warning criteria for these zones were reached for four straight days. There were no injuries, but four deaths associated with the event, and no damage were reported.

June 14, 2021, Northeast Clark (Zone), Southern Clark (Zone), Las Vegas Valley (Zone), Western Clark/Southern Nye County, and Lake Mead/Lake Mohave National Recreation Center, Extreme/Excessive Heat ****This event represents five locations in the planning area but will be counted as one event.***

Strong, nearly stationary high pressure led to a week long, intense heat wave with many temperature records broken. Excessive Heat Warning criteria for these zones were reached for seven days in a row. There were no injuries, no death, and no damage were reported associated with the event.

June 27, 2021, Western Clark/Southern Nye County, Extreme/Excessive Heat

High pressure near the West Coast produced very hot temperatures over western portions of the southern Great Basin and Mojave Desert. Excessive Heat Warning criteria were reached for two days. There were no injuries, no death, and no damage were reported associated with the event.

July 7, 2021, Northeast Clark (Zone), Southern Clark (Zone), Las Vegas Valley (Zone), Lake Mead/Lake Mohave National Recreational Area, and Western Clark/Southern Nye County, Extreme/Excessive Heat ****This event represents five locations in the planning area but will be counted as one event.***

Strong high pressure over the Desert Southwest brought several days of scorching temperatures. Excessive Heat Warning criteria for these zones were reached six days in a row. There were no injuries, no death, and no damage were reported associated with the event.

August 3, 2021, Lake Mead/Lake Mohave National Recreation Area, Extreme/Excessive Heat

High pressure building overhead brought three days of excessive heat to portions of the Mojaave Desert. Excessive Heat Warning criteria were reached three days in a row. There were no injuries, no death, and no damage were reported associated with the event.

August 4, 2021, Northeast Clark (Zone), Southern Clark (Zone), Las Vegas Valley (Zone), and Western Clark/Southern Nye County, Extreme/Excessive Heat *This event represents four locations in the planning area but will be counted as one event.

High pressure building overhead brought three days of excessive heat to portions of the Mojaave Desert. Excessive Heat Warning criteria for these zones were reached two days in a row. There were no injuries, no death, and no damage were reported associated with the event.

August 15, 2021, Western Clark/Southern Nye County, Extreme/Excessive Heat

Strengthening high pressure suppressed thundersotm development and brought two days of excessive heat to portions of the Mojave Desert. Excessive Heat Warning criteria were reached two days in a row. There were no injuries, no death, and no damage were reported associated with the event.

August 26, 2021, Lake Mead/Lake Mohave National Recreation Area, Extreme/Excessive Heat

High pressure building in from the east brought five days of excessive heat to much of the Mojave Desert. There were no injuries, no death, and no damage were reported associated with the event.

August 28, 2021, Western Clark/Southern Nye County, Northeast Clark (Zone), Las Vegas Valley (Zone), Southern Clark (Zone), Extreme/Excessive Heat

High pressure building in from the east brought three days of excessive heat to much of the Mojave Desert. There were no injuries, no death, and no damage were reported associated with the event.

August 29, 2021, Southern Clark (Zone), Extreme/Excessive Heat

High pressure building in from the east brought five days of excessive heat to much of the Mojave Desert. For the Southern Clark (Zone), Excessive Heat Warning criteria were reached on one day. There were no injuries, no death, and no damage were reported associated with the event.

September 6, 2021, Las Vegas Valley (Zone), Southern Clark (Zone), Spring Mountain (Zone), Lake Mead/Lake Mohave National Recreational Area, and Western Clark/Southern Nye (Zone), Extreme/Excessive Heat ***This event represents four locations in the planning area but will be counted as one event.***

High pressure over the Deseret Southwest brought four days of excessive heat. In the Las Vegas Valley (Zone), Excessive Heat Warning criteria were reached four day in a row that lead to five fatalities and no injuries. However, for the remaining zones (Southern Clark, Spring Mountain, Lake Mead/Lake Mohave National Recreational Area, and Western Clark/Southern Nye County), there were no injuries, no death, and no damage were reported associated with the event.

September 12, 2021, Lake Mead/Lake Mohave National Recreational Area, Extreme/Excessive Heat

High pressure brought two days of excessive heat to the Colorado River Valley. There were no injuries, no death, and no damage were reported associated with the event.

June 9, 2022, Northeast Clark (Zone), Las Vegas Valley (Zone), Southern Clark (Zone), Lake Mead/Lake Mohave National Recreational Area, and Western Clark/Southern Nye (Zone), Extreme/Excessive Heat ***This event represents five locations in the planning area but will be counted as one event.***

Building high pressure pushed temperatures close to records ove rmuch of the Mohave Desert. In the Las Vegas Valley (Zone), Excessive Heat Warning criteria were reached three day in a row leading to four deaths and no injuries. However, for the remaining zones (Northeast Clark, Southern Clark, Lake Mead/Lake Mohave National Recreational Area, and Western Clark/Southern Nye County), there were no injuries, no death, and no damage were reported associated with the event.

July 21, 2022, Northeast Clark (Zone), Las Vegas Valley (Zone), Southern Clark (Zone), Lake Mead/Lake Mohave National Recreational Area, and Western Clark/Southern Nye (Zone), Extreme/Excessive Heat ***This event represents five locations in the planning area but will be counted as one event.***

Strong high pressure building overhead brought record hot temperatures to portiosn of the Mohave Desert and Southern Great Basin. In the Las Vegas Valley (Zone), Excessive Heat Warning criteria were reached two day in a row leading to three deaths and no injuries. However, for the remaining zones (Northeast Clark, Southern Clark, Lake Mead/Lake Mohave National Recreational Area, and Western Clark/Southern Nye County), Excessive Heat Warning criteria was reached for two days however, there were no injuries, no death, and no damage were reported associated with the event.

August 30, 2022, Northeast Clark (Zone), Las Vegas Valley (Zone), Southern Clark (Zone), Lake Mead/Lake Mohave National Recreational Area, and Western Clark/Southern Nye (Zone), Extreme/Excessive Heat ***This event represents five locations in the planning area but will be counted as one event.***

High pressure building over the Desert Southwest brought widespread excessive heat conditions which continued to September. In the Las Vegas Valley (Zone), Excessive Heat Warning criteria were reached two day in a row leading to one death but no injuries. However, for the remaining zones (Northeast Clark, Southern Clark, Lake Mead/Lake Mohave National Recreational Area, and Western Clark/Southern Nye County), Excessive Heat Warning criteria was reached for two days however, there were no injuries, no death, and no damage were reported associated with the event.

September 1, 2022, Northeast Clark (Zone), Las Vegas Valley (Zone), Southern Clark (Zone), Lake Mead/Lake Mohave National Recreational Area, and Western Clark/Southern Nye (Zone), Extreme/Excessive Heat ***This event represents five locations in the planning area but will be counted as one event.***

This event began in August. Excessive Heat Warning criteria were reached on each of the first four days of September, and the event continued beyond. In the Las Vegas Valley (Zone), this event lead to four deaths but no injuries. However, for the remaining zones (Northeast Clark, Southern Clark, Lake Mead/Lake Mohave National Recreational Area, and Western Clark/Southern Nye County), there were no injuries, no death, and no damage were reported associated with the event.

September 5, 2022, Northeast Clark (Zone), Las Vegas Valley (Zone), Southern Clark (Zone), Lake Mead/Lake Mohave National Recreational Area, and Western Clark/Southern Nye (Zone), Extreme/Excessive Heat ***This event represents five locations in the planning area but will be counted as one event.***

This event began in August and continue through early September. In the Las Vegas Valley (Zone), this event lead to one death but no injuries. However, for the remaining zones (Northeast Clark, Southern Clark, Lake Mead/Lake Mohave National Recreational Area, and Western Clark/Southern Nye County), there were no injuries, no death, and no damage were reported associated with the event.

Probability of Future Events, Extreme/Excessive Heat

Calculating future probability is one of many predictors of future occurrences. Based on the Calculated Priority Risk Index (CPRI) conducted for Clark County and its participating jurisdictions, there is a **high probability (rank score of 3.0-3.9**) of extreme/excessive heat for the planning area. The following table provides CPRI Rating on climate change for Clark County and its participating jurisdictions.

Table 44: Clark County and Participating Jurisdiction CPRI Rating for Extreme/Excessive Heat

Clark County and Participating Jurisdictions CPRI Rating for Extreme/Excessive Heat							
Hazard: Extreme/Excessive Heat **Index Rating (R) Weighted Score (WS)**		**Category and Weight** **Probability 45%**	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**	**CPRI Score**	**Risk Level**
Clark County (including Incorporated and Unincorporated Areas	R	4	3	1	3	3.15	H
	WS	1.8	0.9	0.15	0.3		
Boulder City	R	4	3	2	3	3.3	H
	WS	1.8	0.9	0.3	0.3		
Henderson	R	4	4	4	4	4	S
	WS	1.8	1.2	.15	.4		
Las Vegas	R	4	2	1	3	2.85	M
	WS	1.8	0.6	0.15	0.3		
Mesquite	R	4	3	1	3	3.15	H
	WS	1.8	0.9	0.15	0.3		
North Las Vegas	R	4	2	1	2	2.75	M
	WS	1.8	0.6	0.15	0.2		
Special District: Clark County Water Reclamation District	R	4	3	1	3	3.15	H
	WS	1.8	0.90	.15	.30		
Special District: Clark County School District	R	3	2	2	3	2.55	M
	WS	1.35	0.6	0.3	0.3		
Special District: Las Vegas Valley Water District/SWNA	R	4	2	2	3	3.00	H
	WS	1.80	0.60	0.30	0.30		
Tribal Nation: Las Vegas Valley Paiute	R	4	2	3	4	3.25	H
	WS	1.8	0.6	0.45	0.4		
Tribal Nation: Moapa Band of Paiutes	R	4	4	2	3	3.6	H
	WS	1.8	1.2	0.3	0.3		

***Note**: Though participating in the planning process, at the time of this update, the CPRI data for the City of Mesquite was not received. Therefore, the CPRI rating for the City of Mesquite is the same rating as Clark County due to the city being within the planning area.*

Also, based on the information obtained from the NOAA/NCEI, only 132 extreme/excessive heat incidents occurred in Clark County between January 1, 2018, and January 31, 2023. It's worth noting that during the reporting period (January 1, 2018, and January 31, 2018), these hazard events occurred on the same day for multiple locations in the planning area. Therefore, the number of extreme/excessive heat events reported from the NOAA/NCEI Storm Event Database for the planning area for the table below are counted as one event though representing multiple locations updating the recorded event total as now 36.

Clark County and its participating jurisdictions which included Clark County Unincorporated area, and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation can expect a extreme/excessie heat event with 720% probability per year or 7.2 events per year, as indicated in Table 45 (below). This number is based on historical events. As such, and according to the probability range table, flooding is **highly likely** for Clark County and its participating jurisdictions.

Table 45: Probability of Future Events, Extreme/Excessive Heat – Clark County, NV

Probability of Future Events, Extreme/Excessive Heat, Clark County, NV	
Event Year	**Event Count**
2018	5
2019	8
2020	6
2021	10
2022	9
Total Recorded Events =	**36**
Total Years =	**5**
Yearly Probability =	**720%***

***Note**: * Clark County and its participating jurisdictions can expect an extreme/excessive heat event with 720% probability each year. This number was derived from the number of recorded events by the year range used. Calculating future probability is not the only predictor of future occurrences. The qualitative chance of an extreme/excessive heat event impacting the planning area is highly likely.*

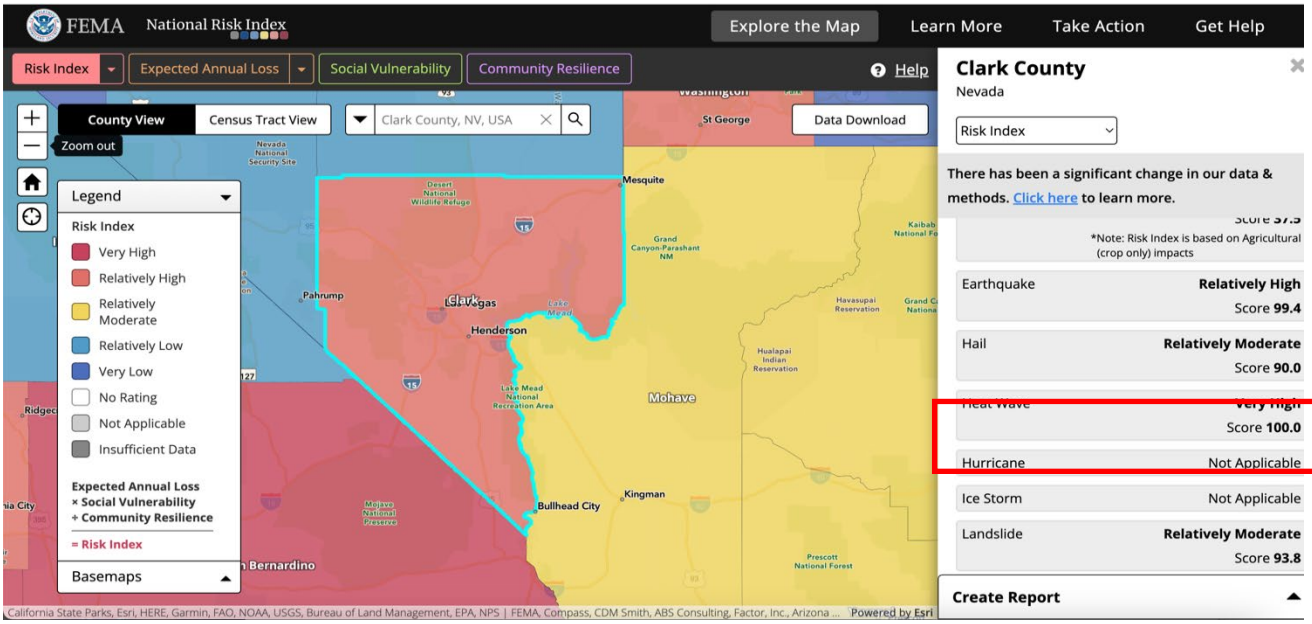
Data Source: NOAA/NCEI Storm Events Database

Vulnerability and Impact

Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) are vulnerable to extreme/excessive heat events except for areas located in the higher elevations.

The FEMA National Risk Index for Natural Hazards is an online mapping system that identifies communities most at risk to 18 natural hazards. Related to drought, In the National Risk Index, a A Heat Wave is a period of abnormally and uncomfortably hot and unusually humid weather typically lasting two or more days with temperatures outside the historical averages for a given area. The Heat Wave Risk Index score and rating represent a community's relative risk for Heat Waves when compared to the rest of the United States. Clark County has a Heat Wave risk score of **100.0 (very high)** compared to the rest of the Country. The map below illustrates that score visually.

Figure 69: FEMA National Risk Index Drought Map – Clark County, NV, Extreme/Excessive Heat (Heat Wave)



Data Source: The FEMA National Risk Index

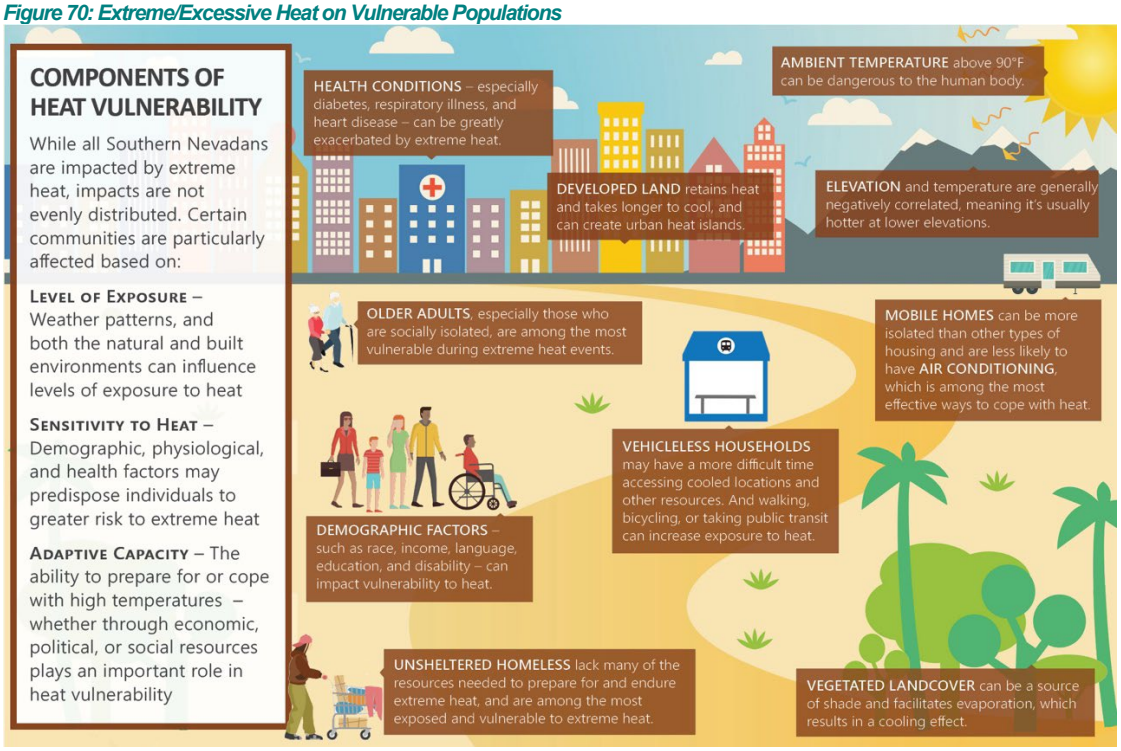
Vulnerability of Facilities

Critical facilities are not vulnerable to extreme heat. However, excessive heat can drive individuals with inadequate means of staying cool to seek refuge in facilities to keep cool. These facilities, known as cooling centers, may be pre-identified critical facilities or become vital to protect individuals, especially within the community's vulnerable population, from the effects of extreme heat.

Vulnerability of Population

Extreme/Excessive Heat could pose a risk to the vulnerable population within the planning area. Due to the Urban Heat Island (UHI) effect, some of the neighborhoods within the planning areaare hotter than others. Although our extreme temperatures impact our vulnerable residents the most, everyone is exposed to extreme heat here in Clark County (Stay Cool in Clark County). These events can impact individuals with access and functional needs, including aging populations, older adults, children, people with chronic illness, and those sensitive to heat exposure. The following infographic visually describes the component of heat vulnerability within the Clark County and its participating jursidcitions.

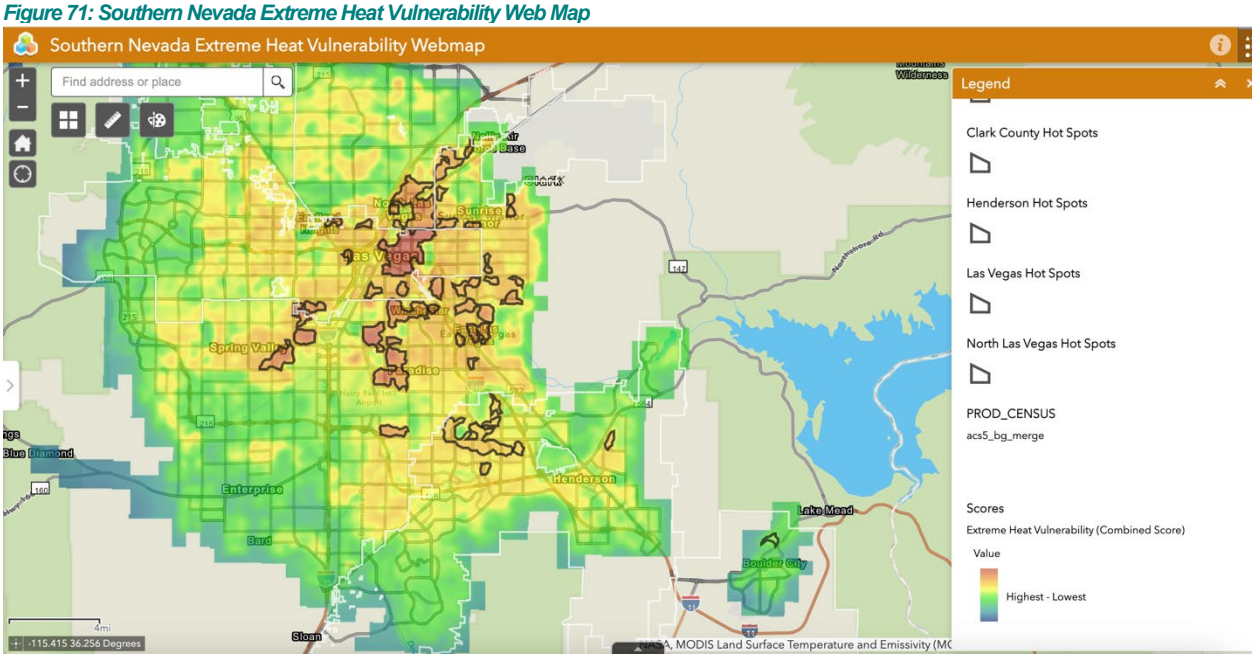
Figure 70: Extreme/Excessive Heat on Vulnerable Populations



Data Source: Regional Transportation of Southern Nevada (RTC)

In the last five years, Clark County recorded 56 fatalities from extreme/excessive heat events. Still, of the County's total population of 2,265,461, all are considered vulnerable and could pose a risk to the socially vulnerable populations within the planning area. To illustrate the vulnerability that extreme/excessive heat has on the County, the Southern Nevada Extreme Heat Vulnerability Webmap was developed to identify areas within the region with populations most vulnerable to extreme heat. This webmap is a component of an extreme heat vulnerability study completed by Metropolitan Planning Organization (MPO) staff within the Regional Transportation of Southern Nevada (RTC).

Figure 71: Southern Nevada Extreme Heat Vulnerability Web Map



Data Source: Regional Transportation of Southern Nevada (RTC)

The Clark County, Climate Vulnerability Study, mentions how extreme/excessive will affect the people and communities within Clark County related to housing, schools, correctional and detention centers,

and critical health facilities:

- **Housing:** "Under extreme heat conditions, there is an increased energy and utility cost burden on the housing system due to demand for cooling. Further, state law currently does not have clear standards for heating and cooling in housing and few energy, cooling, and weatherization programs are specific to Clark County."
- **Schools:** " Extreme heat may negatively impact learning, physical health, mental health, socio-personal development, mood, and compliance. Excessive heat limits access to outdoor spaces, and impacts those who walk, roll, or bike to school. Increasing temperatures negatively impact school infrastructure, operations, and programming as higher temperatures cause increased demand for cooling that strains older HVAC systems or increases the risk of power outage, with health and safety implications. Clark County School District (CCSD) is well positioned to successfully adapt to future conditions through available and anticipated funding resources, staffing capacity, programmatic initiatives, and ongoing partnerships. Through the current Capital Improvement Program (2015-2025) and the recently developed Sustainability, Energy, and Environmental Services Department, the district is renovating facilities with sustainability in mind."
- **Correctional Facilities and Detention Centers**: "Excessive heat is a great concern for incarcerated and detained individuals, as well as staff, threatening physical and mental health, socio-personal development, mood, and compliance. Increasing temperatures strain these facilities by increasing utility costs and power outages, which in turn have health and safety implications. High temperatures also strain older and inefficient HVAC systems in many older facilities, leading to moderate-high sensitivity and moderate adaptive capacity."
- **Critical Health Facilities**: "The increase in heat-related illnesses, including cardiovascular and respiratory stresses, puts additional stress on critical health facilities and healthcare workers. Frontline communities are generally more sensitive groups to the impacts of extreme heat. Disruptions to power systems during extreme heat events can have a significant impact on the functionality of health care facility operations, storage and access to essential medications, and medical treatments of individuals."

The FEMA National Risk Index map provides data on social vulnerability and community resilience related to hazards. Both of these factors impact the vulnerability of a population to a hazard event like extreme/excessive heat. FEMA National Risk Index defines Social Vulnerability as the susceptibility of social groups to the adverse impacts of natural hazards, including death, injury, loss, or disruption of livelihood. FEMA defines Community Resilience as the ability for a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruption. The scoring of these FEMA National Risk Index categories are for all hazards, including extreme/excessive heat, are as follows:

- Community Resilience: the higher community resilience score results in a lower risk index score. The Community Resilience score for Clark County is **49.9**, meaning communities within the County have a Very Low ability to prepare for anticipated natural hazards, adapt to conditions, and withstand and recover rapidly from disruptions compared to the rest of the U.S.
- Social vulnerability: a higher social vulnerability score results in a higher Risk Index score. Social groups in Clark County, NV, have a Relatively High susceptibility to the adverse impacts of natural hazards compared to the rest of the U.S. The Social Vulnerability score for Clark County is **48.59**.

The following maps provide a snapshot of community resilience and social vulnerability scoring related to all hazards, including extreme/excessive heat for Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).

Figure 72: FEMA National Risk Index Maps, Social Vulnerability and Community Resilience - Clark County, NV

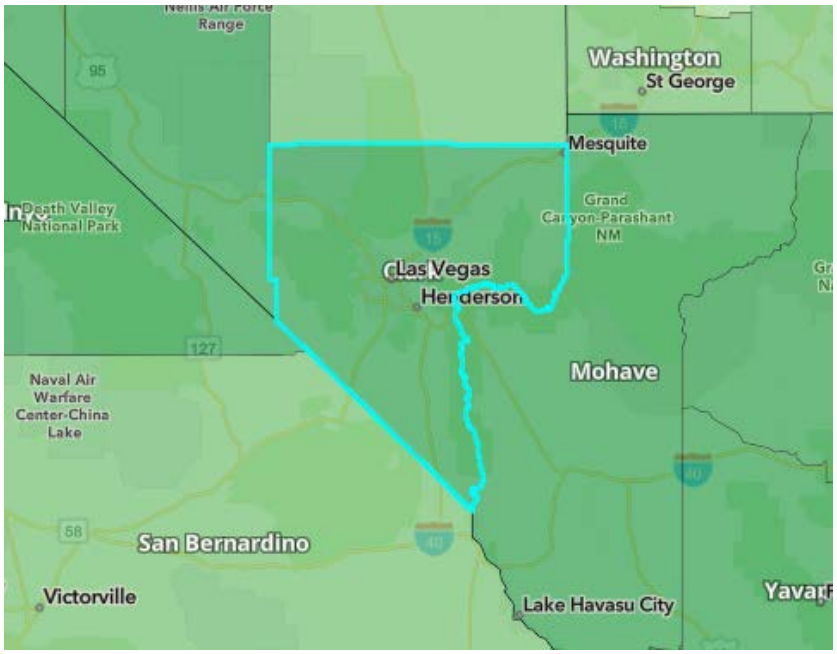
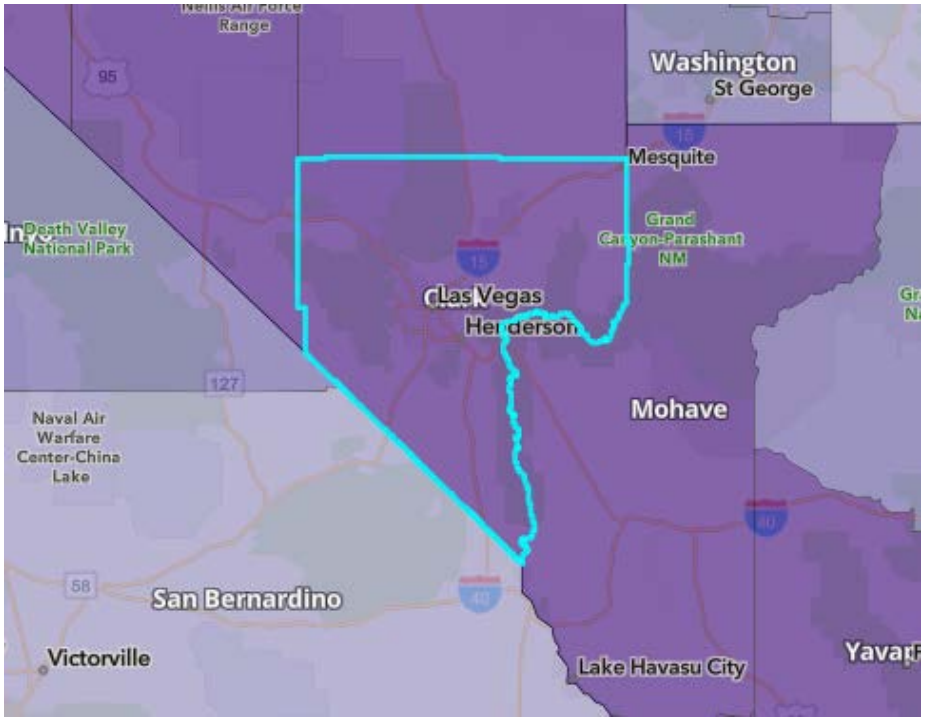


Figure 73: FEMA National Risk Index Maps, Community Resilience Map – Clark County, NV



Data Source: The FEMA National Risk Index

Impact of Climate Change

Climate change is resulting in more annual days with excessive heat. More areas in the County will likely be affected by excessive heat more often, more severely, and for more extended periods. As stated in this section, Stay Cool in Clark County mentions extreme heat days—days with temperatures exceeding 106° F—are projected to increase in Clark County—currently, the County experience about four extreme/excessive heat days per year. By 2064, that number could increase to 23 – 30 extreme heat days. Increasing the daily temperature means less "cooling off" occurs at

night. Hotter temperatures increase the likelihood and severity of wildland fires.

Critical Facilities & Infrastructure

While extreme heat does not pose a direct risk to critical facilities, it does pose a risk to mechanical and electrical infrastructure. The increase in heat can cause failure of components which are heat intolerant. The Regional Transportation of Southern Nevada (RTC) mentions that "Increasing temperatures in the region are associated with and contribute to a host of negative impacts – from poorer air quality to added wear and tear on infrastructure. But, most importantly, studies have found a clear link between increasing temperatures and increasing heat-related deaths and hospitalizations."

A complete list of critical facilities and infrastructure can be found in Appendix D – Critical Facilities & Infrastructure.

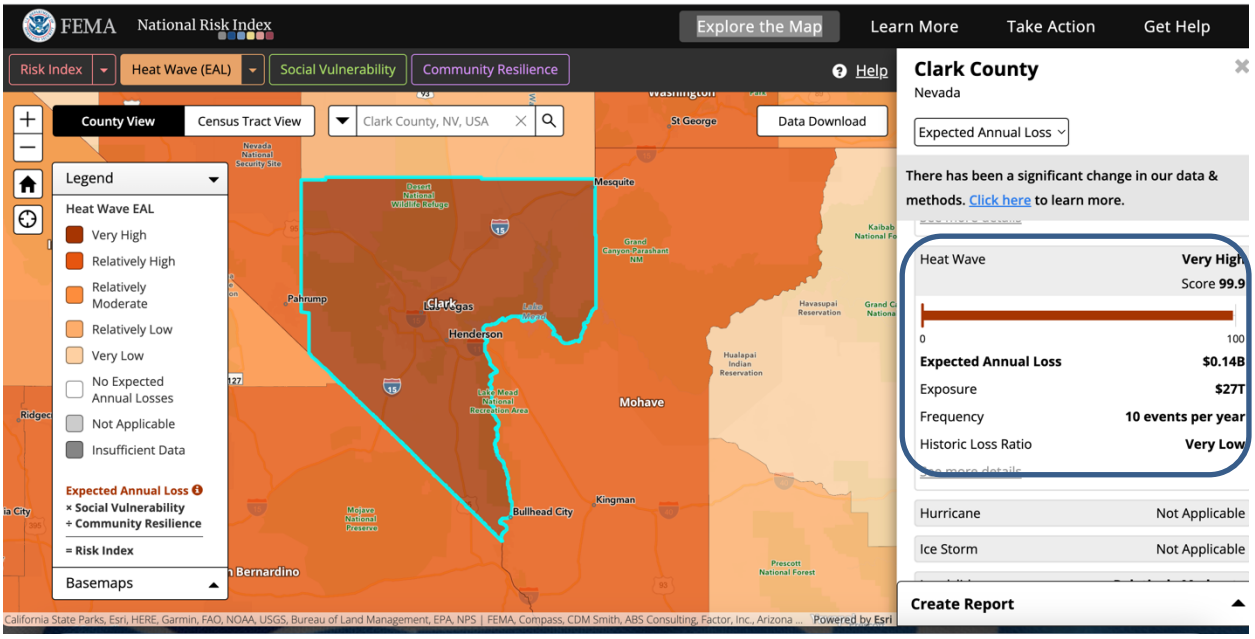
Land Use & Development

As the population in the County continues to grow and as the general climate becomes warmer, more people will be exposed to extreme/excessive heat, which will occur more frequently. Since the last MJMHP update (2018), the risk associated the excessive heat has increased. The Heatwave Heat Risk Index score on the FEMA National Risk Index website states the heat wave expected annual loss score and rating represent a community's relative level of expected building and population loss each year due to heat waves when compared to the rest of the United States. For Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation), the expected loss of data related to drought is as follows:

- Expected Annual Loss Score: 99.9 – Very High
- Expected Annual Loss: $0.14B
- Exposure: $27T
- Frequency: 10 events per year
- Historic Loss Ratio: Very Low

The following map illustrates the expected annual loss for extreme/excessive heat (heat wave) in the planning area:

Figure 74: FEMA National Risk Index Extreme/Excessive Heat (Heat Wave) Map - Clark County, NV, Expected Annual Loss



Data Source: The FEMA National Risk Index

The entire planning area is likely to experience additional days of excessive heat. Within the planning, areas are increasingly vulnerable to extreme heat's short- and long-term effects. Structures such as buildings, roads, and other infrastructure absorb and re-emit the sun's heat more than natural landscapes such as forests and water bodies. More development will expose more areas and people to the heat island effect.

Unique & Varied Risk

The Regional Transportation Commission of Southern Nevada indicates that Southern Nevada, has among the hottest climates in the U.S. and has been identified as one of the fastest-warming regions in the country. Clark County and its participating jurisdictions are more susceptible to extreme/excessive heat events. Extreme/excessive heat events in the planning area are due to the heat island effect. The City of Las Vegas ranked as the most intense urban heat island in the United States in both daytime and nighttime metrics between 2004 and 2013 (*The Urban Heat Effect, UNLV Libraries*). Increasing regional temperatures are associated with and contribute to negative impacts – from poorer air quality to added wear and tear on infrastructure. But, most importantly, studies have found a clear link between increasing temperatures and increasing heat-related deaths and hospitalizations.

Repetitive Loss Structure

Not applicable to the identified hazard.

HAZUS® Models

Not applicable to the identified hazard.

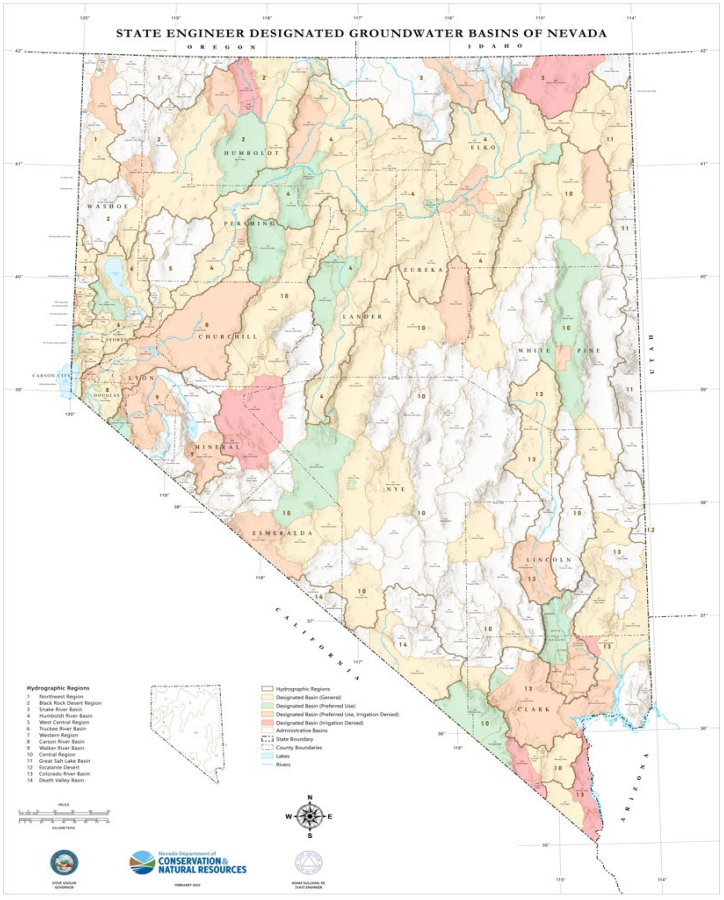
(FS) Fissures & Subsidence

Hazard Description

The National Oceanic and Atmospheric Administration (NOAA) defines subsidence as the sinking of the ground because of underground material movement—is most often caused by the removal of water, oil, natural gas, or mineral resources out of the ground by pumping, fracking, or mining activities. USGS further states land subsidence occurs when large amounts of groundwater have been withdrawn from certain types of rocks, such as fine-grained sediments. The rock compacts because the water is partly responsible for holding the ground up. When the water is withdrawn, the rocks falls in on itself.

Groundwater is one of the essential resources in a planning area. The 2018 Nevada Enhanced Hazard Mitigation Plan mentions, in the southwestern United States, agricultural and urban areas that depend on groundwater pumping are prone to land subsidence. Non-recoverable land subsidence occurs when declining water levels lead to inelastic water compaction. With Nevada being one of the driest states, with an average of fewer than 10 inches of rain a year in the U.S., groundwater can supplement rainfall. The map below is the designated groundwater basin in the State by the (Nature Conservancy). A lesser amount of subsidence occurs with the recoverable compression of course-grained sands and gravel deposits. A common feature that accompanies subsidence is earth fissures, which are tension cracks in the sediment above the water table (aquifers). The map below is the designated groundwater basins in the State by the Nevada Division of Water Resources.

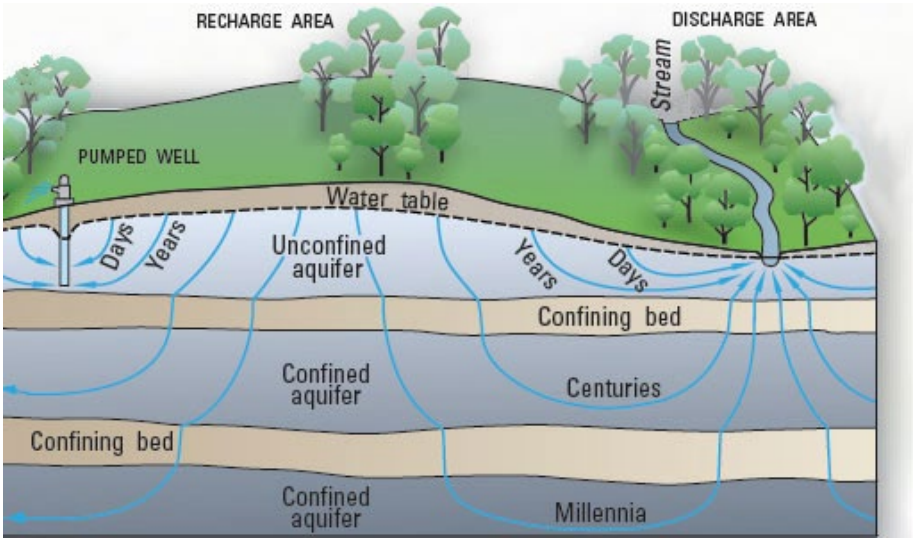
Figure 75: Designed Groundwater Basins in the State of Nevada



Data Source: Nevada Division of Water Resources

An aquifer, as defined by USGS, is when a water-bearing rock readily transmits water to wells and springs. Wells can be drilled into the aquifers and water can be pumped out. Precipitation eventually

adds water (recharge) into the porous rock of the aquifer. The rate of recharge is not the same for all aquifers, though, and that must be considered when pumping water from a well. Pumping too much water too fast draws down the water in the aquifer and eventually causes a well to yield less and less water and even run dry. The following illustration is an example of a typical groundwater flow that will recharge aquifers like the Great Basin region of the United States by USGS.

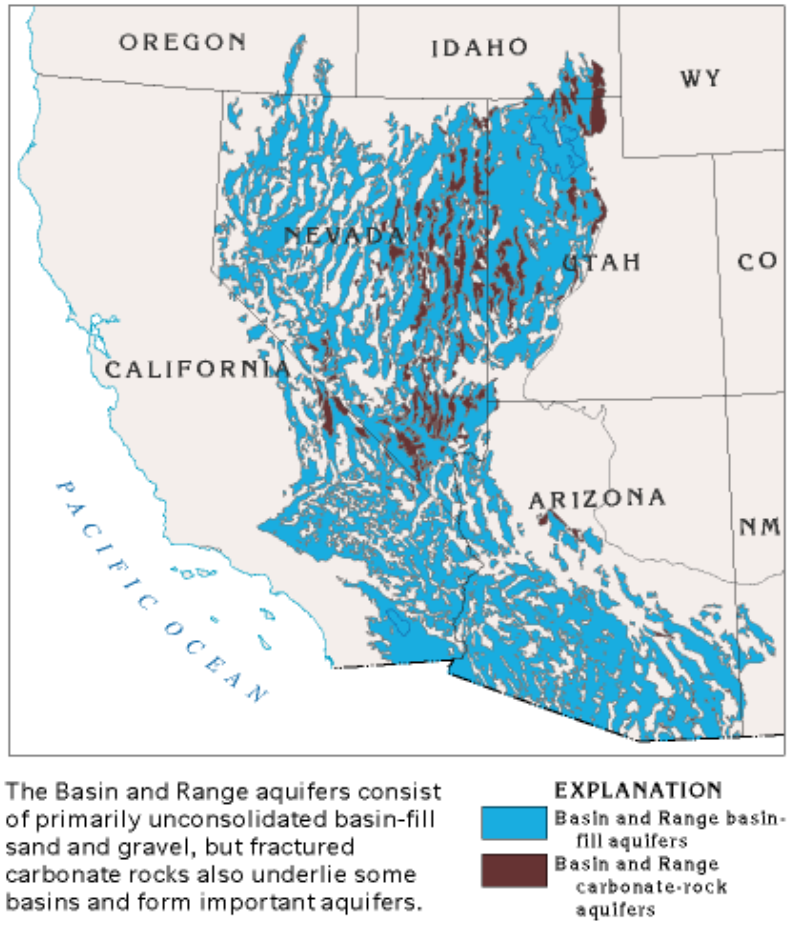


Data Source: Conceptual groundwater flow diagram (Source: USGS)

The 2018 Nevada Hazard Mitigation Plan states aquifers in Nevada are composed primarily of three major hydrogeologic units which are as follows:

- Alluvial aquifers: the material that makes up the valleys between mountain ranges and mostly consists of gravels, sands, silts, and clays.
- Carbonate aquifer: mainly made up of limestone and dolomite. These rocks comprise many mountain ranges in eastern and southern Nevada and underlie the alluvial aquifer in places. The Basin and Range carbonate-rock aquifers are the type of groundwater aquifers found in the state of Nevada. The following is a map of the Basin and Range Aquifers that can be found in the Southwestern United States.
- Other permeable bedrock: this is the third major aquifer type in Nevada that consists of volcanic rock and makes up many mountain ridges and underlies the alluvial aquifer in much of western and Northern Nevada.

Figure 76: Basin and Range Aquifers in the United States



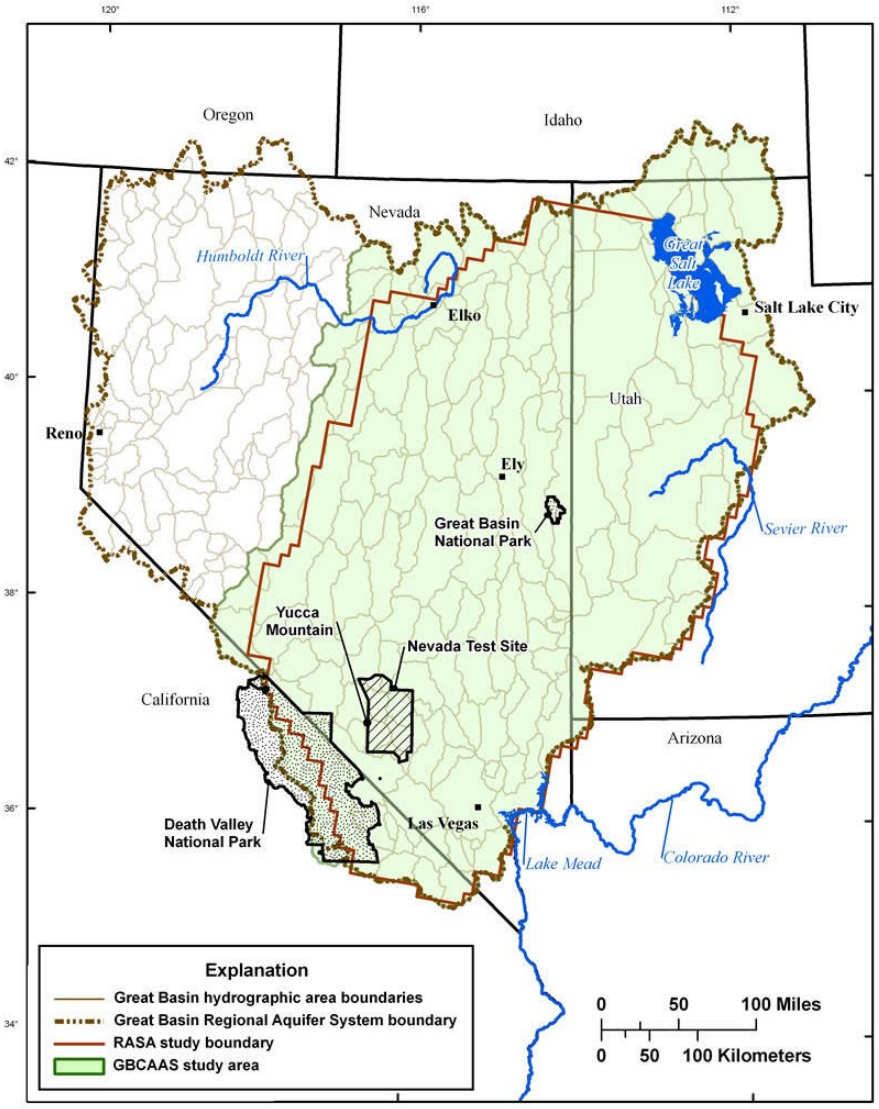
Data Source: USGS)

Other parts of the state are also affected by subsidence or more rapid ground failure due to mine dewatering or the presence of underground mine workings adjacent to populated areas. You may not notice land subsidence too much because it can occur over large areas rather than in a small spot, like a sinkhole. That doesn't mean that subsidence is not a big event — states like California, Texas, and Florida have suffered damage to the tune of hundreds of millions of dollars over the years. The Nevada Enhanced Hazard Mitigation Plan mentions the history of subsidence problems within the State have developed in the Las Vegas Valley, however is now recognized in other parts of the State like Douglas, Nye, Storey, and Washoe Counties as a risk.

Location and Extent

As mentioned in the previous section, Basin and Range carbonate-rock aquifers are the type of groundwater aquifers found in the state of Nevada. The Basin and Range basin-fill aquifers underlie an area of 148,000 square miles in Nevada, California, Arizona, Utah, and adjacent States. The aquifers are a substantial source of groundwater for public supply, ranking fourth in the Nation for this use and providing about 1 billion gallons per day; the aquifers are also ranked tenth for domestic-supply use at about 64 million gallons per day and ranked fourth for irrigation use at about 4.5 billion gallons per day (USGS). The urban areas in the U.S. covering this aquifer is Salt Lake City, Phoenix, Reno, and Las Vegas. The following map show the aquifer and its location in more detail:

Figure 77: Great Basin Carbonate and Alluvial Aquifer System Map



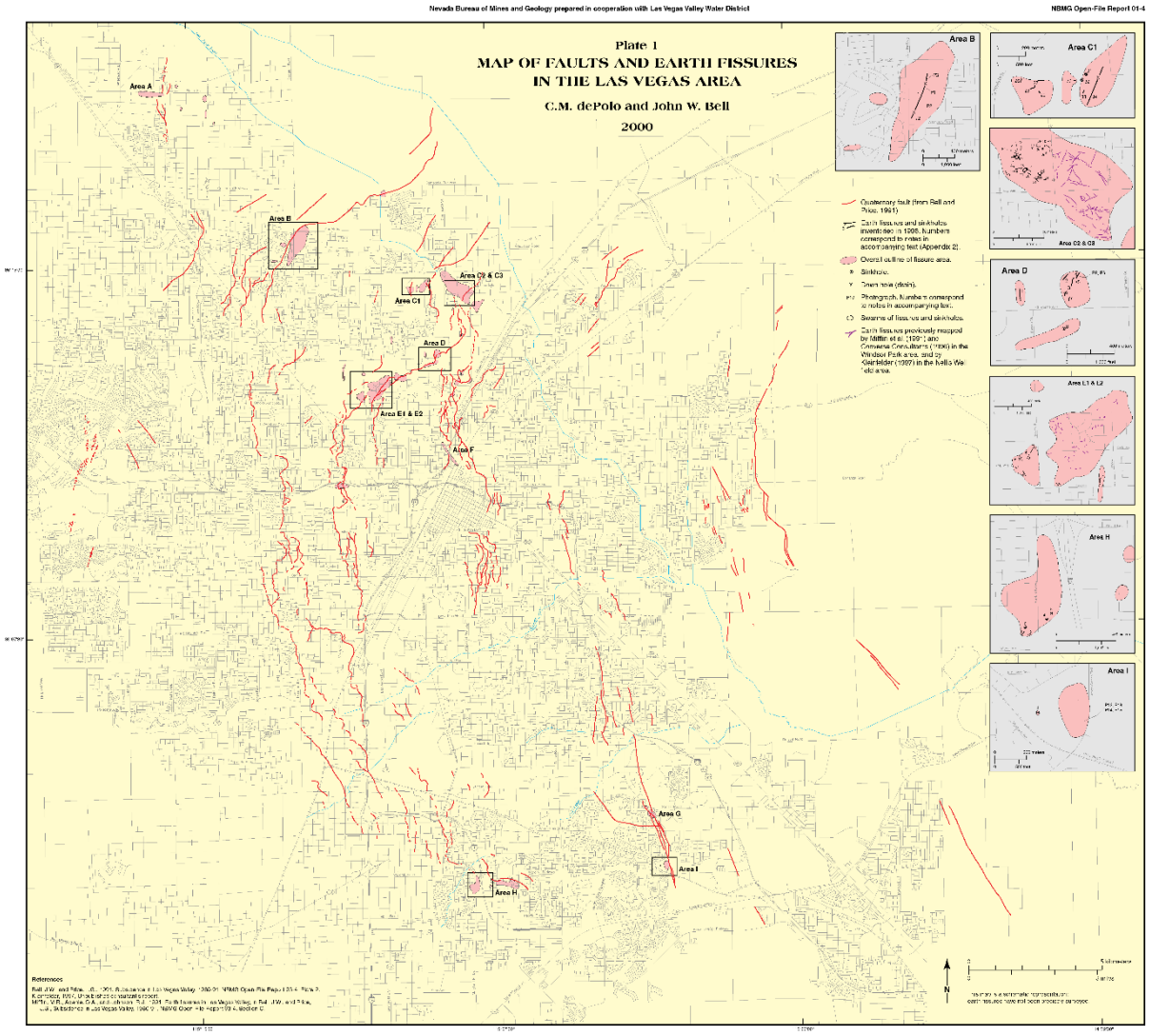
Data Source: USGS

The southern part of the State which includes Clark County is particularly vulnerable to land subsidence due to groundwater extraction. The major aquifer under Las Vegas Valley is an alluvial aquifer. Below the alluvial aquifer, at least on the western side of the valley, is the carbonate aquifer. Over-pumping (taking more water out than is naturally recharged from snow melt and rainwater) of the alluvial aquifer has caused subsidence problems in Las Vegas and Pahrump Valleys.

The Nevada Bureau of Mines and Geology mention the following about subsidence in the Las Vegas Valley. Subsidence due to underground fluid withdrawal can be another problem. The main area of the state suffering from this is the Las Vegas Valley. Las Vegas (Spanish for "the marshes") naturally contained areas of a high-water table and artesian springs, and was a stopping off point on the Old Spanish Trail. After an aborted effort by the Latter-Day Saints to settle the area in the 1850s, ranches were reestablished by the late 19th century. Las Vegas was founded in 1905 as a railroad town and has since grown into a gambling mecca of almost a million people and continues to grow explosively. Las Vegas Valley receives less than 8 inches of precipitation annually, and despite receiving a share of the water from Lake Mead, gets most of its water from wells. The large removal of groundwater from the generally unconsolidated alluvial sediments underlying Las Vegas has resulted in surface subsidence of locally as much as 6 feet since the 1930s. This has also resulted in local fissuring of the ground.

The previous Clark County MJHMP (2018) mentions that while a broad regional primary subsidence bowl occupies the central portion of the Las Vegas Valley, three localized secondary subsidence bowls are superimposed on this area, and are located in the central (downtown), southern (Las Vegas Strip) and the northwestern part of the valley. From 1963 to 1980, the primary bowl had subsided more than 49 cm and the secondary bowls had subsided as much as 79 cm. Studies indicate the same patterns and trends of movement have continue to occure since 1980. It has been noted that fissures have been observed in the County, primarily, Las Vegas Valley since 1925. In the Las Vegas Valley, eight zones of fissuring exist and are "closely coincident" with known or inferred geologic faults. The following map shows the locations of those faults and fissures in the Las Vegas Valley area.

Figure 78: Maps of Faults and Earths Fissures in the Las Vegas Area



Data Source: [Nevada Bureau of Mines and Geology]

The State HMP (2018) mentions land subsidence can be caused by actions other than over drafting of water. Mining, hydrocompaction, and underground fluid withdrawal (water, oil, or other fluid) can cause this hazard and result in land surface displacements and fissures. Within Clark County, primarily the Las Vegas Valley area, has seen more impacts and issues, including subsidence, vertical aquifer-system deformation, and earth fissuring that have caused millions of dollars of damage and might have altered boundaries of flood-prone areas.

Previous Occurrence

The previous Clark County HMP (2018) indicates subsidence in the Las Vegas Valley has been geodetically monitored since 1935. Monitoring showed that the center of the valley (near downtown Las Vegas) had subsided as much as 3.4 feet by 1963. The following monitoring period revealed that from 1963 - 1987 the downtown area sunk another 2.8 feet and other nearby areas subsided more than 5.0 feet.

Probability of Future Events, Fissure and Subsidence

Based on the Calculated Priority Risk Index (CPRI) conducted for Clark County and its participating jurisdictions, there is a **moderate probability (rank score of 2.0-2.9)** of subsidence for the planning area. The following table provides CPRI Rating for earthquakes related to Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).

Table 46: Clark County and Participating Jurisdictions CPRI Rating for Fissures and Subsidence

Clark County and Participating Jurisdictions CPRI Rating for Fissures and Subsidence							
Hazard: Geohazards – Fissures & Subsidence		**Category and Weight**				**CPRI Score**	**Risk Level**
Index Rating (R) Weighted Score (WS)		**Probability 45%**	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**		
Clark County (including Incorporated and Unincorporated Areas	R	2	2	4	4	2.5	M
	WS	0.95	0.6	0.6	0.4		
Boulder City	R	1	1	1	1	1	L
	WS	0.45	0.3	0.15	0.1		
Henderson	R	3	3	4	4	3.25	H
	WS	1.35	0.9	0.6	0.4		
Las Vegas	R	2	2	1	2	1.85	L
	WS	0.9	0.6	0.15	0.2		
Mesquite	R	2	2	4	4	2.5	M
	WS	0.95	0.6	0.6	0.4		
North Las Vegas	R	1	1	4	3	1.65	L
	WS	0.45	0.3	0.6	0.3		
Special District: Clark County Water Reclamation District	R	2	2	4	1	2.2	M
	WS	0.9	0.6	0.6	0.1		
Special District: Clark County School District	R	2	2	2	3	2.1	M
	WS	0.9	0.6	0.3	0.3		
Special District: Las Vegas Valley Water District/SWNA	R	1	2	4	3	1.95	L
	WS	0.45	0.60	0.60	0.30		

Clark County and Participating Jurisdictions CPRI Rating for Fissures and Subsidence							
Hazard: Geohazards – Fissures & Subsidence **Index Rating (R)** **Weighted Score (WS)**		**Category and Weight** **Probability 45%**	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**	**CPRI Score**	**Risk Level**
Tribal Nation: Las Vegas Valley Paiute	R	2	2	1	2	1.85	L
	WS	0.9	0.6	0.15	0.2		
Tribal Nation: Moapa Band of Paiutes	R	2	1	3	3	1.95	L
	WS	0.9	0.3	0.45	0.3		

***Note**: Though participating in the planning process, at the time of this update CPRI data for the City of Mesquite was not received. Therefore, the CPRI rating for the City of Mesquite is the same rating as Clark County due to the city being within the planning area.*

Calculating future probability is not the only predictor of future occurrences. The previous Clark County MJHMP plan (2018) states that land subsidence and the creation of fissures will continue to occur in Las Vegas Valley as long as the net annual groundwater withdrawal continues to exceed the net annual recharge. Even if the region can reduce the net annual groundwater withdrawal to the level of net annual recharge, subsidence may continue for years after equilibrium is achieved because of a lag in sediment response.

In the last five years, Clark County and its participating jurisdictions (which included the Clark County Unincorporated area and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) do not have any documented cases of subsidence incidences. Though the County has experience occurrences that were listed in its HMP update (2018), the likelihood of a subsidence event happening in the planning area is considered occasional.

Vulnerability and Impact

Communities that are located near the Las Vegas Valley area are more vulnerable to subsidence due to their location on top of the alluvial aquifer within the planning area. The major subsidence impacts are property damage, including but not limited to structural collapse, injuries, fatalities, and reduction of useable land. Accordingly, the hazards may create the need for control measures and the stabilization of structures that are built in that portion of the County.

Vulnerability of Population

Subsidence(s) currently pose some risk to the residents of Clark County, primarily those who reside in the Las Vegas Valley area where the City of Las Vegas is located, which is above the major alluvial aquifer. Additionally, based on previous occurrences, subsidence will likely occur within the planning area and/or adversely affect the County's population, primarily the cities within the Las Vegas Valley (major cities of Las Vegas, Henderson, and North Las Vegas).

Vulnerability of System

Subsidence currently poses a risk in the planning area with a more significant risk to the vital systems such as roads and other infrastructure within the Las Vegas Valley, home to the Cities of Las Vegas, Henderson, and North Las Vegas. As mentioned in the previous Clark County HMP (2018), Subsidence and fissure impacts include: residential structure and critical infrastructure failure and serviceability problems; increased flood risk in low-lying areas; and long-term damage to groundwater aquifers and aquatic ecosystems.

Impact of Climate Change

The 2018 Nevada Enhanced Hazard Mitigation Plan states that due to Nevada's history of new development and pressures on water systems related to climate change, the State, which includes Clark County and its participating jurisdictions, will most likely see more subsidence problems.

Critical Facilities and Infrastructure

Subsidence poses risk to critical facilities and infrastructure Clark County and its participating jurisdictions (which included the Clark County Unincorporated area and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation). A complete list of critical facilities and infrastructure can be found in Appendix D – Critical Facilities & Infrastructure.

Land Use and Development

The 2018 Nevada Enhanced Mitigation Plan that Clark County is working to mitigate the subsidence hazard within the planning. As part of its building code, the Clark County building department has a requirement to conduct special geotechnical investigations near any earth fissures and faults to avoid building directly over these features. Click here for more information about the Investigating Potential Surface Fault Rupture & Land Subsidence Hazards codes in Clark County, NV.

Unique and Varied Risk

Clark County and its participating jurisdictions (which included the Clark County Unincorporated area and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) have significant areas within the County, primarily the Las Vegas Valley, that is at risk of subsidence.

Repetitive Loss Structure

Not applicable.

HAZUS® Models

Not applicable.

(FL) Flood, Landslide, and Debris Flow - Flooding

Hazard Description

Floods are the second most common and widespread of all-natural disasters faced by the County and its Special Districts. Most communities in the United States have experienced some flooding during or after spring rains, heavy thunderstorms, winter snow thaws, or summer thunderstorms.



Flash Floods in Clark County, NV
Photo Source: Clark County Government Website

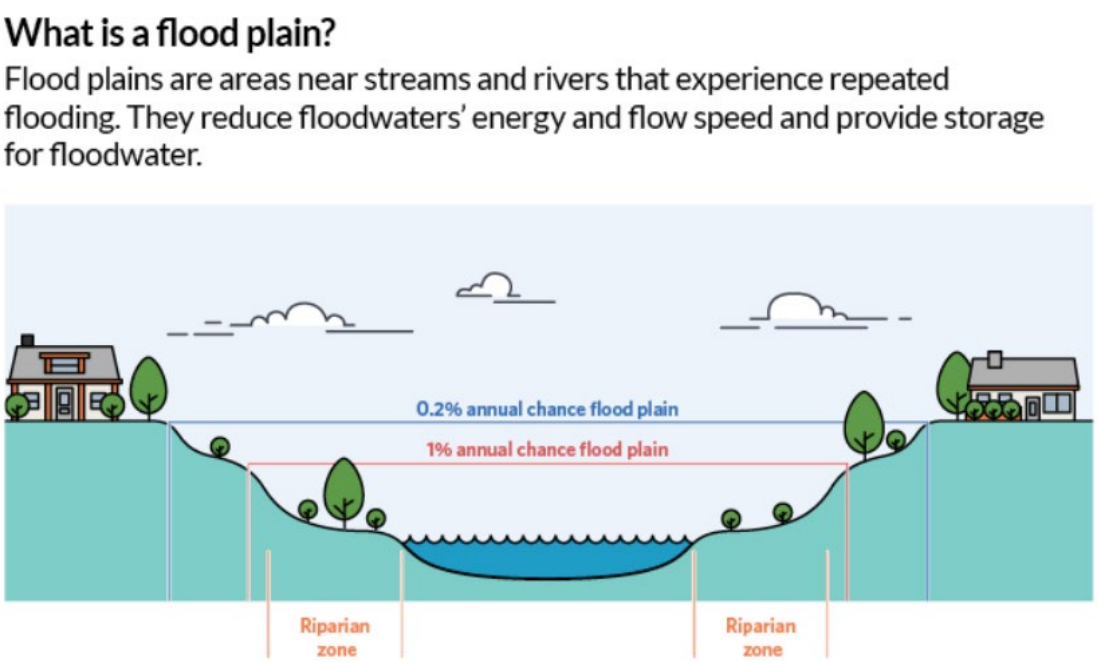
A flood, as defined by the National Flood Insurance Program, is: "A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties (at least one of which is the policyholder's property) from:

- Overflow of inland or tidal waters, or
- Unusual and rapid accumulation or runoff of surface waters from any source, or
- Collapse or subsidence of land along the shore of a lake or a similar body of water due to erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels."

Floods can rise slowly or quickly but generally develop over hours or days. Inland flooding, also known as "urban flooding" or "flash flooding," can be caused by intense, short-term rain or moderate rainfall over several days, which can overwhelm existing drainage infrastructure. Other factors that affect the dynamics of this type of flood include slope, width, and vegetation in place along the watercourse banks. The slope that a flash flood traverses has a definite relationship to the overall speed at which the water will travel. The incline on which the water moves affects the width of the flooding area. Generally, the faster the water moves, the narrower that channel will be created since the water digs the channel deeper as it flows. When water flows over the shallower slope, it spreads out more, decreasing its potential to cause mass damage but still considered dangerous. Finally, the type of vegetation located along the flood's path can prevent further erosion of the channel banks. A structure that lies along a flood channel with no surrounding vegetation is at risk of having its foundation undercut, which can cause structural damage, or in some cases, a building's complete collapse. Riverine or alluvial flooding occurs when excessive rainfall over an extended period causes a river to exceed its capacity. Typical flooding causes, both inland and riverine, include tropical cyclonic systems, frontal systems, and isolated thunderstorms, combined with other environmental variables such as changes to the physical environment, topography, ground saturation, soil types, basin size, drainage patterns, and vegetative cover. The rate of onset and duration of flooding events depends on the type of flooding (typical flood or flash flood). The spatial extent of a flooding event depends on the amount of water overflow but can usually be mapped because of existing floodplains.

Mitigation includes any activities that prevent an emergency, reduce the chance of an emergency from happening, or lessen the damaging effects of unavoidable emergencies. Investing in mitigation measures now, such as: engaging in floodplain management activities, constructing barriers such as levees, and purchasing flood insurance, will help reduce the amount of structural damage to structures and financial loss from building and crop damage should a flood or flash flood occur. The standard for flooding is the 1% annual chance of flood, commonly called the 100-year flood, and 0.2% annual chance of flood, called a 500-year flood, are used to classify flooding by the Federal Emergency Management Agency. The 100-year flood is the national minimum standard to which communities regulate their floodplains through the FEMA National Flood Insurance Program (NFIP).

Figure 79: What is a Floodplain Diagram



Data Source: Pew Trust

The NFIP aims to reduce the impact of flooding on private and public structures. It provides affordable enforcement of floodplain management regulations. These efforts help mitigate the effects of flooding on new and improved structures. Overall, the program reduces the socio-economic impact of disasters by promoting the purchase and retention of general risk insurance and flood insurance.

The adverse impacts of flooding can include structural damage; agricultural crop loss; the death of livestock; loss of access to critical facilities due to roads being washed out or overtopped; unsanitary conditions resulting from materials such as dirt, oil, solvents, and chemicals being deposited during the recession; infestations of disease-carrying mosquitoes; mold and mildew, which pose a severe health risk to small children and the elderly; and temporary backwater effects in sewers and drainage systems. Raw sewage is a breeding ground for bacteria, such as E. coli and other disease-causing agents. A boil order may need to be issued to protect people and animals from contaminated water. Of equal concern is the long-term psychological effect that flooding has on the people impacted by it. They must contend with the loss of life, property, livelihood, etc., as they cope with the aftermath. The clean-up can take months. The cost to restore a home may be too much, especially for the unprepared or uninsured. Plus, there is the looming fear that it may flood again. The resulting stress on floodplain residents takes its toll in the form of aggravated physical and mental health problems.

According to FEMA, out of the total 4,717 federally declared disasters in the U.S. from May 2, 1953 - December 23, 2022, water and flooding account for 823 Presidential declared disasters in the United States. Unfortunately, the risks from future floods are significant, given the expanded development in coastal areas and floodplains, unabated urbanization, land-use changes, and climate change. Because of this, flooding may intensify in many regions across the country, even in areas where total precipitation is projected to decline.

Location and Extent

Various factors, including topography, weather characteristics (e.g., the amount of rainfall and snowmelt each year), development, and geology, come into play when considering the hazards of flooding within the planning area. The types of flooding of most concerns for Clark County and its participating jurisdictions (which includes Clark County Unincorporated Area and the Tribal Lands of

the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) are channel flooding, sheet flooding, alluvial fan flooding, and flash flooding. The previous Clark County HMP (2018) provides the following descriptions of these types of flooding:

- Channel flooding is characterized by lateral channel migration during major flows, which results in abrupt changes in the horizontal alignment or location of the channel. Other characteristics include localized channel bed and bank-scour in addition to the potential for over-bank flow inundation.
- Sheet flooding is characterized by channel having minimal capacity, water flowing across broad areas at relatively shallow depths, and gently sloping terrain. Damage from these events includes localized scour and deposition of extensive amounts of sediments and debris typically associated with sheet flow. If the depth of the water is high enough, water may encroach into low-lying structures within the floodplain.
- Alluvial fan flooding refers to flooding occurring on the surface of an alluvial fan or similar landform characterized by high-velocity flows, active erosion processes, sediment transportation and deposition, and unpredictable flow paths. Flow depths with alluvial fan flooding are generally shallow with damage resulting from inundation, variable flow paths, localized scour and the deposition of debris. Alluvial flooding is potentially more dangerous than riverine flooding due to its unpredictable nature resulting in difficulties associated with threat identification.
- Flash flooding is characterized by the time scale in which it develops: a flash flood generally develops in less than six hours. Flash flood waters also move at very fast speeds and have the power to move boulders, tear out trees, and destroy both buildings and transportation infrastructure. During a flash flood, walls of water can reach heights of 10 to 20 feet. This combination of power and suddenness makes flash floods particularly dangerous. They are likely to occur in areas with steep slopes and sparse vegetation. These floods arise when storms produce a high volume of rainfall in a short period, over a watershed where runoff collects quickly as well as in the mountain areas resulting in the massive melting of the snowpack leading to heavy run off. They are likely to occur in areas with steep slopes and sparse vegetation. They often strike with little warning and are accompanied by high velocity flow.

For this MJHMMP update (20XX), the hazard of flooding pertains to precipitation and runoff-related events like alluvial fan floods and flash floods. The State of Nevada Enhanced Hazard Mitigation Plan (2018) mentions that floods occur along streams and arroyos (usually dry stream channels) that do not have classic floodplains. Because much of Nevada is part of the Great Basin (an area of internal drainage in which streams are not connected to rivers that flow to the ocean), flood waters commonly drain into the following: interior lakes (i.e. Walker Lake at the terminus of the Walker River, Pyramid Lake at the terminus of Truckee River), wetland area (i.e., Carson Since at the terminus of both the Carson and Humboldt Rivers), or playas (normally dry lake beds, such as Roach Lake, south of Las Vegas, where a new airport is planned).

The Flood Insurance Study of Clark County, NV, and incorporated areas indicate that the County is bordered to the west by Nye County, the north by Lincoln County, the east by the Colorado River and Mohave County, AZ, and to the south by San Bernadino and Inyo Counties in California. The County covers the geographic areas that include the unincorporated areas of the County, like the Laughlin, Las Vegas Valley, and Moapa Valleys. The incorporated cities of Las Vegas, North Las Vegas, Henderson, Boulder City, and Mesquite are the counties' populated areas. Clark County is situated on the southern tip of Nevada and served by a network of primary and secondary highways, including U.S. Interstates 15, 215, and 515; U.S. Highway Routes 95 and 93; and Clark County Road 15. Flash Flooding in Southern Nevada occurs most often during July – September however, flash flooding is unpredictable and, therefore, can happen anywhere and anytime inside the planning area. In many cases, a flash flood can move through an area a mile from where rain has occurred, thereby increasing people's damage within the flood's path. This type of flooding can be challenging to predict and occur with little or no warning. The 2018 Flood Insurance Study for Clark County mentions the typical flood-producing storm causing flooding problems in Clark County are associated with summer

thunderstorms of short duration and high intensity which result in significant runoff rates. These storms result from topical depressions that approach Clark County from the south or southeast. Summer or winter general storms of longer duration and lower intensity have not contributed to significant discharges in the past.

Within the County, the surface hydrology of the Colorado River Basin is marked by complex flow patterns in the alluvial fans of the valley, with areas of concentrated but frequently shifting flows. The dynamic drainage pattern, topography, and soils of the alluvial fan are generally more conducive to sheeting runoff than channelized flow. Consequently, pronounced gullies and ravines rarely develop and flash flood the Las Vegas Valley and are the only perennial stream in the Las Vegas Valley and one of few in the entire County. The other primary surface waters within the County include Virgin River, Muddy River, Muddy Springs, Colorado River, Lake Mead, and Lake Mojave.

The Las Vegas Valley is an externally draining basin. The general drainage pattern of the corridor includes a collection of precipitation runoff from tributaries located on alluvial fill from the Sheep Mountains, Spring Mountains, and alluvial fans north of the City of North Las Vegas to the Upper Las Vegas Wash. These flows are then conveyed to the southeast end of the valley and eventually to the Las Vegas Wash and the Colorado River Basin via Lake Mead.

The Las Vegas Wash is the primary channel through which the Las Vegas Valley's excess water returns to Lake Mead. Accounting for less than 2 percent of the water in Lake Mead, the water flowing through Wash consists of urban runoff, shallow groundwater, stormwater, and releases from the valley's four water reclamation facilities. The heaviest flow occurs during the winter when precipitation falls and evapotranspiration rates are lowest. Colorado River water is the source of 90 percent of Clark County's drinking water. Water is diverted from the Colorado River at Lake Mead.

The following table shows the complete list of hydrologic regions and basins in the planning area from the State of Nevada Division of Water Resources (http://water.nv.gov/hydrographicregions.aspx):

Table 47: Clark County Hydrographic Regions and Basins – Central Region and Colorado River Region

Clark County Hydrographic Regions and Basins – Central Region and Colorado River Region				
Hydrographic Basin/Sub Basin Name	Counties	Nearest Cities	Square Miles	Acres
Central Region (Hydrographic Region 10)				
Frenchman Flat	Nye; Lincoln; Clark	Mercury	463	293620
Indian Springs Valley	Clark; Lincoln; Nye	Indian Springs	655	419200
Pahrump Valley	Clark; Nye	Pahrump; Las Vegas	789	504960
Mesquite Valley (Sandy Valley)	Clark	Goodsprings; Las Vegas	236	151040
Ivanpah Valley/Southern Part	Clark	Jean; Roach; Goodsprings	73	46720
Jean Lake Valley	Clark	Jean; Goodsprings	96	61440
Hidden Valley	Clark	Henderson; Jean	34	21760
Eldorado Valley	Clark	Boulder City; Searchlight	530	339200

Clark County Hydrographic Regions and Basins – Central Region and Colorado River Region				
Hydrographic Basin/Sub Basin Name	Counties	Nearest Cities	Square Miles	Acres
Central Region (Hydrographic Region 10)				
Three Lakes Valley – Northern Part	Lincoln; Clark	Indian Springs	298	190720
Tikapoo Valley/ Southern Part	Lincoln; Clark	Alamo; Indian Springs	391	250240

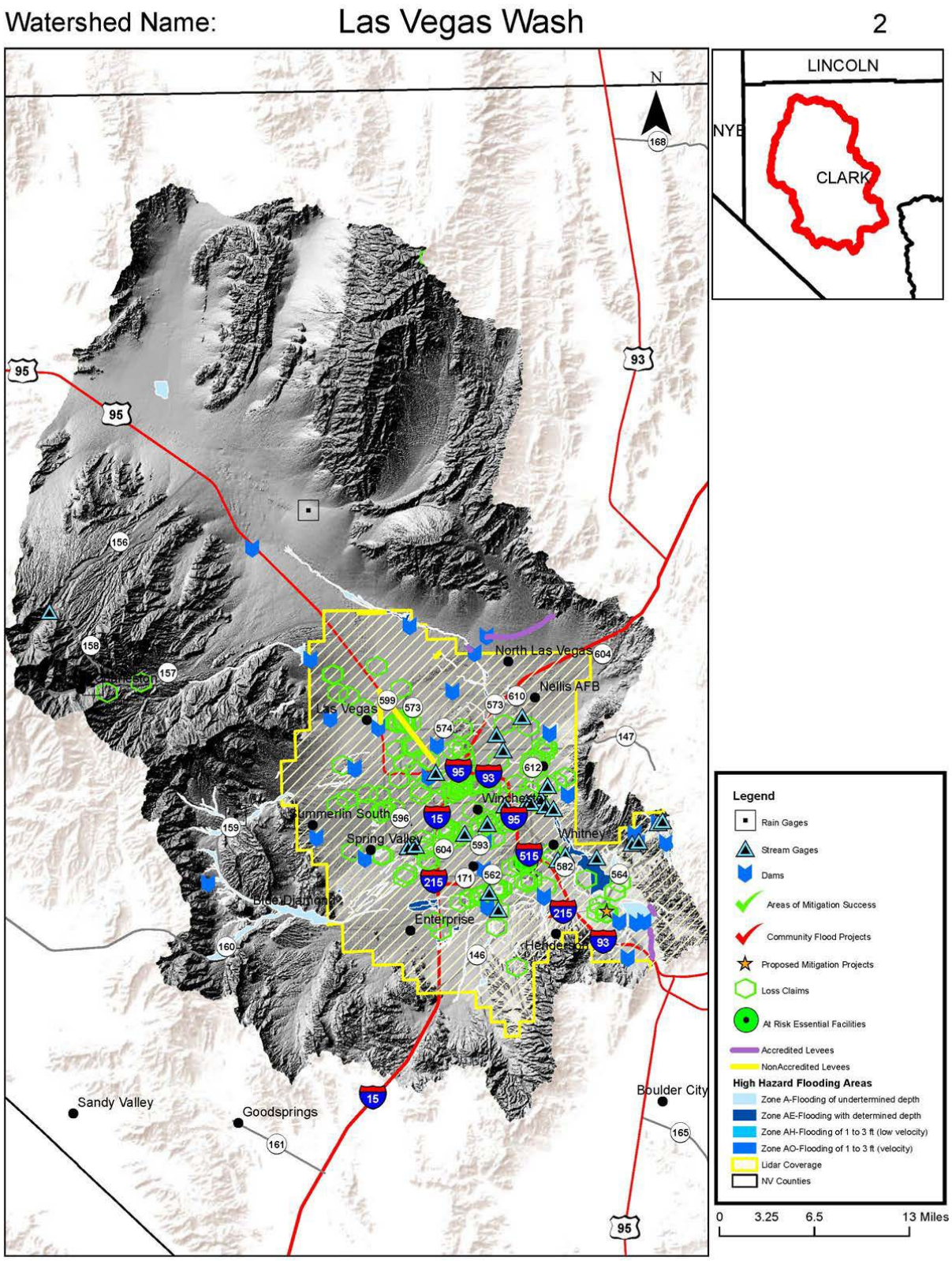
Colorado River Region – Hydrographic Region 13				
Hydrographic Basin/Sub-Basin Name	Counties	Nearest Cities	Sq Miles	Acres
Lower Meadow Valley Wash	Lincoln; Clark	Caliente; Moapa	979	626560
Coyote Springs Valley	Lincoln; Clark	Moapa; Alamo	657	420480
Three Lakes Valley – Southern Part	Clark	Indian Springs	311	299040
Las Vegas Valley	Clark	Las Vegas; Henderson;	1546	1000960
Ado River Valley	Clark	Laughlin; Boulder City	563	3603250
Piute Valley	Clark	Searchlight	338	216320
Black Mountains Area	Clark	Boulder City; Overton	630	403200
Garnet Valley	Clark	North Las Vegas; Moapa	156	99840
Hidden Valley	Clark	North Las Vegas; Moapa	80	51200
California Wash	Clark	Moapa	318	203520
Muddy River Springs Area	Clark; Lincoln	Moapa; Overton	91	58240
Lower Moapa Valley	Clark; Lincoln	Logandale; Overton	252	161280
Virgin River Valley	Lincoln; Clark	Mesquite; Bunkerville	907	580480

Gold Butte Area	Clark	Overton; Logandale	533	341120
Greasewood Area	Clark	Bunkerville; Overton	108	69120

Data Source: State of Nevada Division of Water Resources

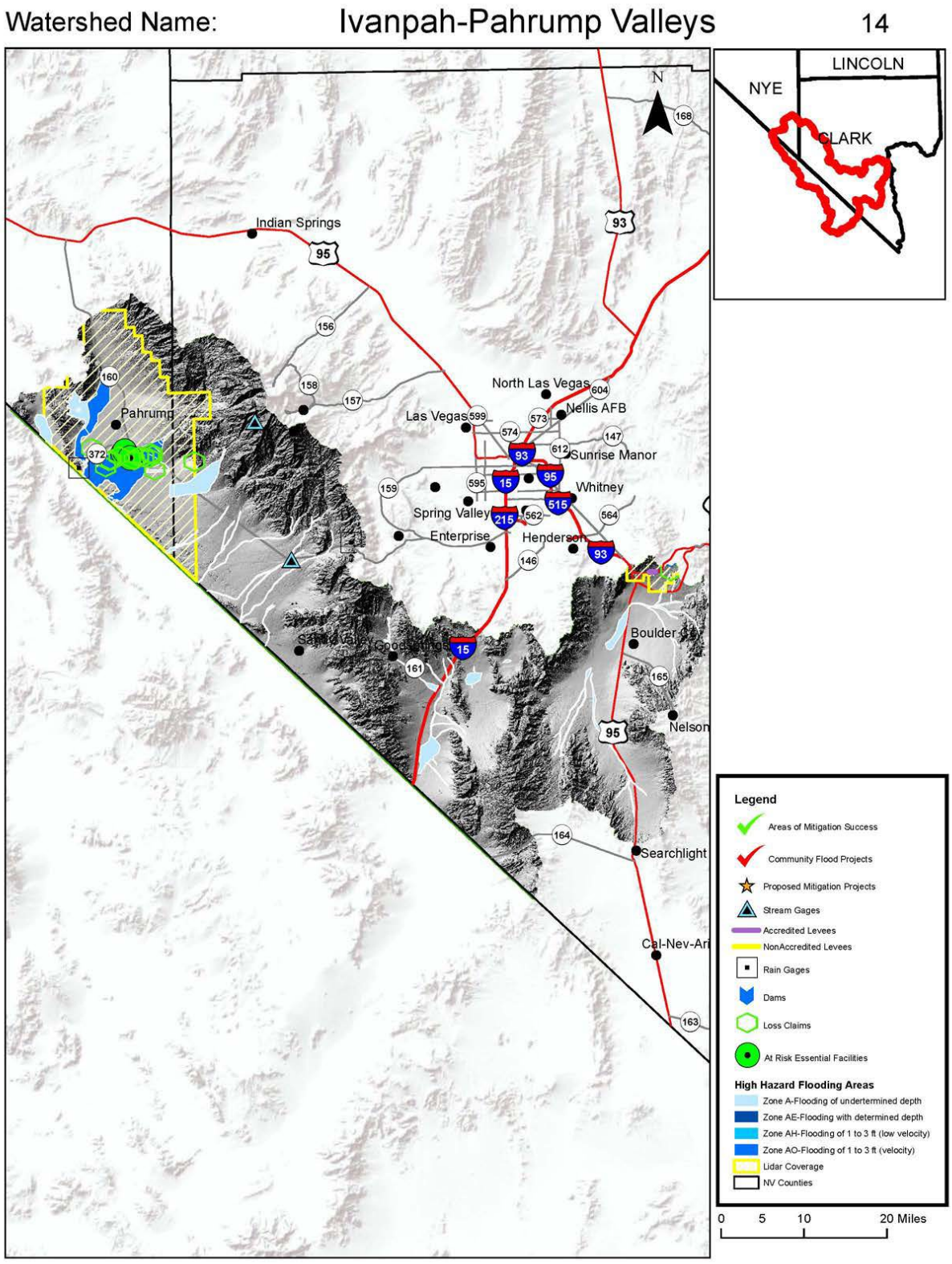
The previous Clark County HMP (2018) mentions that in the north-central and north-eastern portions of Clark County, many of the flood-prone areas are associated with the tributaries leading into Lake Mead, such as the Muddy River that flows through the communities of Overton and Logandale, and the Virgin River that runs along the southern boundary of the city of Mesquite. In the desert basins of central and southern Clark County, natural runoff channels, or washes, focus the sheet flow across desert pavement. Because of these topographic phenomena the probability of floods occurring in Clark County communities is relatively high. Contributing to this dispersion type is an urbanization and sprawl pattern that has spread development onto the washes and sediment piedmonts. In addition, runoff from monsoon thunderstorms can quickly overtop a wash, thereby flooding adjacent areas. The following maps show the major watersheds/tributaries within the planning area.

Figure 80: Watershed Map – Las Vegas Wash



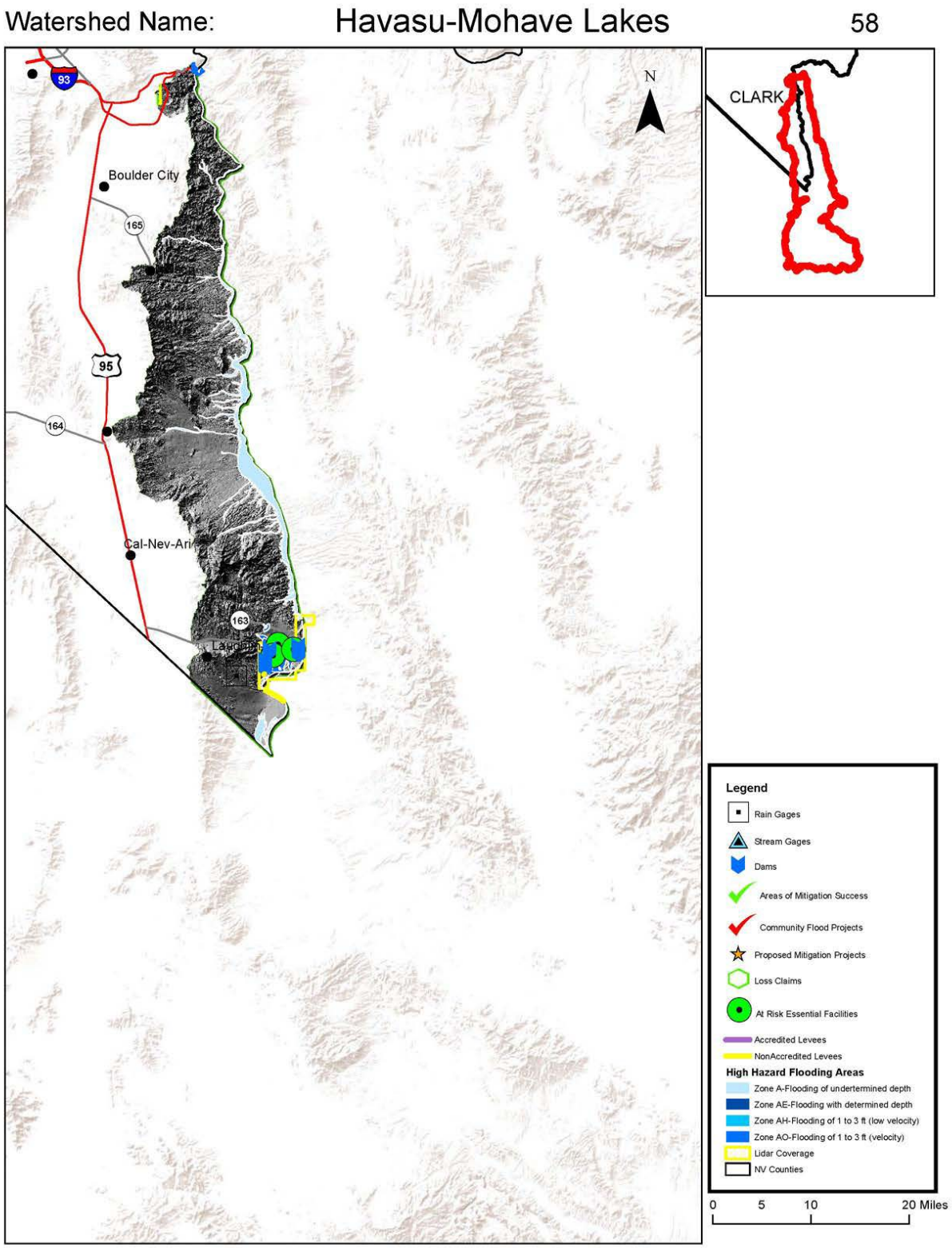
Data Source: [Nevada Risk Portfolio, September 2013]

Figure 81: Watershed Map – Ivanpah – Paharump Valleys



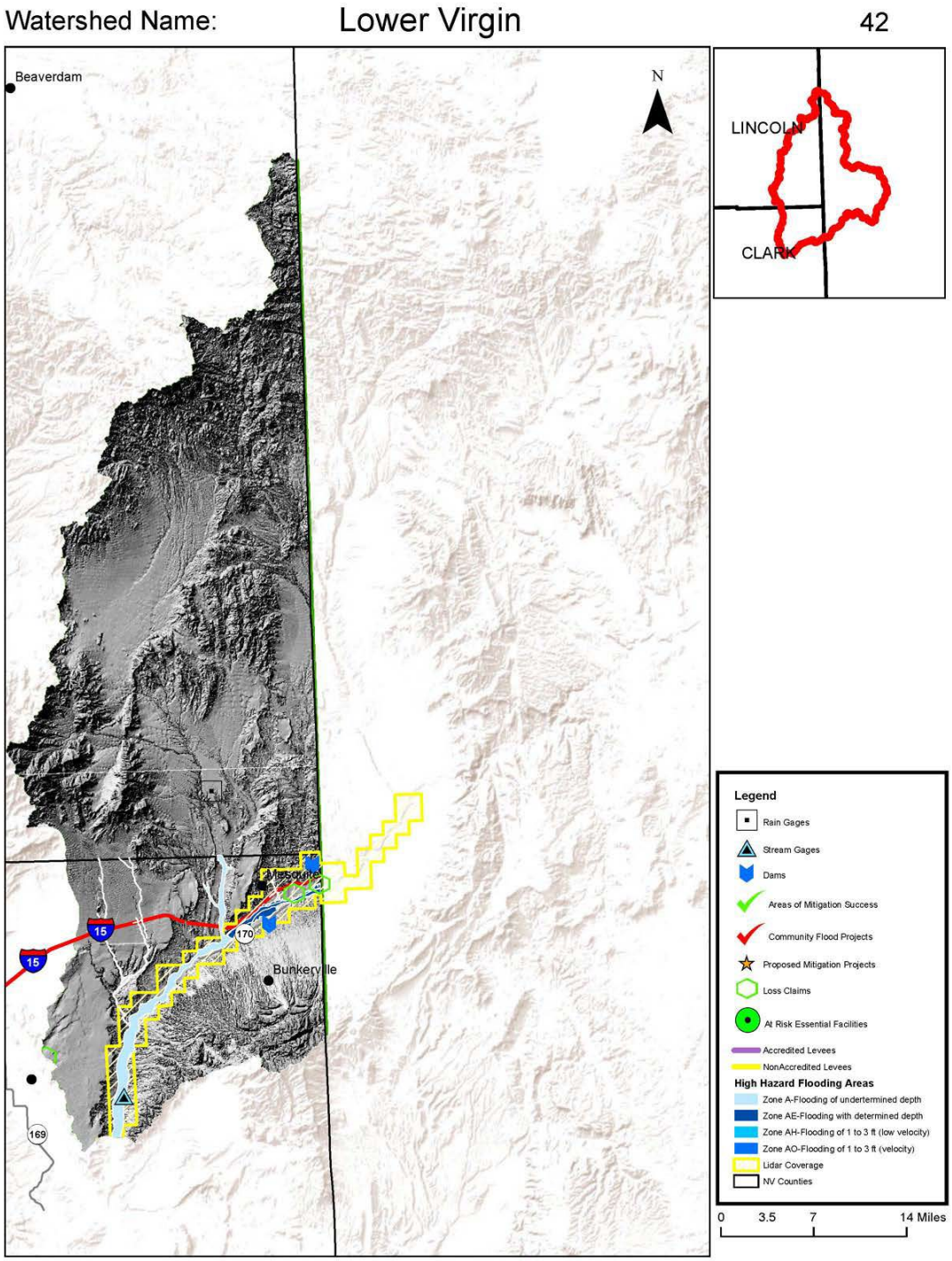
Data Source: [Nevada Flood Risk Portfolio, September 2013]

Figure 82: Watershed Map – Havasu-Mohave Lakes



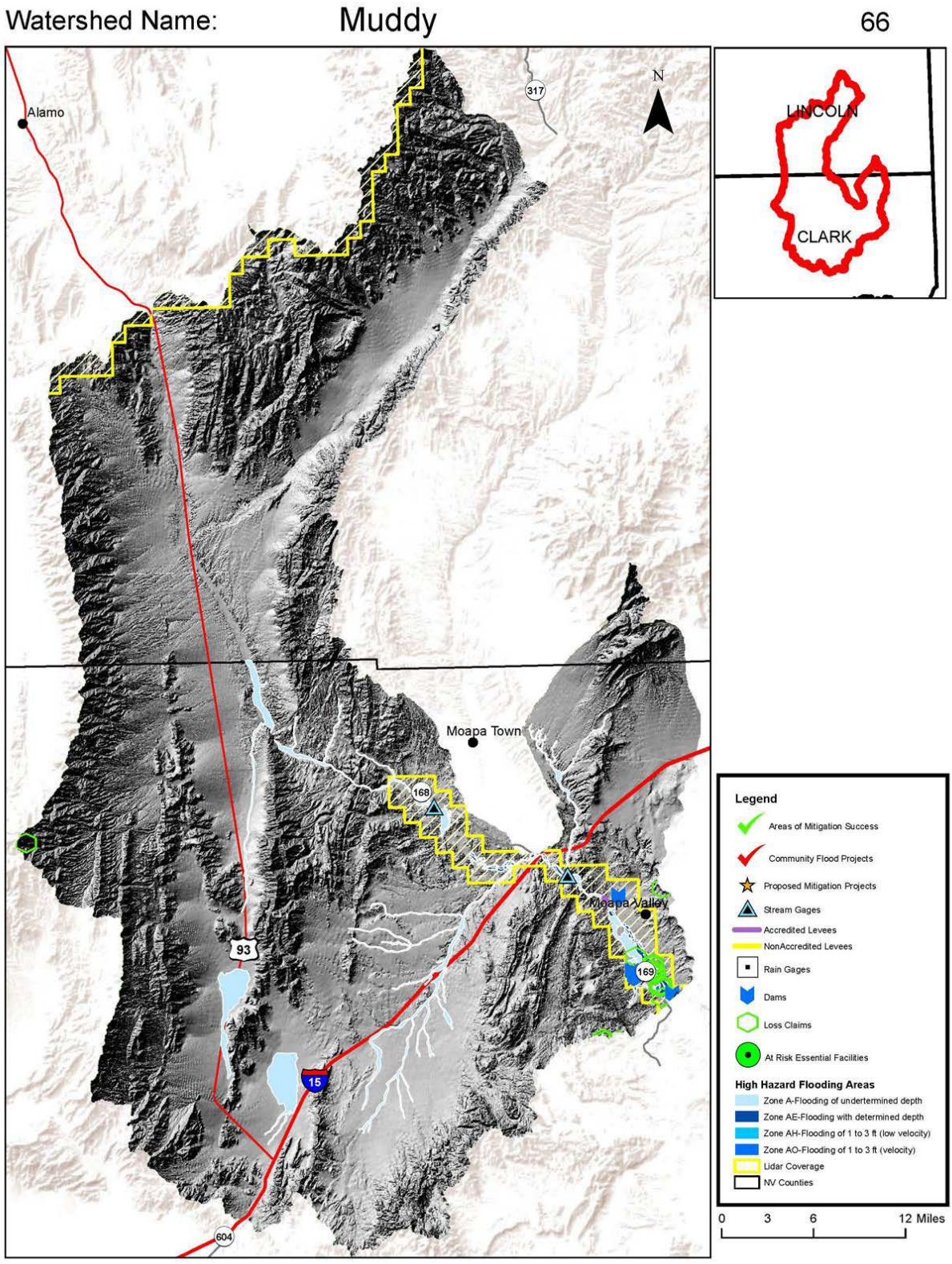
Data Source: [Nevada Flood Risk Portfolio, September 2013]

Figure 83: Watershed Map – Lower Virgin



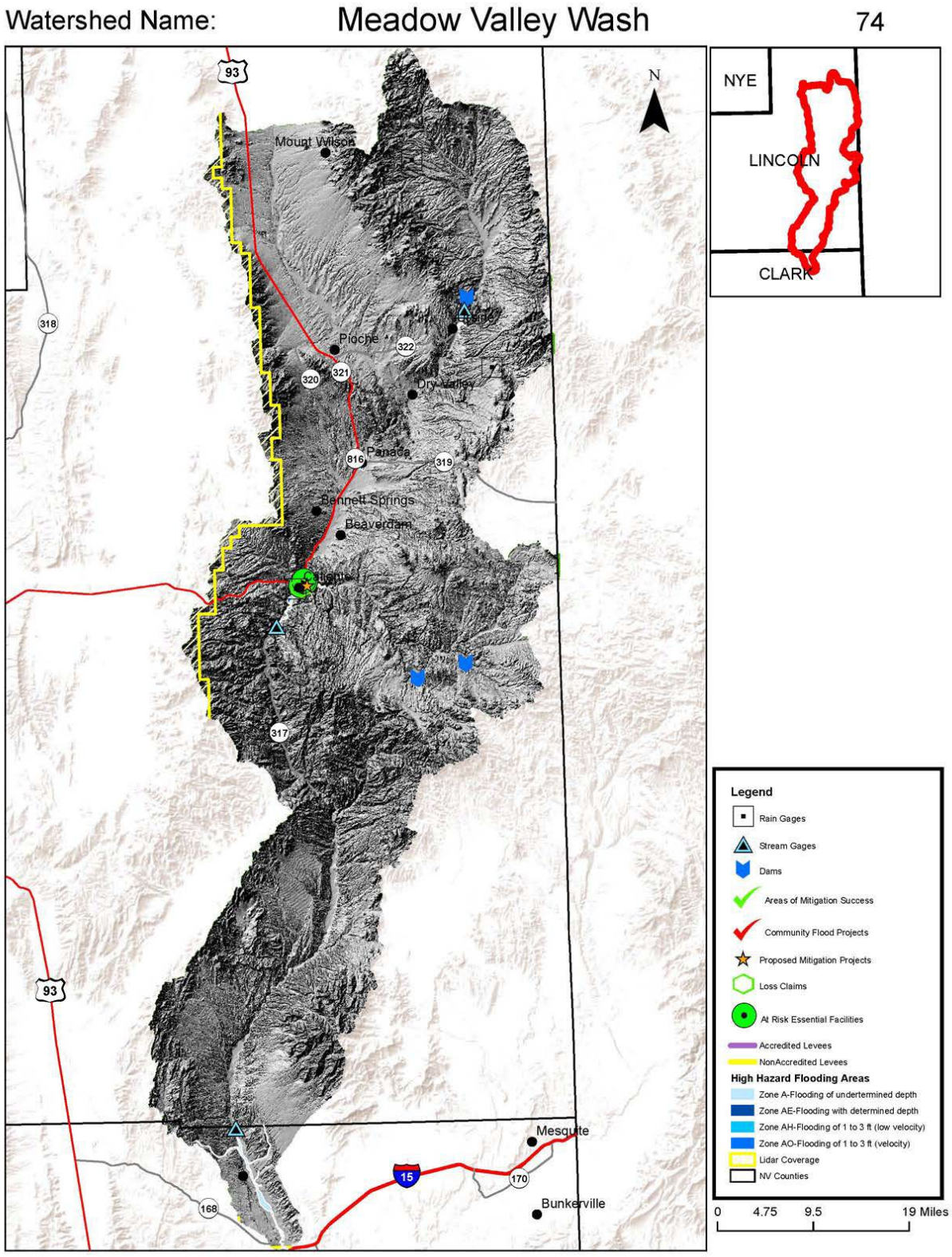
Data Source: Nevada Flood Risk Portfolio, September 2013

Figure 84: Watershed Map - Muddy



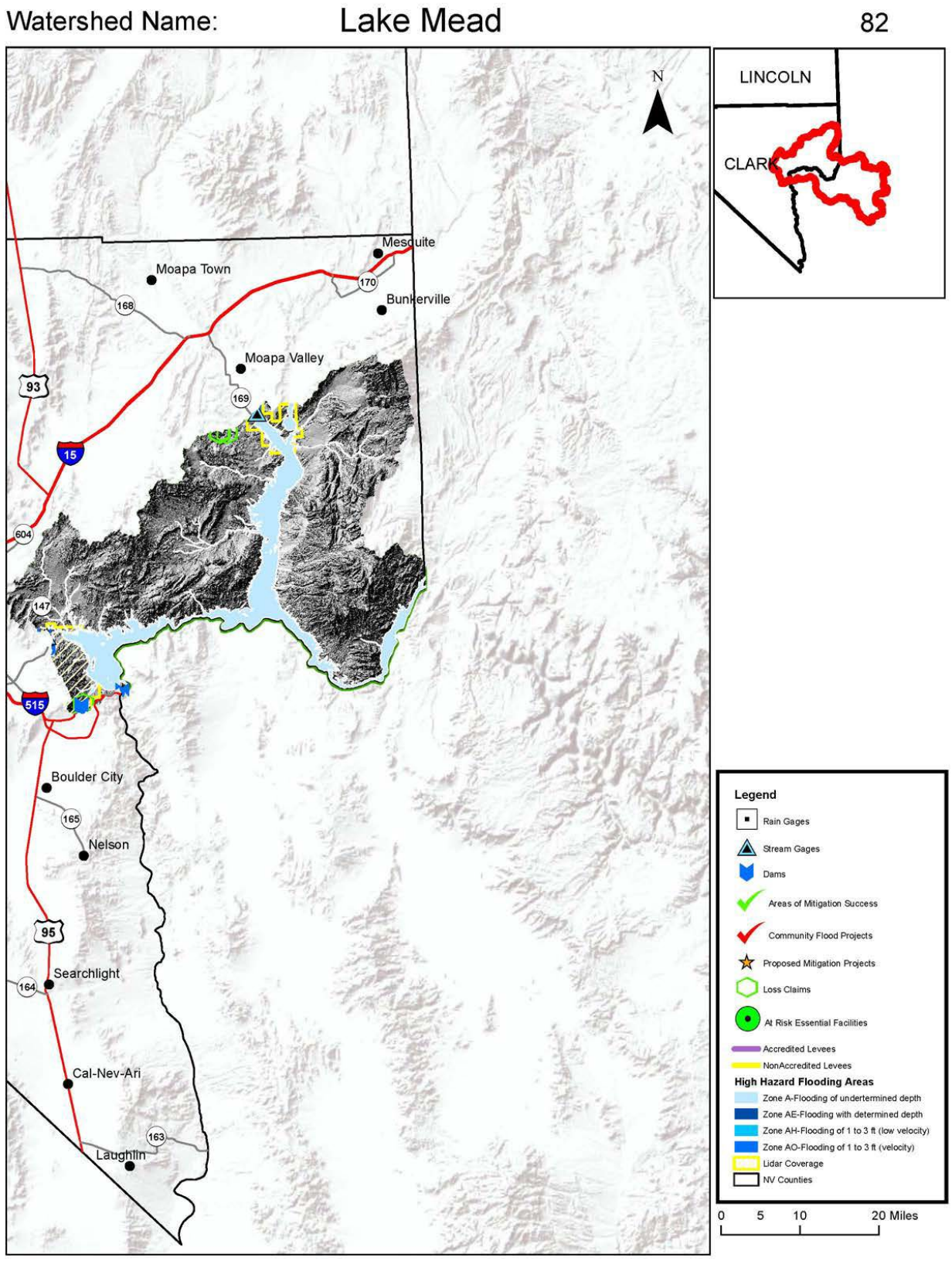
Data Source: [Nevada Flood Risk Portfolio, September 2013]

Figure 85: Watershed Map – Meadow Valley Wash



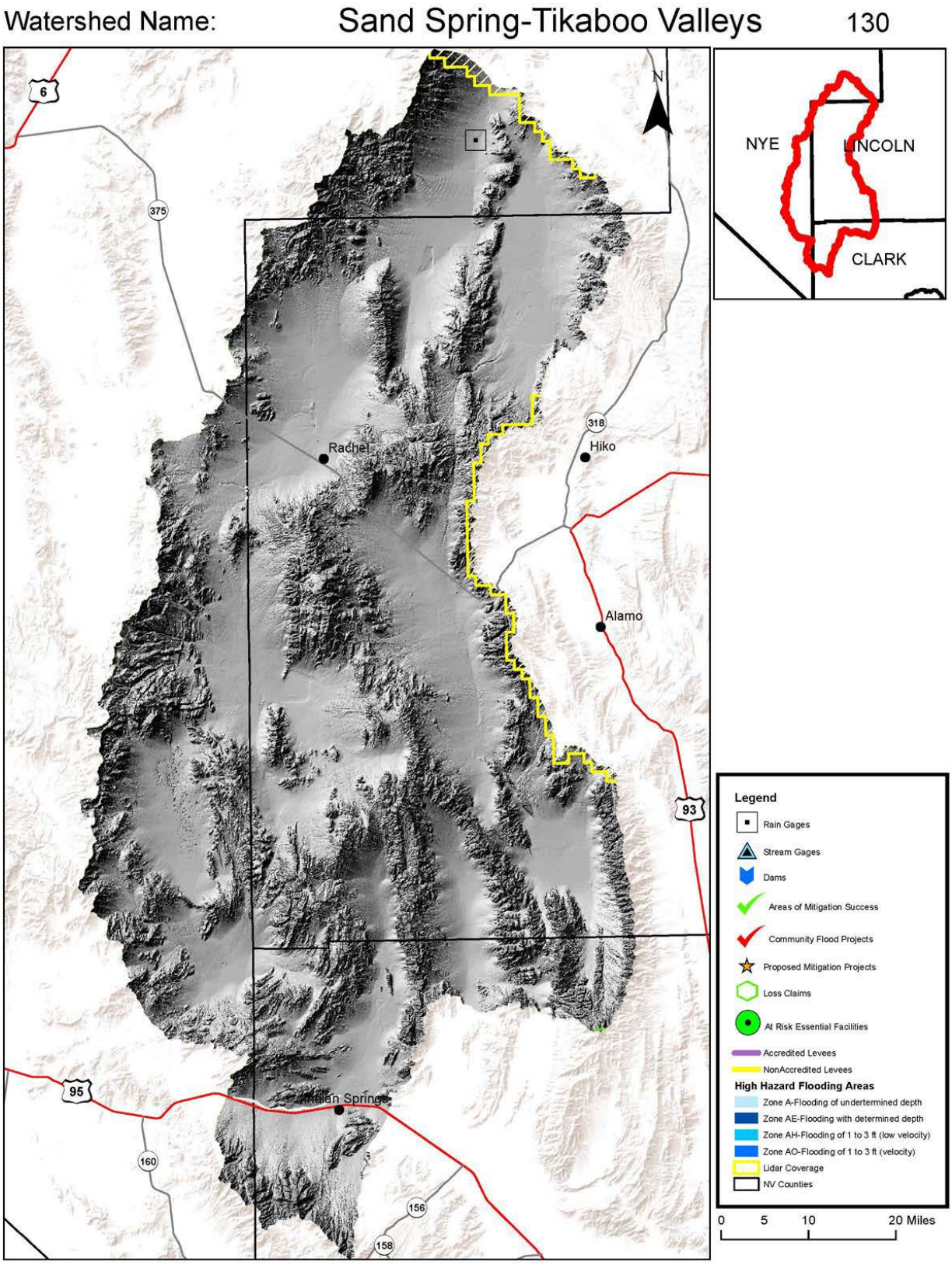
Data Source: [Nevada Flood Risk Portfolio, September 2013]

Figure 86: Watershed Map – Lake Mead



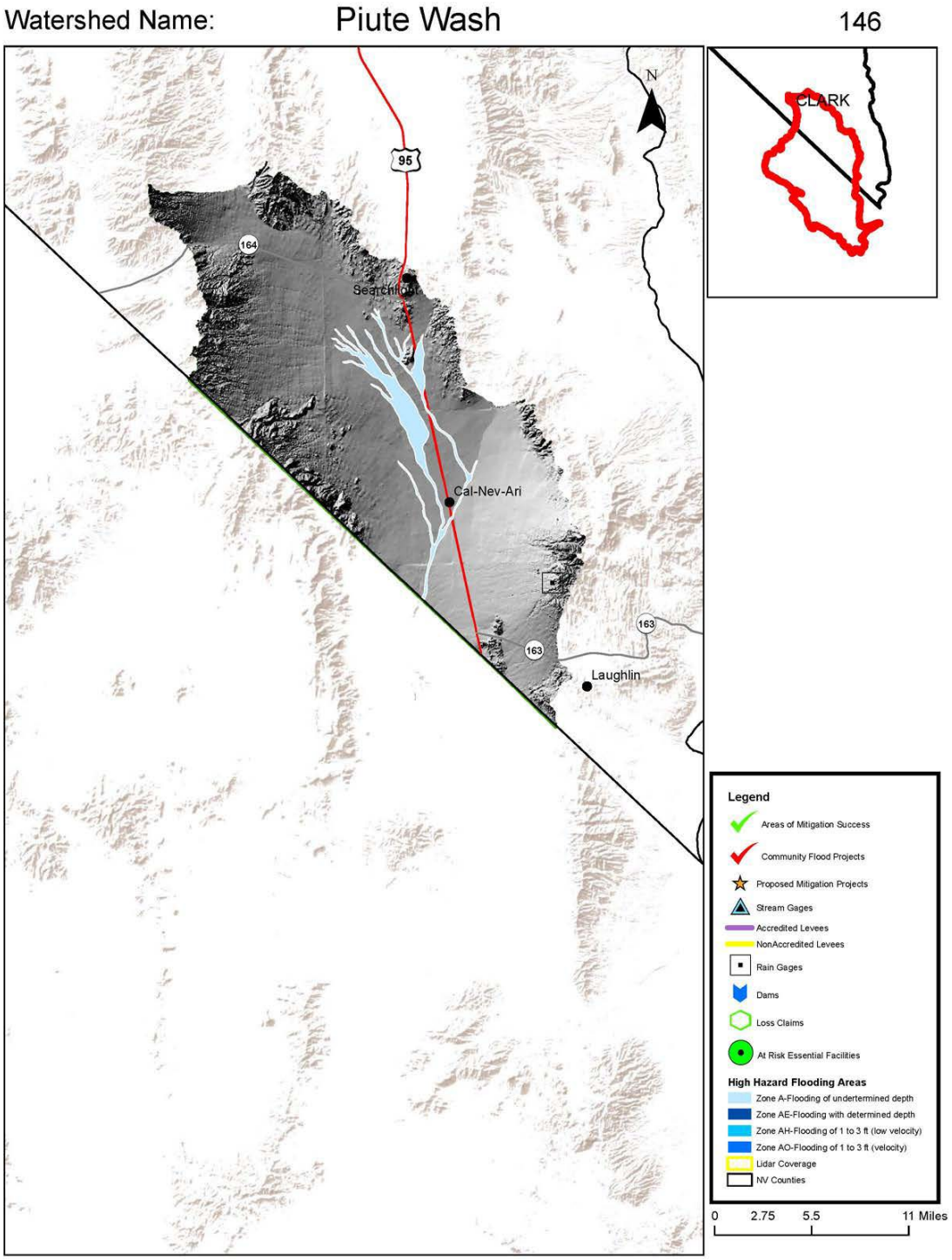
Data Source: [Nevada Flood Risk Portfolio, September 2013]

Figure 87: Watershed Map – Sand Spring – Tikaboo Valleys



Data Source: [Nevada Flood Risk Portfolio, September 2013]

Figure 88: Watershed Map – Piute Wash



Data Source: Nevada Flood Risk Portfolio, September 2013

The historical crest data and corresponding maps for the Clark County stream gauge locations can be found in Appendix G – Clark County, NV: Flooding, Storm Gauges and Historical Crest Data. The following table shows the current USGS Streamflow Data for Rivers/Lake/Streams within Clark County.

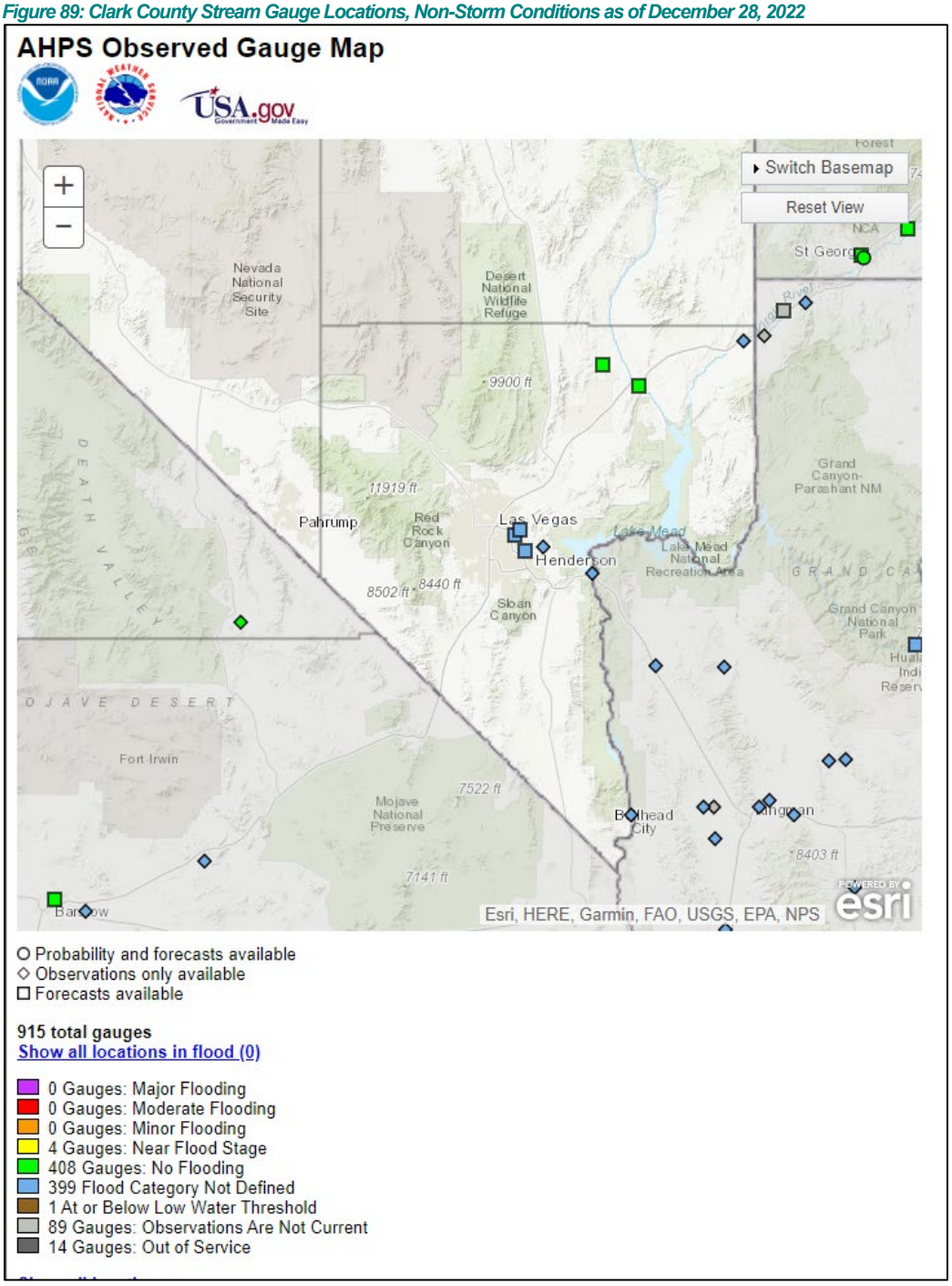
Current Conditions – Streamflow Data for Clark County, NV				
Station Number	Station Name	Long-Term mean flow 12/28	Gage height, feet	Discharge, ft 3/s
09415090	VIRGIN RV AT MESQUITE, NV	--	4.56	129
09415900	MUDDY SPGS AT LDS FARM NR MOAPA, NV	7.60	1.40	7.60
09415908	PEDERSON E SPGS NR MOAPA, NV	.17	5.45	0.10
09415910	PEDERSON SPGS NR MOAPA, NV	.18	9.35	0.09
09415915	WARM SPGS W INFLOW NR MOAPA, NV	3.50	22.16	3.32
09415920	WARM SPGS W NR MOAPA, NV	3.60	0.87	3.23
09415927	WARM SPGS CONFL AT IVERSON FLUME NR MOAPA, NV	5.80	7.28	4.37
09416000	MUDDY RV NR MOAPA, NV	43.0	1.81	40.2
09418700	MEADOW VALLEY WASH NR ROX, NV	1.70	26.04	2.50
09419000	MUDDY RV NR GLENDALE, NV	47.0	6.96	44.9
09419530	VIRGIN RV BLW CONF OF MUDDY RV NR OVERTON, NV	199	11.55	122
09419550	ROGERS SPNG NR OVERTON BEACH, NV	1.60	0.56	1.62
09419625	CORN CK SPGS AT NATIONAL FISH & WILDLIFE HDQRS, NV	.33	2.60	0.35
09419665	SLOAN CHANNEL AT CHARLESTON BLVD NR LAS VEGAS, NV	--	11.31	--
094196781	FLAMINGO WASH AT NELLIS BLVD NR LAS VEGAS, NV	16.0	11.15	5.86
094196783	LV WASH BLW FLAMINGO WASH CONFL NR LAS VEGAS, NV	36.0	16.08	8.12
094196784	LAS VEGAS WASH AT VEGAS VALLEY DR NR LAS VEGAS, NV	65.0	1.83	Rat
09419679	LAS VEGAS WASTEWAY NR E LAS VEGAS, NV	210	6.48	232
09419696	DUCK CK AT BROADBENT BLVD AT E LAS VEGAS, NV	20.0	3.74	16.1
09419698	LV WASH BLW DUCK CK CONF NR HENDERSON, NV	269	5.60	177
09419700	LAS VEGAS WASH AT PABCO RD NR	301	5.90	210

Current Conditions – Streamflow Data for Clark County, NV				
Station Number	**Station Name**	**Long-Term mean flow 12/28**	**Gage height, feet**	**Discharge, ft 3/s**
	HENDERSON, NV			
09419740	C-1 CHANNEL NR WARM SPGS RD AT HENDERSON, NV	.32	9.72	0.00
09419745	C-1 CHANNEL ABV MOUTH NR HENDERSON, NV	-- .004	33.75 --	-- 0.00
09419747	LV WASH ABV BOSTICK WEIR NR HENDERSON, NV	296	5.04	173
09419749	LV WASH ABV HOMESTEAD WEIR NR HENDERSON, NV	318	5.94	175
09419753	LV WASH ABV THREE KIDS WASH BLW HENDERSON, NV	284	33.99	215
09419756	LAS VEGAS WASH OVERFLOW AT LAKE LAS VEGAS INLET	9.30	26.46	0.00
09419800	LV WASH BLW LAKE LAS VEGAS NR BOULDER CITY, NV	224	4.63	225
09421500	COLORADO RV BLW HOOVER DAM, AZ-NV	--	42.76	--
09423000	COLORADO RIVER BELOW DAVIS DAM, AZ-NV	9,090	Dis	Dis
355906115492601	162 S23 E55 05BAAB1 STUMP SPRING	--	15.03	0.00003
360310115303201	163 S22 E58 07ADDA1 RAINBOW SPRING	.020	8.81	Rat
360956115432801	162 S20 E56 31DADA1 KIUP SPRING	.010	11.00	0.01
361600114163301	223 S19 E69 22BCAA1 QUAIL SPRING	--	19.38	0.006
362734114124201	RED ROCK SPRINGS OUTFLOW NR LAKE MEAD, NV	--	23.17	0.015

Data Source: USGS National Water Information, Current Conditions for Nevada – Streamflow: https://waterdata.usgs.gov/nv/nwis/current/?type=flow&group_key=county_cd

Note: *The data status codes within the in a few sections of this table are the following: Rat – Rating being developed or revised; Dis – Data-collection discontinued*

Figure 89: Clark County Stream Gauge Locations, Non-Storm Conditions as of December 28, 2022



Data Source: National Weather Service

In terms of the extent, or range of magnitude, floods can vary greatly in the planning area from localized drainage to dangerous flash floods with significant depths and high velocities. According to the 2011 Clark County Flood Insurance Study, " the streams or portions of streams, studied by detailed methods in the incorporated communities include the following: Hemenway Wash studied from the mouth upstream to Lakeview Drive extended; Georgia Avenue Wash studied from the corporate limits to the north end of Sierra Vista Place; approximately 1 mile of the upstream end of Wash C, which flows from near the intersection of Utah Street and Adams Boulevard to the corporate limits of Boulder City; Wash D, which crosses U.S. Highway 93 1.3 miles west of the junction with Nevada Highway studied from U.S. Highway 93 downstream 0.4 mile; Wash B, which parallels U.S. Highway 93 (Business); Las Vegas Wash from Nellis Boulevard extending northward to Owens Avenue and from approximately 200 feet downstream of Lake Mead Boulevard to Las Vegas Wash northwesterly from its confluence with Las Vegas Wash to approximately 1,000 feet south of Lone

Mountain Road; Union Pacific Overflow from its confluence with Unnamed Tributary of Las Vegas Wash to its confluence with Las Vegas Wash; Las Vegas Creek from its confluence with Las Vegas Wash to Las Vegas Boulevard North, a distance of 3.4 miles; Pulsipher Wash from the edge of the Virgin River floodplain and ending just above Interstate 15; and alluvial fan flooding within the City of Henderson."

The following tables provide information related to the peak discharges included in the 2011 Clark County Flood Insurance Study – Summary of Discharges.

Table 3. Summary of Discharges

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-Year	50-Year	100-Year	500-Year
Alluvial Fan					
In Eastern Henderson	5.54	370	2,200	3,600	–[1]
Alluvial Fan					
In Western Henderson	76.0	1,490	13,300	23,370	–[1]
Abbott Wash					
At Interstate 15	7.16	–[1]	–[1]	3,334	–[1]
Blue Diamond Fan					
At Apex	69.5	2,010	8,800	14,820	42,550
Bridge Canyon Wash					
At Apex	7.3	650	2,680	4,430	12,240
Colorado River					
At Laughlin	169,300	–[1]	–[1]	40,000[2]	–[1]
Dripping Springs Wash					
At Apex	4.5	460	1,910	3,150	8,710
Duck Creek					
At Interstate 15	–[3]	–[1]	–[1]	1,326	–[1]
Upstream of Lower Duck Creek Detention Basin	119.8	–[1]	–[1]	4,826	–[1]
Downstream of Lower Duck Creek Detention Basin	119.8	–[1]	–[1]	3,395	–[1]
At Mountain Vista Avenue	158.5	–[1]	–[1]	6,195	–[1]
At Boulder Highway	164.8	–[1]	–[1]	8,562	–[1]
Duck Creek Tributary					
At Interstate 15	–[3]	–[1]	–[1]	5,100	–[1]
Duck Creek South Channel					
Above Silverado Ranch Boulevard	6.7	–[1]	–[1]	5,700	–[1]

[1]Discharge not available
[2]Established by the Colorado River Floodway Protection Act, Public Law 99-450
[3]Flow affected by upstream overflows, diversions, or obstructions; drainage area does not apply

Table 3. Summary of Discharges (Cont'd)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet Per Second) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Georgia Avenue Wash					
At Buchman Boulevard	1.98	263	781	1,285	4,300
At Mendota Drive	0.95	177	459	727	2,000
At Cross Section E	0.45	68	189	310	1,000
Hennenway Wash					
At Cross Section C	2.86	290	635	815	1,380
At Cross Section E	1.06	80	195	260	420
Hiko Springs Wash					
At Apex	17.9	1,220	5,070	8,370	23,130
Las Vegas Creek					
At Las Vegas Boulevard	13	640	1,280	1,570	2,420
At Confluence with Las Vegas Wash	14	660	1,300	1,600	2,450
Las Vegas Wash					
Just below Losee Road	–[1]	–[1]	–[1]	6,730	–[1]
Approximately 400 feet downstream of Interstate 15	–[2]	–[1]	–[1]	9,136	–[1]
Approximately 750 feet upstream of East Cheyenne Avenue	–[2]	–[1]	–[1]	6,977	–[1]
Just downstream of Owens Boulevard	–[2]	–[1]	–[1]	8,155	–[1]
At confluence of Las Vegas Creek	–[2]	–[1]	–[1]	11,314	–[1]
Just downstream of Stewart Street	–[2]	–[1]	–[1]	12,754	–[1]
Just downstream of Las Vegas Boulevard	–[2]	–[1]	–[1]	7,573	–[1]
Just downstream of Nellis Boulevard	–[2]	–[1]	–[1]	13,515	–[1]
Approximately 1,200 feet upstream of confluence of Sloan Channel	–[2]	–[1]	–[1]	18,672	–[1]
Approximately 250 feet downstream of Lake Mead Boulevard	–[2]	–[1]	–[1]	7,800	–[1]
At Desert Inn Road	–[2]	–[1]	–[1]	18,718	–[1]

1 Data Not Available
2 Flow affected by upstream overflows, diversions, or obstructions; drainage area does not apply.

Table 3. Summary of Discharges (Cont'd)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet Per Second) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Las Vegas Wash (Cont'd)					
Approximately 850 feet upstream of divergence of Las Vegas Split Flow 1	–[1]	–[1]	–[1]	18,798	–[1]
Just downstream of divergence of Las Vegas Split Flow 2	–[1]	–[1]	–[1]	5,682	–[1]
Approximately 1,200 feet downstream of convergence of Las Vegas Split Flow 2	–[1]	–[1]	–[1]	20,690	–[1]
Just downstream of divergence of Las Vegas Split Flow 3	–[1]	–[1]	–[1]	11,752	–[1]
Approximately 5,300 feet downstream of convergence of Las Vegas Split Flow 3	–[1]	–[1]	–[1]	22,530	–[1]
Las Vegas Wash Split Flow 1					
Just downstream of divergence from Las Vegas Wash	–[1]	–[1]	–[1]	8,907	–[1]
Las Vegas Wash Split Flow 2					
Just downstream of divergence from Las Vegas Wash	–[1]	–[1]	–[1]	4,210	–[1]
Las Vegas Wash Split Flow 3					
Just downstream of divergence from Las Vegas Wash	–[1]	–[1]	–[1]	8,938	–[1]
Middle Branch Blue Diamond Wash					
At Union Pacific Railroad	–[2]	–[1]	–[1]	1,961	–[1]
At Interstate 15	97.5	–[1]	–[1]	1,462	–[1]
Muddy River					
At Cooper Avenue	4,035	5,250	14,750	21,300	45,900
Downstream of Wells Siding	3,950	5,270	14,800	21,400	45,500
Upstream of confluence with Meadow Valley Wash	1,360	3,620	10,900	16,000	34,400

1 Data Not Available
2 Flow affected by upstream overflows, diversions, or obstructions; drainage area does not apply.

Table 3. Summary of Discharges (Cont'd)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet Per Second) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
North Branch Blue Diamond Wash					
At Union Pacific Railroad	–[2]	–[1]	–[1]	244	--[1]
At Interstate 15	7.8	–[1]	–[1]	1,290	–[1]
Overton Wash					
At Upstream Limit of Detailed Study	21.7	2,170	4,510	5,680	8,200
Pulsifer Wash					
At Leavitt Lane	4.9	–[1]	–[1]	2,100	–[1]
Upstream of Interstate 15	4.7	–[1]	–[1]	3,100	–[1]
Southwest Unnamed Wash					
At Apex	3.9	260	1,070	1,770	4,890
Tropicana Wash – Central Branch					
At Flamingo Wash	20.1	–[1]	–[1]	4,473	–[1]
Upstream of Airport Wash	12.1	–[1]	–[1]	3,320	–[1]
Downstream of Koval Road	11.0	–[1]	–[1]	3,320	–[1]
Just upstream of Interstate 15	3.6	–[1]	–[1]	1,545	–[1]
Just downstream of Union Pacific Railroad	1.5	–[1]	–[1]	750	--[1]
Downstream of Tropicana Wash – North Branch	1.3	–[1]	–[1]	1,582	–[1]
Upstream of Union Pacific Railroad	1.5	–[1]	–[1]	1,818	–[1]
Breakout Upstream of Union Pacific Railroad	1.5	–[1]	–[1]	1,068	–[1]
Downstream of Tropicana Wash – South Branch	0.1	–[1]	–[1]	121	--[1]
At Jones Boulevard	0.3	–[1]	–[1]	189	--[1]
Tropicana Wash – North Branch					
Above confluence with Tropicana Wash – Central Branch	1.0	–[1]	–[1]	1,352	–[1]
Just downstream of Hacienda Avenue	0.5	–[1]	–[1]	833	--[1]
Just downstream of South Decatur Boulevard	0.8	–[1]	–[1]	1,270	–[1]
At Jones Boulevard	0.4	–[1]	–[1]	240	--[1]
Just upstream of the confluence with Tributary No.2	0.9	–[1]	–[1]	821	--[1]
Tropicana Wash – South Branch					
Above Jones Boulevard	0.3	–[1]	–[1]	340	--[1]

1 Data Not Available

2 Flow affected by upstream overflows, diversions, or obstructions; drainage area does not apply.

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-Year	50-Year	100-Year	500-Year
Union Pacific Railroad Overflow					
At Las Vegas Wash	--[1]	1,860	4,970	6,380	11,100
At Middle Tributary to Las Vegas Wash	--[1]	1,240	4,260	5,300	8,600
Unnamed Fan (Just West of Blue Diamond Fan)					
At Apex	1.3	140	660	1,140	3,460
Unnamed Tributary to Las Vegas Wash					
At Lone Mountain Road	126	2,120	4,060	4,890	7,850
At Craig Road	--[2]	1,560	3,500	4,330	6,550
Below Intestate 15	177	3,000	5,720	6,870	9,100
Below Civic Center Drive	--[2]	3,000	5,720	5,970	7,100
Wash B					
At Cross Section A	0.41	140	255	315	460
Wash C					
At Cross Section A	1.04	120	265	335	490
At Cross Section C	0.81	90	195	250	390
At Cross Section D	0.60	70	150	195	300
Wash D					
At Cross Section D	1.38	205	400	490	740
West Branch Muddy River					
Downstream of Cooper Avenue	--[3]	100	2,450	9,000	20,900
Virgin River					
At Little Field, AZ	5,090	--[1]	--[1]	39,510	68,800

[1]Discharge Not Available
[2]Flow affected by upstream overflows, diversions, or obstructions; drainage area does not apply
[3]Flow due to overflows from Muddy River

21

Data Source: FEMA Flood Map Center

Note from Clark County Flood Insurance Study: *Estimates of flood discharges for the alluvial fan analysis in the City of Henderson were based on published USGS data and Peak discharge-frequency relationships for the Colorado River were based on operating procedures for the Hoover Dam (Reference 20) and USBR information (Reference 14). These discharges were adopted for the Bullhead City study area. The 100-year peak discharge is equivalent to the "levee design flood" used by the USBR. The 10-, 50-, and 500-year peak discharge relationships were based on operating procedures for Hoover Dam and additional information provided by the USBR.*

Clark County's previous HMP (2018) states that Clark County and its participating jurisdictions (Unincorporated Clark County, NV, the city of Boulder City, NV, the city of Henderson, NV, the city of Las Vegas, NV, the city of Mesquite, NV, and the city of North Las Vegas, NV) participate in the National Flood Insurance Program (NFIP). The initial FIRM dates were initiated for the planning area on the following dates:

- Clark County (CID number 320003), September 29, 1989
- Boulder City (CID number 320004), September 16, 1981
- Henderson (CID number 320005), June 15, 1982
- Las Vegas (CID number 325276), September 30, 1980
- Mesquite (CID number 320035), September 28, 1980
- North Las Vegas (CID number 320007), January 16, 1981
- Fort Mojave Indian Tribe (CID number 320036), the tribe has been included in the Community Status Book under Clark County, however, their entry is under California CID 060743, because their mailing address is in the state of California.

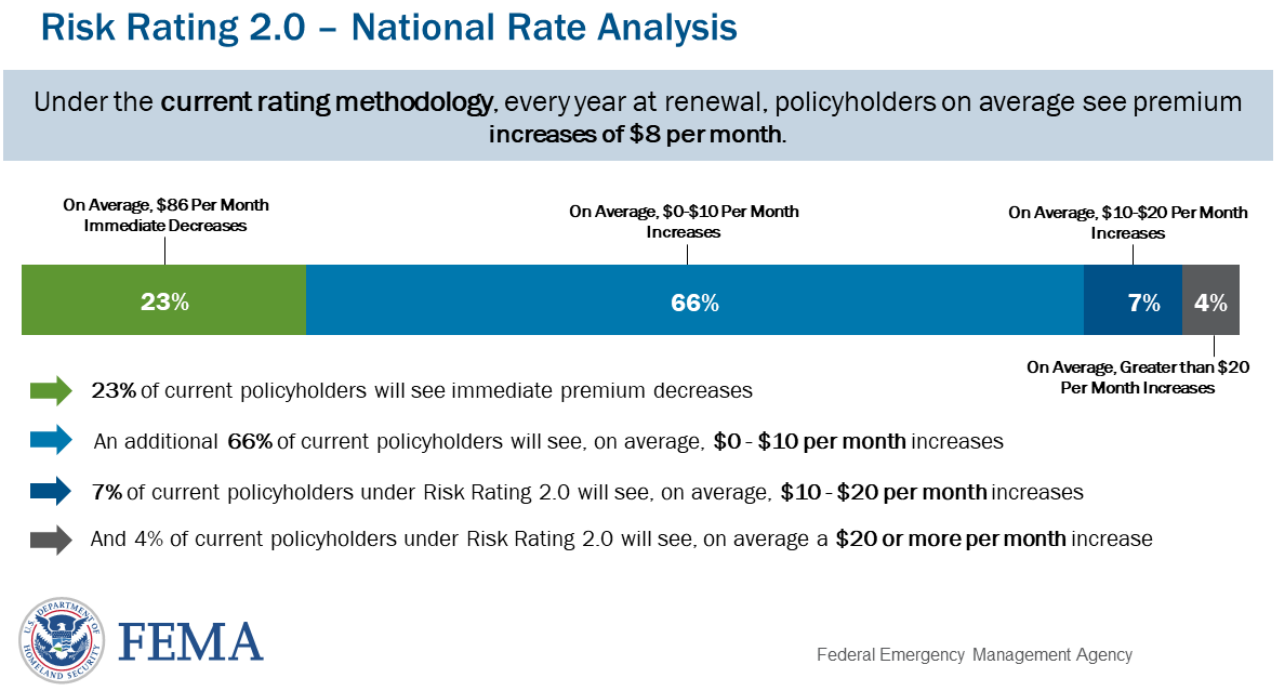
The FEMA Community Status Book Report for Communities participating in the NFIP (https://www.fema.gov/cis/NV.pdf) still indicates the digital FIRMs for Clark County and its participating jurisdictions were updated on the following dates:

- Clark County (including Clark County Unincorporated Area and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) (CID number 320003), City of Boulder City (CID number 320004), City of Henderson (CID number 320005), City of Las Vegas (CID number 325276), and City of North Las Vegas (CID number 320007), November 16, 2011
- City of Mesquite (CID number 320035), December 4, 2007

For more information about the NFIP/CRS Status for Clark County and its participating jurisdictions can be found in Section 5 under "National Flood Insurance Program Participation".

The Nevada Flood Risk Portfolio states that high-risk flood zones, also known as Special Flood Hazard Areas (SFHAs), are delineated on Flood Insurance Rate Maps (FIRMs) to represent areas subject to inundation by the base (1-percent-annual chance) flood. Structures located with the SFHA have a 26 percent change of flooding during the life of a standard 30-year mortgage. The FEMA Risk Rating 2.0: Equity in Action allows FEMA to provide individuals and communities with information to make more informed decisions on purchasing flood insurance, initiating, and informing appropriate mitigation options to help lower flood insurance rates. The current rating methodology has not changed since the 1970s. Over the years, technology has evolved and so has FEMA's understanding of flood risk. Risk Rating 2.0 allows FEMA to calculate premiums more equitably across all policyholders based on the value of their home and individual property's flood risk.

Figure 90: FEMA, National Rate Analysis



Data Source: FEMA, April 2022

Related to the SFHA, the following table provides premium change analysis for the SFHA Count and % SFHA by County by FEMA:

Table 48: SFHA Count, Clark County, NV

FEMA Risk Rating 2.0 - Equity In Action																						
First Year Change by State and County - Count of SFH Policies																						
NV	**County**	**Green bar**											**Blue Bar**	**Dk. Blue Bar**	**Grey bar**							
		< -$100	**$-100 to $-90**	**$-90 to $-80**	**$-80 to $-70**	**$-70 to $-60**	**$-60 to $-50**	**$-50 to $-40**	**$-40 to $-30**	**$-30 to $-20**	**$-20 to $-10**	**$-10 to $0**	**$0 to $10**	**$10 to $20**	**$20 to $30**	**$30 to $40**	**$40 to $50**	**$50 to $60**	**$60 to $70**	**$70 to $80**	**$80 to $90**	**$90 to $100**	**> $100**	**Total**
	Clark County	41	10	6	5	6	10	16	11	14	42	121	1,552	13	2									1,849
NV Total		**318**	**51**	**69**	**78**	**96**	**124**	**104**	**88**	**100**	**188**	**362**	**6,426**	**154**	**44**	**1**								**8,203**
Data Source: FEMA: https://www.fema.gov/sites/default/files/documents/fema_risk-rating-county-breakdown-nevada_2021.xlsx																						

Table 49: SFH % by County, Clark County, NV

FEMA Risk Rating 2.0 - Equity In Action																					
First Year Change by State and County – Percent of SFH Policies																					
NV	**County**	**Green bar**											**Blue Bar**	**Dk. Blue Bar**	**Grey bar**						
		< -$100	**$-100 to $-90**	**$-90 to $-80**	**$-80 to $-70**	**$-70 to $-60**	**$-60 to $-50**	**$-50 to $-40**	**$-40 to $-30**	**$-30 to $-20**	**$-20 to $-10**	**$-10 to $0**	**$0 to $10**	**$10 to $20**	**$20 to $30**	**$30 to $40**	**$40 to $50**	**$50 to $60**	**$60 to $70**	**$70 to $80**	**$80 to $90**	**$90 to $100**	**> $100**
	Clark County	2.2%	0.5%	0.3%	0.3%	0.3%	0.5%	0.9%	0.6%	0.8%	2.3%	6.5%	83.9%	0.7%	0.1%								
NV Total		**3.9%**	**0.6%**	**0.8%**	**1.0%**	**1.2%**	**1.5%**	**1.3%**	**1.1%**	**1.2%**	**2.3%**	**4.4%**	**78.3%**	**1.9%**	**44**	**0.0%**							
Data Source: FEMA: https://www.fema.gov/sites/default/files/documents/fema_risk-rating-county-breakdown-nevada_2021.xlsx																						

For Clark County, the previous Clark County HMP plan (2018) mentions that "approximately 5.2 percent of Clark County's land mass (417.1 square miles) is located in the SFHA, which is concentrated along the Virgin, Muddy, and Colorado rivers, in the eastern and southern portions of the County. Every incorporated jurisdiction within Clark County is mapped for the SFHA. In the 2012 Clark County HMP's vulnerability analysis, 15.2 percent of the population and 12.4 percent of the residential buildings within the County were located in the SFHA whereas the 2018 HMP vulnerability analysis shows only 10.4 percent of people and 10.7 percent of residential buildings located in the SFHA hazard area." The following information provide flood sources, the most current available SFHA data, and flood insurance rate zones developed for Clark County. The following data provides mapped special flood hazard areas and flood study verification (CNMS) from the Nevada Flood Risk Portfolio – Flood Hazard and Flood Risk in Nevada's Watersheds, September 2013:

A. Las Vegas Wash (including Clark County, City of Henderson, City of Las Vegas, and City of North Las Vegas) – SFHA Summary

Mapped Special Flood Hazard Areas and Flood Study Verification (CNMS)						
Area of SFHA RISK Zones (Sq Miles)				CNMS Line Stats- (Stream Miles)		
A	AE	AO	AH		A	151.4
288	47.90	1	0		AE	61.9
Area of SFHA RISK Zones (Acres)					AO	0
A	AE	AO	AH		AH	0
184,348	30,656	0	0	CNMS Verification- (Stream Miles)		
					Valid	77.1
					Unverified	41.5
					Unknown	94.8
					Being Studied	0
NOTES:						
The Clark County Regional Flood Control District						

Data Source: Nevada Flood Risk Portfolio – Flood Hazard and Flood Risk in Nevada's Watersheds, September 2023

B. Havasu-Mojave Lakes (including Clark County and the City of Laughlin) – SFHA Summary

Mapped Special Flood Hazard Areas and Flood Study Verification (CNMS)						
Area of SFHA RISK Zones (Sq Mi)				CNMS Line Stats- (Stream mi)		
A	AE	AO	AH		A	149.6
33.10	2	25	0		AE	21.9
Area of SFHA RISK Zones (Acres)					AO	16.1
A	AE	AO	AH		AH	0
21,161	1,286.0	16,003	0	CNMS Verification- (Stream mi)		
					Valid	123.1
					Unverified	37.9
					Unknown	26.6
					Being Studied	0
NOTES:						
Laughlin Rainstorm you tube video Keyword search: Laughlin, NV after major storm						

Data Source: Nevada Flood Risk Portfolio – Flood Hazard and Flood Risk in Nevada's Watersheds, September 2013

C. Ivanpah- Pahrump Valleys (including Clark County) – SFHA Summary

Mapped Special Flood Hazard Areas and Flood Study Verification (CNMS)						
Area of SFHA RISK Zones (Sq Miles)				CNMS Line Stats- (Stream Miles)		
A	AE	AO	AH		A	287.6
59.0	0.07	49.4	0		AE	2.5
Area of SFHA RISK Zones (Acres)					AO	0.07
A	AE	AO	AH		AH	0
37,767	44	31,633	0	CNMS Verification- (Stream Miles)		
					Valid	230.4
					Unverified	17
					Unknown	42.8
					Being Studied	0
NOTES:						
Pahrump Valley FEMA mapping update website						
http://www.r9map.org/Pages/countyPage.aspx?choLoco=84&choProj=						
Pahrump Regional Planning District Master Plan; Chapter 15, Flood Control and Drainage						
updated 8/27/2010 Nyecounty.net						

Data Source: *Nevada Flood Risk Portfolio – Flood Hazard and Flood Risk in Nevada's Watersheds, September 2013*

D. Lower Virgin (including the City of Mesquite) – SFHA Summary

Mapped Special Flood Hazard Areas and Flood Study Verification (CNMS)						
Area of SFHA RISK Zones (Sq Mi)				CNMS Line Stats- (Stream mi)		
A	AE	AO	AH		A	51.7
0.95	4.2	0	0		AE	15.2
Area of SFHA RISK Zones (Acres)					AO	0
A	AE	AO	AH		AH	0
611	2,664	0	0	CNMS Verification- (Stream mi)		
					Valid	41.9
					Unverified	0
					Unknown	25.1
					Being Studied	0
NOTES:						
USGS 1989 Flood Report						
http://pubs.usgs.gov/wri/1994/4159/report.pdf						
Clark County LOMR for the Virgin River, May 4, 2006						
Flooding in Mesquite You Tube video: Keywords KLAS Video Flooding in Mesquite						

Data Source: *Nevada Flood Risk Portfolio – Flood Hazard and Flood Risk in Nevada's Watersheds, September 2013*

E. Muddy (including Clark County) – SFHA Summary

Mapped Special Flood Hazard Areas and Flood Study Verification (CNMS)						
Area of SFHA RISK Zones (Sq Miles)				CNMS Line Stats- (Stream Miles)		
A	AE	AO	AH		A	169.8
175.5	48.5	1.1	0		AE	23.4
Area of SFHA RISK Zones (Acres)					AO	0.44
A	AE	AO	AH		AH	0
112,319	31,018	678	0	CNMS Verification- (Stream Miles)		
					Valid	138.3
					Unverified	41.5
					Unknown	55.3
					Being Studied	0
NOTES:						
Clark County Regional Flood Districts						

Data Source: Nevada Flood Risk Portfolio – Flood Hazard and Flood Risk in Nevada's Watersheds, September 2013

F. Meadow Valley Wash (including Clark County) – SFHA Summary

Mapped Special Flood Hazard Areas and Flood Study Verification (CNMS)						
Area of SFHA RISK Zones (Sq Mi)				CNMS Line Stats- (Stream mi)		
A	AE	AO	AH		A	23.7
3	3.2	0.27	0		AE	23.2
Area of SFHA RISK Zones (Acres)					AO	0.88
A	AE	AO	AH		AH	0
1,949	2,051	171	0	CNMS Verification- (Stream mi)		
					Valid	37.1
					Unverified	0
					Unknown	0
					Being Studied	0
NOTES:						

Data Source: Nevada Flood Risk Portfolio – Flood Hazard and Flood Risk in Nevada's Watersheds, September 2013

G. Lake Mead (including Clark County) – SFHA Summary

Mapped Special Flood Hazard Areas and Flood Study Verification (CNMS)						
Area of SFHA RISK Zones (Sq Mi)				CNMS Line Stats- (Stream mi)		
A	AE	AO	AH	A	171.9	
0.05	0.05	0	0	AE	2.1	
Area of SFHA RISK Zones (Acres)				AO	0	
A	AE	AO	AH	AH	0	
30	31.4	0	0	CNMS Verification- (Stream mi)		
				Valid	140.5	
				Unverified	1.6	
				Unknown	31.9	
				Being Studied	0	
NOTES:						

Data Source: *Nevada Flood Risk Portfolio – Flood Hazard and Flood Risk in Nevada's Watersheds, September 2013*

H. Sandy Springs -Tikaboo Valleys (including a portion of Clark County) – SFHA Summary

Mapped Special Flood Hazard Areas and Flood Study Verification (CNMS)						
Area of SFHA RISK Zones (Sq Mi)				CNMS Line Stats- (Stream mi)		
A	AE	AO	AH	A	12.9	
1.9	0	0	0	AE	0	
Area of SFHA RISK Zones (Acres)				AO	0	
A	AE	AO	AH	AH	0	
1,220	0	0	0	CNMS Verification- (Stream mi)		
				Valid	12.9	
				Unverified	0	
				Unknown	0	
				Being Studied	0	
NOTES:						

Data Source: *Nevada Flood Risk Portfolio – Flood Hazard and Flood Risk in Nevada's Watersheds, September 2013*

I. Piute Wash (including Clark County) – SFHA Summary

Mapped Special Flood Hazard Areas and Flood Study Verification (CNMS)						
Area of SFHA RISK Zones (Sq Miles)				CNMS Line Stats- (Stream Miles)		
A	AE	AO	AH	A	74.6	
12.2	0	0	0	AE	0	
Area of SFHA RISK Zones (Acres)				AO	0	
A	AE	AO	AH	AH	0	
7,844	0	0	0	CNMS Verification- (Stream Miles)		
				Valid	49.4	
				Unverified	0	
				Unknown	25.2	
				Being Studied	0	
NOTES:						

Data Source: Nevada Flood Risk Portfolio – Flood Hazard and Flood Risk in Nevada's Watersheds, September 2013

The following table explains the Floodplain Insurance Rate Map (FIRM) flood zone classifications associated with Maps 87-94 on the proceeding pages. All Clark County and its participating jurisdiction (which included Clark County Unincorporated area, and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) FEMA DFIRM Maps can be found in Appendix F: FEMA FIRM Maps .

Table 50: FEMA Flood Zone Classifications

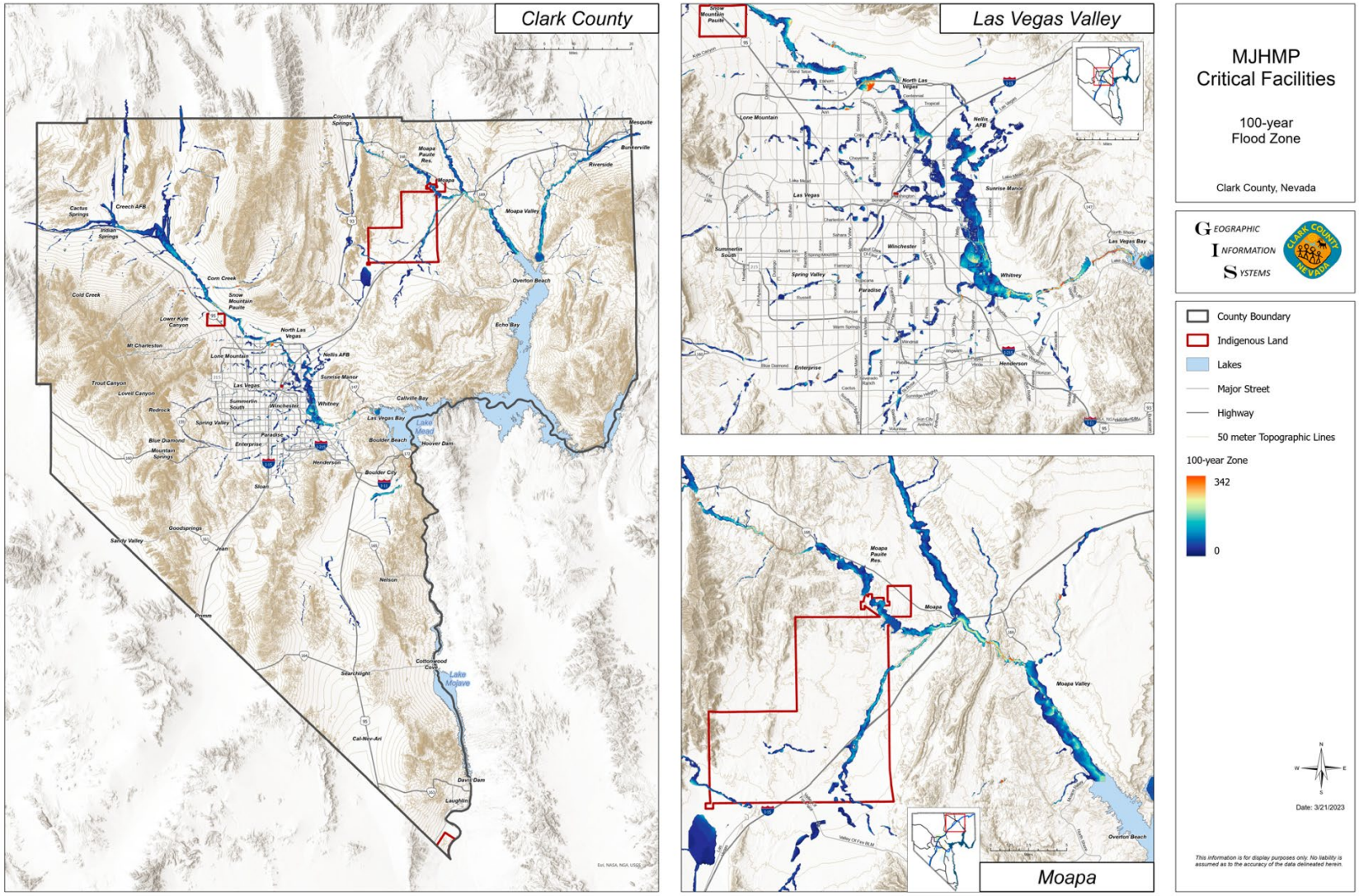
FEMA Flood Zone Classifications		
Risk Area Classification	**Zone**	**Description**
High Risk Area	A	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones. (100-Year Floodplain)
High Risk Area	AE	An area inundated by 1% annual chance of flooding. The base floodplain where base flood elevations are provided. AE Zones is now used on new format FIRMs instead of A1-A30 Zones. (100-Year Floodplain)
Moderate to Low-Risk Area	Shaded X	Area of moderate flood hazard, usually the area between the limits of 100-year and 500-year floods. Areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood. An area inundated by 0.2% annual chance flooding.
Moderate to Low-Risk Area	Unshaded X	Area of minimal flood hazard, usually depicted on FIRMS as above the 500-year flood level. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100-year flood.
Undetermined Risk Area	D	Areas with possible but undetermined flood hazards. No flood

FEMA Flood Zone Classifications		
Risk Area Classification	**Zone**	**Description**
		hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.

Note: *For the following FEMA National Flood Hazard Layer (NFHL) maps, the A and AE zones have been combined as they are both considered 100-year floodplain.*

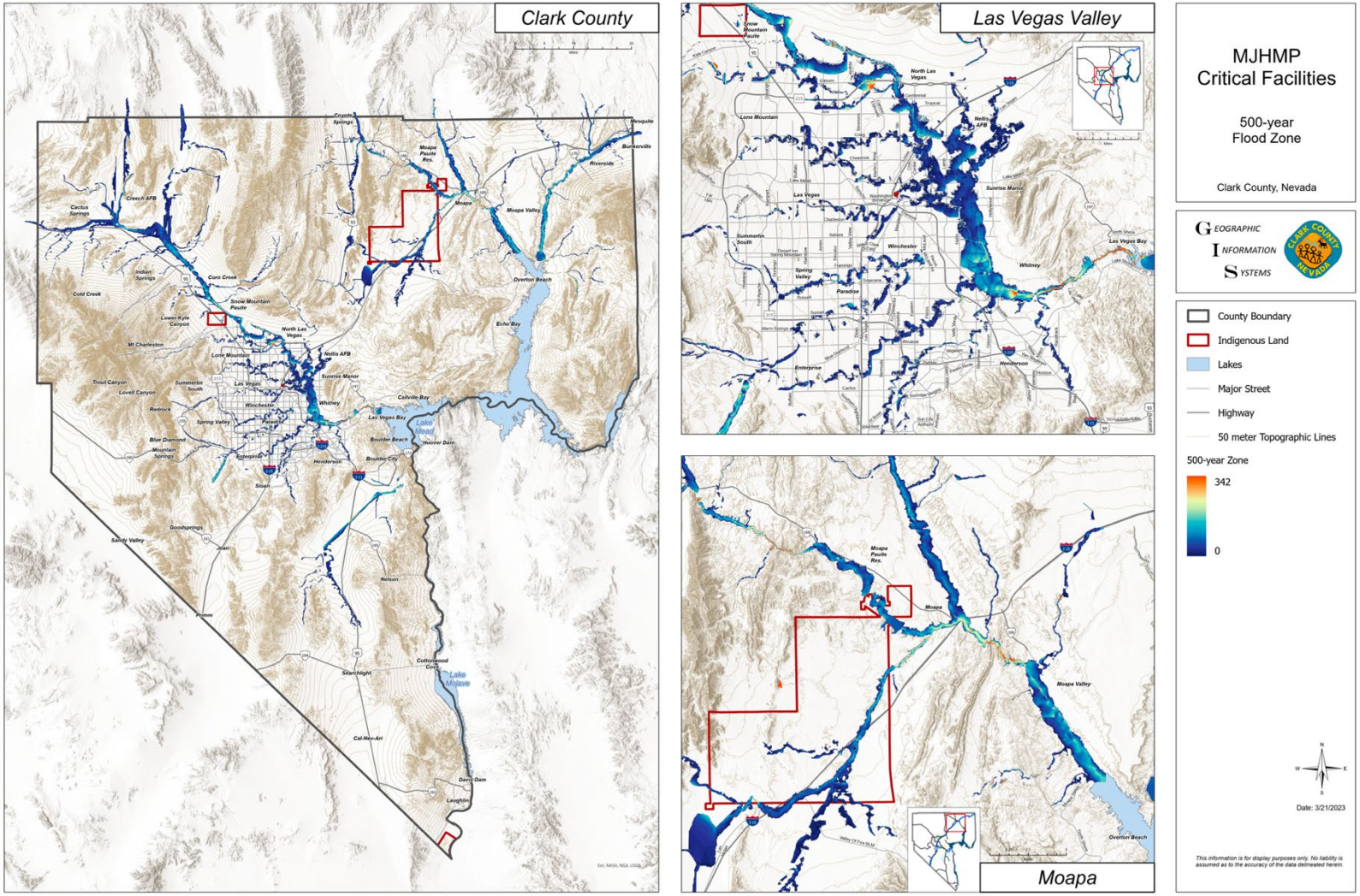
Data Source: FEMA Flood Zone Classifications: https://snmapmod.snco.us/fmm/document/fema-flood-zone-definitions.pdf

Figure 91: Clark County, NV – 100-year flood zone map with Critical Facilities Layers



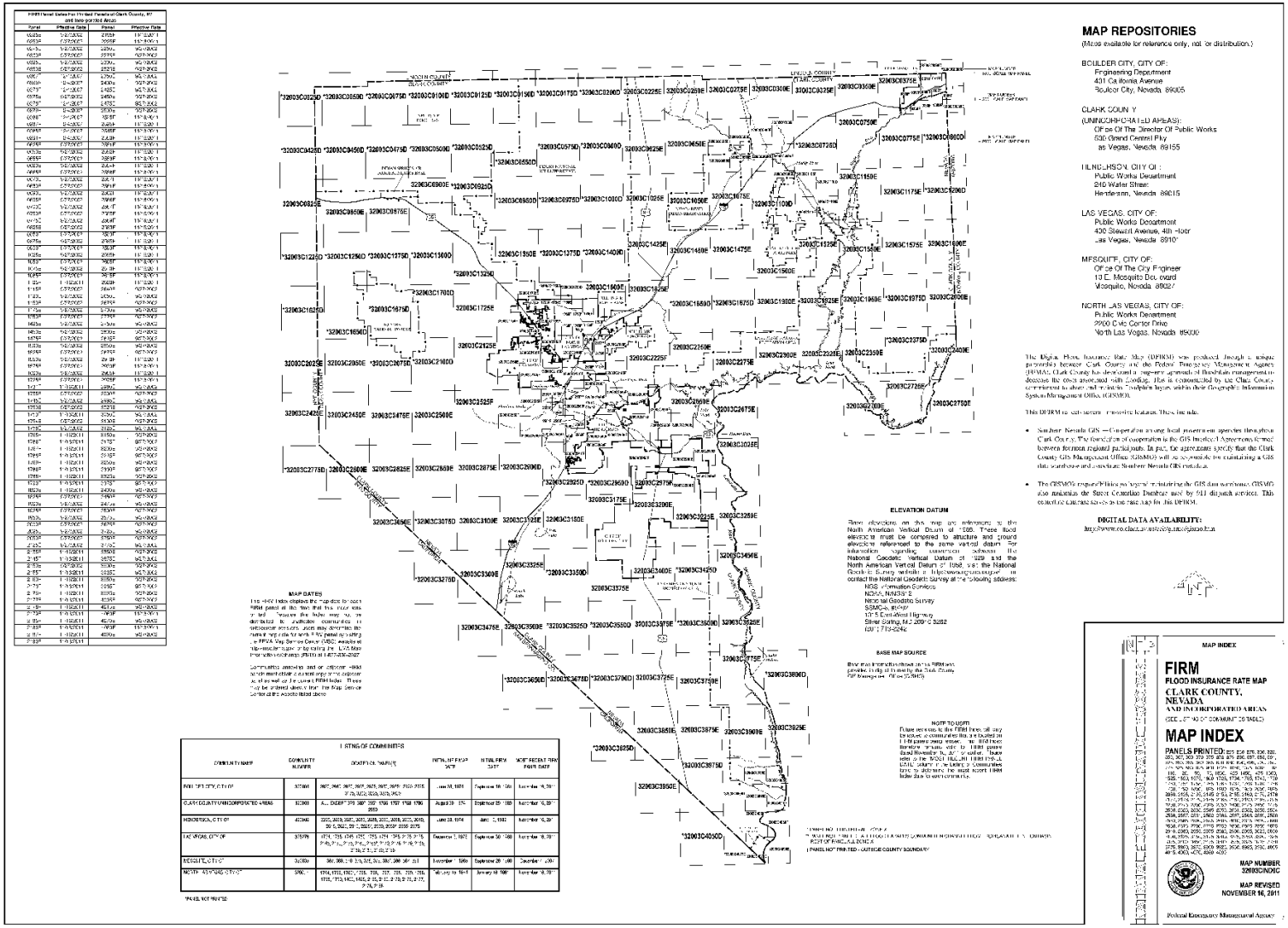
Data Source: Clark County GISMO Department

Figure 92: Clark County, NV –500-year flood zone map with Critical Facilities Layers



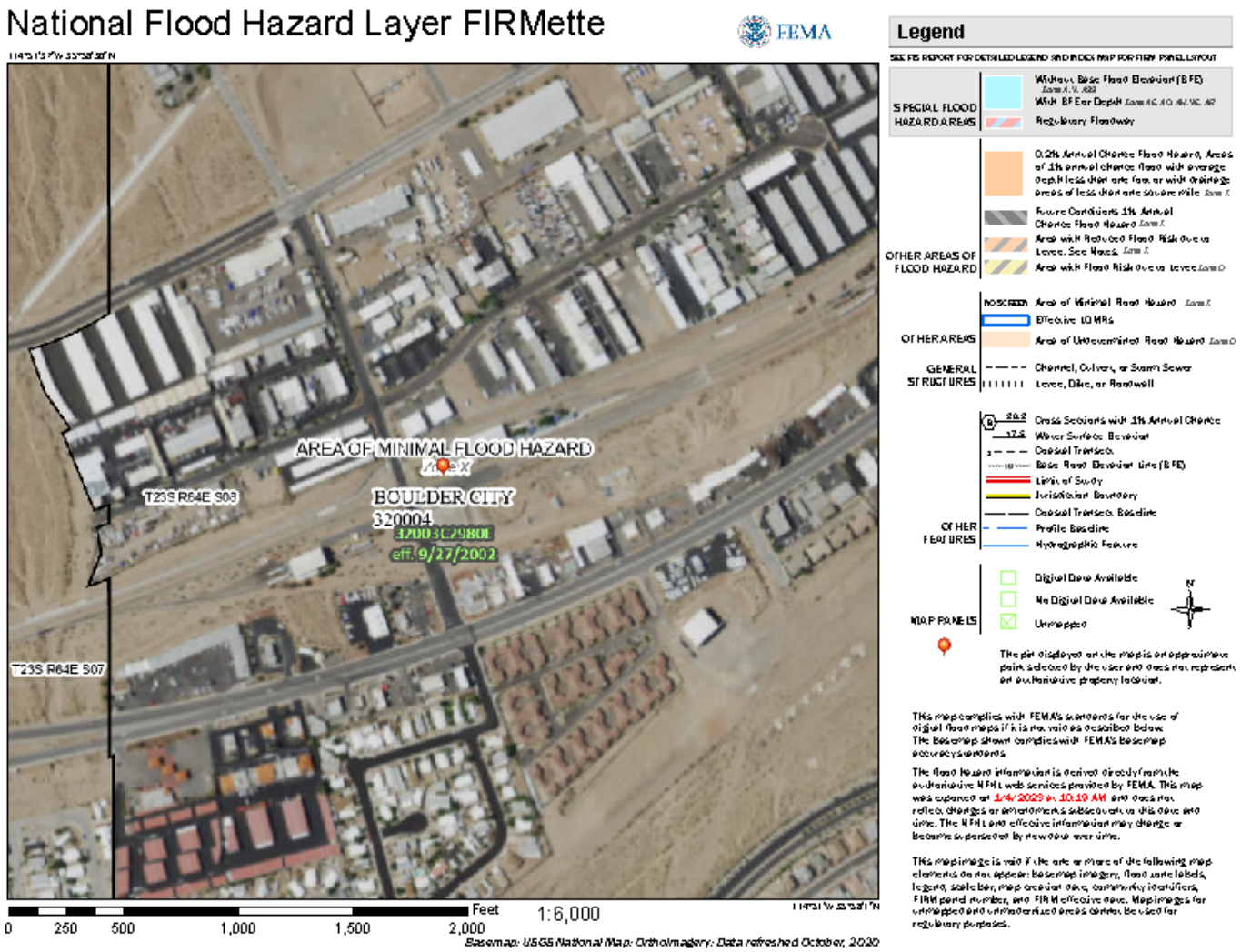
Data Source: Clark County GISMO Department

Figure 93: FEMA FIRM Map: Clark County, NV including all jurisdictions and Clark County Unincorporated



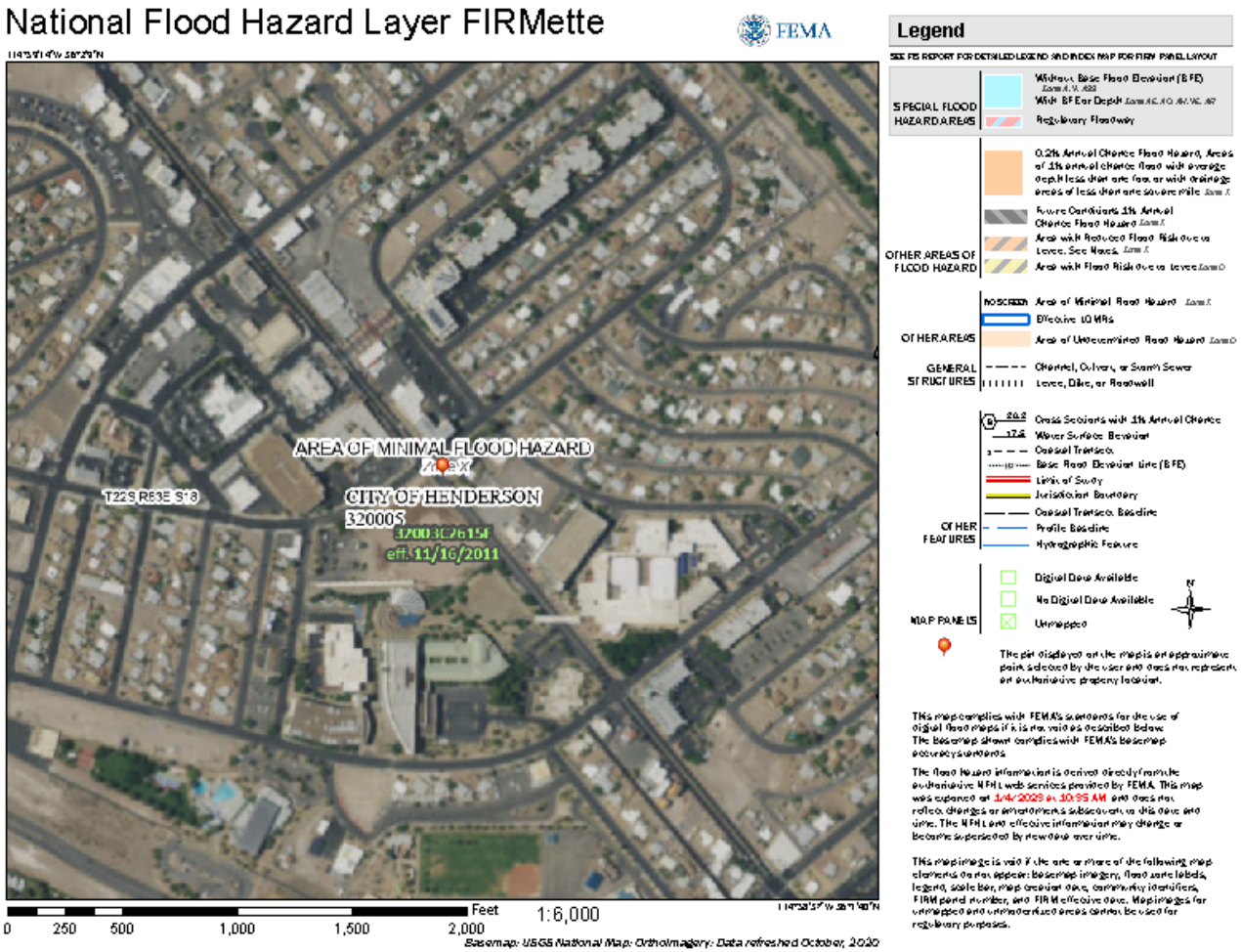
Data Source: [FEMA Flood Map Service Center]

Figure 94: FEMA FIRM Map: Boulder City, NV



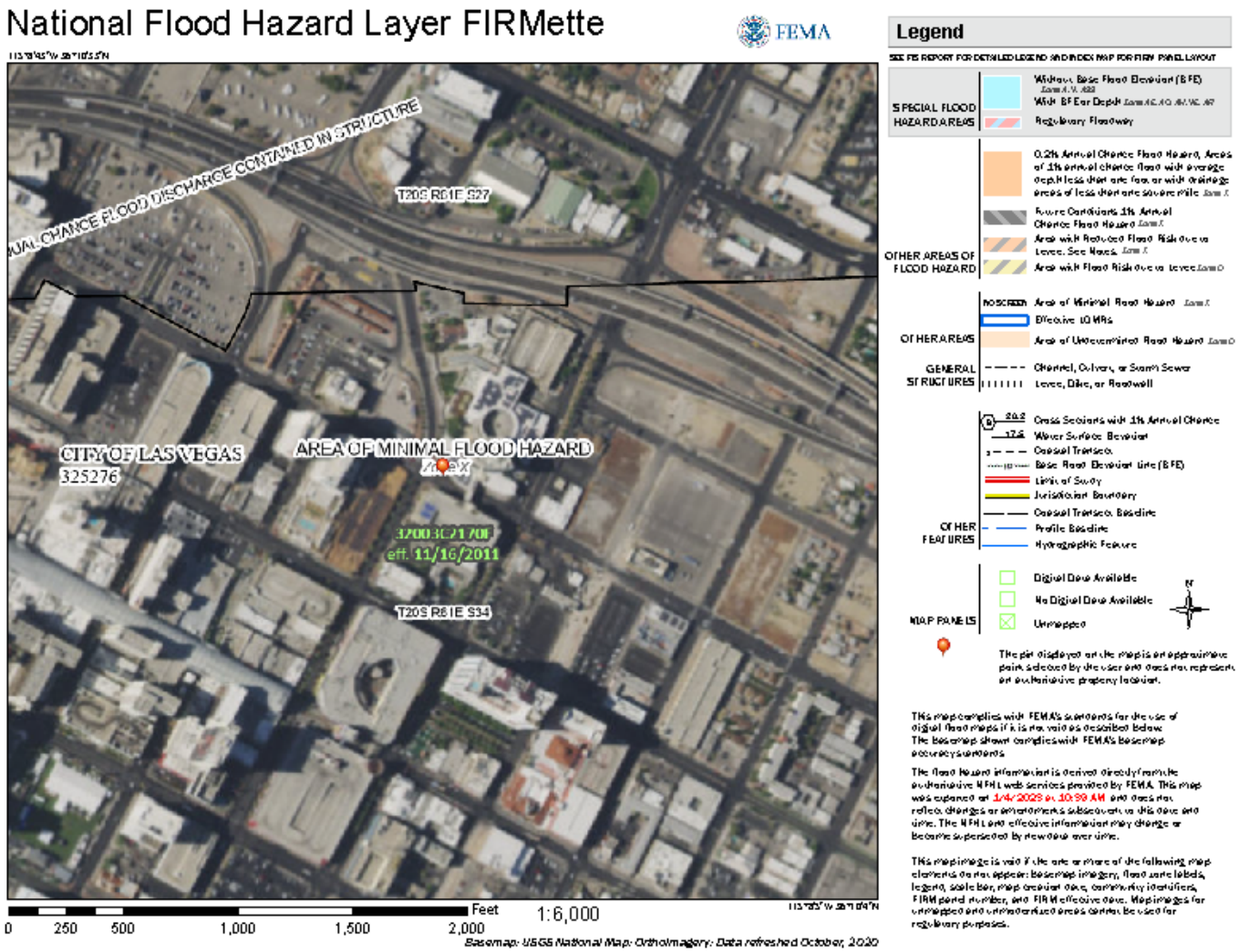
Data Source: [FEMA Flood Map Center]

Figure 95: FEMA FIRM Map: Henderson, NV



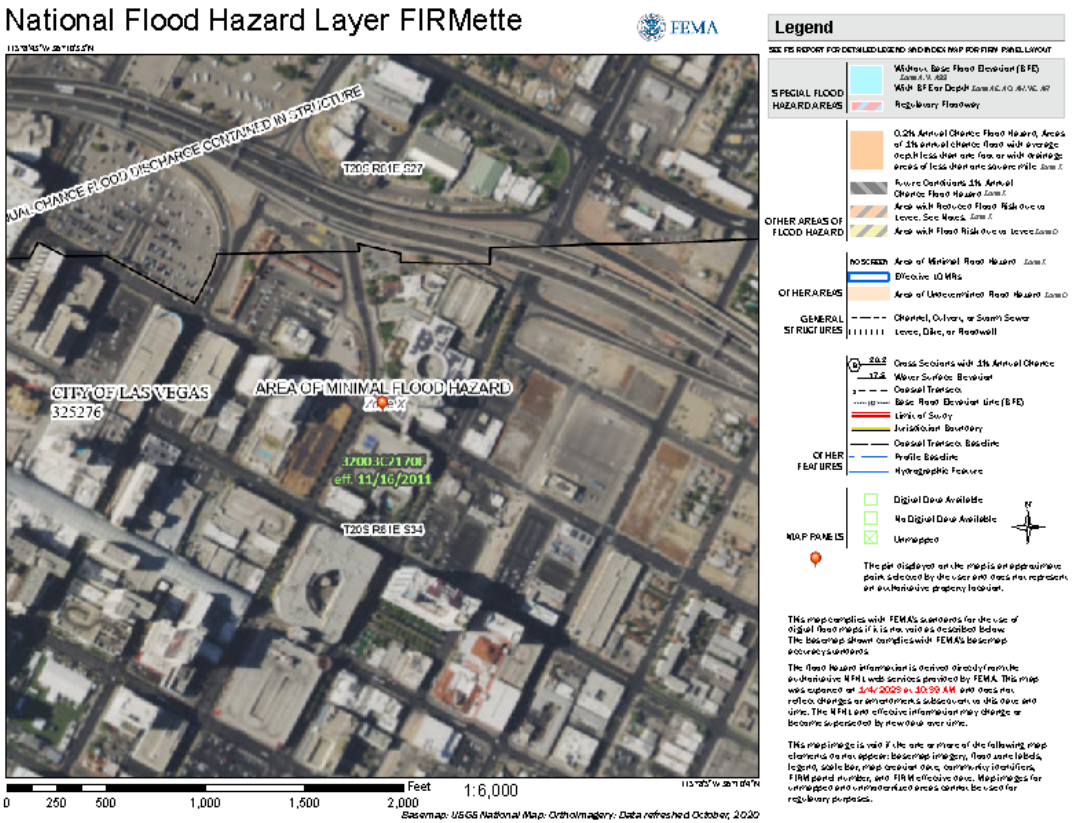
Data Source: [FEMA Flood Map Service Center]

Figure 96: FEMA Firm Map: Las Vegas, NV



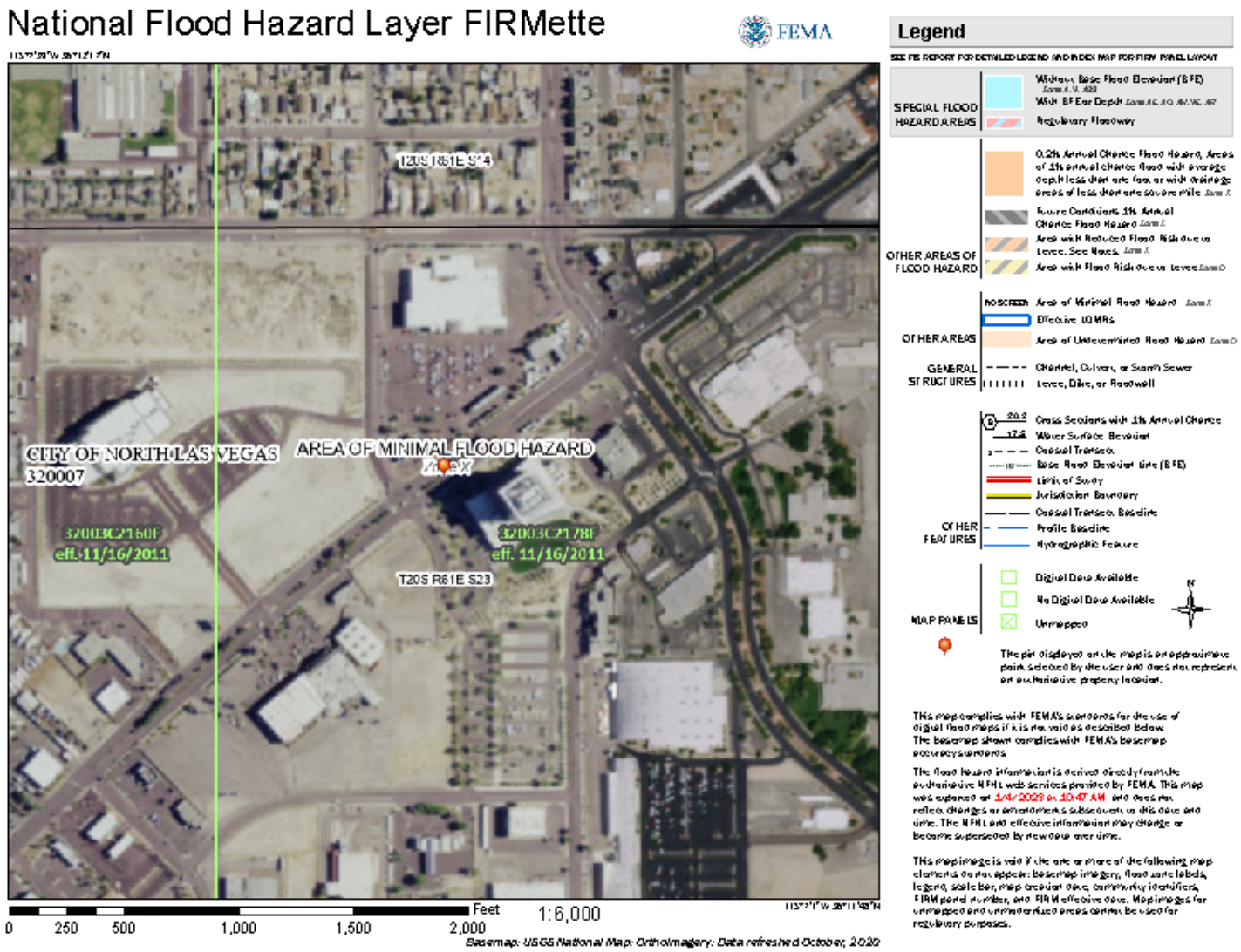
Data Source: [FEMA Flood Map Service Center]

Figure 97: FEMA Risk Map – Mesquite, NV



Data Source: FEMA Flood Map Service Center

Figure 98: FEMA FIRM Map – North Las Vegas, NV



Data Source: [FEMA Flood Map Service Center]

Previous Occurrence

In the past, there has been a history of flood events within Clark County. The State of Nevada Enhanced Hazard Mitigation Plan (2018) mentions in its Summary of Major Flooding in Southern Nevada that the first significant flooding event in the planning area was on March 31, 1906. This flood impacted the Las Vegas Valley; it experienced a flooding event that moved 70 miles of track, bridges, and fills were swept away and related to estimated losses; no property damage estimates were available. As the previous Clark County HMP plan (2012) mentioned, "recorded floods in Clark County date back almost one hundred years. From 1905-1975, there have been 184 different flooding events that resulted in damages to private property and public facilities. Since 1960, the area has experienced at least 11 floods costing more than a million dollars each. In that same period, 31 lives were lost in 21 separate flash flood events. Since 1965, four Presidential Disaster Declarations have been issued for flood events affecting Clark County."

To gain a better understanding of previous occurrences and accurately calculate future probability, the following information was taken into consideration. From January 1, 2010, to September 30, 2022, NOAA/NCEI recorded 263 flood (flood/flash flood) events in Clark County (including its participating jurisdiction and Clark County Unincorporated Area and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).

Table 51: Flood Events, Clark County, NV, NOAA/NCEI Database

Flood Events, Clark County, NV: 2010-2022					
Location	**Date**	**Event Type**	**Injuries/Deaths**	**Property Damage**	**Crop Damage**
Bracken	1/21/2010	Flash Flood	0/0	0.00K	0.00K
Moapa	1/21/2010	Flash Flood	0/0	0.00K	0.00K
Bracken	1/21/2010	Flash Flood	0/0	0.00K	0.00K
Laughlin	8/07/2010	Flash Flood	0/0	1.00K	0.00K
Logandale	8/08/2010	Flash Flood	0/0	20.00K	0.00K
Moapa	8/18/2010	Flash Flood	0/0	10.00K	0.00K
Alunite	10/04/2010	Flash Flood	0/0	2.00K	0.00K
Callville Bay	10/04/2010	Flash Flood	0/0	1.000M	0.00K
Logandale	10/04/2010	Flash Flood	0/0	5.00K	0.00K
Sunrise Manor	10/20/2010	Flash Flood	0/0	0.10K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	**Date**	**Event Type**	**Injuries/Deaths**	**Property Damage**	**Crop Damage**
Overton Echo Bay Arp	10/20/2010	Flash Flood	0/0	40.00K	0.00K
Callville Bay	10/20/20	Flash Flood	0/0	1.00K	0.00K
Mount Charleston	12/19/2010	Flash Flood	0/0	1.00K	0.00K
Red Rock Canyon	12/19/2010	Flash Flood	0/0	0.00K	0.00K
Red Rock Canyon	12/20/2010	Flash Flood	0/0	20.00K	0.00K
Blue Diamond	12/20/2010	Flash Flood	0/0	0.00K	0.00K
Mountain Springs	12/20/2010	Flash Flood	0/0	0.00K	0.00K
Mesquite	12/21/2010	Flood	0/0	1.000M	0.00K
Las Vegas N Air Term	12/22/2010	Flash Flood	0/0	50.00K	0.00K
Moapa	12/22/2010	Flood	0/0	500.00K	0.00K
Boulder City	12/22/2010	Flash Flood	0/0	1.00K	0.00K
Overton Echo Bay Arp	12/22/2010	Flash Flood	0/0	10.00K	0.00K
Paradise	7/3/2011	Flash Flood	0/1	200.00K	0.00K
Blue Diamond	7/5/2011	Flash Flood	0/0	25.00K	0.00K
Boulder City	7/7/2011	Flash Flood	0/0	5.00K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	Date	Event Type	Injuries/Deaths	Property Damage	Crop Damage
Nelson	7/7/2011	Flash Flood	0/0	2.00K	0.00K
Winchester	9/11/2011	Flash Flood	0/0	100.00K	0.00K
Wann	9/13/2011	Flash Flood	0/0	250.00K	0.00K
Bracken	9/14/2011	Flash Flood	0/0	20.00K	0.00K
Boulder City	9/16/2011	Flash Flood	0/0	5.00K	0.00K
East Las Vegas	10/4/2011	Flash Flood	0/0	30.00K	0.00K
Mount Charleston	1/21/2012	Flash Flood	0/0	1.00K	0.00K
Searchlight	7/13/2012	Flash Flood	0/0	1.00K	0.00K
Las Vegas N Air Term	7/14/2012	Flash Flood	0/0	1.00K	0.00K
Las Vegas N Air Term	7/14/2012	Flash Flood	0/0	1.00K	0.00K
Las Vegas N Air Term	07/15/2012	Flash Flood	0/0	3.00K	0.00K
Charleston Park	7/15/2012	Flash Flood	0/0	5.00K	0.00K
Las Vegas N Air Term	7/31/2012	Flash Flood	0/0	1.00K	0.00K
Laughlin	7/31/2012	Flash Flood	0/0	150.00K	0.00K
Alunite	7/31/2012	Flash Flood	0/0	1.00K	0.00K
East Las Vegas	8/9/2012	Flash Flood	0/0	1.00K	0.00K
Pittman	8/14/2012	Flash Flood	0/0	2.00K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	**Date**	**Event Type**	**Injuries/Deaths**	**Property Damage**	**Crop Damage**
Las Vegas N Air Term	8/14/2012	Flash Flood	0/0	1.00K	0.00K
Arden	8/18/2012	Flash Flood	0/0	2.00K	0.00K
Moapa	8/21/2012	Flash Flood	0/0	10.00K	0.00K
Overton Muni Arpt	8/22/2012	Flash Flood	0/0	1.00K	0.00K
Goodspgs	8/22/2012	Flash Flood	0/0	5.00K	0.00K
Las Vegas N Air Term	8/22/2012	Flash Flood	1/0	5.000M	0.00K
Sloan	8/22/2012	Flash Flood	0/0	1.00K	0.00K
Crystal	8/22/2012	Flash Flood	0/0	200.00K	0.00K
Callville Bay	8/22/2012	Flash Flood	0/0	1.00K	0.00K
Boulder City Arp	8/22/2012	Flash Flood	0/0	5.00K	0.00K
Red Rock Canyon	8/25/2012	Flash Flood	0/0	10.00K	0.00K
Blue Diamond	8/30/2012	Flash Flood	0/0	1.00K	0.00K
Las Vegas Hendrsn Sky	9/5/2012	Flash Flood	0/0	10.00K	0.00K
Charleston Park	9/10/2012	Flash Flood	0/0	20.00K	0.00K
Mesquite	9/11/2012	Flash Flood	0/0	2.00K	0.00K
Las Vegas N Air Term	9/11/2012	Flash Flood	1/0	20.000M	0.00K
Crystal	9/11/2012	Flash Flood	0/0	50.00K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	**Date**	**Event Type**	**Injuries/Deaths**	**Property Damage**	**Crop Damage**
Moapa	9/11/2012	Flash Flood	0/0	50.00K	0.00K
Red Rock Canyon	10/11/2012	Flash Flood	0/0	10.00K	0.00K
Blue Diamond	10/11/2012	Flash Flood	0/0	1.00K	0.00K
Goodspgs	10/11/2012	Flash Flood	0/0	2.00K	0.00K
Red Rock Canyon	10/11/2012	Flash Flood	0/0	1.00K	0.00K
Blue Diamond	10/11/2012	Flash Flood	0/0	1.00K	0.00K
Las Vegas N Air Term	10/11/2012	Flash Flood	0/0	50.00K	0.00K
Las Vegas Hndrsn Sky	7/7/2013	Flash Flood	0/0	1.00K	0.00K
Nelson	7/12/2013	Flash Flood	0/0	100.00K	0.00K
Mount Charleston	7/12/2013	Flash Flood	0/0	50.00K	0.00K
Las Vegas N Air Term	7/19/2013	Flash Flood	0/0	50.00K	0.00K
Henderson	7/20/2013	Flash Flood	0/0	40.00K	0.00K
East Las Vegas	7/20/2013	Flash Flood	0/0	1.00K	0.00K
Las Vegas N Air Term	7/20/2013	Flash Flood	0/0	1.00K	0.00K
Mead Lake	7/27/2013	Flash Flood	0/0	10.00K	0.00K
Charleston Park	8/18/2013	Flash Flood	0/0	10.00K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	Date	Event Type	Injuries/Deaths	Property Damage	Crop Damage
Jean Arpt	8/18/2013	Flash Flood	0/0	1.00K	0.00K
Las Vegas Hndrsn Sky	8/18/2013	Flash Flood	0/0	1.00K	0.00K
Las Vegas Hndrsn Sky	8/18/2013	Flash Flood	0/0	1.00K	0.00K
Goodspgs	8/24/2013	Flash Flood	0/0	1.00K	0.00K
Charleston Park	8/25/2013	Flash Flood	0/0	3.000M	0.00K
Laughlin	8/25/2013	Flash Flood	0/0	10.00K	0.00K
Charleston Park	8/30/2013	Flash Flood	0/0	1.000M	0.00K
Arden	8/31/2013	Flash Flood	0/0	2.00K	0.00K
Red Rock Canyon	8/31/2013	Flash Flood	0/0	10.00K	0.00K
Blue Diamond	8/31/2013	Flash Flood	0/0	1.00K	0.00K
Searchlight	8/31/2013	Flash Flood	0/0	1.00K	0.00K
Charleston Park	9/1/2013	Flash Flood	0/0	1.000M	0.00K
East Las Vegas	9/2/2013	Flash Flood	0/0	2.00K	0.00K
Searchlight	9/4/2013	Flash Flood	0/0	1.00K	0.00K
Crystal	9/4/2013	Flash Flood	0/0	2.00K	0.00K
Las Vegas N Air Term	9/6/2013	Flash Flood	0/0	2.00K	0.00K
Charleston Park	9/11/2013	Flash Flood	0/0	2.00K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	Date	Event Type	Injuries/Deaths	Property Damage	Crop Damage
Red Rock Canyon	9/11/2013	Flash Flood	0/0	1.00K	0.00K
Bracken	7/5/2014	Flash Flood	0/0	10.00K	0.00K
Mount Charleston	7/6/2014	Flash Flood	0/0	5.00K	0.00K
Blue Diamond	7/6/2014	Flash Flood	0/0	1.00K	0.00K
Laughlin	7/6/2014	Flash Flood	0/0	5.00K	0.00K
Charleston Park	7/7/2014	Flash Flood	0/0	2.00K	0.00K
Arden	7/7/2014	Flash Flood	0/0	1.00K	0.00K
Charleston Park	7/16/2014	Flash Flood	0/0	1.00K	0.00K
Jean	7/27/2014	Flash Flood	0/0	5.00K	0.00K
Charleston Park	7/28/2014	Flash Flood	0/0	1.000M	0.00K
Nelson	8/3/2014	Flash Flood	0/0	2.00K	0.00K
Boulder City	8/3/2014	Flash Flood	0/0	2.00K	0.00K
Moapa	8/3/2014	Flash Flood	0/0	5.00K	0.00K
Mount Charleston	8/3/2014	Flash Flood	0/0	20.00K	0.00K
Blue Diamond	8/4/2014	Flash Flood	0/0	5.00K	0.00K
Las Vegas N Air Term	8/4/2014	Flash Flood	0/0	25.00K	0.00K
Blue Diamond	8/4/2014	Flash Flood	0/0	1.00K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	**Date**	**Event Type**	**Injuries/Deaths**	**Property Damage**	**Crop Damage**
Indian Springs	8/4/2014	Flash Flood	0/0	1.00K	0.00K
Las Vegas N Air Term	8/4/2014	Flash Flood	0/0	100.00K	0.00K
Las Vegas N Air Term	8/4/2014	Flash Flood	0/0	1.00K	0.00K
Boulder City	8/14/2014	Flash Flood	0/0	1.00K	0.00K
Boulder City	8/14/2014	Flash Flood	0/0	2.00K	0.00K
Mead Lake	8/19/2014	Flash Flood	0/0	1.00K	0.00K
Overton Echo Bay Arp	8/19/2014	Flash Flood	0/0	2.00K	0.00K
Moapa	8/19/2014	Flood	0/0	1.00K	0.00K
Moapa	8/19/2014	Flood	0/0	1.00K	0.00K
Cottonwood Lndg	8/19/2014	Flash Flood	0/0	1.00K	0.00K
Cal-Nev-Ari	8/19/2014	Flash Flood	0/0	2.00K	0.00K
Laughlin	8/19/2014	Flash Flood	0/0	1.00K	0.00K
Alunite	8/20/2014	Flash Flood	0/0	3.00K	0.00K
Crystal	8/21/2014	Flash Flood	0/0	1.00K	0.00K
Blue Diamond	9/7/2014	Flash Flood	0/0	2.00K	0.00K
Moapa	9/7/2014	Flood	0/0	5.00K	0.00K
Mount Charleston	9/8/2014	Flash Flood	0/0	5.00K	0.00K
Mount	9/8/2014	Flash Food	0/0	5.00K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	Date	Event Type	Injuries/Deaths	Property Damage	Crop Damage
Charleston					
Moapa	9/8/2014	Flash Flood	0/0	2.00K	0.00K
Moapa	9/8/2014	Flash Flood	0/1	6.000M	0.00K
Bracken	9/8/2014	Flash Flood	0/0	5.00K	0.00K
Goodspgs	9/8/2014	Flash Flood	0/0	500.00K	0.00K
Bracken	9/8/2014	Flash Flood	0/0	1.00K	0.00K
Blue Diamond	9/8/2014	Flash Flood	0/0	1.00K	0.00K
Arrowhead	9/8/2014	Flood	0/0	3.000M	0.00K
Moapa	9/26/2014	Flash Flood	0/0	1.00K	0.00K
Crystal	9/26/2014	Flash Flood	0/0	2.00K	0.00K
Boulder City	9/26/2014	Flash Flood	0/0	1.00K	0.00K
Las Vegas N Air Term	9/26/2014	Flash Flood	0/0	1.00K	0.00K
Las Vegas N Air Term	9/26/2014	Flash Flood	0/0	1.00K	0.00K
Moapa	9/26/2014	Flood	0/0	2.00K	0.00K
Crystal	9/26/2014	Flash Flood	0/0	1.00K	0.00K
Moapa	9/27/2014	Flood	0/0	500.00K	0.00K
Valley of Fire	7/6/2015	Flash Flood	0/0	5.00K	0.00K
Blue Diamond	7/6/2015	Flash Flood	0/0	10.00K	0.00K
Laughlin	7/17/2015	Flash Flood	0/0	1.00K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	**Date**	**Event Type**	**Injuries/Deaths**	**Property Damage**	**Crop Damage**
Mount Charleston	7/31/2015	Flash Flood	0/0	10.00K	0.00K
Nelson	8/7/2015	Flash Flood	0/0	2.00k	0.00K
Goodspgs	8/13/2015	Flash Flood	0/0	1.00K	0.00K
Cactus Spgs	8/13/2015	Flash Flood	0/0	2.00K	0.00K
Victory Vlg	8/13/2015	Flash Flood	0/0	25.00K	0.00K
Overton Muni Arpt	8/14/2015	Flash Flood	0/0	1.00K	0.00K
Callville Bay	10/5/2015	Flash Flood	0/0	15.00K	0.00K
Crystal	10/5/2015	Flash Flood	0/0	1.00K	0.00K
Moapa	10/5/2015	Flash Flood	0/0	2.00K	0.00K
Las Vegas N Air Term	105/2015	Flash Flood	0/0	50.00K	0.00K
Red Rock Canyon	10/5/2015	Flash Flood	0/0	2.00K	0.00K
Blue Diamond	10/18/2015	Flash Flood	0/0	1.00K	0.00K
Dry Lake	10/18/2015	Flash Flood	0/0	5.00K	0.00K
Red Rock Canyon	10/18/2015	Flash Flood	0/0	2.00K	0.00K
Mount Charleston	10/18/2015	Flash Flood	0/0	20.00K	0.00K
Crystal	10/18/2015	Flash Flood	0/0	2.00K	0.00K
Moapa	10/18/2015	Flash Flood	0/0	10.00K	0.00K
Apex	10/18/2015	Flash Flood	0/0	2.00K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	Date	Event Type	Injuries/Deaths	Property Damage	Crop Damage
Laughlin	10/18/2015	Flash Flood	0/0	20.00K	0.00K
Mead Lake	10/18/2015	Flash Flood	0/0	5.00K	0.00K
Mead Lake	1/6/2016	Flash Flood	0/0	5.00K	0.00K
(LAS) McCarran/Las Ve	4/9/2016	Flash Flood	0/0	25.00K	0.00K
Overton Echo Bay Arp	4/9/2016	Flash Flood	0/0	2.00K	0.00K
Crystal	4/10/2016	Flash Flood	0/0	1.00K	0.00K
Mead Lake	5/7/2016	Flash Flood	0/0	1.00K	0.00K
Valley of Fire	5/7/2016	Flash Flood	0/0	1.00K	0.00K
Valley of Fire	5/7/2016	Flash Flood	0/0	2.00K	0.00K
Blue Diamond	6/30/2016	Flash Flood	0/0	1.00K	0.00K
Red Rock Canyon	6/30/2016	Flash Flood	1/1	20.00K	0.00K
Jean	6/30/2016	Flash Flood	0/0	1.00K	0.00K
Laughlin	7/2/2016	Flash Flood	0/0	1.00K	0.00K
Mount Charleston	8/3/2016	Flash Flood	0/0	5.00K	0.00K
Alunite	8/3/2016	Flash Flood	0/0	5.00K	0.00K
East Las Vegas	8/4/2016	Flash Flood	0/0	1.00K	0.00K
East Las Vegas	8/4/2016	Flood	0/0	0.00K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	**Date**	**Event Type**	**Injuries/Deaths**	**Property Damage**	**Crop Damage**
Sandy	8/4/2016	Flood	0/0	0.00K	0.00K
Wann	8/22/2016	Flash Flood	0/0	100.00K	0.00K
Moapa	8/22/2016	Flash Flood	0/0	4.00K	0.00K
Garnet	8/22/2016	Flash Flood	0/0	1.00K	0.00K
Crystal	8/22/2016	Flash Flood	0/0	2.00K	0.00K
Nelson	8/26/2016	Flash Flood	0/0	10.00K	0.00K
Laughlin	8/26/2016	Flash Flood	0/0	1.00K	0.00K
Cal-Nev-Ari	8/26/2016	Flash Flood	0/0	2.00K	0.00K
Red Rock Canyon	12/24/2016	Flood	0/0	2.00K	0.00K
Blue Diamond	2/18/2017	Flash Flood	0/0	1.00K	0.00K
Searchlight	7/18/2017	Flash Flood	0/0	25.00K	0.00K
Alunite	7/19/2017	Flash Flood	0/0	2.00K	0.00K
Searchlight	7/19/2017	Flash Flood	0/0	2.00K	0.00K
Charleston Park	7/204/2017	Flash Flood	0/0	100.00K	0.00K
Logandale	7/25/2017	Flash Flood	0/0	1.00K	0.00K
Las Vegas N Air Term	7/25/2017	Flash Flood	0/0	10.00K	0.00K
Searchlight	7/25/2017	Flash Flood	0/0	10.00K	0.00K
Mesquite	8/3/2017	Flash Flood	0/0	1.00K	0.00K
Bracken	8/4/2017	Flash Flood	1/0	10.00K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	**Date**	**Event Type**	**Injuries/Deaths**	**Property Damage**	**Crop Damage**
Charleston Park	8/4/2017	Flash Flood	0/0	50.00K	0.00K
Charleston Park	8/29/2017	Flash Flood	0/0	5.00K	0.00K
Roach	9/8/2017	Flash Flood	0/0	5.00K	0.00K
Searchlight Arpt	9/8/2017	Flash Flood	0/0	1.00K	0.00K
East Las Vegas	1/9/2018	Flash Flood	0/0	1.00K	0.00K
Moapa	1/9/2018	Flash Flood	0/0	1.00K	0.00K
Wann	1/9/2018	Flash Flood	0/0	1.00K	0.00K
Valley of Fire	7/9/2018	Flash Flood	0/0	20.0K	0.00K
Alunitie	7/12/2018	Flash Flood	0/0	1.00K	0.00K
Blue Diamond	7/12/2018	Flash Flood	0/0	1.00K	0.00K
Mount Charleston	7/12/2018	Flash Flood	0/0	5.00K	0.00K
Jean	7/13/2018	Flash Flood	0/0	5.00K	0.00K
Logandale	7/14/2018	Flash Flood	0/0	20.00K	0.00K
East Las Vegas	7/14/2018	Flash Flood	0/0	2.00K	0.00K
Logandale	7/17/2018	Flash Flood	0/0	25.00K	0.00K
Callville Bay	7/19/2018	Flash Flood	0/0	1.00K	0.00K
Las Vegas Hndrsn Sky	7/20/2018	Flash Flood	0/0	1.00K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	**Date**	**Event Type**	**Injuries/Deaths**	**Property Damage**	**Crop Damage**
Blue Diamond	7/29/2018	Flash Flood	0/0	2.00K	0.00K
Charleston Park	7/30/2018	Flash Flood	0/0	10.00K	0.00K
Roach	8/15/2018	Flash Flood	0/0	2.000M	0.00K
Mount Charleston	8/16/2018	Flash Flood	0/0	1.00K	0.00K
Nelson	8/22/2018	Flash Flood	0/0	2.00K	0.00K
Red Rock Canyon	2/14/2019	Flash Flood	0/0	1.00K	0.00K
Wann	2/14/2019	Flash Flood	0/0	1.00K	0.00K
Red Rock Canyon	3/6/2019	Flash Flood	0/0	1.00K	0.00K
Arden	7/31/2019	Flash Flood	0/0	1.00K	0.00K
Arden	7/31/2019	Flood	0/0	25.00K	0.00K
Arden	8/1/2019	Flood	0/0	0.00K	0.00K
Nelson	11/20/2019	Flash Flood	0/0	20.00K	0.00K
Las Vegas N Air Ter	3/12/2020	Flash Flood	0/0	1.00K	0.00K
Mount Charleston	8/30/2020	Flash Flood	0/0	2.00K	0.00K
Logandale	6/29/2021	Flash Flood	0/0	1.000M	0.00K
Valley of Fire	7/11/20221	Flash Flood	0/0	1.00K	0.00K
Callville Bay	7/12/2021	Flash Flood	0/0	100.00K	0.00K
Moapa	7/14/2021	Flash Flood	0/0	1.00K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	Date	Event Type	Injuries/Deaths	Property Damage	Crop Damage
Cactus Spgs	7/18/2021	Flash Flood	0/0	10.00K	0.00K
Pittman	7/18/2021	Flash Flood	0/0	1.00K	0.00K
Moapa	7/18/2021	Flash Flood	0/0	1.00K	0.00K
Arrowhead	7/18/2021	Flash Flood	0/0	1.00K	0.00K
Mead Lake	7/18/2021	Flash Flood	0/0	0.00K	0.00K
Pittman	7/22/2021	Flash Flood	0/0	10.00K	0.00K
Valley of Fire	7/25/2021	Flash Flood	0/0	2.00K	0.00K
Boulder City	7/25/2021	Flash Flood	0/0	10.00K	0.00K
Red Rock Canyon	7/26/2021	Flash Flood	0/0	2.00K	0.00K
Arden	7/26/2021	Flash Flood	0/0	1.00K	0.00K
Callville Bay	8/12/2021	Flash Flood	0/0	2.00K	0.00K
Red Rock Canyon	12/24/2021	Flash Flood	0/0	1.00K	0.00K
Victory Vlg	7/25/2022	Flash Flood	0/0	2.00K	0.00K
Arden	7/25/2022	Flash Flood	0/0	2.00K	0.00K
Apex	7/25/2022	Flash Flood	0/0	1.00K	0.00K
Arden	7/25/2022	Flash Flood	0/0	25.00K	0.00K
Nelson	7/31/2022	Flash Flood	0/0	1.00K	0.00K
Searchlight	8/1/2022	Flash Flood	0/0	1.00K	0.00K
Searchlight	8/1/2022	Flash Flood	0/0	1.00K	0.00K
Nelson	8/10/2022	Flash Flood	0/0	1.00K	0.00K

Flood Events, Clark County, NV: 2010-2022					
Location	**Date**	**Event Type**	**Injuries/Deaths**	**Property Damage**	**Crop Damage**
Nelson	8/10/2022	Flash Flood	0/0	5.00K	0.00K
Bracken	8/10/2022	Flash Flood	0/0	1.00K	0.00K
Mountain Spgs	9/12/2022	Flash Flood	0/0	2.00K	0.00K
Moapa	9/13/2022	Flash Flood	0/0	1.00K	0.00K
Moapa	9/13/2022	Flash Flood	0/0	100.00K	0.00K
Las Vegas N Air Term	9/13/2022	Flash Flood	0/0	1.00k	0.00K
Wann	9/28/2022	Flash Flood	0/0	1.00K	0.00K
Total – 263 Flood/Flash Flood Events			**4/3**	**49.503M**	**0.00K**

Data Source: NOAA/NCEI Storm Events Database

Based on the information obtained from the NOAA/NCEI, only 60 incidents of flooding (flood/flash flooding) occurred in Clark County between January 1, 2018, and September 30, 2022. NOAA/NCEI details of the events are provided below:

January 9, 2018, East Las Vegas, Moapa, and Wann, Flash Flooding

A slow-moving low-pressure system pulled a plume of moisture over the Mojave Desert, resulting in unseasonably heavy rain and some flash flooding. The unusually humid conditions also led to patchy dense fog. The following roads were closed due to flooding, Stephanie Street was closed at Monson Channel in East Las Vegas, Ranch Road was closed south of Highway 169 in Moapa, and Cheyenne Ave. was closed at and east of Las Vegas Blvd. There were no injuries or deaths associated with the event, and damages were reported at $3,000.

July 9, 2018, Valley of Fire, Flash Flooding

The first monsoon moisture push of the season fueled isolated thunderstorms over the Mojave Desert. Some storms produced severe weather and flash flooding. Several roads in Valley of Fire State Park were closed by flash flooding. Most were cleared by the next morning. There were no injuries or death associated with the events, and the damages were reported at $20,000.

July 12, 2018, Alunite, Blue Diamond, and Mount Charleston, Flash Flooding

A more substantial push of monsoon moisture helped trigger widespread thunderstorms across the Mojave Desert and southern Great Basin. Many storms produced severe weather and flash flooding. Roads were closed due to flooding, the underpass at Highway 95 and Wagon Wheel was flood in Alunite. Also, flooding damaged Highway 158 near Highway 156 in Mount Charleston. Finally, flooding closed the entrance to Spring Mountain Ranch State Park in Blue Diamond. There were no injuries or death associated with the events, and the damages were reported at $1,000.

July 13, 2018, Jean, Flash Flooding

A more substantial push of monsoon moisture helped trigger widespread thunderstorms across the Mojave Desert and southern Great Basin. Many storms produced severe weather and flash flooding. Highway 161 was closed west of 1-15, and three people were trapped in a vehicle. There were no injuries or death associated with the event, and the damages were reported at $5,000.

July 14, 2018 – Logandale and East Las Vegas, Flash Flooding

A more substantial push of monsoon moisture helped trigger widespread thunderstorms across the Mojave Desert and southern Great Basin. Many storms produced severe weather and flash flooding. Numerous roads in Overton and Logandale were flooded. Flooding closed all the ramps at Highway 95 and Flamingo and affected several other intersections in the area. There were no injuries or death associated with the events, and the damages were reported at $22,000.

July 17, 2018 – Logandale, Flash Flooding

After a brief break, another push of monsoon moisture fueled another outbreak of thunderstorms across the Mojave Desert and southern Great Basin. Many storms produced severe weather and flash flooding. Flooding covered several roads with water and debris in and near Logandale and Overton. There were no injuries or death associated with the event, and the damages were reported at $25,000.

July 19, 2018– Callville Bay, Flash Flooding

After a brief break, another push of monsoon moisture fueled another outbreak of thunderstorms across the Mojave Desert and southern Great Basin. Many storms produced severe weather and

flash flooding. Northshore Road was closed due to flooding. There were no injuries or death associated with the event, and the damages were reported at $1,000.

July 20, 2018 – Las Vegas Hndrsn Sky, Flash Flooding

After a brief break, another push of monsoon moisture fueled another outbreak of thunderstorms across the Mojave Desert and southern Great Basin. Many storms produced severe weather and flash flooding. St. Rose Parkway was flooded at Eastern Ave. There were no injuries or death associated with the event, and the damages were reported at $1,000.

July 29-30, 2018 – Blue Diamond and Charleston Park

The last push of moisture in July triggered scattered thunderstorms over the Mojave Desert. Some storms produced severe weather and flash flooding. Flash flooding affected Highway 169 in Blue Diamond. There was also substantial flooding in the Kyle Canyon campground off Highway 157, and water six to eight feet deep flowed down the diversion channel in Rainbow Canyon. There were no injuries or death associated with the events, and the damages were reported at $12,000.

August 15-16, 2018 – Roach and Mount Charleston, Flash Flooding

Southerly flow pulled moisture into the Mojave Desert, fueling scattered thunderstorms. Some storms produced severe weather and/or flash flooding. In Roach, flooding caused major damage to Nipton Road between mile markers 2 and 6. The road will be closed for months. Also, Highways 158 and 156 were closed due to flooding. There were no injuries or deaths associated with the events, and the damages were reported at $2,001,000.

August 22, 2018 – Nelson, Flash Flooding

Southeasterly flow pulled monsoon moisture up into the eastern Mojave Desert, fueling scattered thunderstorms as far west as the Colorado River. One storm produced flash flooding. Dirt beams were damaged and rocks the size of basketballs were washed onto the road. There were no injuries or deaths associated with the events, and the damages were reported at $2,000.

February 14, 2019 – Red Rock Canyon and Wann, Flash Flooding

A potent atmospheric river brought heavy rain and flooding to much of the Mojave Desert. Isolated high winds also occurred after the heavy rain ended. The Red Rock Scenic Loop was closed due to water flowing over the road at mile marker 12. In Wann, the intersection of Las Vegas Boulevard and Cheyenne was closed due to flooding. There were no injuries or deaths associated with the events, and the damages were reported at $2,000.

March 6, 2019 – Red Rock Canyon and Blue Diamond, Flash Flooding

A Pacific storm system brought locally heavy rain to Clark County west of Las Vegas. Highway 159 was closed from the Red Rock Scenic Loop entrance to just west of Charleston Blvd due to flooding. In Blue Diamond, Bonnie Springs Rd was closed due to flooding. There were no injuries or deaths associated with the events, and the damages were reported at $2,000.

July 31 - August 1, 2019– Arden, Flash Flooding and Flooding

A brief intrusion of monsoon moisture brought spotty thunderstorms to the Mojave Desert. A couple of strong storms caused wind damage and flooding in the Las Vegas Valley. Six to eight inches of water flowed through the intersection of Blue Diamond and Rainbow. During the flooding event, several hours after a thunderstorm, water flowing through a wash overcame a berm and spilled into a neighborhood. Cars were stranded, and the water was waist deep in places. Water neared, but did not enter, homes. It took until the next morning for the water to recede (thus, this event continued into August). There were no injuries and death associated with the event, and

the damages were reported at $26,000.

November 20, 2019 – Nelson, Flash Flooding

Two low pressure areas interacted and brought widespread rain and flooding to the Mojave Desert. Two funnel clouds were also photographed in remote areas. Eagle Wash Road (a dirt road) was obliterated by flooding and will have to be resurfaced. Nelson Landing Turnaround will also have to be repaired. There were no injuries and death associated with the event, and the damages were reported at $20,000.

March 12, 2020 – Las Vegas N Air Term, Flash Flooding

A deep Pacific low pressure system and a rich plume of moisture combined to bring heavy rain and localized flash flooding to the Mojave Desert. There were approximately 12 to 15 swift water rescues in the Las Vegas Valley, including at least one which occurred on normally dry ground. Cheyenne Ave was closed between Pecos Rd and Lamb Blvd due to flooding. There were no injuries and death associated with the event, and the damages were reported at $1,000.

August 23, 2020 – Mount Charleston, Flash Flooding

A push of monsoon moisture fueled thunderstorm development over the Mojave Desert. Isolated severe weather and flash flooding occurred. Deer Creek Road was closed in both directions due to flooding and a rockslide. There were no injuries and death associated with the event, and the damages were reported at $2,000.

June 29, 2021– Logandale, Flash Flooding

A push of monsoon moisture fueled thunderstorms over southern Nevada. Several storms produced severe winds and flash flooding. Major flooding in Logandale and Overton due to heavy rainfall and flow on the Muddy River. Evacuations, sandbag operations, and at least two water rescues occurred. Water was four to five feet deep in some neighborhoods, railroad tracks were closed due to flood damage, many roads were flooded, and there were power outages. There were no injuries and death associated with the event, and the damages were reported at $1,000,000.

July 11-14, 2021 – Valley of Fire, Callville Bay, and Moapa, Flash Flooding

Monsoon moisture slowly seeped into the region under the big dome of high pressure, which was causing record-breaking temperatures, fueling isolated to scattered thunderstorms. As the moisture increased, the main thunderstorm impact transitioned from high winds to flash flooding. Valley of Fire Highway flooded just west of the park. In Callville Bay, flash flooding left a few feet of debris over the access road, damaged the head walk from the shore to the docks, and damaged the sewage lift station. Finally, Highway 168 was closed from Interstate 15 to Interstate 93 due to flooding in Moapa. There were no injuries and death associated with the event, and the damages were reported at $102,000.

July 18, 2021 – Cactus Springs, Pittman, Moapa, Arrowhead, and Mead Lake, Flash Flooding

A big push of monsoon moisture led to ten days of scattered thunderstorms over the Mojave Desert and southern Great Basin. Many storms produced flash flooding and/or high winds. Events in this episode are continued in the July 22-26 Thunderstorms episode. Flash flooding in Cold Creek washed out the shoulders of some roads. In Pittman, one foot of water flowed over the intersection of Boulder Highway and Sunset. In Moapa, Hidden Valley Road was closed at the Muddy River crossing due to flooding. In Arrowhead, water flowed over Interstate 15 near Moapa, causing traffic to be diverted. The Overton Wash near Mead Lake flooded Highway 169 about

two feet deep. There were no injuries and death associated with the event, and the damages were reported at $13,000.

July 22, 2021– Pittman, Flash Flooding

This is a continuation of the July 17-21 Thunderstorms episode, which lasted ten days total. Warm Springs was closed between Arroyo Grande and Valle Verde, water covered the intersection of Sunset and Stephanie, and the onramp from Sunset onto Interstate 515 southbound was flooded a food deep with two cars stalled. There were no injuries and death associated with the event, and the damages were reported at $10,000.

July 25, 2021– Valley of Fire and Boulder City, Flash Flooding

This is a continuation of the July 17-21 Thunderstorms episode, which lasted ten days total. Flooding left debris across Valley of Fire Highway. In Boulder City, Lakeshore Road and Boulder Beach Frontage Road were covered with two feet of debris, including basketball sized rocks, due to flash flooding. There were no injuries and death associated with the event, and the damages were reported at $12,000.

July 26, 2021– Red Rock Canyon and Arden, Flash Flooding

This is a continuation of the July 17-21 Thunderstorms episode, which lasted ten days total. The intersection of Blue Diamond Road and Rainbow Boulevard was closed due to flooding. In Red Rock Canyon, water, mud, boulders, and debris flowed over Calico Basin Road. There were no injuries and death associated with the event, and the damages were reported at $3,000.

December 24, 2021– Red Rock Canyon, Flash Flooding

A Pacific storm system brought heavy rain and snow to the Spring Mountains and their eastern foothills. Highway 159 was closed due to flooding. There were no injuries and death associated with the event, and the damages were reported at $1,000.

July 25, 2022– Victory Vlg, Arden, and Apex, Flash Flooding ** one location has two (2) incidents that need to be marked as one (1)**

A big push of monsoon moisture immediately followed the excessive heat event, and stormy conditions persisted into August. Several storms produced severe weather and flash flooding. Mud and debris covered Lake Mead Pkwy near Lake Las Vegas Pkwy. Las Vegas Blvd flooded underneath 1-15. In Arden, water covered intersections of Blue Diamond and Rainbow, and Blue Diamond and Pioneer. Also, flooded roads near the intersection of Decatur and Silverado Ranch stranded 15 to 20 cars. There were no injuries and death associated with the event, and the damages were reported at $7,000.

July 28, 2022– Arden, Flash Flooding

The stormy period which began on the 24th continued to bring severe weather and flash flooding through the end of the month. Multiple intersections were flooded, large rocks washed into a road near Mountains Edge, and water poured into at least two casinos through the ceilings and walls. There were no injuries and death associated with the event, and the damages were reported at $25,000.

July 31, 2022– Nelson, Flash Flooding ***** Same location will be notes as one incident on the same day and not two (2)***

The stormy period which began on the 24th continued to bring severe weather and flash flooding through the end of the month. A video showed flooding on Hwy 95 south of the solar farms. There were no injuries and death associated with the event, and the damages were reported at $1,000.

August 1, 2022– Searchlight, Flash Flooding

Broad east to southeast flow advected in monsoon moisture, which fueled thunderstorms over southern Nevada. Several storms produced flash flooding. Westbound Highway 164 was closed due to flooding. Also, Highway 95 was closed in both directions due to flooding. There were no injuries and death associated with the event, and the damages were reported at $2,000.

August 10, 2022– Nelson and Bracken, Flash Flooding ***** Same location will be notes as one incident on the same day and not two (2)***

Moist southeast flow fueled thunderstorms over southern Nevada. Several storms produced severe weather, and a few produced flash flooding. Highway 95 was closed due to flooding. Highway 165 was closed from Highway 95 to Nelson due to flooding in multiple locations. In Bracken, Charleston Blvd was flooded one to one and a half deep near Jones. There were no injuries and death associated with the event, and the damages were reported at $7,000.

September 12, 2022– Mountain Springs, Flash Flooding

The remnant circulation of former Pacific Hurricane Kay brought thunderstorms and flash flooding to the Mojave Desert. Six to eight of water plus mud and debris covered the northbound lanes of Hwy 160. There were no injuries and death associated with the event, and the damages were reported at $2,000.

September 13, 2022– Moapa and Las Vegas N Air Term, Flash Flooding ***** Same location will be notes as one incident on the same day and not two (2)***

The remnant circulation of former Pacific Hurricane Kay brought thunderstorms and flash flooding to the Mojave Desert. The intersection of Farm Rd and Grand Canyon Dr was flooded. Six to eight of water plus mud and debris covered the northbound lanes of Hwy 160. In Moapa, one lane of Hwy 93 was flooded just south of Hwy 168. Also, significant road flooding occurred in Moapa, Moapa Valley, Overton, and Valley of Fire State Park. The Overton co-op observer measured 1.89 inches of rain, including 0.80 inch in 20 minutes. Multiple vehicles were stuck in Valley of Fire. There were no injuries and death associated with the event, and the damages were reported at $102,000.

September 28, 2022– Wann, Flash Flooding

A weak upper-level disturbance combined with monsoon moisture to produce thunderstorms over southern Nevada. Storms in Las Vegas caused minor damage. Three drivers were rescued after their cars were stalled in water, and Nellis Blvd was closed due to flooding. There were no injuries and death associated with the event, and the damages were reported at $1,000.

Probability of Future Events, Flooding, Landslides, and Debris Flow

The Calculated Priority Risk Index (CPRI conducted for Clark County and its participating jurisdictions, there is a **high probability (rank score of 3.0-3.9) of flooding for the planning area.** The following table provides CPRI Rating for flooding, landslides, and debris flow related to Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).

Table 52: Clark County and Participating Jurisdiction CPRI Rating for Flooding, Landslides, and Debris Flow

Clark County and Participating Jurisdiction CPRI Rating for Flooding, Landslides, and Debris Flow							
Hazard: Flooding, Landslides, and Debris Flow		**Category and Weight**				**CPRI Score**	**Risk Level**
Index Rating (R) Weighted Score (WS)		**Probability 45%**	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**		
Clark County (including Incorporated and Unincorporated Areas	R	3	3	4	3	3.15	H
	WS	1.35	0.9	0.6	0.3		
Boulder City	R	2	2	4	1	3.1	M
	WS	0.9	0.6	0.5	0.1		
Henderson	R	3	3	3	3	3	H
	WS	1.35	.9	.45	.3		
Las Vegas	R	4	4	3	3	3.75	H
	WS	1.8	1.2	0.45	0.3		
Mesquite	R	3	3	4	3	3.15	H
	WS	1.35	0.9	0.6	0.3		
North Las Vegas	R	3	3	3	3	3	H
	WS	1.35	0.9	0.45	0.3		
Special District: Clark County Water Reclamation District	R	3	4	4	1	3.25	H
	WS	1.35	1.2	0.6	0.1		
Special District: Clark County School District	R	3	2	2	2	2.45	M
	WS	1.35	0.6	0.3	0.2		
Special District: Las Vegas Valley Water District/SWNA	R	2	2	3	2	2.15	M
	WS	0.9	0.6	0.45	0.2		

Clark County and Participating Jurisdiction CPRI Rating for Flooding, Landslides, and Debris Flow							
Hazard: Flooding, Landslides, and Debris Flow **Index Rating (R)** **Weighted Score (WS)**		**Category and Weight** **Probability 45%**	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**	**CPRI Score**	**Risk Level**
Tribal Nation: Las Vegas Valley Paiute	R	4	4	1	4	3.55	**H**
	WS	1.8	1.2	0.15	0.4		
Tribal Nation: Moapa Band of Paiutes	R	4	4	3	3	3.75	**H**
	WS	1.8	1.2	0.45	0.3		

***Note**: Though participating in the planning process, at the time of this update CPRI data for the City of Mesquite was not received. Therefore, the CPRI rating for the City of Mesquite is the same rating as Clark County due to the city being within the planning area.*

Also, based on the information obtained from the NOAA/NCEI, only 60 incidents of flooding (flood/flash flooding) occurred in Clark County between January 1, 2018, and September 30, 2022. Clark County and its participating jurisdictions which included Clark County Unincorporated area, and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation can expect a flooding (flood/flash flood) event with 760% probability per year or 7.6 events per year, as indicated in Table 53 (below). This number is based on historical events. As such, and according to the probability range table, flooding is **highly likely** for Clark County and its participating jurisdictions.

Table 53: Probability of Future Events, Flooding, Landslides, and Debris Flow – Clark County, NV

Probability of Future Events, Flooding Landslides, and Debris Flow, Clark County, NV	
Event Year	**Event Count**
2018	13*
2019	4*
2020	2
2021	10*
2022	9*
Total Recorded Events =	**38**
Total Years =	**5**

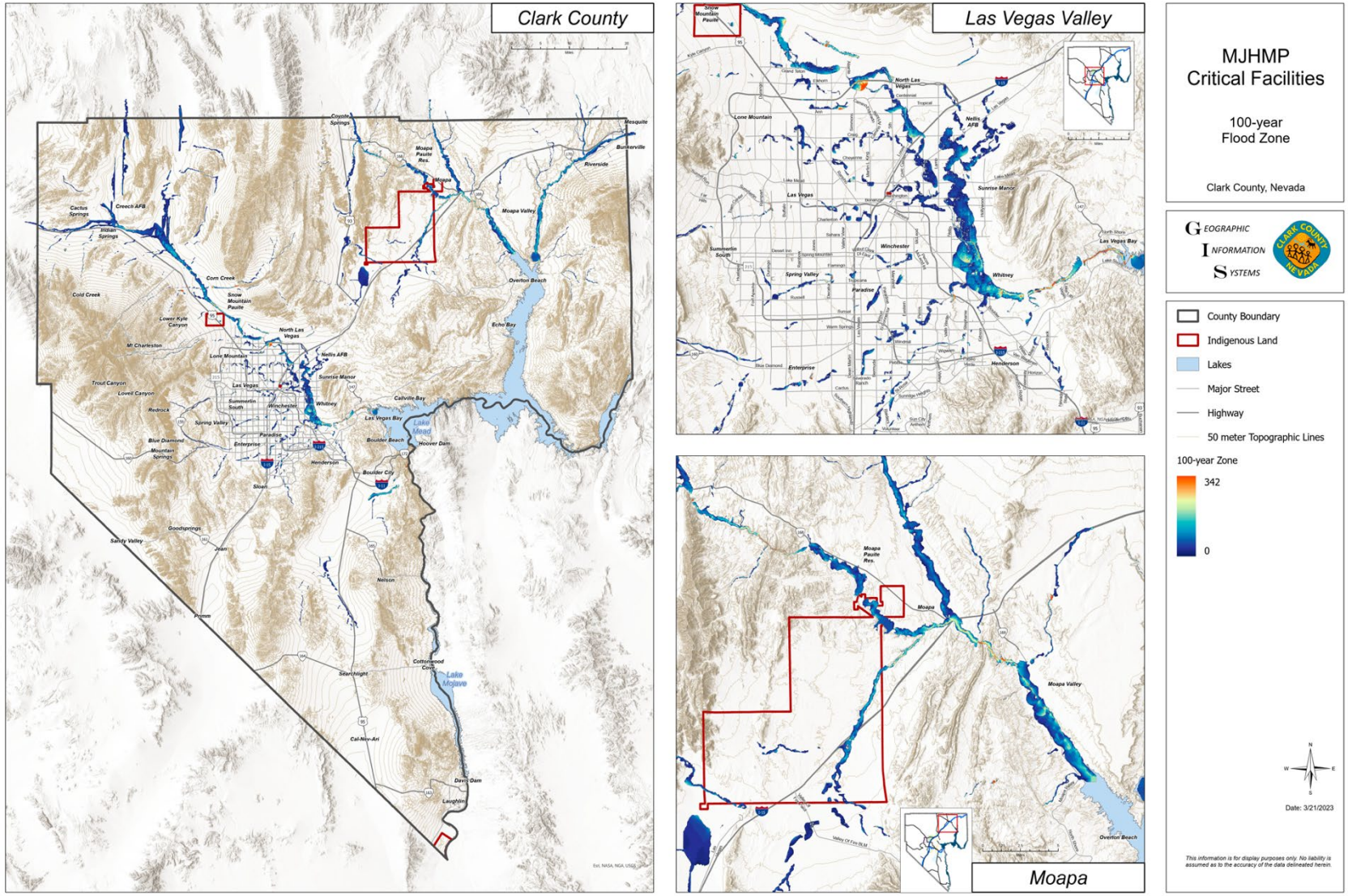
Probability of Future Events, Flooding Landslides, and Debris Flow, Clark County, NV	
Event Year	**Event Count**
Yearly Probability =	**760%***

** The flooding event occurring on January 9, 2018, though shown as one event impacted three locations (East Las Vegas, Moapa, and Wann) within Clark County.*
** The flooding event occurring on July 12, 2018, though shown as one event impacted three locations (Alunite, Blue Diamond, and Mount Charleston) within Clark County.*
**The flooding event occurring on July 14, 2018, though shown as one event impacted two locations (Logandale and East Las Vegas) within Clark County.*
** The flooding event occurring on February 14, 2019, though shown as one event impacted two locations (Red Rock Canyon and Wann) within Clark County.*
** The flooding event occurring on March 6, 2019, though shown as one event impacted two locations (Red Rock Canyon and Blue Diamond) within Clark County.*
** The flooding event occurring on July 31, 2019, though shown as one event impacted the same location twice (Arden) on the same day that provide 2 event narratives within Clark County.*
** The flooding event occurring on August 1, 2022, though shown as one event, impacted the same location twice (Searchlight) on the same day, providing two event narratives within Clark County.*
** The flooding event occurring on July 18, 2021, though shown as one event impacted four locations (Cactus Spgs, Pittman, Moapa, Arrowhead, and Mead Lake) within Clark County.*
** The flooding event that occurred on July 25, 2021, though shown as one event impacted two locations (Valley of Fire and Boulder City) within Clark County. * The flooding event that occurred on July 26, 2021, though shown as one event impacted two locations (Red Rock Canyon and Arden) within Clark County.*
** The flooding event on July 25, 2022, though shown as one event impacted four locations (Victory Vlg, Arden, Apex, and Arden) within Clark County.*
** The flooding event occurring on August 1, 2022, though shown as one event, impacted the same location twice (Searchlight) on the same day, providing two event narratives within Clark County.*
** The flooding event on August 10, 2022, though shown as one event impacted four locations (Nelson, Nelson, and Bracken) within Clark County.*
**The flooding event on September 13, 2022, though shown as one event actually impacted three locations (Moapa, Moapa, and Las Vegas N Air Term) within Clark County.*
**Clark County and its participating jurisdictions can expect a flooding (flood/flash flood) event with 760% probability each year. This number was derived from the number of recorded events by the year range used. Calculating future probability is not the only predictor of future occurrences. The qualitative chance of a flood impacting the planning area is highly likely.*
Data Source: NOAA/NCEI Storm Events Database

Vulnerability and Impact

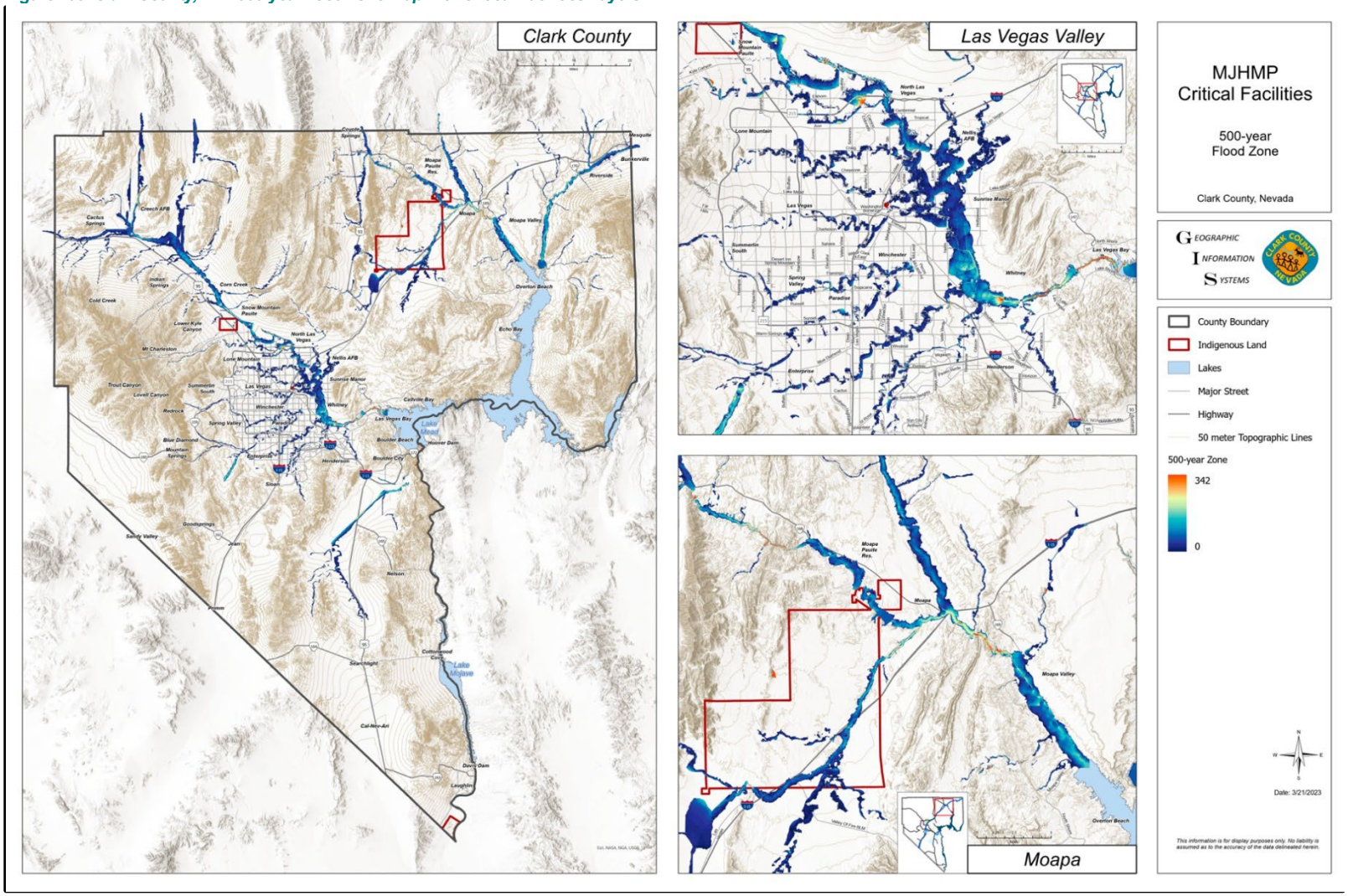
Based on Maps 87-96 and the Probability of Future Events, Flooding, Landslides, and Debris Flow portion of this MJHMP update, Clark County is exposed to 100-year floodplains. The likelihood of flooding is equal throughout each participating jurisdiction, and as depicted in previous section - Probability of Future Events, Flooding, Landslides, and Debris Flow of this MJHMP update, at 7.60 events per year. Again, according to Table 26: Probability Categories, flooding is considered **highly likely.**

Figure 99: Clark County, NV – 100-year flood zone map with Critical Facilities Layers



Data Source: Clark County GISMO Department

Figure 100: Clark County, NV –500-year flood zone map with Critical Facilities Layers



Data Source: Clark County GISMO Department

Vulnerability of Facilities, Critical Facilities Inventory

A HAZUS® analysis was performed to determine critical facility locations relative to the SFHAs. Using GIS, the Digital Flood Insurance Flood Rate Map (DFIRM) flood zones were overlaid on the critical facility location data. Maps 95-96 show critical facility locations and 100-year flood depths within Clark County. Aside from the essential facilities at risk, there are many critical facilities at risk. Additional information is provided in the table below.

Table 54: Expected Damage to Essential Facilities, 1% Riverine Flood and 0.2% Riverine Flood

Expected Damage to Essential Facilities, 1% Riverine Flood and 0.2% Riverine Flood				
Classification	**Total**	**At Least Moderate**	**At Least Substantial**	**Loss of Use**
Emergency Operation Centers (EOCs)	7	0	0	0
Fire Stations	78	0	0	0
Hospitals	50	0	0	0
Police Stations	34	0	0	0
Schools	530	0	0	0

Note: *HAZUS® indicated the following "If this report displays all zeros or is blank, two possibilities can explain this: 1.) None of the essential facilities were flooded in the scenario. This can be checked by mapping the inventory data on the depth gird. 2.) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.*

Data Source: HAZUS® Flood Global Risk Report for Clark County produced by CONSTANT Associates

Shelter Requirements

HAZUS® estimated the number of households that are expected to be displaced from their homes due to flood and associated potential evacuation. HAZUS® also estimates the number of displaced people who will require accommodations in temporary public shelters. The model estimates related to the 100-year and 500-year flooding within the planning area:

- **100-year flood within the Clark County – Las Vegas Area:** 61,969 households (or 185,906 people) will be displaced due to flooding. Displacement includes households evacuated from within or near the inundated area(s). Of these 25,023 (out of a total population of 2,260,510) may require temporary, public sheltering.
- **100-year flood within the Clark County, Northeast Area:** 1,361 households (or 4,082 people) will be displaced due to flooding. Displacement includes households evacuated from within or near the inundated area(s). Of these 300 (out of a total population of 2,260,510) may require temporary, public sheltering.
- **500-year flood within the Clark County – Las Vegas Area:** 112,945 households (or 338,836 people) will be displaced due to flooding. Displacement includes households evacuated from within or near the inundated area(s). Of these 40,963 (out of a total population of 2,260,510) may require temporary, public sheltering.
- **500-year flood within the Clark County, Northeast Area:** 1,938 households (or 5,815 people) will be displaced due to flooding. Displacement includes households

evacuated from within or near the inundated area(s). Of these 380 (out of a total population of 2,260,510) may require temporary, public sheltering.

The shelter requirements information is from the hazard risk analysis (HAZUS®: Flood Global Risk Reports for Clark County, NV NE and Clark County, NV – Las Vegas Area provided by CONSTANT Associates.

Building-Related Losses

Building losses are broken into two categories: direct building and business interruption. Direct building losses are the estimated cost to repair or replace damage to the building and its contents. Business interruption losses also include the temporary living expenses for those displaced from their homes because of flooding.

Clearly, severe flooding has the potential to inflict significant damage in Clark County. Analysis by CONSTANT Associates the following estimates the amount of debris that may be generated from a 100-year 1% flood and 500-year 0.2% flood within the planning area:

- **100-year flood within the Clark County** – Las Vegas Area: the model estimates that 39,977 tons of debris may be generated from a 100-year riverine flood in Clark County – Las Vegas area.
- **100-year flood within the Clark County**, Northeast Area: the model estimates that 3,733 tons of debris may be generated from a 100-year riverine flood in Clark County – Northeast area.
- **500-year flood within the Clark County** – Las Vegas Area: the model estimates that 102,748 tons of debris may be generated from a 500-year riverine flood in Clark County – Las Vegas area. 500-year flood within the Clark County, Northeast Area: the model estimates that 8,878 tons of debris may be generated from a 100-year riverine flood in Clark County – Northeast area.

Smaller floods caused by heavy rains and inadequate drainage capacity will occur more frequently than 100-year floods and continue to be problematic for the County. Fortunately, damage from them will not be nearly as costly.

Flooding can cause minimal or complete destruction to facilities, taking them offline for days to years depending upon the resources available after an event. Clark County and its participating jurisdictions have incurred $1,343,000 in property damage from flooding/flash flooding from 2018 to present.

Table 55: 1% Riverine Building Losses and 0.2% Riverine Building Losses for Clark County, Las Vegas and Clark County – Northeast Area:
Clark County, Las Vegas Area, 100-year Flood

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	4,615.54	657.74	234.02	172.80	5,680.10
	Content	2,589.33	1,867.97	515.80	800.86	5,773.95
	Inventory	0.00	305.92	69.67	8.00	383.60
	Subtotal	**7,204.87**	**2,831.64**	**819.49**	**981.66**	**11,837.65**
Business Interruption						
	Income	49.69	1,431.53	12.87	283.79	1,777.88
	Relocation	1,062.44	379.80	15.99	174.59	1,632.82
	Rental Income	441.04	278.79	3.45	23.07	746.35
	Wage	116.98	1,433.24	20.63	1,610.70	3,181.55
	Subtotal	**1,670.14**	**3,523.36**	**52.94**	**2,092.14**	**7,338.59**
ALL	**Total**	**8,875.01**	**6,355.00**	**872.43**	**3,073.80**	**19,176.24**

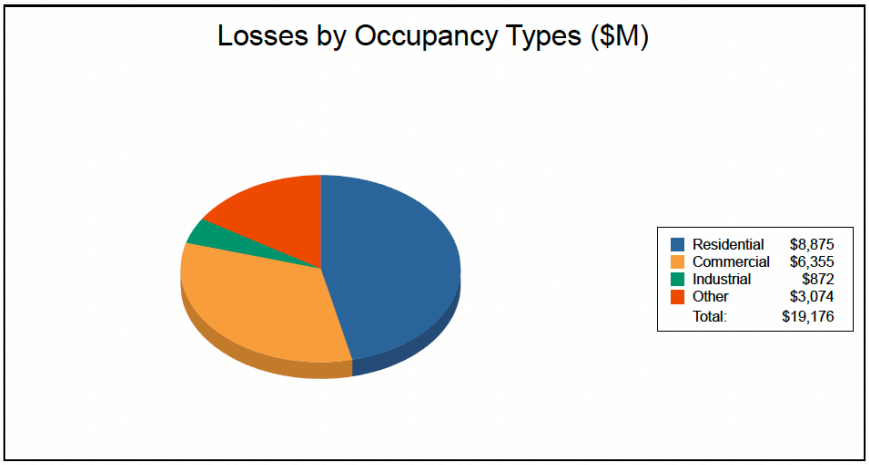


Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	9,653.64	1,795.59	576.19	404.04	12,429.45
	Content	5,413.22	4,820.28	1,281.83	1,690.62	13,205.94
	Inventory	0.00	794.73	170.40	19.96	985.08
	Subtotal	**15,066.85**	**7,410.60**	**2,028.41**	**2,114.61**	**26,620.47**
Business Interruption						
	Income	121.83	3,618.62	31.37	588.57	4,360.39
	Relocation	2,070.30	954.77	36.60	349.81	3,411.49
	Rental Income	927.40	702.60	8.37	41.59	1,679.97
	Wage	286.87	3,556.91	46.99	3,239.59	7,130.35
	Subtotal	**3,406.40**	**8,832.91**	**123.33**	**4,219.56**	**16,582.20**
ALL	**Total**	**18,473.25**	**16,243.51**	**2,151.74**	**6,334.17**	**43,202.67**

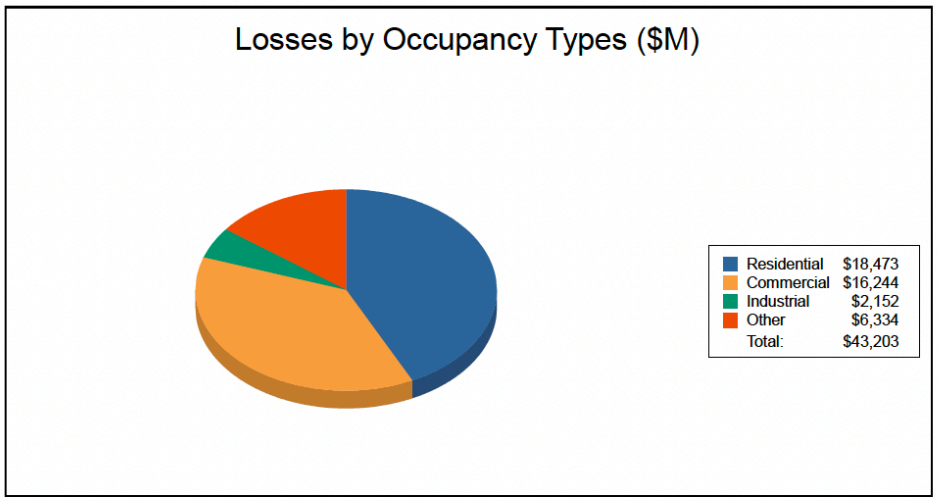
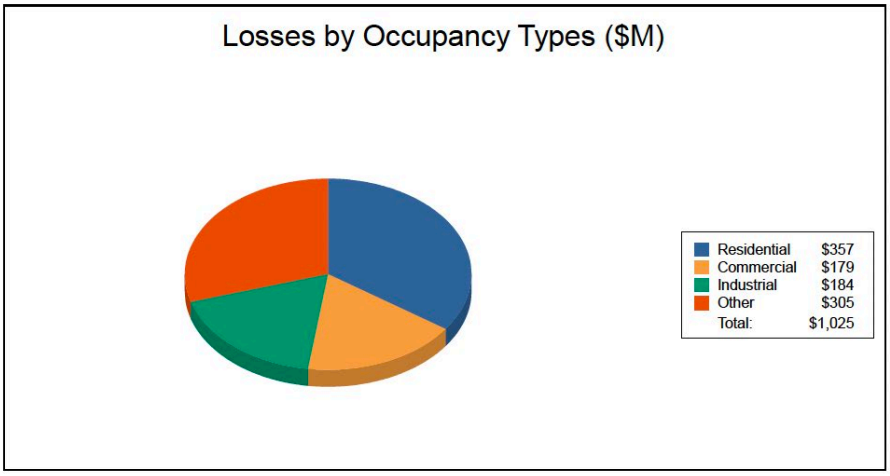


Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	189.34	20.25	41.61	26.97	278.17
	Content	101.75	58.85	117.13	81.30	359.03
	Inventory	0.00	11.31	16.04	43.24	70.59
	Subtotal	**291.09**	**90.41**	**174.79**	**151.50**	**707.79**
Business Interruption						
	Income	2.87	36.86	2.02	17.36	59.12
	Relocation	40.87	9.27	2.89	10.48	63.52
	Rental Income	15.42	6.86	0.81	1.47	24.57
	Wage	6.78	35.22	3.39	124.37	169.76
	Subtotal	**65.94**	**88.22**	**9.11**	**153.69**	**316.96**
ALL	**Total**	**357.04**	**178.63**	**183.90**	**305.19**	**1,024.75**

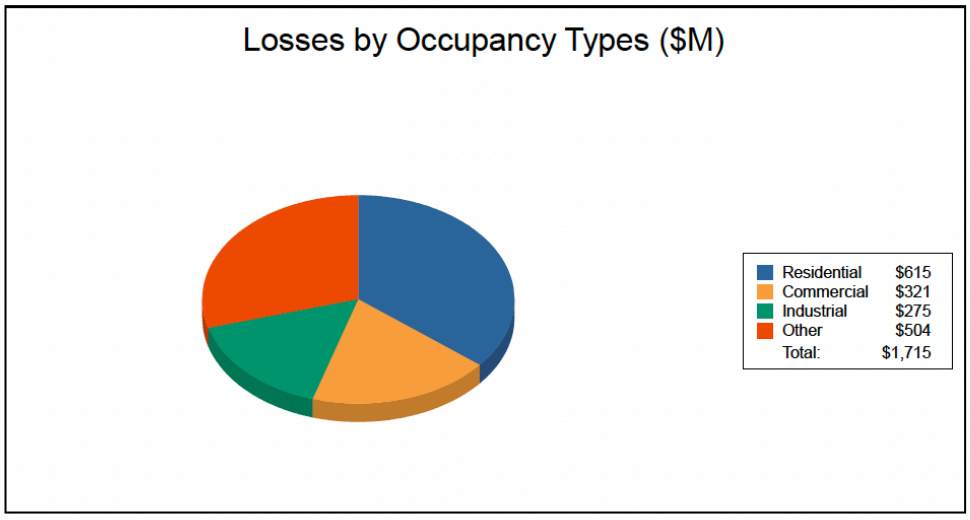


Clark County, Northeast Area, 500-year Flood

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	334.61	40.51	67.73	55.23	498.09
	Content	179.53	104.66	172.00	134.65	590.84
	Inventory	0.00	18.63	22.38	58.13	99.13
	Subtotal	**514.14**	**163.80**	**262.11**	**248.01**	**1,188.05**
Business Interruption						
	Income	4.09	65.61	2.83	29.69	102.22
	Relocation	63.13	16.38	4.00	18.58	102.09
	Rental Income	24.19	12.25	1.15	2.84	40.43
	Wage	9.65	63.41	4.73	204.62	282.41
	Subtotal	**101.06**	**157.65**	**12.71**	**255.73**	**527.15**
ALL	**Total**	**615.20**	**321.45**	**274.82**	**503.74**	**1,715.20**



Data Source: HAZUS® Flood Global Risk Report for Clark County produced by CONSTANT Associates

Vulnerability of Populations

If evacuation orders are not heeded of flood waters rise quickly, enough residents within the planning area can be swept away by floodwaters currents, become trapped on rooftops or other points of high elevations, and even sustain injury of death. Depending upon the conditions, this will expose them to the elements and deprive them of basic needs and services.

As previously described in the Vulnerability of Facilities, Critical Facilities Inventory section of this hazard profile, flooding will, directly and indirectly, impact people, infrastructure, natural systems, and the economy significantly. In the event of a flooding event in the planning area, still water that is long-lasting and slow to drain will encourage the growth of mold and other bio-hazardous materials, rendering a facility unusable. Extra care, assessment, and sanitization are required before residents can re-inhabit a facility, or they may face serious health concerns. Hospitals housing vulnerable populations can take longer to evacuate. Additionally, the potential presence of mold after a flood requires extra care before Clark County's population can re-inhabit a hospital or long-term care facility.

Clark County has 0 recorded fatalities from flood/flash flood events in the last five years. Still, of the planning area's total population of 2,265,461, all are considered vulnerable and at risk of flooding, whether alluvial fan, riverine, or flash. However, flooding could pose a risk to the vulnerable populations within the planning area. The Clark County Climate Vulnerability Study mentions how flooding will affect the people and communities within Clark County related to housing, schools, correctional and detention centers, and critical health facilities:

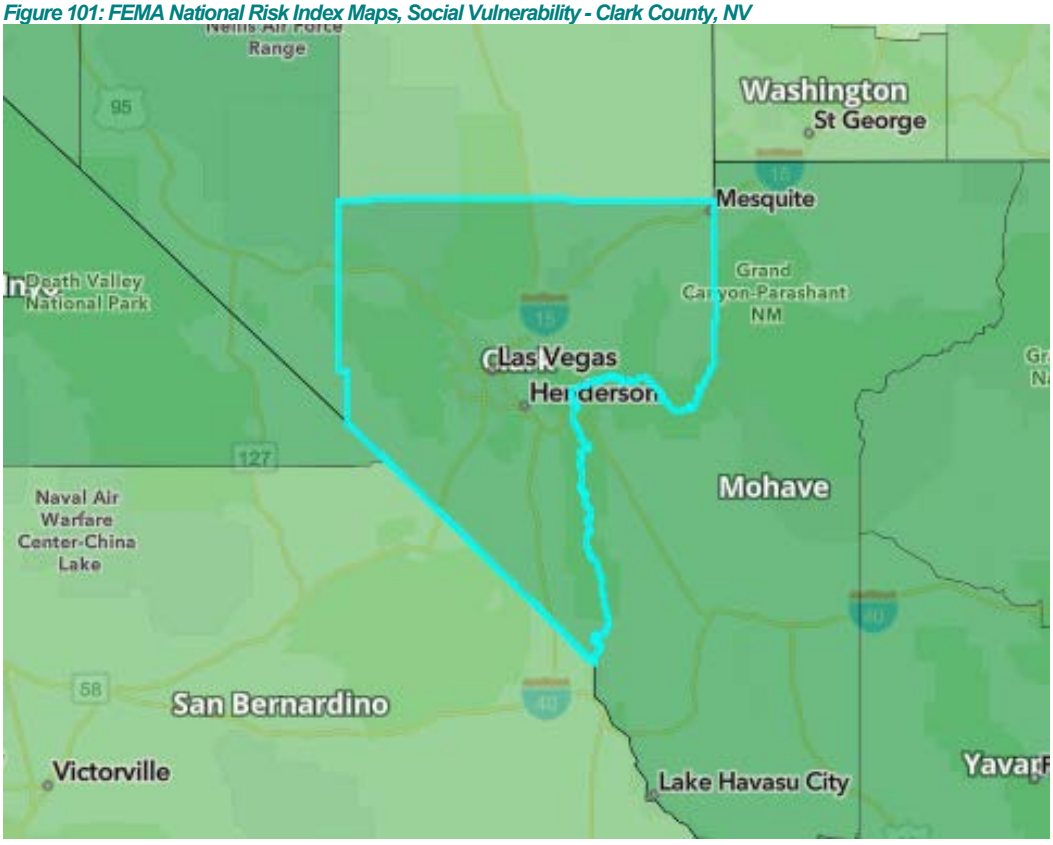
- **Housing:** “The majority of Clark County’s at-risk people and property exist in the Las Vegas Wash, which contains Las Vegas, North Las Vegas, and Henderson. Though not heavily populated, housing in rural areas may be significantly impacted by flooding because there are often fewer resources available for response and recovery. This includes areas alongside the Muddy River (which flows through Overton and Logandale) and the Virgin River (which runs along the southern boundary of Mesquite), much of which is within the County’s Special Flood Hazard Area (SFHA). Lastly unhoused residents (especially those living in stormwater infrastructure) face acute risk of no-notice flash flood events. There is increased need for shelters, communication, rescue, and care during these events.”
- **Schools:** “While not all schools are equal risk of flooding impacts because of the variations of topography and urbanization across the County, flooding can pose transportation and mobility issues for those traveling to school facilities. Flood can also disrupt school operations, interfering with programming, causing school delays, or even causing school closures.”
- **Correctional Facilities and Detention Centers:** “Existing facilities experience few flood impacts during heavy rain events. That said facilities in lower lying areas are especially at risk for flash flooding impacts. Similarly, flood impacts are worse in rural areas compared to urban areas.”
- **Critical Health Facilities**: “While flash flooding can be costly, there is generally not a significant impact to public health. Most critical facilities in Clark County are located safely outside of flood hazard areas; yet flash floods can temporarily restrict access to critical health and emergency service, especially for rural areas. These events can also reduce the ability of healthcare workers and emergency responders to access affected areas.”

The FEMA National Risk Index map provides data on social vulnerability and community resilience related to hazards. Both of these factors impact the vulnerability of a population for a hazard event like flooding. FEMA National Risk Index defines Social Vulnerability as the susceptibility of social groups to the adverse impacts of natural hazards, including death, injury, loss, or disruption of livelihood. FEMA defines Community Resilience as the ability for a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruption. The scoring of these FEMA National Risk Index categories are for all hazards, including drought are as follows:

- **Community Resilience**: the higher community resilience score results in a lower risk index score. The Community Resilience score for Clark County is 49.9, meaning communities within the County have a Very Low ability to prepare for anticipated natural hazards, adapt to conditions, and withstand and recover rapidly from disruptions compared to the rest of the U.S.
- **Social Vulnerability**: a higher social vulnerability score results in a higher Risk Index score. Social groups in Clark County, NV, have a Relatively High susceptibility to the adverse impacts of natural hazards compared to the rest of the U.S. The Social Vulnerability score for Clark County is 48.59

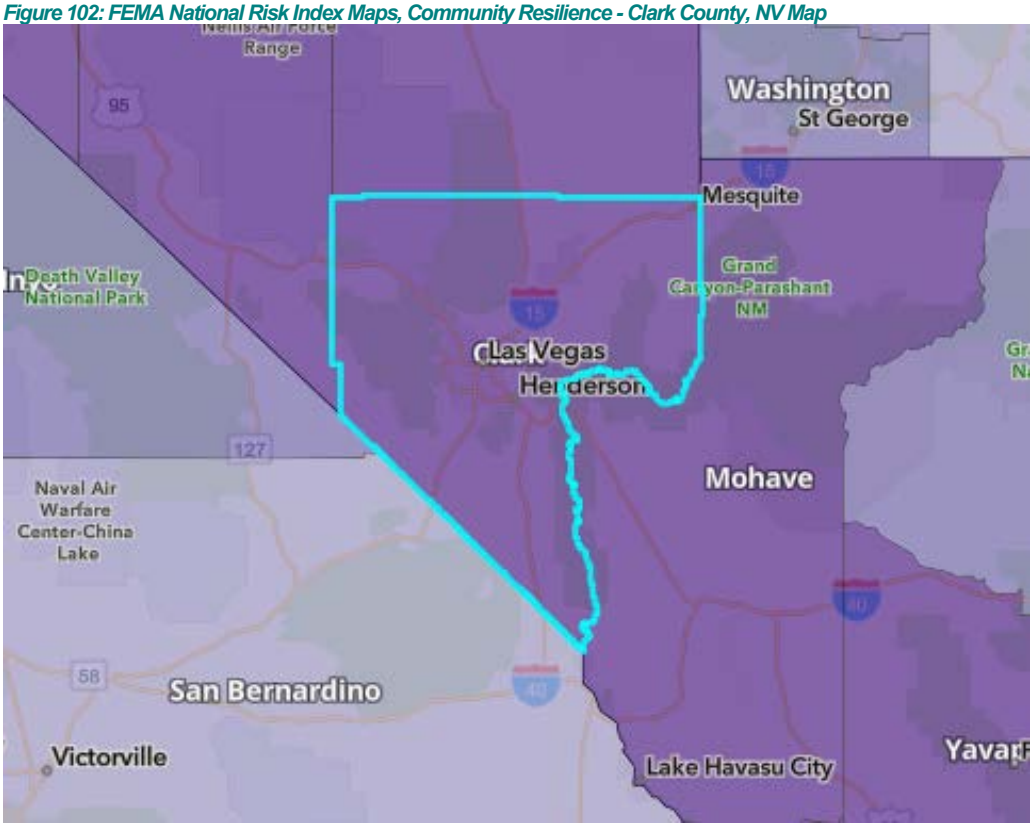
The following maps provide a snapshot of community resilience and social vulnerability scoring related to all hazards including flooding for Clark County and its participating jurisdictions.

Figure 101: FEMA National Risk Index Maps, Social Vulnerability - Clark County, NV



Data Source: The FEMA National Risk Index

Figure 102: FEMA National Risk Index Maps, Community Resilience - Clark County, NV Map



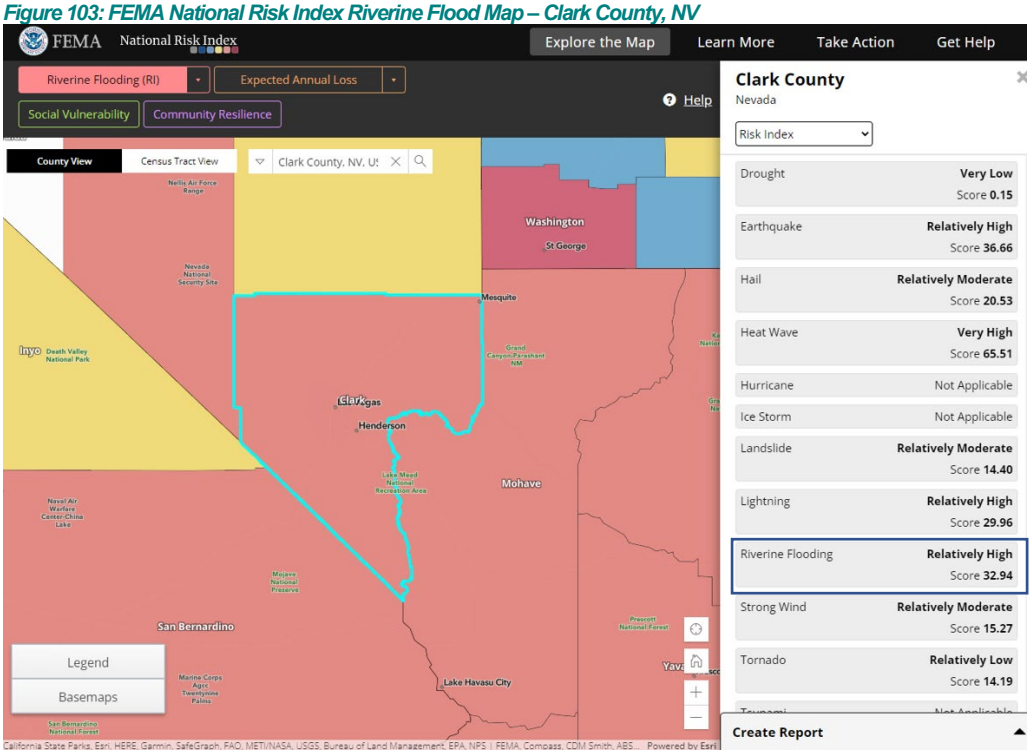
Data Source: The FEMA National Risk Index

Vulnerability of Systems

Critical facilities and infrastructure can be rendered unusable or permanently destroyed, significantly impacting a jurisdiction's ability to conduct its day-to-day operations. Considerable damage to residential and/or commercial structures can damage a community and its economy by creating economic hardship. If a chemical facility is severely impacted, stored chemicals can potentially wash away with the floodwater and have detrimental effects on the local environment.

The FEMA National Risk Index. All jurisdictions throughout Clark County are susceptible to flooding (flash /flood). The FEMA National Risk Index for Natural Hazards is an online mapping system that identifies communities most at risk to 18 natural hazards. Related to flooding – riverine flooding, In the National Risk Index, a Riverine Flooding Risk Index score and rating represent a community's relative risk for Riverine Flooding compared to the rest of the United States. Clark County has a riverine flooding risk score of 32.94 (relatively high) compared to the rest of the Country. The map below illustrates that score visually.

Figure 103: FEMA National Risk Index Riverine Flood Map – Clark County, NV



Data Source: [The FEMA National Risk Index]

Impact of Climate Change

The Clark County, Climate Vulnerability Study, mentions that four main climate hazards, which include flooding, will, directly and indirectly, impact people, infrastructure, natural systems, and the economy significantly. The illustration below illustrates how climate change can affect hazards like flooding within the planning area.

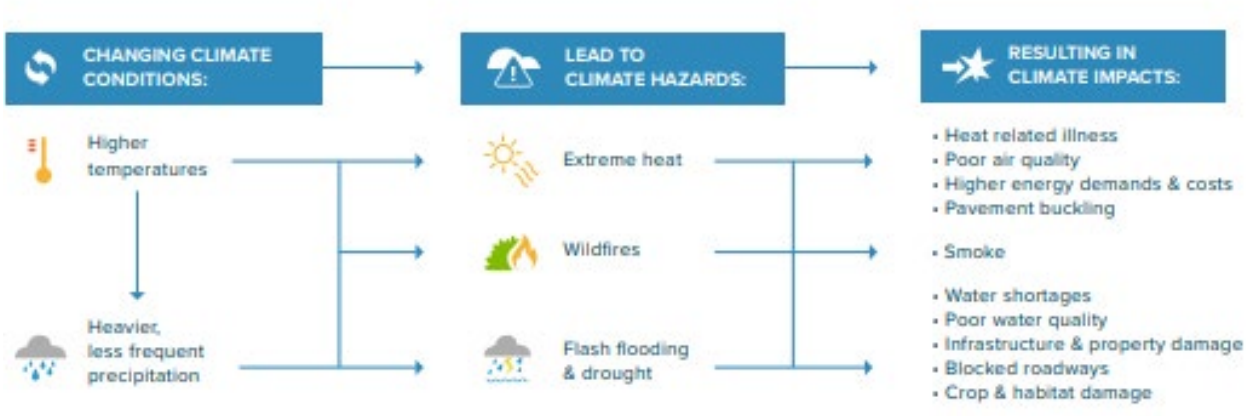


Illustration Source: [Clark County, NV Climate Vulnerability Assessment]

The upcoming sections of the Vulnerability and Risk related to flooding provide information on how climate change will affect populations, systems, critical facilities & infrastructure, and land use & development trends.

Critical Facilities and Infrastructure

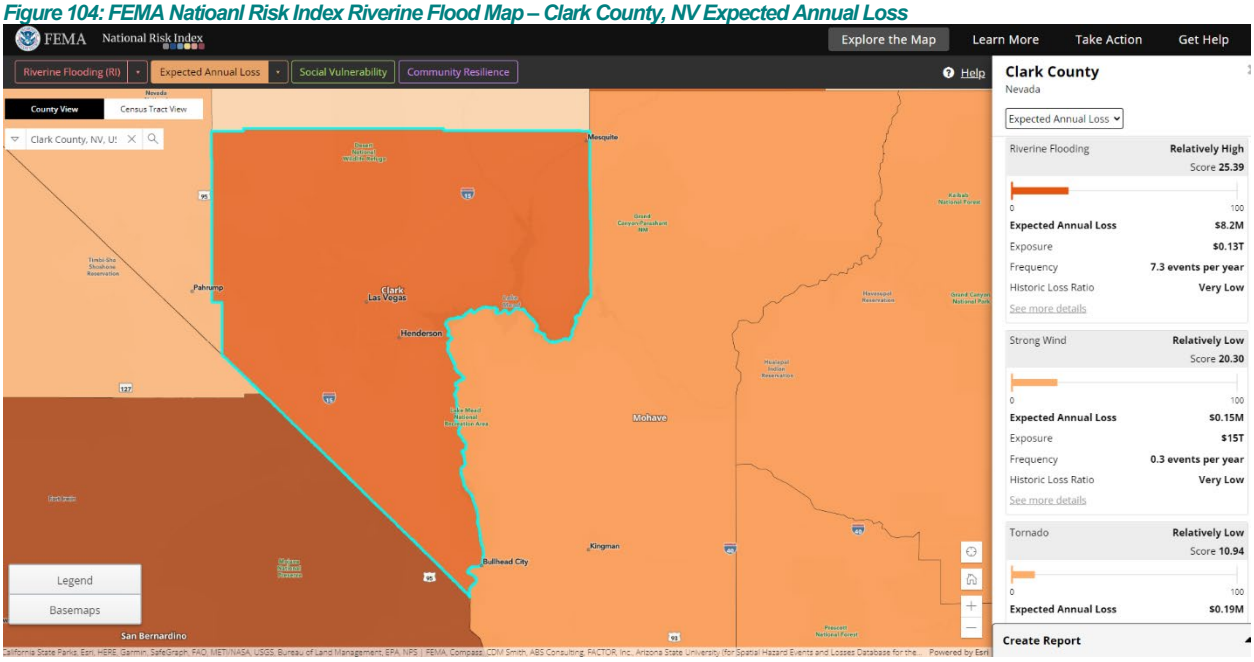
All critical facilities and infrastructure are at risk of flooding (flash/flood) since it can indiscriminately affect the planning area. A complete list of critical facilities and infrastructure can be found in Appendix D – Critical Facilities & Infrastructure.

Also, the National Risk Index scores provided by FEMA analyze potential exposure and estimated losses within the planning area related to flooding. For flooding, the National Risk Index uses the Riverine Flood Exposure value to represent community building values (in dollars), population (in both people and population equivalence), and agriculture value (in dollars) exposed to Riverine Flooding. Exposure is a natural consequence factor for Annual Expected Loss, the natural hazard component of the National Risk Index. A jurisdiction with a higher exposure value will result in higher Expected Annual Loss and Risk Index scores. Clark County's Expected Annual Loss rating related to riverine flooding is 25.39, which is relatively high compared to the rest of the country. The other exposure data related to expected loss for riverine flooding is as follows:

- Expected Annual Loss: $8.2M
- Exposure: $0.13T
- Frequency: 7.3 events per year
- Historic Loss Ration: Very Low

The following map illustrates the expected annual loss for riverine flooding in the planning area:

Figure 104: FEMA Natioanl Risk Index Riverine Flood Map – Clark County, NV Expected Annual Loss



Data Source: The FEMA National Risk Index

Land Use and Development

The Clark County, NV Economic Development website mentions that Clark County encompasses 8,000 square miles and 2.3 million residents —accounting for 70% of Nevada's population and making it Nevada's largest county. It is also the nation's 14th largest county, responsible for nearly half a million visitors to Southern Nevada annually as the 7th most frequented region in America. The previous Clark County HMP (2018) mentions contributing to this dispersion type is an urbanization and sprawl pattern that has spread development onto the washes and sediment piedmonts. In addition, runoff from monsoon thunderstorms can quickly overtop a wash, thereby flooding adjacent areas. With its growing population within the major cities of the county and in the unincorporated portion of the county and continued urbanization, all of Clark County is at risk of some type of flooding (riverine, flash, or alluvial fan). This is especially true for future development within the County's many 100-year and 500-year floodplains, or SFHAs. New construction in unmapped areas prone to flooding may further increase vulnerabilities and potential losses. However, Clark County's current land-use regulations require the consideration of flood hazards during the development review process electronically via the Clark County Regional Flood Control District website.

Unique and Varied Risk

In Clark County, flooding (flash/flood) can affect the entire planning area or only a portion, or portions, of it. Unfortunately, there is no accurate method of predicting the location or extent of a flash flood's impact— namely, whether it will affect one participating jurisdiction, any number of, or all participating jurisdictions. Further, it is not possible to predict any varying probability between the participating jurisdictions, except for different risk as it is proportionate to a participating

jurisdiction's demographics. Logically, participating jurisdictions with a more significant population are at a higher risk than involving jurisdictions with a lower population.

Although this plan update addresses vulnerability to flooding, without the possibility of being able to calculate all components of risk at a jurisdictional level, each jurisdiction's likelihood of experiencing flash flooding is not possible to calculate. Based on the NFIP FIRM, Clark County, Clark County – Unincorporated, and the Cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas are at risk for flooding (flash/riverine/alluvial fan).

Table 56: Unique & Varied Risk, Clark County, NV Flooding

Unique & Varied Risk, Clark County, NV Flooding	
Jurisdiction	***Risk Characteristics***
Clark County including the unincorporated portions of the County and the Tribal Land of Las Vegas Paitue Tribe and Moapa Band of Paitues	Parts of the jurisdiction are in a 100-year floodplain.
City of Boulder City	Parts of the jurisdiction are in a 100-year floodplain.
City of Henderson	Parts of the jurisdiction are in a 100-year floodplain.
City of Las Vegas	Parts of the jurisdiction are in a 100-year floodplain.
City of Mesquite	Parts of the jurisdiction are in a 100-year floodplain.
City of North Las Vegas	Parts of the jurisdiction are in a 100-year floodplain.

Repetitive Loss Structure

Clark County's previous HMP (2018) mentioned that according to FEMA Region IX, as of June 2018, there are a total of 25 Repetitive Loss (RL) properties located in Unincorporated Clark County; with 52 losses equaling $1,705,220. In the city of Henderson, there are two RL properties, with four losses equaling $20,837. In the city of Las Vegas there are eight RL properties, with 24 losses totaling $805,563.

However, as of December 5, 2022, there are Repetitive Loss (RL) properties, and subsequently, NFIP-insured properties within Clark County. The following table, provided by the State of Nevada Division of Emergency Management (NVDEM), indicates the locations, number of losses, and number of policies.

Community Name	Community Number	Mitigated	Occupancy 1	Cumulative Building Payment	Cumulative Contents Payment	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
BOULDER CITY, CITY OF	320004	NO	SINGLE FMLY (OLD METHODOLOGY)	13935.24	0	13935.24	N	N	N	N	Y
CLARK COUNTY *	320003	YES	OTHR-NONRES (OLD METHODOLOGY)	28766.95	41685.05	70452	Y	N	N	N	N
CLARK COUNTY *	320003	YES	OTHR-NONRES (OLD METHODOLOGY)	161390.46	124196.3	285586.76	Y	N	N	N	N
CLARK COUNTY *	320003	YES	OTHR-NONRES (OLD METHODOLOGY)	45544.51	16686.43	62230.94	Y	N	N	N	N
CLARK COUNTY *	320003	YES	OTHR-NONRES (OLD METHODOLOGY)	27508.25	0	27508.25	Y	N	N	N	N
CLARK COUNTY *	320003	YES	OTHR-NONRES (OLD METHODOLOGY)	175771.66	0	175771.66	Y	N	Y	N	N
CLARK COUNTY *	320003	NO	SINGLE FMLY (OLD METHODOLOGY)	7189.04	10493.23	17682.27	Y	N	N	N	N
CLARK COUNTY *	320003	NO	SINGLE FMLY (OLD METHODOLOGY)	38459.6	0	38459.6	Y	N	N	N	N
CLARK COUNTY *	320003	YES	SINGLE FMLY (OLD METHODOLOGY)	3173.52	0	3173.52	Y	N	N	N	N
CLARK COUNTY *	320003	NO	SINGLE FMLY (OLD METHODOLOGY)	44707.05	11752.47	56459.52	Y	N	N	N	N
CLARK COUNTY *	320003	NO	SINGLE FMLY (OLD METHODOLOGY)	78828.05	29216.55	108044.6	N	N	N	N	Y
CLARK COUNTY *	320003	YES	SINGLE FMLY (OLD METHODOLOGY)	52139.03	0	52139.03	Y	N	N	N	N

Community Name	Community Number	Mitigated	Occupancy 1	Cumulative Building Payment	Cumulative Contents Payment	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
CLARK COUNTY *	320003	YES	SINGLE FMLY (OLD METHODOLOGY)	30475.51	0	30475.51	Y	N	N	N	N
CLARK COUNTY *	320003	YES	SINGLE FMLY (OLD METHODOLOGY)	63068.79	6347.09	69415.88	Y	N	N	N	N
CLARK COUNTY *	320003	YES	SINGLE FMLY (OLD METHODOLOGY)	60008.2	35816.62	95824.82	Y	N	N	N	N
CLARK COUNTY *	320003	YES	SINGLE FMLY (OLD METHODOLOGY)	8758.38	1981.32	10739.7	Y	N	N	N	N
CLARK COUNTY *	320003	YES	SINGLE FMLY (OLD METHODOLOGY)	76391.12	22955.87	99346.99	Y	N	N	N	N
CLARK COUNTY *	320003	YES	SINGLE FMLY (OLD METHODOLOGY)	10100.82	11935.59	22036.41	Y	N	N	N	N
CLARK COUNTY *	320003	NO	SINGLE FMLY (OLD METHODOLOGY)	100511.4	90111.55	190622.95	Y	N	N	N	N
CLARK COUNTY *	320003	NO	SINGLE FMLY (OLD METHODOLOGY)	209020.56	102179.02	311199.58	Y	N	N	N	N
CLARK COUNTY *	320003	NO	SINGLE FMLY (OLD METHODOLOGY)	75552.07	6180.88	81732.95	Y	N	N	N	N
CLARK COUNTY *	320003	NO	SINGLE FMLY (OLD METHODOLOGY)	35502.68	6422.7	41925.38	Y	N	N	N	N
HENDERSON, CITY OF	320005	YES	SINGLE FMLY (OLD METHODOLOGY)	6442.62	4968.19	11410.81	N	N	N	N	Y
HENDERSON, CITY OF	320005	NO	SINGLE FMLY (OLD METHODOLOGY)	9426.19	0	9426.19	Y	N	N	N	N

Community Name	Community Number	Mitigated	Occupancy 1	Cumulative Building Payment	Cumulative Contents Payment	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
LAS VEGAS, CITY OF	325276	YES	SINGLE FMLY (OLD METHODOLOGY)	10156.76	0	10156.76	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	YES	SINGLE FMLY (OLD METHODOLOGY)	14607.13	0	14607.13	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	YES	OTHR-NONRES (OLD METHODOLOGY)	5381.09	1332	6713.09	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	NO	SINGLE FMLY (OLD METHODOLOGY)	71336.57	34991.86	106328.43	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	YES	SINGLE FMLY (OLD METHODOLOGY)	4820.42	0	4820.42	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	YES	SINGLE FMLY (OLD METHODOLOGY)	6351.69	14378.14	20729.83	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	YES	SINGLE FMLY (OLD METHODOLOGY)	4271.16	408	4679.16	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	NO	OTHR-NONRES (OLD METHODOLOGY)	0	39633.9	39633.9	N	N	N	N	Y
LAS VEGAS, CITY OF	325276	YES	OTHR-NONRES (OLD METHODOLOGY)	103353.28	116445	219798.28	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	YES	OTHR-NONRES (OLD METHODOLOGY)	0	23786.4	23786.4	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	YES	OTHR-NONRES (OLD METHODOLOGY)	0	112460.01	112460.01	Y	Y	N	Y	N
LAS VEGAS, CITY OF	325276	NO	SINGLE FMLY (OLD METHODOLOGY)	17975.75	1893.5	19869.25	Y	N	N	N	N

Community Name	Community Number	Mitigated	Occupancy 1	Cumulative Building Payment	Cumulative Contents Payment	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
LAS VEGAS, CITY OF	325276	NO	OTHR-NONRES (OLD METHODOLOGY)	57007.85	59843.93	116851.78	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	NO	BUSI-NONRES (OLD METHODOLOGY)	244270.67	54773.56	299044.23	Y	Y	N	Y	N
LAS VEGAS, CITY OF	325276	NO	SINGLE FMLY (OLD METHODOLOGY)	7358.35	0	7358.35	Y	N	N	N	N

HAZUS® Models

HAZUS®, version 6.0, was used to perform the analysis for Clark County using essential facility data for Clark County Office of Emergency Management & Homeland Security. The analysis was completed by CONSTANT Associates. For this hazard, the risk assessment data and maps involved were from an analysis of 1% annual chance flood event (100-Year Flood) and 0.2% annual chance flood event (500-Year Flood).

(SW) Severe Weather (Including Thunderstorms, Lightning, Hail, Wind, and Tornadoes)

Hazard Description

Meteorologists generally define severe weather as any aspect of the weather that poses risk to life and/or property and requires the intervention of authorities. Severe weather can happen at any time, and in any part of the country, and may present itself in a variety of ways. Severe weather usually applies to local, intense, and often damaging storms such as thunderstorms, hailstorms, and tornadoes, but can also describe more widespread events such as tropical systems. This section provides general and historical information about three specific severe weather elements affecting the plannig area: Thunderstorms, Lightning, Wind, and Tornadoes.

Thunderstorms

Thunderstorms form when warm, moist air near the Earth's surface is forced upward through some catalyst (convection or frontal weather system). As the air rises, it cools, condenses, and forms cumulonimbus clouds that can reach up to 40,000 feet in altitude. When the rising air reaches its dew point, water droplets (rain) and ice (hail) form and begin falling the long distance through the clouds towards the ground. As the droplets fall, they collide with other droplets and become larger. The falling droplets create a downdraft of air that spreads out at the Earth's surface, resulting in strong, oftentimes damaging winds. The collision of the water and ice particles in the cloud(s) form a large electrical field, discharging as dangerous cloud-to-ground or ground-to-cloud lightning.

There are four ways in which thunderstorms can organize: single cell, multi-cell cluster, multi-cell lines (squall lines), and supercells. The average single-cell thunderstorm develops rapidly, is approximately 15 miles in diameter, and lasts less than 30 minutes at a single location. Multi-cell clusters and multi-cell lines, which can also form relatively quickly, can travel for distances exceeding 600 miles. Supercells are usually associated with severe weather phenomena. Regardless of the type of thunderstorm, warm, humid conditions are most favorable for their development.

A thunderstorm is classified as "severe" by NWS when it contains one or more of the following: hail one inch or greater, winds gusting in excess of 50 knots (57.5 mph), and/or a tornado. In these instances, Severe Thunderstorm Watches or Severe Thunderstorm Warnings will be issued by the national/local weather authorities.

A Severe Thunderstorm Watch is issued by NOAA's Storm Prediction Center when conditions are favorable for severe thunderstorms. A watch can cover parts of a state or several states. A Severe Thunderstorm Warning, on the other hand, is issued by local NOAA NWS Forecast office meteorologists and is specific to a designated area. Warnings, which can cover parts of counties or even several counties, mean severe weather has been reported by spotters or indicated by radar and that there is a serious threat to life and property.

According to NOAA, many hazardous weather events are associated with thunderstorms. Under the right conditions, rainfall from thunderstorms causes flash flooding, which kills more people each year than hurricanes, tornadoes, or lightning. Lightning is responsible for many fires around the world each year and causes fatalities. Hail up to the size of softballs damages cars and windows, and kills livestock caught out in the open. Strong (up to more than 120 mph) straight-

line winds associated with thunderstorms knock down trees, power lines and mobile homes. Tornadoes (with winds up to about 300 mph) can destroy all but the best-built man-made structures.

Lightning

Lightning is one of the more dangerous weather hazards in the United States. The NWS describes lightning as a giant spark of electricity in the atmosphere or between the atmosphere and the ground. As the rapid discharge between positive and negative regions of a thunderstorm, lightning flashes are composed of a series of strokes (with an average of about four). The length and duration of each lightning strike vary, but typically average around 30 microseconds. People and objects can be directly struck by lightning, or damage can occur indirectly when the current (up to 100 million volts of electrical potential) passes through or near them.

Per the NWS, lightning strikes the U.S. about 25 million times a year, killing an average of 51 people and accounting for hundreds of injuries including serious burns. Interestingly, lightning is hotter than the surface of the sun and can reach temperatures around 50,000° Fahrenheit. Lightning is also responsible for millions of dollars of property damage annually, including damage to buildings, communications systems, powerlines, and electrical systems. Moreover, lightning causes forest and brush fires, as well as deaths and injuries to livestock and other animals.

According to the National Lightning Safety Institute (NLSI), lightning triggers more than 26,000 fires in the U.S. each year. The Institute estimates property damage, increased operating costs, production delays, and lost revenue from lightning and secondary effects to be $6-7 billion dollars/year.

Hail

Hail, which is associated with thunderstorms, forms when updrafts carry raindrops into extremely cold areas of the atmosphere and form ice. The frozen precipitation falls to the ground when it becomes heavy enough to overcome the strength of the updraft. Hailstones can range from the size of a pea to the size of a grapefruit, and they can span a variety of shapes, though most are spherical. They are usually less than two inches in diameter and can fall at speeds of 120 mph.

The largest recorded hailstone in the U.S. was nearly as big as a volleyball and fell on July 23, 2010, in Vivian, South Dakota. It was eight inches in diameter and weighed almost two pounds.

On average, hail causes nearly $1 billion in damage in the U.S. each year to crops and property including automobiles, aircraft and structures. According to the NOAA's Severe Weather database, there were 6,045 major hailstorms in 2017 resulting in $1.8 billion in property and crop damage. Hail also poses a safety threat to both humans and animals. In fact, NOAA estimates that 24 people in the U.S. are injured each year with some injuries significant enough to send them to the hospital.

Wind

Naturally occurring, wind is simply moving air that is caused by differences in air pressure within the Earth's atmosphere. Air under high pressure moves toward areas of low pressure. The greater the difference in pressure, the faster the air flows. The definitions of the three wind types addressed in this section, 4.2 (W) Wind, come from the NOAA/NCEI Storm Data Preparation document:

- High Wind*:* Sustained, non-convective winds of 40 mph or greater lasting for one hour or longer, or winds (sustained or gusts) of 58 mph for any duration on a widespread or localized basis.
- Strong Wind: Non-convective winds gusting less than 58 mph, or sustained winds less

than 40 mph, resulting in a fatality, injury, or damage.

- Thunderstorm Wind: Winds, arising from convection (occurring within 30 minutes of lightning being observed or detected), with speeds of at least 58 mph, or winds of any speed (non-severe thunderstorm winds below 58 mph) producing a fatality, injury, or damage.

Downbursts, including dry or wet microbursts or macrobursts, are classified as Thunderstorm Wind events. In some cases, the downburst may travel several miles from the parent thunderstorm, or the parent thunderstorm may have dissipated. A gustnado is a small and usually weak whirlwind that forms as an eddy in thunderstorm outflows. It does not connect with any cloud-base rotation and is not a tornado. Since their origin is associated with cumuliform clouds, gustnadoes are classified as Thunderstorm Wind events.

Tornadoes

A tornado is a violent, dangerous, rotating column of air that is in contact with both the surface of the earth and a cumulonimbus cloud or, in rare cases, the base of a cumulus cloud. Often referred to as a twister or a cyclone, they can strike anywhere and with little warning. Tornadoes come in many shapes and sizes but are typically in the form of a visible condensation funnel, whose narrow end touches the earth and is often encircled by a cloud of debris and dust. Tornadoes are usually born in “supercell” thunderstorms and present certain physical signs that include a dark, greenish sky, large hail, and a powerful train-like roar.

Tornadoes have been known to lift and move objects weighing more than three tons, toss homes more than 300 feet from their foundations, and siphon millions of tons of water. However, less spectacular damage is much more common.

Tornadoes can also generate a tremendous amount of flying debris. If wind speeds are high enough, airborne debris can be hurled at buildings with enough force to penetrate windows, roofs, and walls. Most tornado-related injuries or deaths are caused by flying debris.

Violent tornadoes comprise only about two percent of all tornadoes, but they cause 70 percent of all tornado deaths and may last an hour or more. While tornado forecasters cannot provide the same kind of warning that hurricane watchers can, they can do enough to help save lives. Today the average warning time for a tornado alert is 13 minutes.

Until 2007 the Fujita Tornado Scale ranked the severity of tornadoes. The Fujita scale assigned a numerical F value, F0 through F5, based on the wind speeds and estimated damage. Since 2007 the U.S. switched over to the Enhanced Fujita Scale. The altered scale adjusted the wind speed values per F level and introduced a rubric for estimating damage. An EF0 tornado could lightly damage structures to the extent they would become unsafe to use until repaired. An EF1 or larger tornado could destroy the entire neighborhood, town, or city or damage any number of structures to the point where they would be unusable for at least a year.

Location & Extent

Severe weather is common across the U.S., including the State of Nevada. Severe weather is not spatially confined to any particular location in Nevada. Therefore, the entire State of Nevada, including Clark County, is equally at risk of severe weather, namely thunderstorms, lightning, hail, wind, and even tornadoes. Recently, the planning area has seen thunderstorm incidences that can spawn tornadoes. CrisisReady.com mentions that in Nevada, the Spring, summer, and fall temperatures create a climate ideal for storms, including cloudbursts, strong gusty winds,



Data Source: Vaisala U.S. National Lightening Detection Network, 2021 Annual Lightning Report

monsoons, thunderstorms, lightning, and dust storms, and rarely tornadoes and hail storms.

Lightning can strike where it's not raining or even before the rain reaches the ground! The NOAA National Severe Storms Laboratory (NSSL) states most lightning starts inside a thunderstorm and travels through the cloud. It can then stay within the cloud or continue to travel through the open air and eventually to the ground. There are roughly 5 to 10 times as many flashes that remain in the cloud as there are flashes that travel to the ground, but individual storms may have more or fewer flashes reaching the ground.

During a lightning event, Clark County will likely experience numerous adverse impacts, including damage to critical facilities/infrastructure like utilities, residential and commercial buildings/property, and agricultural losses. There is also a risk of fire due to lightning strikes. According to the Vaisala U.S. National Lightning Detection Network, the total lightning counts per State in the 2021 report indicates the State of Nevada averaged approximately 730,222 cloud-to-ground lightning flashes per year. Related to lighting count, which includes total lightning pulses (in-cloud and cloud-to-ground pules), Clark County ranked seven out of 15 in the overall county ratings in 2020 (2020 U.S. Lightning Report). The following table describes the Lightning Activity Intensity Levels as defined by the Vaisala U.S. National Lightning Detection Network.

Table 57: Lightning Activity Intensity Levels

Lightning Intensity Levels	
LAL Level	**Description**
LAL 1	No thunderstorms
LAL 2	Isolated thunderstorms: Light rain will occasionally reach the ground. Lightning is very infrequent, 1 to 5 cloud-to-ground strikes in a 5-minute period.
LAL 3	Widely scattered thunderstorms: Light to moderate rain will reach the ground. Lightening is infrequent, 6 to 10 cloud-to-ground strikes in a 5-minute period.
LAL 4	Scattered thunderstorms: Moderate rain is commonly produced. Lightning is frequent, 11 to 15 cloud-to ground strikes in a 5-minute period.
LAL 5	Numerous thunderstorms: Rainfall is moderate to heavy. Lightning is frequent and intense, greater than 15 cloud-to-ground strikes in a 5-minute period.

Data Source: Vaisala U.S. National Lightning Detection Network; The National Weather Service

The State of Nevada Enhanced Hazard Mitigation (2018) mentions hail can occur as part of a severe thunderstorm. Hail develops within a low-pressure front as warm air rises rapidly in the upper atmosphere and is cooled, forming ice crystals. This cycle continues until the hailstone is too heavy to be lifted by the updraft winds and falls to the earth. The higher the temperature at the earth's surface, the stronger the updraft, thereby increasing the amount of time the hailstones

are developed. As hailstones are suspended longer within the atmosphere, they become larger. Other factors impacting the size of hailstones include:

- storm scale wind profile,
- elevation of freezing level,
- and the mean temperature and relative humidity of the downdraft air.

The following image illustrates how to measure hail based on everyday objects:



Data Source: The National Weather Service

Hailstones of this size can destroy roofs, break windows, damage vehicles, kill livestock, and injure people resulting in significant financial and personal losses. The proceeding table explains the Modified NOAA/TORRO Hailstorm Intensity Scale.

Table 58: Modified NOAA/TORRO Hailstorm Intensity Scale

Modified NOAA/TORRO Hailstorm Intensity Scale				
Code	**Intensity Category**	**Diameter (inches)**	**Approximate Size**	**Typical Damage Impacts**
HO	Hard Hail	0.00 – 0.33	Pea	No Damage
H1	Potentially Damaging	0.33 – 0.60	Marble/Mothball	Slight damage to crops
H2	Potentially Damaging	0.60 – 0.80	Dime/Grape	Significant damage to crops
H3	Severe	0.80 – 1.20	Nickel to Quarter	Severe damage to crops,

Modified NOAA/TORRO Hailstorm Intensity Scale				
Code	**Intensity Category**	**Diameter (inches)**	**Approximate Size**	**Typical Damage Impacts**
				damage to glass and plastic, paint and wood scored
H4	Severe	1.20 – 1.60	Half Dollar	Widespread glass damage, vehicle bodywork damage
H5	Destructive	1.26 – 2.00	Silver Dollar to Golf Ball	Damage to tilted roofs, significant risk to personal injury
H6	Destructive	2.00 – 2.40	Egg	Aircraft bodywork dented; brick walls pitted
H7	Very Destructive	2.40 – 3.00	Tennis Ball	Severe roof damage, risk to serious injuries to persons not protected
H8	Very Destructive	3.00 – 3.50	Baseball to Orange	Severe damage to aircraft bodywork
H9	Super Hailstorms	3.50 – 4.00	Grapefruit	Extensive structural damage, risk of severe injury or fatal injuries to persons not protected
H10	Super Hailstorms	4.00+	Softball and up	Extensive structural damage, risk of severe injury or fatal injuries to persons not protected

Data Source: NOAA/TORRO

Wind events (high wind, strong wind, and thunderstorm wind) are typical in Nevada. Since the last MJHMP NOAA/NCEI update (2018), there have been over 500 recorded Wind events (high wind, strong wind, and thunderstorm wind) in the State. Therefore, the entirety of Clark County, including all assets in the planning area, can be considered at risk. This includes its entire population (presently 2,265,461), all critical facilities, buildings (commercial, residential, etc.), and infrastructure.

Wind observations or measurements are required to determine the probability of wind damage and the estimation of wind energy. To help with the planning, design, and construction of buildings for residential and commercial purposes, as well as mitigation efforts, the American Society of Civil Engineers (ASCE) calculates Average Hazard Wind Scores. The wind speeds correspond with the assigned hazard score with values ranging from one to five, as shown in the following table.

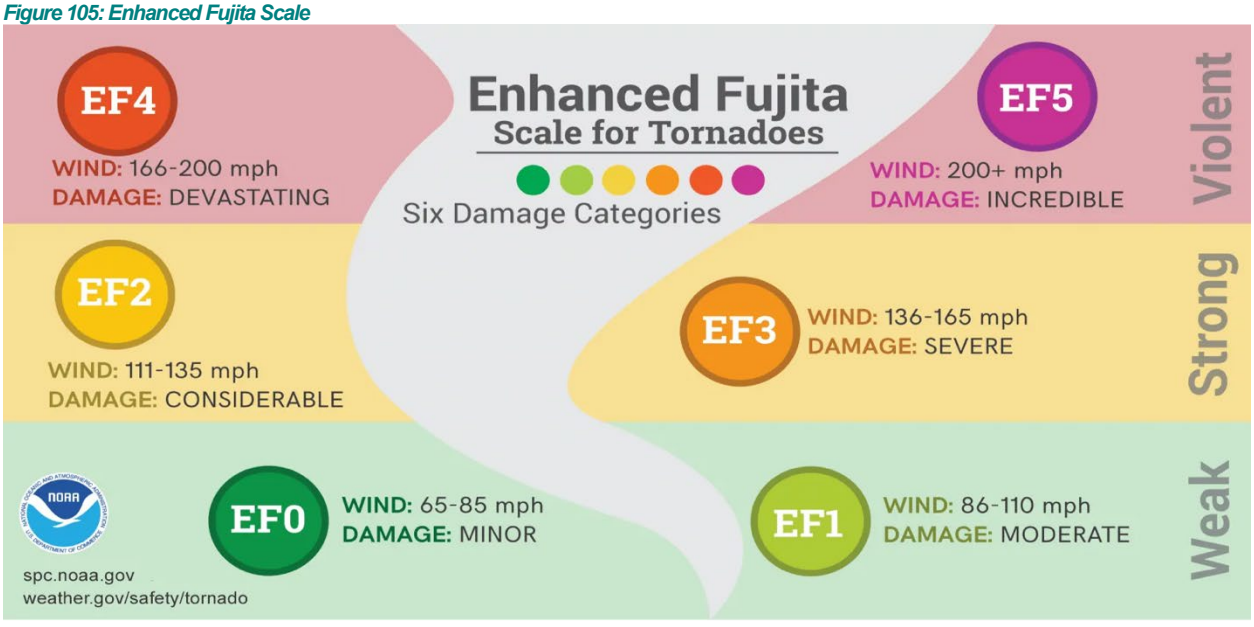
Table 59: ASCE Average Hazard Wind Score (s)

ASCE Average Hazard Wind Scores	
Wind Score (s)	**Wind Speeds (mph)**
1	<90
2	91-100
3	101-110
4	111-120
5	>120

Data Source: Vaisala U.S. National Lightning Detection Network; The National Weather Service

Spawned from powerful thunderstorms, Tornadoes are nature's most violent storms. Tornadoes can cause fatalities and devastate a neighborhood in seconds. Strong downburst (straight-line) winds may also occur due to the same thunderstorm. Hail is commonly found close to tornadoes, as the strongest thunderstorms that spawn tornadoes are formed under atmospheric conditions and are also highly likely to make hail. Every State, including Nevada, is at some risk from this hazard. They can strike anywhere in Clark County and its participating jurisdictions, placing the entire planning area at risk. Some tornadoes are clearly visible, while rain or nearby low-hanging clouds obscure others. Tornadoes develop very quickly and may dissipate just as quickly. Most tornadoes are on the ground for less than 15 minutes. Therefore, the County should expect to experience tornadoes measuring at least EF0 to EF1 on the Enhanced Fujita (EF) Scale, referenced below, but also be prepared for a rare EF3 or worse.

Figure 105: Enhanced Fujita Scale



Data Source: TexasStormChaser.com

While most severe weather events are limited in their impact, duration, and spatial extent, they remain a hazard of concern in the State of Nevada and the entire planning area. In recent years, severe weather (including thunderstorms, hail, wind, and tornadoes) has become an increased hazard of concern for the planning area. With this shift in mitigation efforts, Clark County MPSC has identified these hazards as a concern and have added them to the plan to include previous occurrences and future probability to identify future mitigation actions related to severe weather in the planning area.

Previous Occurrence, Severe Weather

Based on information obtained from NOAA/NCEI, the following incidents of severe weather (i.e., thunderstorm wind, wind, lightning, hail, and tornadoes) occurred in Clark County (including its participating jurisdiction and Clark County Unincorporated Area and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) between January 1, 2000, and January 31, 2023:

- **Thunderstorms, Clark County** – Clark County experienced 270 severe thunderstorm (wind) events between 1963 and 2023. This, on average, is about four severe thunderstorm events per year (4.5/yr.). NOAA/NCEI does not have a specific classification for thunderstorms. In order to paint a picture of historical occurrences for this event type, heavy rain, and thunderstorms (wind) events were compiled for Clark County from January 1, 2000, to January 31, 2023. According to NOAA/NCEI, there was twenty-one (21) heavy rain event that occurred in this time period for Clark County. Thunderstorm winds, however, turned up more event than heavy rain. NOAA/NCEI reports 158 thunderstorm wind events in Clark County during this particular timeframe. According to NOAA/NCEI, these events caused one (1) death and $7,061,000 in property damage.
-
- **Lightning, Clark County** – There were forty-two (42) reported lightning event in Clark County from January 1, 2000 – January 31, 2023. According to NOAA/NCEI, this event five (5) injuries and caused $3,485,000 in property damage.
- **Hail, Clark County** – Clark County reported forty-two (42) hail events from January 1, 2000 – January 31, 2023, according to NOAA/NCEI. No deaths or injuries, however, $100,022,000 in property damage were reported from these hail events.
- **Wind, Clark County** – NOAA/NCEI does not have a specific classification for wind. In order to paint a picture of historical occurrences for this event type, strong wind, and high wind events were compiled for Clark County from January 1, 2000, to January 31, 2023. According to NOAA/NCEI, there was 71 strong wind events that occurred in this time period for Clark County. High winds, however, turned up more event than strong wind. NOAA/NCEI reports 71 strong wind events in Clark County during this particular timeframe. According to NOAA/NCEI, these events caused five (5) deaths, injured (24) $7,008,000 in property damage, and $100,000 in crop damage.
- **Tornadoes, Clark County** – Clark County reported 2 tornadoes events from January 1, 2000 to January 31, 2023, according to NOAA/NCEI. No damage, injuries, or deaths were reported from these tornado events.

Most recently, the following severe weatther events affected the planning area:

- **Thunderstorms:** On July 29, 2022, clean-up efforts were underway in Clark County

after a pounding from severe thunderstorms on Thursday night. While they're cleaning up, first responders and the Department of Public Works are also preparing for another round of thunderstorms, county officials said. Friday evening, there's another chance of showers in the valley. (https://www.ktnv.com/news/clark-county-cleans-up-mess-from-severe-thunderstorms-prepares-for-another-round)

- **Tornadoes**: A rare tornado warning was issued for part of Nevada Sunday afternoon as a string of thunderstorms rolled into the area. The National Weather Service issued the warning for northeastern Clark County and southeastern Lincoln County until 5:15 p.m. The storm, which was moving northwest of Mesquite, Nevada, was showing rotations that could potentially produce tornados in the area. Videos of 'land spout' tornado(s)' also began circulating online near Littlefield, Arizona, which is about 10 miles north of Mesquite. Residents were asked to seek shelter ahead of the warning. A wind threat is also being monitored for storms moving south from Utah and Lincoln County that could produce damaging winds and heavy rain in Clark County. There is also currently a severe thunderstorm warning issued in the area until 6 p.m. (https://news3lv.com/news/local/severe-thunderstorms-cause-tornado-warning-to-be-issued-for-northeastern-clark-county)

Probability of Future Events, Severe Weather (including Thunderstorms, Hail, Wind, and Tornadoes)

Calculating future probability is one of many predictors of future occurrences. Based on the Calculated Priority Risk Index (CPRI) conducted for Clark County and its participating jurisdictions, the following probability rankings for severe weather and high winds/tornadoes for the planning area:

- **Severe Storms (Severe Weather): high probability – 3.15 (rank score of 3.0-3.9)**
- **High Winds and Tornadoes: high probability – 3.2 (rank score of 3.0-3.9)**

The following tables provides CPRI Rating on Severe Weather which includes High Wind and Tornadoes for Clark County and its participating jurisdictions.

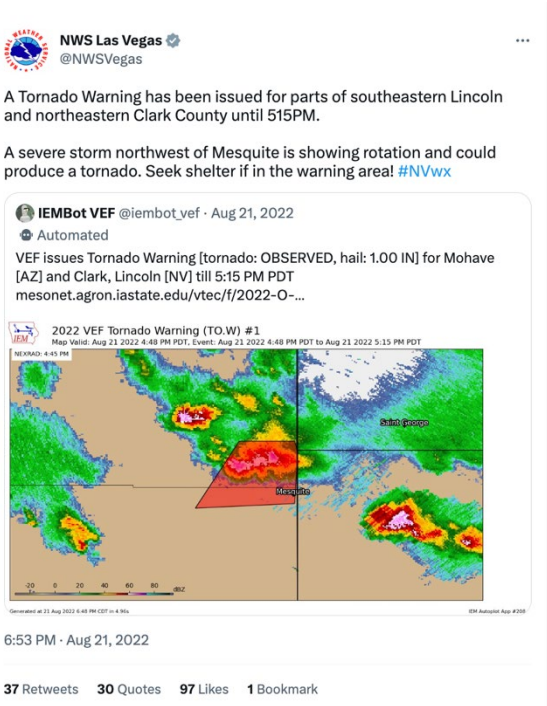


Table 60: Clark County and Participating Jurisdiction CPRI Rating for Severe Weather

Clark County and Participating Jurisdictions CPRI Rating for Severe Weather							
Hazard: Severe Weather **Index Rating (R)** **Weighted Score (WS)**		**Category and Weight** **Probability 45%**	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**	**CPRI Score**	**Risk Level**
Clark County (including Incorporated and Unincorporated Areas	R	4	2	3	3	3.15	H
	WS	1.8	0.6	0.6	0.3		
Boulder City	R	2	2	1	1	1.75	L
	WS	0.9	0.6	0.15	0.1		
Henderson	R	4	3	3	4	3.10	H
	WS	1.35	0.9	0.45	0.4		
Las Vegas	R	2	3	2	2	2.3	M
	WS	0.9	0.9	0.3	0.2		
Mesquite	R	4	2	3	3	3.15	H
	WS	1.8	0.6	0.6	0.3		
North Las Vegas	R	4	2	2	2	2.9	M
	WS	1.8	0.6	0.3	0.2		
Special District: Clark County Water Reclamation District	R	3	3	4	1	2.95	M
	WS	1.35	.9	.6	.1		
Special District: Clark County School District	R	3	3	2	2	2.55	M
	WS	1.35	0.9	0.3	0.2		
Special District: Las Vegas Valley Water District/SWNA	R	2	2	1	3	1.95	L
	WS	0.90	0.60	0.15	0.30		
Tribal Nation: Las Vegas Valley Paiute	R	3	3	3	3	3.0	H
	WS	1.35	0.9	0.45	0.3		
Tribal Nation: Moapa Band of Paiutes	R	3	2	2	2	2.45	M
	WS	1.35	0.6	0.3	0.2		

***Note**: Though participating in the planning process, at the time of this update, the CPRI data for the City of Mesquite was not received. Therefore, the CPRI rating for the City of Mesquite is the same rating as Clark County due to the city being within the planning area.*

Table 61: Clark County and Participating Jurisdiction CPRI Rating for High Winds/Tornadoes

Clark County and Participating Jurisdictions CPRI Rating for High Winds/Tornadoes							
Hazard: Severe Weather **Index Rating (R)** **Weighted Score (WS)**		**Category and Weight**				**CPRI Score**	**Risk Level**
		Probability 45%	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**		
Clark County (including Incorporated and Unincorporated Areas	***R***	4	2	4	2	3.2	**H**
	WS	1.8	0.6	0.6	0.2		
Boulder City	***R***	1	1	1	1	1.0	**L**
	WS	0.45	0.3	0.15	0.1		
Henderson	***R***	4	3	3	4	3.55	**H**
	WS	1.8	.9	.45	.4		
Las Vegas	***R***	2	2	1	1	1.75	**L**
	WS	0.9	0.6	0.15	0.1		
Mesquite	***R***	4	2	4	2	3.2	**H**
	WS	1.8	0.6	0.6	0.2		
North Las Vegas	***R***	3	2	3	2	2.60	**M**
	WS	1.35	0.6	0.45	0.2		
Special District: Clark County Water Reclamation District	***R***	2	2	4	1	2.20	**M**
	WS	.9	0.6	0.6	0.1		
Special District: Clark County School District	***R***	3	2	2	2	2.45	**M**
	WS	1.35	0.60	0.30	0.20		
Special District: Las Vegas Valley Water District/SWNA	***R***	2	2	1	3	1.95	**L**
	WS	0.90	0.60	0.15	0.30		
Tribal Nation: Las Vegas Valley Paiute	***R***	3	2	3	3	2.7	**M**
	WS	1.35	0.6	0.45	0.30		
Tribal Nation: Moapa Band of Paiutes	***R***	3	3	3	2	2.9	**M**
	WS	1.35	0.90	0.45	0.20		

***Note**: Though participating in the planning process, at the time of this update, the CPRI data for the City of Mesquite was not received. Therefore, the CPRI rating for the City of Mesquite is the same rating as Clark County due to the city being within the planning area.*

The following table provides a summary of the severe weather events recorded by NOAA/NCEI for Clark County between January 1, 2018, and January 31, 2023:

Table 62: Probability of Future Events, Severe Weather – Clark County, NV

Probability of Future Events, Severe Weather, Clark County, NV						
Event Year	Event Count					
	Heavy Rain	Hail	Lightning	Thunderstorm Wind	Wind (High Wind and Strong Wind)	Tornadoes
2018	0	0	0	19	16	0
2019	0	0	0	2	12	0
2020	0	1	0	2	11	0
2021	0	1	2	23	18	0
2022	0	1	2	12	33	0
2023	1	0	0	0	0	0
Total Recorded Events =	**1**	**3**	**4**	**62**	**89**	**0**
Total Years =	**5**	**5**	**5**	**5**	**5**	**5**
Yearly Probability =	**20%**	**60%**	**80%**	**1,240%**	**1,780%**	**0%**

Data Source: NOAA/NCEI Storm Events Database

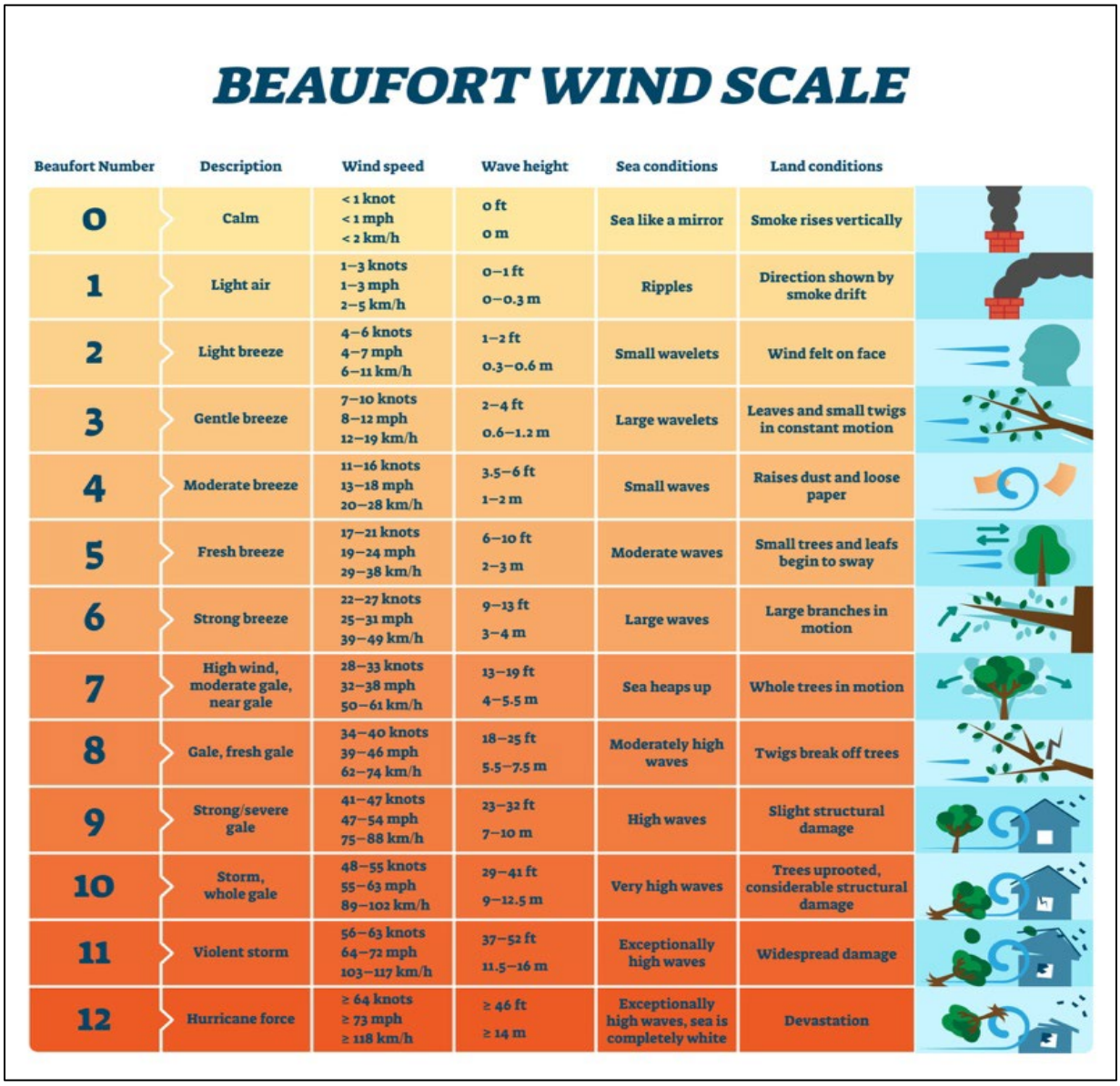
The likelihood of severe weather occurring in Clark County is **likely** for a heavy rain, **unlikely** for a tornadoes, and **highly likely**, respectively for hail, wind, lightning, and thunderstorm wind events. However, for a combined likelihood of a severe weather event, it is highly likely for the entire planning area.

Vulnerability and Impact

Thunderstorm (Thunderstorm Winds and Heavy Rain) Impacts

Clark County (including its participating jurisdiction and Clark County Unincorporated Area and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) have recorded 62 thunderstorm wind and one (1) heavy rain events since 2018; and of these events, the range of magnitude was between 45 and 65 MPH with an average of 50 MPH. Based on the Beaufort Scale (as indicated) Cobb County and its participating

jurisdictions can expect 5.8 thunderstorm wind events per year ranging from Beaufort Scale 8 – “Fresh Gale” to Beaufort Scale 10 – “Whole Gale.”



BEAUFORT WIND SCALE

Beaufort Number	Description	Wind speed	Wave height	Sea conditions	Land conditions
0	Calm	< 1 knot < 1 mph < 2 km/h	0 ft 0 m	Sea like a mirror	Smoke rises vertically
1	Light air	1–3 knots 1–3 mph 2–5 km/h	0–1 ft 0–0.3 m	Ripples	Direction shown by smoke drift
2	Light breeze	4–6 knots 4–7 mph 6–11 km/h	1–2 ft 0.3–0.6 m	Small wavelets	Wind felt on face
3	Gentle breeze	7–10 knots 8–12 mph 12–19 km/h	2–4 ft 0.6–1.2 m	Large wavelets	Leaves and small twigs in constant motion
4	Moderate breeze	11–16 knots 13–18 mph 20–28 km/h	3.5–6 ft 1–2 m	Small waves	Raises dust and loose paper
5	Fresh breeze	17–21 knots 19–24 mph 29–38 km/h	6–10 ft 2–3 m	Moderate waves	Small trees and leafs begin to sway
6	Strong breeze	22–27 knots 25–31 mph 39–49 km/h	9–13 ft 3–4 m	Large waves	Large branches in motion
7	High wind, moderate gale, near gale	28–33 knots 32–38 mph 50–61 km/h	13–19 ft 4–5.5 m	Sea heaps up	Whole trees in motion
8	Gale, fresh gale	34–40 knots 39–46 mph 62–74 km/h	18–25 ft 5.5–7.5 m	Moderately high waves	Twigs break off trees
9	Strong/severe gale	41–47 knots 47–54 mph 75–88 km/h	23–32 ft 7–10 m	High waves	Slight structural damage
10	Storm, whole gale	48–55 knots 55–63 mph 89–102 km/h	29–41 ft 9–12.5 m	Very high waves	Trees uprooted, considerable structural damage
11	Violent storm	56–63 knots 64–72 mph 103–117 km/h	37–52 ft 11.5–16 m	Exceptionally high waves	Widespread damage
12	Hurricane force	≥ 64 knots ≥ 73 mph ≥ 118 km/h	≥ 46 ft ≥ 14 m	Exceptionally high waves, sea is completely white	Devastation

Data Source: Science Sparks

Lightening Impacts

Since 2018, Clark County has recorded only four (4) lightning-related events/impacts. The planning area is still vulnerable to lightning strikes, but without any historical precedent, there is no reasonable way to predict a range or magnitude.

Hail Impacts

Since 2018, Clark County has recorded three (3) hail events, of which the range of magnitude was between 0.75 and 1.00 inches in diameter with an average of 1 inch. Based on the hailstorm average and future probability see in the table above, Clark County and its participating jurisdiction(s) can expect 0.60 ‘potentially damaging’ hail events each year, or with 40 percent

probability.

Wind (High Wind and Strong Wind) Impacts

Wind (High and Strong Wind) is a regular aspect of normal weather conditions within the County and its participating jurisdictions. However, the hazard being explained is an abnormal gust or length of time of the wind. The wind is also not more susceptible to one part of Clark County than any other, therefore, it can (and does) affect the entire planning area. If the wind is strong enough, it can adversely affect any building, system, or person in any location within the planning area.

Tornado Impacts

The NWS recorded two (2) tornadoes in the County since 2000. The range of magnitude was between EF0 and EF1, with an approximate average of an EF1. Based on the Enhanced Fujita Scale and the future probability in the table above, Clark County (including its participating jurisdiction and Clark County Unincorporated Area and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) can expect no tornadoes per year.

Vulnerability of Facilities

Structural vulnerability to severe weather, specifically thunderstorm wind, lightning, hail, and tornadoes, is the same throughout the entire planning area. Wind events create flying debris that can significantly damage infrastructure and buildings. Strong enough wind can cause structural damage to older, less well-constructed buildings, even toppling or leveling them. FEMA Code 361 "Tornado Safe Room" will provide more-than-sufficient protection and resistance to any form of severe storm as they are designed and constructed above the standard metrics of a severe thunderstorm. Lightning can strike anything, and a single bolt has the potential to damage electrical infrastructure or ignite a fire. Hail can be costly by damaging rooftops, outdoor equipment, and windows.

Vulnerability of Population

Clark County's vulnerability to severe weather is the same throughout the planning area. In the absence of proper shelter, hail, in particular, can cause serious injury to unprotected persons. As long as Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) citizens stay indoors and away from windows, they will be protected against hail injury or death. Similarly, they can avoid being struck by lightning by staying indoors. Although lightning may strike a structure sheltering people, it is improbable that the strike itself will directly injure or kill a sheltered person. If a structure can maintain its integrity during high-speed winds, it will protect people from wind injury or death. However, old or poorly constructed facilities are not a good shelter as flying debris can easily break windows or cause structural damage. Either of these instances have the potential for severe injuries or kill anyone taking shelter in an older, less well-constructed building.

The FEMA National Risk Index map provides data on social vulnerability and community resilience related to hazards. Both of these factors impact the vulnerability of a population for a hazard event like drought. FEMA National Risk Index defines Social Vulnerability as the susceptibility of social groups to the adverse impacts of natural hazards, including death, injury, loss, or disruption of livelihood. FEMA defines Community Resilience as the ability for a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruption. The scoring of these FEMA National Risk Index

categories are for all hazards, including drought are as follows:

- Community Resilience: the higher community resilience score results in a lower risk index score. The Community Resilience score for Clark County is 49.9, meaning communities within the County have a Very Low ability to prepare for anticipated natural hazards, adapt to conditions, and withstand and recover rapidly from disruptions compared to the rest of the U.S.
- Social Vulnerability: a higher social vulnerability score results in a higher Risk Index score. Social groups in Clark County, NV, have a Relatively High susceptibility to the adverse impacts of natural hazards compared to the rest of the U.S. The Social Vulnerability score for Clark County is 48.59

The following maps provide a snapshot of community resilience and social vulnerability scoring related to all hazards including drought for Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).

Figure 106: FEMA National Risk Index Maps, Social Vulnerability - Clark County, NV

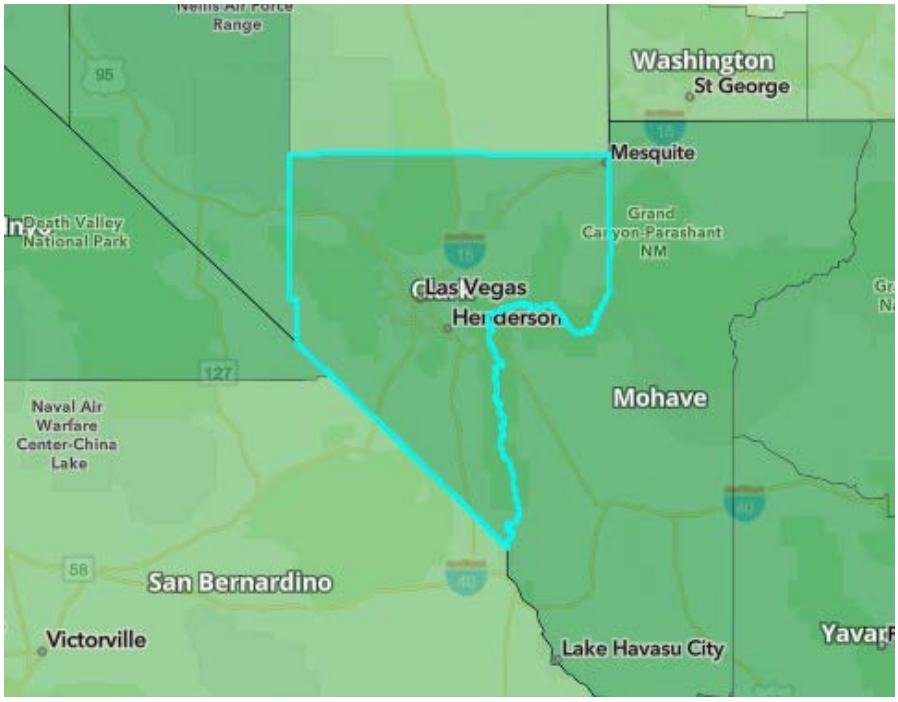
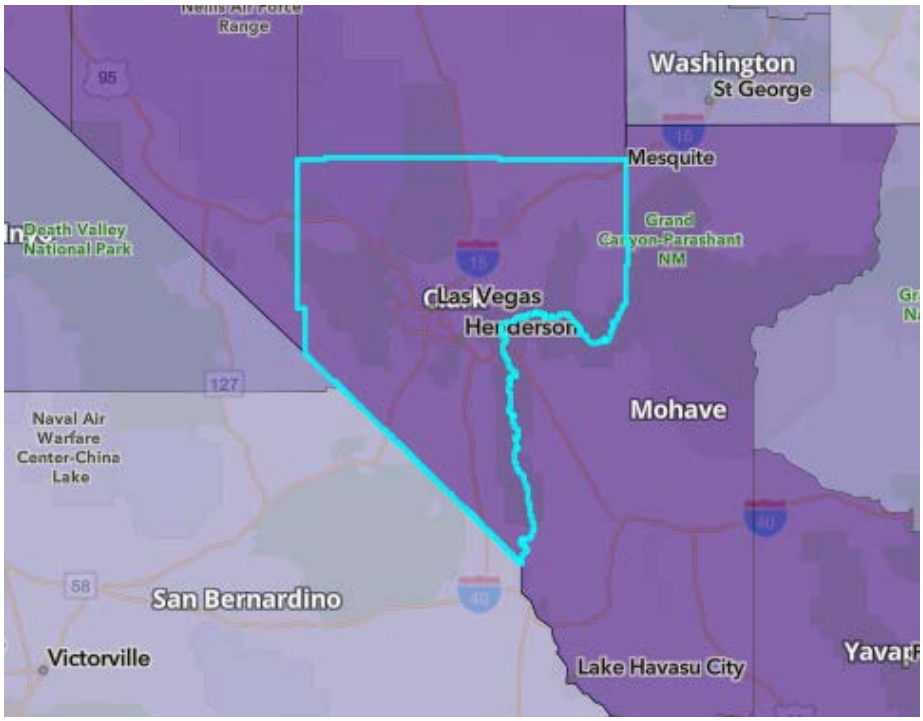


Figure 107: FEMA National Risk Index Maps, Community Resilience Map – Clark County, NV



Data Source: The FEMA National Risk Index

Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation). have a total population of 2,265,461 in 840,343 housing units, all of which are highly vulnerable and at risk to severe weather events. Historically, there have been five (5) deaths and no injuries recorded from severe weather (thunderstorms, lightening, hail, wind, and thunderstorm wind) within the planning area.

Impact of Climate Change

Climate change is expected to result in stronger, more powerful storms, particularly thunderstorms which may produce high winds and/or tornados. Climate change-induced warmer weather will likely result in more days with high winds, stronger wind events, and potentially an increased number of tornados on an annual basis. Also, there presently is not enough data or research to quantify the magnitude of change that climate change may have related to tornado frequency and intensity. NASA's Earth Observatory has studied the interaction between climate change and tornadoes. Based on these studies, meteorologists are unsure why some thunderstorms generate tornadoes and others do not, beyond knowing that they require a specific type of wind shear. Tornadoes spawn from approximately one percent of thunderstorms, usually supercell thunderstorms in a wind-shear environment that promotes rotation. Some studies show a potential decrease in wind shear in mid-latitude areas. Because of uncertainty about the influence of climate change on tornadoes, future updates to the mitigation plan should include the latest research on how the tornado hazard frequency and severity could change. An article published by National Geographic also agrees that there is still much to learn about how climate change might affect tornadoes. As one of nature's most violent storms, climate change's effect on tornadoes remains unclear (National Geography 2019). The level of significance of this hazard

should be revisited over time.

Critical Facilities & Infrastructure

All critical facilities and infrastructure within Clark County are equally at risk since severe weather indiscriminately affects the entire planning area. Facilities on higher ground may also be more exposed to wind damage or damage from falling trees. The most common problem associated with extreme weather is the loss of utilities. Downed power lines can cause blackouts, leaving large areas isolated and phone, water, and sewer systems inoperable. Roads may become impassable due to flooding and downed trees. High winds can knock down critical infrastructure, such as powerlines, preventing information communication systems from functioning sufficiently. Severe winds can also cause structural and non-structural damage to critical facilities. Heavy rains, especially when accompanied by a windstorm, can cause water damage to critical facilities and compromise functionality.

A complete list of critical facilities and infrastructure can be found in Appendix D.

Land Use & Development

Considering the entire planning area is at risk of severe weather, increased development and population growth can reasonably translate to increased damage due to the hazard. All future development will be affected by severe storms.

The ability to withstand impacts lies in sound land use practices and consistent enforcement of codes and regulations for new construction. Participating jurisdictions have adopted the Nevada Building Code, which corresponds to the International Building Code, to meet Nevada mandates. This code is equipped to deal with the impacts of severe weather events, including high wind, heavy rain, high wind, and tornadoes. Land use policies identified in general plans within the planning area also address many secondary impacts of severe weather, such as flooding. With these tools, the participating jurisdictions are well-equipped to deal with future growth and the associated effects of severe weather.

Unique & Varied Risk

Severe weather, primarily thunderstorm wind, wind (high wind and strong wind), lightning, and hail, can affect a portion or all of the planning area. Unfortunately, there is no accurate method of predicting the location or extent of a severe weather event's impact—namely, if it will affect one participating jurisdiction or any other participating jurisdiction(s).

Additionally, it is not possible to predict varying probability between the participating jurisdiction(s) except for varying risk, as it is proportionate to a participating jurisdiction(s)' demographics. Logically, a participating jurisdiction with a more significant population, like the Las Vegas Metropolitan area, is at higher risk than one with a smaller population in the County's unincorporated areas.

Although this plan addresses vulnerability to severe weather, it is nearly impossible to calculate all risk components at a jurisdictional level. To predict unique and varied risks for Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) one needs a comprehensive catalog of wind resilience ratings, hail impact ratings, and grounding capacity for all infrastructure. Such information is not available at this time.

Repetitive Loss Structure

Not applicable to the identified hazard.

HAZUS® Models

Not applicable to the identified hazard.

(FL) Fire, Wildland Urban Interface (Wildfire)

Hazard Description



Smoke and Ozone Advisory Issued for Clark County, NV
Photo Source: 8NewsNow.com

The National Weather Service (NWS) defines a wildfire as "any free-burning, uncontainable wildland fire not prescribed for the area which consumes the natural fuels and spreads in response to its environment." The previous Clark County HMP (2012) mentions that wildfires can be human-caused through acts such as arson, campfires, or the improper burning of debris, or can be caused by natural events such as lightning. Wildfires can be categorized into four types:

Wildland fires occur mainly in areas under federal control, such as national forests and parks, and are fueled primarily by natural vegetation. Generally, development in these areas is nonexistent, except for roads, railroads, power lines, and similar features.

Interface or intermix fires occur in areas where both vegetation and structures provide fuel. These are also referred to as Wildland/Urban Interface (WUI) fires.

Firestorms occur during extreme weather (e.g., high temperatures, low humidity, and high winds) with such intensity that fire suppression is virtually impossible. These events typically burn until the conditions change or the fuel is exhausted.

Prescribed fires and prescribed natural fires are intentionally set or natural fires that are allowed to burn for beneficial purposes.

Regardless of how they begin, wildfires can consume large areas, including infrastructure, property, and resources. As indicated in the previous Clark County HMPs (2012 and 2018), the following three factors contribute significantly to wildfire behavior and can be used to identify wildfire hazard areas.

- **Topography:** As slope increases, the rate of wildfire spread increases. South-facing slopes are also subject to more solar radiation, making them drier and thereby intensifying wildfire behavior. However, ridgetops may mark the end of wildfire spread because fire spreads more slowly or may even be unable to spread downhill.
- **Fuel:** Wildfires spread based on the type and quantity of available flammable material, referred to as the fuel load. The basic characteristics of fuel include size and shape, arrangement and moisture content.
- **Weather:** The most variable factor affecting wildfire behavior is weather. Important weather variables are temperature, humidity, wind, and lightning. Weather events ranging in scale from localized thunderstorms to large fronts can have major effects on wildfire occurrence and behavior. Extreme weather, such as high temperatures and low humidity, can lead to extreme wildfire activity. By contrast, cooling and higher humidity often signals reduced wildfire occurrence and easier containment. Wind has probably the largest impact on a wildfire's behavior and is also the most unpredictable. Winds supply the fire with additional oxygen, further dry potential fuel, and push fire

across the land at a quicker pace. The threat of wildfire increases in areas prone to intermittent drought, or that are generally arid and dry. Also, since the mid-1980s, earlier snowmelt and associated warming due to global climate change has been associated with longer and more severe wildfire seasons in the western United States.

With more people making their homes in wooded settings near forests and remote mountain sites, the threat of wildfire is steadily rising. This is because the demographic change is expanding the size of the area where structures and other human development meet or intermingle with undeveloped wildland, otherwise known as the wildland-urban interface (WUI). The WUI creates an environment where fire can move readily between structure and vegetation fuels, often resulting in massive fires or conflagrations that may lead to widespread evacuations.

A wildfire risk assessment can determine the level of risk of a particular location. The "boundary" WUI is characterized by areas of development where homes, especially new subdivisions, press against public and private wildlands, such as private or commercial forest land, or public forests or parks. There is a clearly defined boundary between the suburban fringe and the rural countryside. WUI areas deemed as "intermix" are places where improved property and/or structures are scattered and interspersed in wildland areas. These may be isolated rural homes or an area that is just starting to transition from rural to urban land use. "Island" WUI areas, also called occluded interface, are plots of undeveloped wildland, such as remnant forests and parks, within predominately urban or suburban locales.

The previous Clark County HMP (2018) mentions that indirect wildfire effects 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 exacerbate river and stream siltation; thereby increasing flood potential, harming aquatic life, and degrading water quality. Vegetation stripped lands are more susceptible to increased debris flow hazards.

Aside from damaging or destroying property, or worse, claiming lives, wildfires put off dense smoke that can affect air quality and pose a serious health risk. This is especially true for the elderly or those, young and old, who have breathing conditions such as asthma or Chronic Obstructive Pulmonary Disorder (COPD). Experts agree that smoke inhalation is the number one cause of death related to fires. Wildfires are also notorious for spawning secondary hazards long after the original fire is extinguished. Such hazards include flash flooding, debris flow and landslides. All result from fire consuming the vegetation that provides precipitation interception and infiltration as well as slope stability.

Fire services can mitigate wildfires by regularly engaging in preventative burns and proactive land use measures. Homeowners and business owners can also do their part by taking precautionary efforts, such as following local fire-related ordinances; removing leaves, limbs and other debris from property; and creating a defensible space around structures. Among those emphasizing the need for such preemptive actions is Firewise USA™, a national recognition program that provides instructional resources to inform people how to adapt to living with the risk of wildfire.

Location and Extent

The Nevada Enhanced Hazard Mitigation Plan (2018) states that "Nevada is susceptible to weather that may range from prolonged periods of drought to periods that are marked by above average precipitation." These weather fluctuations result in millions of acres of dead or dying vegetation, which rapidly dry out under normal summer weather conditions. The dry, hot conditions and windy weather patterns characteristic of Nevada's summers combine with vegetation conditions that fuel fast-moving, high-intensity wildland fires. Nevada also experiences

off-season wildfires in drier fall and winter conditions when adequate herbaceous fuels load exist and are not covered by snow. These can easily be as devastating to communities in the WUI as wildfires occurring in the traditional wildfire season.

As mentioned above, topography and weather are two factors that can contribute to the planning area. Clark County comprises 7,891.7 square miles of land area, which equals over 5.2 million acres (Clark County Federal Lands) and is the 6th County in Nevada by total area. The Nevada Community Wildfire Risk/Hazard Assessment Project for Clark County, 2005, provides the following information related to topography, fire ecology, and vegetation within Clark County:

- **Topography:** Topography can have a powerful influence on wildfire behavior. Slope, gulches, and hollows can greatly increase the rate of spread and hamper access. These slopes lend themselves to rapid spreading fires due to their angle. The greater the slope, the faster the flames move and the longer the flames. Wildfires can reach into overhanging canopies, allowing spread not only through the lower areas of the forest, but the ability to jump to other trees. Elevations within the county range from 450 feet above mean sea level at the Colorado River to 11,918 feet at Charleston Peak in the Spring Mountains. The largest mountain ranges in Clark County include the Spring Mountains, the Sheep Range, the McCullough Range, and the Virgin Mountains. The largest valleys are Las Vegas Valley, Sandy Valley, Moapa Valley and the Virgin Valley. The climate is generally characterized by low precipitation and low humidity.
- **Fire Ecology/Vegetation:** Frequent, low intensity wildfires characterize the natural fire regime in ponderosa pine forests. Under a native fire regime, frequent low-intensity surface fires reduce fuel loading from grasses and shrubs, suppress regeneration of shade-tolerant white fir seedlings, and leave the adult pine trees unaffected, protected by thick, fire-resistant bark. With a natural occurrence of wildfire, ponderosa pine forests often have an open, “park-like” appearance with an understory of grass or low shrubs. Under these conditions, heavy fuel loading can occur in discrete areas, but their discontinuous nature reduces the likelihood that a fire will burn with enough intensity to affect the mature trees. over the majority of the county is Mojave Desert scrub, which is typically too sparse to sustain large wildfires. When wildfires do occur in these areas, they tend to occur in dense stands of fuels such as palm forests, or along ephemeral and perennial drainages and irrigation ditches. Large wildfires are typically limited to the Spring Mountain Range in northwest Clark County, in the pinyon-juniper fuel type, where large fires have been known to occur every few years. The long interval for desert shrub and pinyon pine reestablishment following fire is conducive for invasion of aggressive, pioneering plants such as cheatgrass and red brome. Since the 1970’s the fire frequency in the Mojave Desert has increased dramatically and includes the occurrence of some large fires. This increase in fire frequency is often attributed to the expansion of red brome and cheatgrass. Both species can create continuous ground fuel conditions that can facilitate ignitions and the spread of fire from shrub to shrub, especially in wet years when annual plants respond with increased vegetation growth.

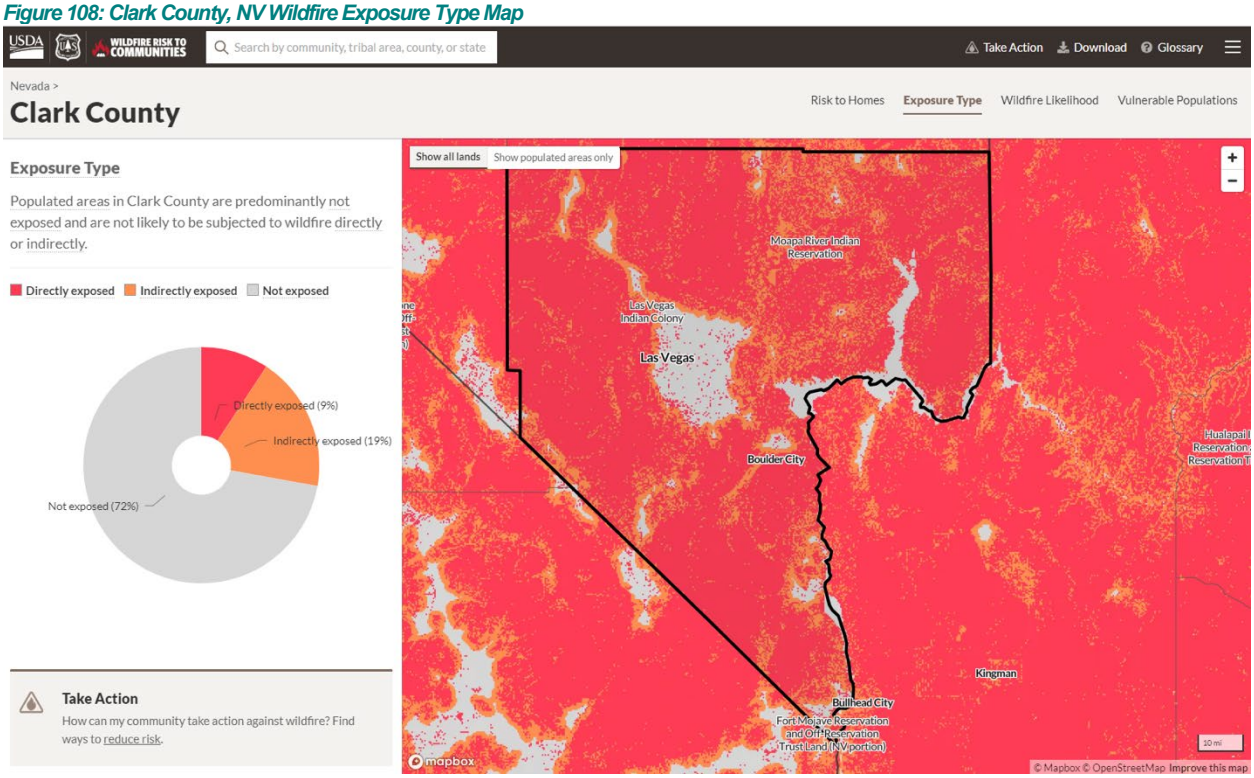
As mentioned in the previous Clark County HMP (2018), mentions that wildfire frequency and severity sometimes result from other hazard impacts, such as lightning, drought, and infestations (such as the damage caused by spruce-bark beetle infestations). If not promptly controlled, wildfires may grow into an emergency or disaster. Even small fires can threaten lives and resources and destroy improved properties. In addition to affecting people, wildfires may severely affect livestock and pets. Such events may require emergency water/food, evacuation, and

shelter.

Wildland fires are also a cascading effect of drought and warmer temperatures. Wildfire risks will likely increase in the future, perhaps dramatically. Extreme variability of precipitation across the southwest, combined with the trend of increasing temperatures, has led to extremely dry conditions within the forest and grasslands of the County, even in the absence of a prolonged drought.

The following map provides the Wildfire exposure for Clark County and its participating jurisdictions (which includes Clark County Unincorporated area, and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation):

Figure 108: Clark County, NV Wildfire Exposure Type Map



Data Source: USDA, USFS Wildfire Risk to Communities

The USFS- WFAS Wildland Fire Assessment System mentions the Fire Danger Rating level takes into account current and antecedent weather, fuel types, and both live and dead fuel moisture (Deeming and others 1977, Bradshaw and others 1984). The Potential fire conditions are described by the warnings issued by the NWS, as shown in Table 63.

Table 63: NWS Wildland Fire Warnings

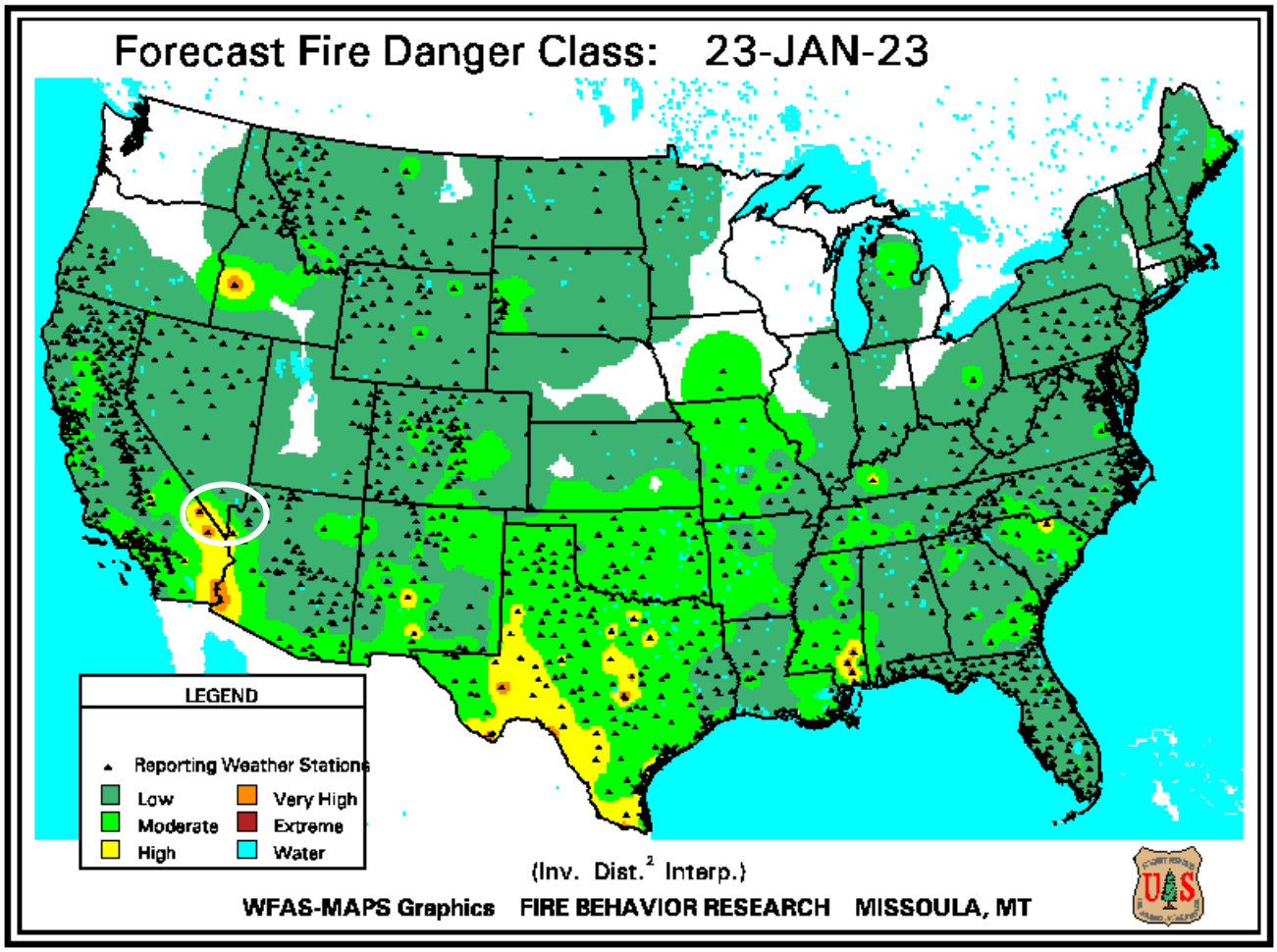
Warning Type	Warning Criteria	Zones Affected
Red Flag Warning	Combination of weather and fuels conditions for any three hours or more in a 12-hour period. Criteria may include: • Frequent gusts of 25 mph or greater; • Relative humidity of 15% or less; • Dry thunderstorms with 15% coverage or more, constituting an LAL 6.	A warning may be issued for all or portions of a fire weather zone or region. Zones impacted by the event will be listed within the Red Flag Warning product.

	Additional criteria include: • Haines Index of 5 or 6, indicating a moderate or high potential for large, plume-dominated fire growth; • Wind shifts associated with frontal passages; • First significant lightning event (wet or dry) after an extended hot and dry period; • Poor relative humidity recovery overnight (40% or lower) ; • Any combination of weather and fuel moisture conditions which, to the judgement of the forecaster, would cause extensive wildland fire occurrences.	
Fire Weather Watch	Alerts land management agencies to the high potential for development of the above Red Flag criteria in the next 12-72 hours.	A watch may be issued for all or portions of a fire weather zone or region. Zones impacted by the event will be listed within the Red Flag Warning

Data Source: The National Weather Service.

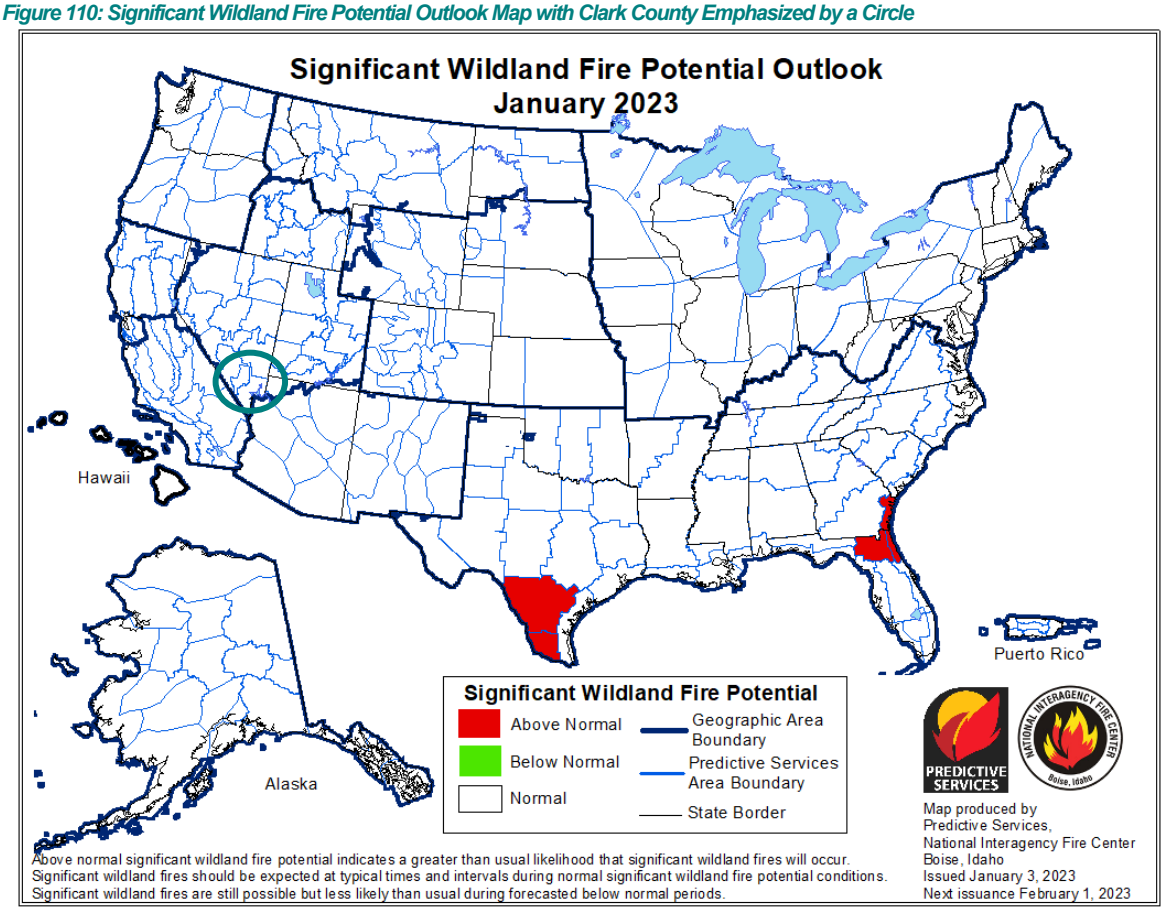
The NWS produces fire danger maps that depict current fire weather across the U.S. The U.S. Forest Service Wildland Fire Assessment (USFA-WFAS) also provides daily potential wildfire conditions throughout the Country. The corresponding maps will show the current potential wildfire potential for Clark County currently within Low/Normal range:

Figure 109: Fire Danger Index Map of the United States with Clark County Emphasized by a Circle



Data Source: USFS-WFAS

Figure 110: Significant Wildland Fire Potential Outlook Map with Clark County Emphasized by a Circle



Data Source: [The National Weather Service]

The National Interagency Coordination Center (NICC), the focal point for coordinating the mobilization of resources for wildland fire and other incidents throughout the United States, reported that 123,427 acres burned in Nevada in 2021. The Nevada Community Wildfire Risk/Hazard Assessment Project for Clark County, 2005, has been considered the State of Nevada's Community Wildfire Protection Plan. The previous Clark County HMP (2012) mentions that Community specific information regarding wildfires can be found in the Nevada Community Wildfire Risk/Hazard Assessment Project reports. In 2003 the Healthy Forest Restoration Act was signed into law. The act creates provisions for expanding the activities outlined in the National Fire Plan. During this year the Nevada Fire Safe Council received National Fire Plan funding through the Department of Interior Bureau of Land Management to conduct a Community Risk/Hazard Assessment in at-risk communities across Nevada.

During 2004, field teams comprised of fire behavior specialists, foresters, rangeland fuels specialists, and field technicians visited communities to assess both the risk of ignition and the potential fire behavior hazard. With the use of procedures accepted by Nevada's wildland fire agencies, these specialists focused their analysis on the wildland urban interface areas where homes and wildlands meet. The reports generated by the Nevada Community Wildfire Risk/Hazard Assessment Project for Clark County may be viewed here: http://www.rcinv.com/reports/clark/. The assessment teams observed and recorded the factors that significantly influence the risk of wildfire ignition along the wildland-urban interface, and inventoried features that can influence hazardous conditions in the event of a wildfire. Five primary factors that affect potential fire hazard were assessed to arrive at the community hazard assessment score:

- Community design
- Construction materials
- Defensible space
- Availability of fire suppression resources
- Physical conditions such as the vegetative fuel load and topography

At the time of this plan update, Community Wildfire Protection Plans (CWPP) for the State of Nevada Division of Forestry list all the County & Community Wildfire Risk/Hazard Assessments documents from 2005 and 2008. The previous Clark County MJHP Updates (2012 and 2018) both reference information from the 2005 Community Wildfire/Risk Hazard Assessment Project, which is an indeterminate period. For this plan update, wildfire data will reference the 2005 Wildfire Risk/Hazard Assessment for the County.

The Nevada Community Wildfire Risk/Hazard Assessment Project for Clark County, 2005, indicates the communities within the county and along with their risk – fuel risk and ignition risk to wildfires in the planning area:

Table 1-1. Community Risk and Hazard Assessment Results

Community	Interface Condition	Interface Fuel Hazard Condition	Ignition Risk	Community Hazard Rating
High and Extreme Hazard Communities				
Cold Creek	Intermix	High to Extreme	Moderate	High
Kyle Canyon	Rural	Extreme	High	Extreme
Lee Canyon	Intermix	Extreme	High	Extreme
Mt. Springs	Intermix	High to Extreme	High	Extreme
Nelson	Intermix	Low to Moderate	Moderate	High
Torino Ranch	Classic	Low to Extreme	High	High
Trout Canyon	Intermix	Extreme	High	Extreme
Moderate Hazard Communities				
Cactus Springs	Classic	Low	Low	Moderate
Goodsprings	Classic	Moderate	Moderate	Moderate
Moapa	Classic	Low to High	Low	Moderate
Sandy Valley	Intermix	Low	Low	Moderate
Searchlight	Intermix	Low	Low	Moderate
Low Hazard Communities				
Arden	Occluded	Low	Low	Low
Blue Diamond	Intermix	Low	Low	Low
Boulder City	Classic	Low	Low	Low
Bunkerville	Classic	Low to High	Low	Low
CalNevAri	Classic	Low to Moderate	Low	Low
Cottonwood Cove	Classic	Low	Low	Low
Glendale	Classic	Low to High	Low	Low
Henderson	Classic	Low	Low	Low
Indian Springs	Classic	Low	Low	Low
Las Vegas	Classic	Low	Low	Low
Laughlin	Classic	Low	Low	Low
Logandale	Classic	Low to High	Low	Low
Mesquite	Classic	Low to High	Low	Low
North Las Vegas	Classic	Low	Low	Low
Overton	Classic	Low to High	Low	Low
Palm Gardens Estates	Classic	Low	Low	Low
Primm	Classic	Low	Low	Low
Sloan	Classic	Low	Low	Low

Data Source: Nevada Community Wildfire Risk/Hazard Assessment Project for Clark County, 2005)

The Nevada Community Wildfire Risk/Hazard Assessment Project and the previous Clark County HMP (2018) indicated the extreme hazard communities in Clark County are all located at higher elevations within or adjacent to the Spring Mountains. The communities with the most hazardous conditions include Kyle Canyon, Lee Canyon, Mt. Springs, and Trout Canyon. High wildfire hazard communities include Cold Creek Nelson, and Torino Ranch. The Clark County Climate Vulnerability Assessment, September 2022, mentions that there are five communities in the planning area at a moderate wildfire risk rating. Those communities are as follows: Cactus Springs, Goodsprings, Moapa, Sandy Valley, and Searchlight. The following map illustrates the stations in some of those extreme hazard communities within the planning area:

Figure 111: State of Nevada Map showing Communities with Extreme Wildfire Risk (2018)

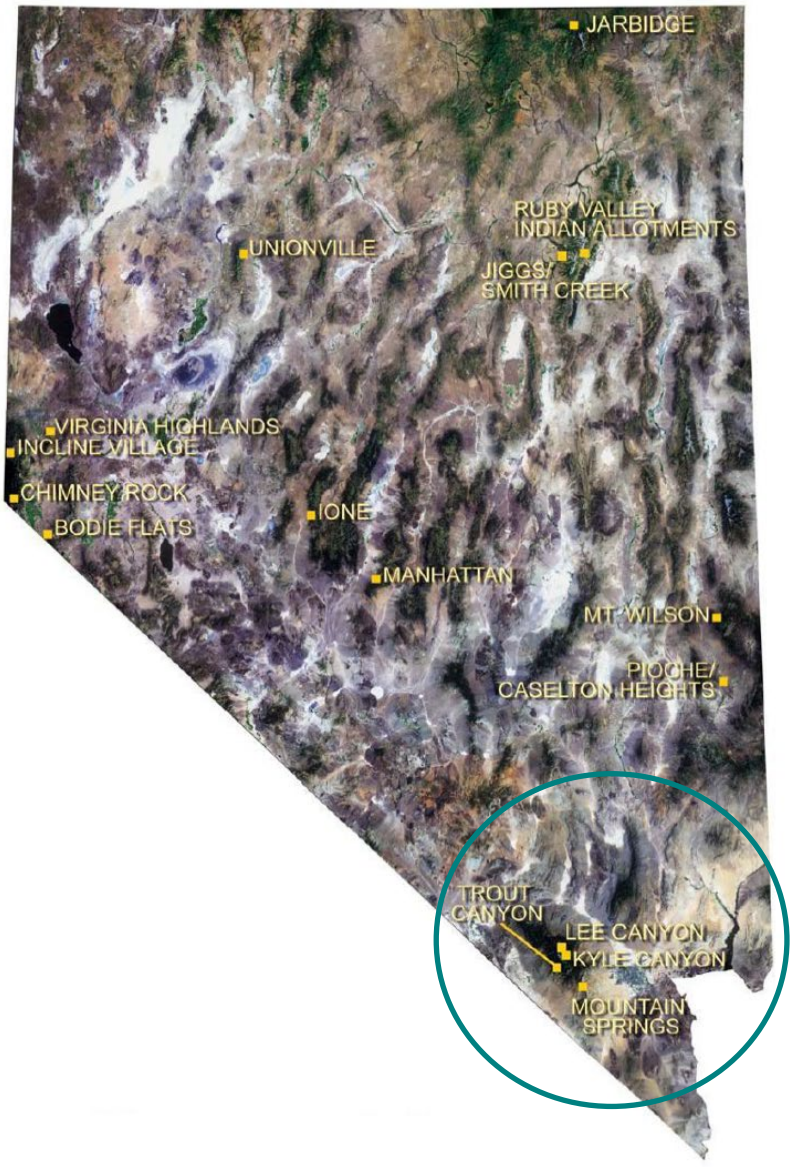
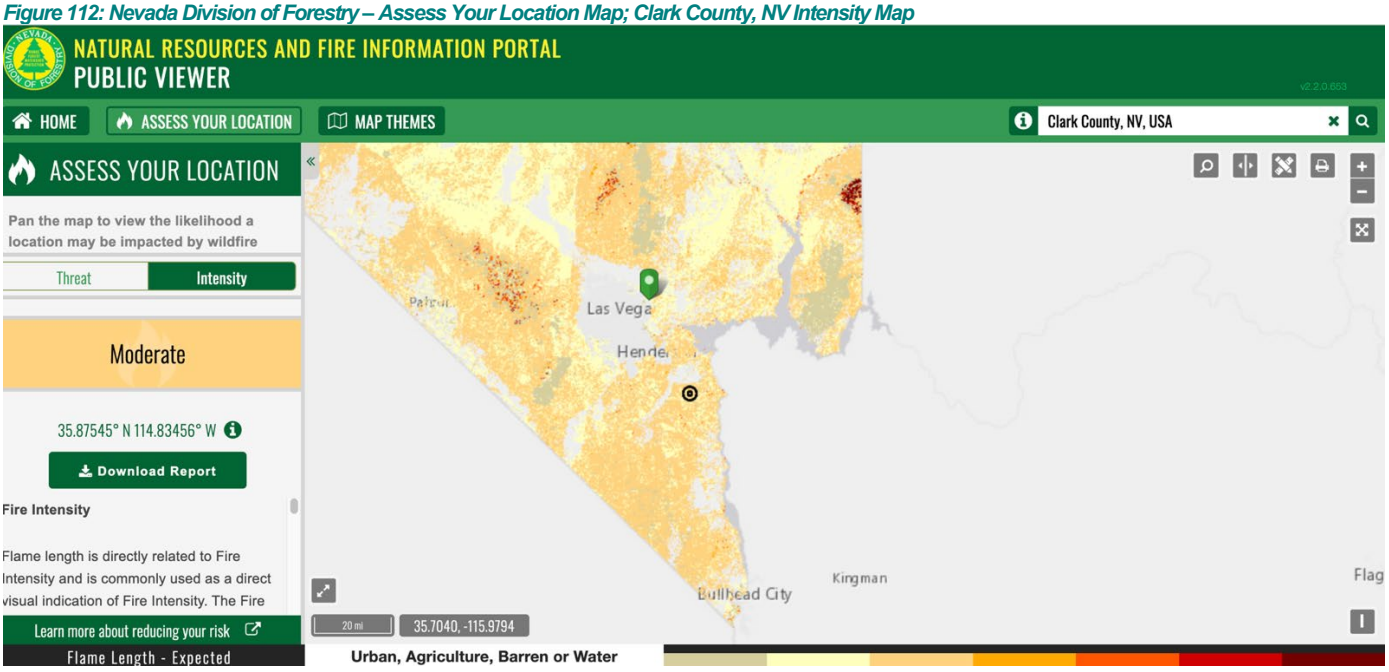


Figure 3-52. Map Showing Communities with Extreme Wildfire Risk

Data Source: [2018 Nevada Enhanced Hazard Mitigation Plan]

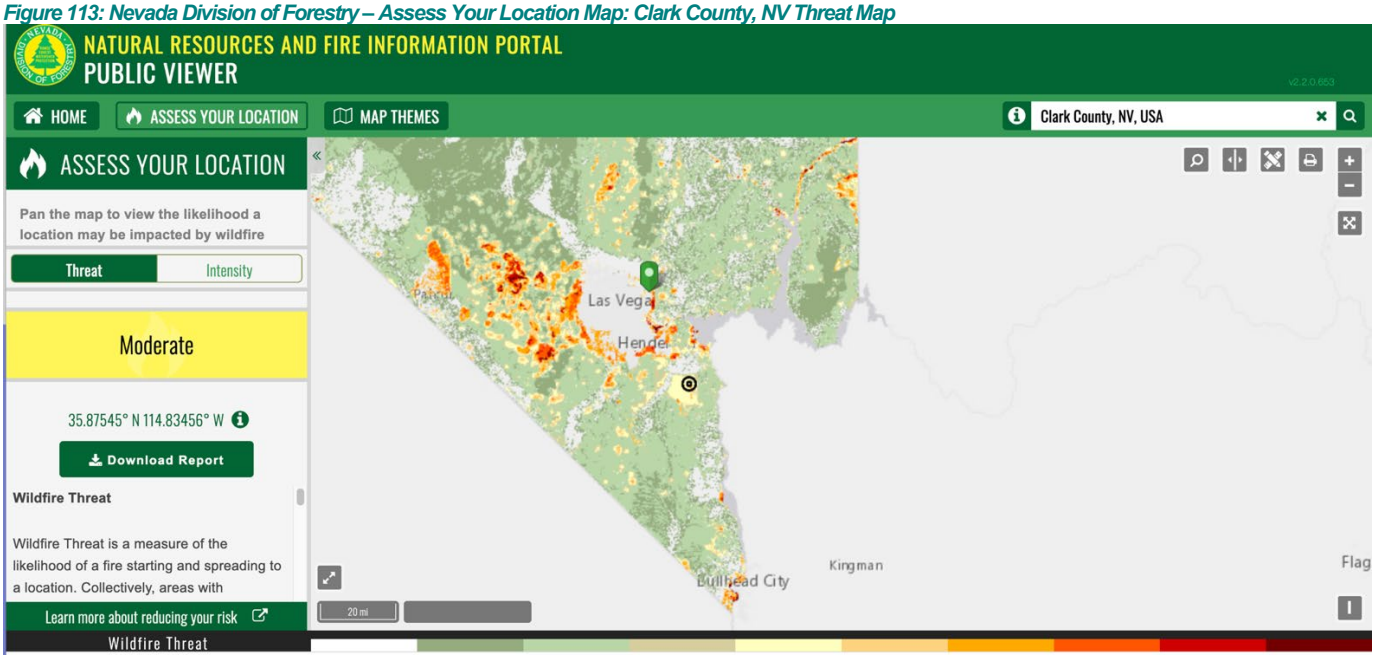
Currently, the Nevada Division of Forestry, Natural Resources and Fire Information Portal indicates Clark County and its participating jurisdiction(s) have a threat of wildfire within the planning area. The following maps illustrate the likelihood of the threat and intensity of a wildfire event within Clark County and its participating jurisdictions:

Figure 112: Nevada Division of Forestry – Assess Your Location Map; Clark County, NV Intensity Map



Data Source: Nevada Resources and Fire Information Portal Public Viewer

Figure 113: Nevada Division of Forestry – Assess Your Location Map: Clark County, NV Threat Map



Data Source: Nevada Resources and Fire Information Portal Public Viewer

Previous Occurrence

Clark County's previous MJHMP (2018) states that the recent large fires in Clark County include the following:

- **July 2013:** The Carpenter 1 Fire was a large wildfire on Mount Charleston, 25 miles northwest of Las Vegas. The fire began on July 1, 2013, near Pahrump (Nye County) before spreading eastward. The Carpenter 1 Fire was fully contained on August 18, 2013. It consumed nearly 28,000 acres and destroyed six buildings. According to the National Interagency Fire Center, the Carpenter I Fire was considered "the highest ranked priority fire in the nation" at the time of its occurrence.
- **July 2017:** The Mount Potosi Fire was a large wildfire in the Humboldt-Toiyabe National Forest's Spring Mountains National Recreation Area, about six miles southwest of Mountain Springs and 28 miles southwest of Las Vegas. It began on July 6 due to lightning. It burned roughly 420 acres before it was contained one week later.

At the time of this plan update, the Clark County Climate Vulnerability Assessment, September 2022, mentioned that the Clark County Fire Plan reports that 1,838 wildfires occurred between 1980 and 2003, or about 77 wildfires a year. However, NOAA/NCEI recorded NOAA/NCEI recorded one wildfire event from January 1, 2018, to October 31, 2022. In order to gain a better understanding of previous occurrences, and accurately calculate future probability, the following information was taken into consideration. From January 1, 2010, to October 31, 2022, NOAA/NCEI recorded 7 wildfire events in Clark County. NOAA/NCEI Wildfire Events table along with details of the events are provided below:

Table 64: Wildfire Events, Clark County, NV, NOAA/NCEI Database

Fire, Wildland Urban Interface (Wildfire) Events, Clark County, NV: 2010-2022					
Location	***Date***	***Event Type***	***Injuries/ Deaths***	***Property Damage***	***Crop Damage***
Las Vegas Valley (Zone)	6/20/2013	Wildfire	0/0	200.00K	0.00K
Spring Mountains (Zone)	07/01/2013	Wildfire	0/0	1.00M	0.00K
Las Vegas Valley (Zone)	08/01/2013	Wildfire	0/2	250.00K	0.00K
Las Vegas Valley (Zone)	04/23/2014	Wildfire	0/0	50.00K	0.00K
Western Clark/Southern Nevada	07/01/2014	Wildfire	0/2	100.00K	0.00K
Las Vegas Valley (Zone)	07/09/2015	Wildfire	0/0	0.50K	0.00K
Southern Clark (Zone)	08/18/2019	Wildfire	0/0	10.00K	0.00K

Fire, Wildland Urban Interface (Wildfire) Events, Clark County, NV: 2010-2022					
Location	***Date***	***Event Type***	***Injuries/ Deaths***	***Property Damage***	***Crop Damage***
Total – 7 Wildfire Events			**0/4**	**1.611M**	**0.00K**

** The NOAA/NCEI Storm Events Database identifies the location of the wildfire events within County into the following zones: Northeast Clark County, Western Clark and Southern Nye County, Sheep Range, Spring Mountains-Red Rock Canyon, Las Vegas Valley, Lake Mead National Recreation Area, and Southern Clark County.*

Data Source: ***NOAA/NCEI Storm Events Database***

NOAA/NCEI details of the wildfire event are provided below:

June 20, 2013– Las Vegas Valley (Zone), Wildfire

Gusty winds and dry conditions helped spread a small brush fire to a home, destroying, the home. The event narrative went on further to say that a small brush fire, aided by gusty winds and dry conditions, spread to a home near Decatur and Craig Roads in northwest Las Vegas, destroying the home. There were no injuries and death associated with the event, and the damages were reported at $200,000.

July 1, 2013– Spring Mountain (Zone), Wildfire

Lightning sparked the Carpenter One Wildfire in the Spring Mountains on July 1st. The fire burned a total of 27,881 acres and six structures and burned well into August before finally being contained. There were no injuries and death associated with the event, and the damages were reported at $1,000,000.

August 1, 2013– Las Vegas Valley (Zone), Wildfire

Gusty winds spread a grass fire to two homes and two vehicles. Two people were injured. There were two injuries and death associated with the event, and the damages were reported at $250,000.

April 23, 2014– Las Vegas Valley (Zone), Wildfire

A strong Pacific storm system brought a short period of high winds to portions of the Mojave Desert. A fire which started outdoors spread to two houses due to strong winds. There were no injuries and death associated with the event, and the damages were reported at $50,000.

July 1, 2014– Western Clark/Southern Nye County, Wildfire

Three wildfires broke out in southern Nevada, destroying several structures and vehicles before being contained. A wildfire in Pahrump burned two sheds, a mobile home, and two motor homes, displacing four families. Two volunteer firefighters also suffered heat exhaustion in the 109-degree temperatures. There were two injuries and death associated with the event, and the damages were reported at $175,000.

July 9, 2015– Las Vegas Valley (Zone), Wildfire

An unseasonable upper-level low moving in from the Pacific helped trigger thunderstorms over easter California and adjacent areas of western Nevada. A wildfire at the Clark County Wetlands Park destroyed a wooden footbridge. There were no injuries and death associated with the event, and the damages were reported at $50,000.

August 18, 2019 – Southern Clark (Zone), Wildfire

The Big Bend fire burned 225 acres south of Laughlin and destroyed a few power poles along Needles Highway. There were no injuries and death associated with the event, and the damages were reported at $10,000.

Probability of Future Events, Fire, Wildland Urban Interface (Wildfire)

Calculating future probability is one of many predictors of future occurrences. Based on the Calculated Priority Risk Index (CPRI conducted for Clark County and its participating jurisdictions, there is a **moderate probability (rank score of 3.0-3.9) of a fire, wildland urban interface (wildfire)** event in the planning area. The following table provides CPRI Rating for wildfire related to Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).

Table 65: Clark County and Participating Jurisdiction CPRI Rating for Fire, Wildland Urban Interface (Wildfire)

Clark County and Participating Jurisdictions CPRI Rating for Fire, Wildland Urban Interface (Wildfire)							
Hazard: Fire, Wildland Urban Interface (Wildfire) **Index Rating (R) Weighted Score (WS)**		**Category and Weight** **Probability 45%**	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**	**CPRI Score**	**Risk Level**
Clark County (including Incorporated and Unincorporated Areas	R	2	2	4	2	2.3	M
	WS	0.9	0.6	0.6	0.4		
Boulder City	R	1	1	2	1	1.15	L
	WS	0.45	0.3	0.3	0.1		
Henderson	R	1	2	4	2	1.85	L
	WS	0.45	0.6	0.6	0.2		
Las Vegas	R	2	2	4	2	1.75	L
	WS	0.45	0.6	0.3	0.4		
Mesquite	R	2	2	4	2	2.3	M
	WS	0.9	0.6	0.6	0.4		
North Las Vegas	R	1	1	1	1	1	L
	WS	0.45	0.3	0.15	0.1		
Special District: Clark County Water Reclamation District	R	1	2	2	1	1.45	L
	WS	0.45	0.6	0.3	0.1		
Special District: Clark County School District	R	3	2	4	3	2.85	M
	WS	1.35	0.6	0.6	03		
Special District: Las Vegas Valley Water District/SWNA	R	2	2	4	2	3.25	H
	WS	0.9	.6	.6	.2		
Tribal Nation: Las Vegas Valley Paiute	R	2	2	2	2	2	M
	WS	0.9	0.3	0.3	0.2		

Clark County and Participating Jurisdictions CPRI Rating for Fire, Wildland Urban Interface (Wildfire)							
Hazard: Fire, Wildland Urban Interface (Wildfire) **Index Rating (R)** **Weighted Score (WS)**		**Category and Weight** **Probability 45%**	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**	**CPRI Score**	**Risk Level**
Tribal Nation: Moapa Band of Paiutes	R	2	3	3	3	2.55	**M**
	WS	0.9	0.9	0.45	0.3		

Note: *Though participating in the planning process, CPRI data for the fire, wildland-urban interface (wildfire) for the City of Mesquite and Las Vegas Valley Water District/SWNA was not received at the time of this update. Therefore, the CPRI rating for the City of Mesquite and Las Vegas Valley Water District is the same as Clark County because the city and the special district are within the planning area.*

Also, based on the information obtained from the NOAA/NCEI, only 7 incidents of wildfire occurred in Clark County between January 1, 2018, and October 31, 2022. At the time of this plan update, NOAA/NCEI recorded NOAA/NCEI recorded one wildfire event from January 1, 2018, to October 31, 2022. However, In order to gain a better understanding of previous occurrences, and accurately calculate future probability, the following information was taken into consideration. From January 1, 2010, to October 31, 2022, NOAA/NCEI recorded 7 wildfire events in Clark County. Clark County and its participating jurisdictions which included Clark County Unincorporated area, and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation can expect a wildfire event with 58.3% probability per year or 0.583 events per year, as indicated in Table 66 (below).

Table 66: Probability of Future Events, Fire, Wildland Urban Interface (Wildfire) – Clark County, NV

Probability of Future Events, Fire, Wildland Urban Interface (Wildfire), Clark County, NV	
Event Year	***Event Count***
2010	0
2011	0
2012	0
2013	3
2014	2
2015	1
2016	0
2017	0
2018	0

Probability of Future Events, Fire, Wildland Urban Interface (Wildfire), Clark County, NV	
Event Year	***Event Count***
2019	1
2020	0
2022	0
Total Recorded Events =	**7**
Total Years =	**12**
Yearly Probability =	**58.3%**

Data Source: NOAA/NCEI Storm Events Database

This number is based on historical events. As such, and according to the probability range table, wildfire is highly likely for Clark County and its participating jurisdictions.

Vulnerability and Impact

Given the data deficiency described in Location & Extent section of this hazard profile, the current impacts of wildfires throughout the planning area are unknown but have the potential, depending upon the circumstances, to be severe. Clark County Office of Emergency Management & Homeland Security will seek out the data to support this finding and will update this portion of the MJHMP as soon as possible.

Vulnerability of Facilities

A wildfire burning near a jurisdiction may cover it in soot, cause secondary fires from traveling coals, or directly engulf facilities, potentially burning them to the ground. Facilities within the planning area can be protected and safe by creating defensible spaces or buffer zones, maintaining a fuel-free environment, and modifying structures to prevent wildfire growth.

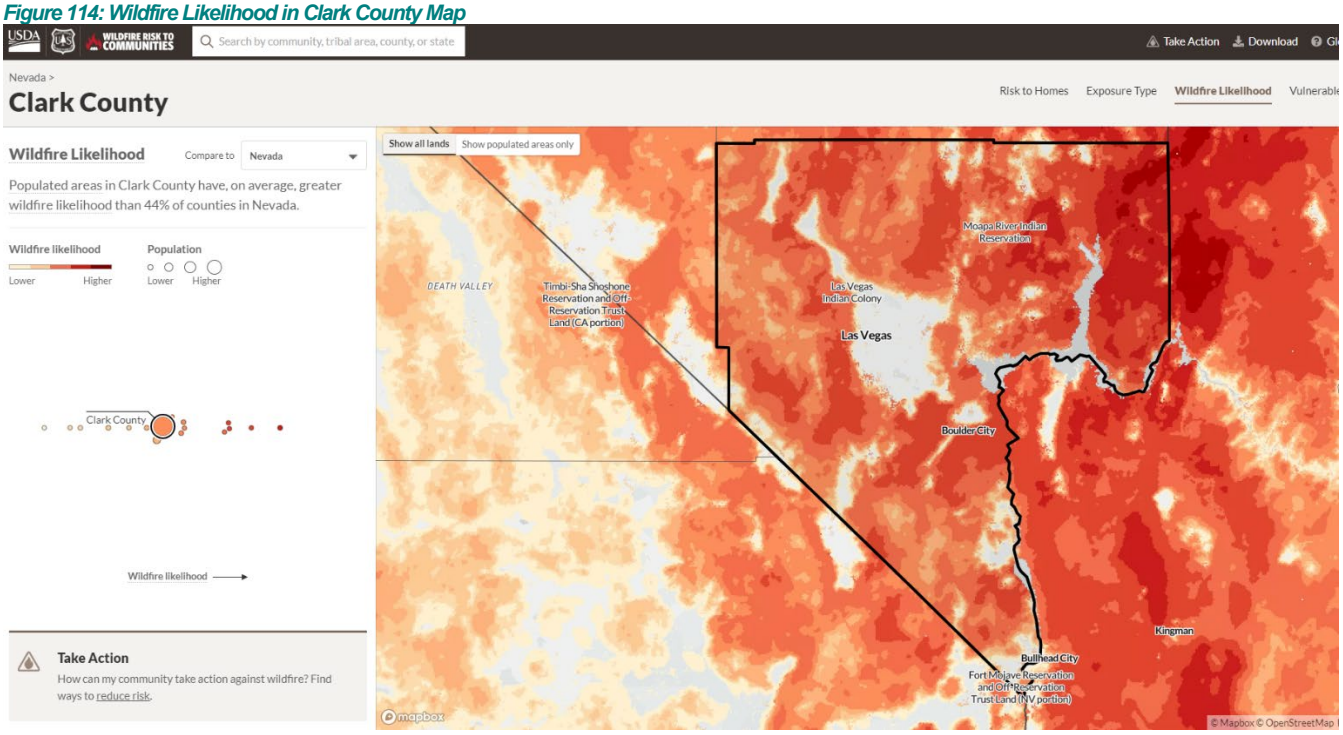
Clark County and its participating jurisdictions' critical structures are valued at $395,355,458.

Vulnerability of Population

A wildfire could pose a risk to the vulnerable population within the County. Clark County and its participating jurisdiction(s) have a total population of 2,265,461 in 840,343 housing units at risk of wildfires. This information should be considered when understanding how many citizens will potentially be displaced from their homes due to the hazard. Since 2010, there have been four (4) injuries, but no deaths have occurred in Clark County or its participating jurisdictions due to wildfire.

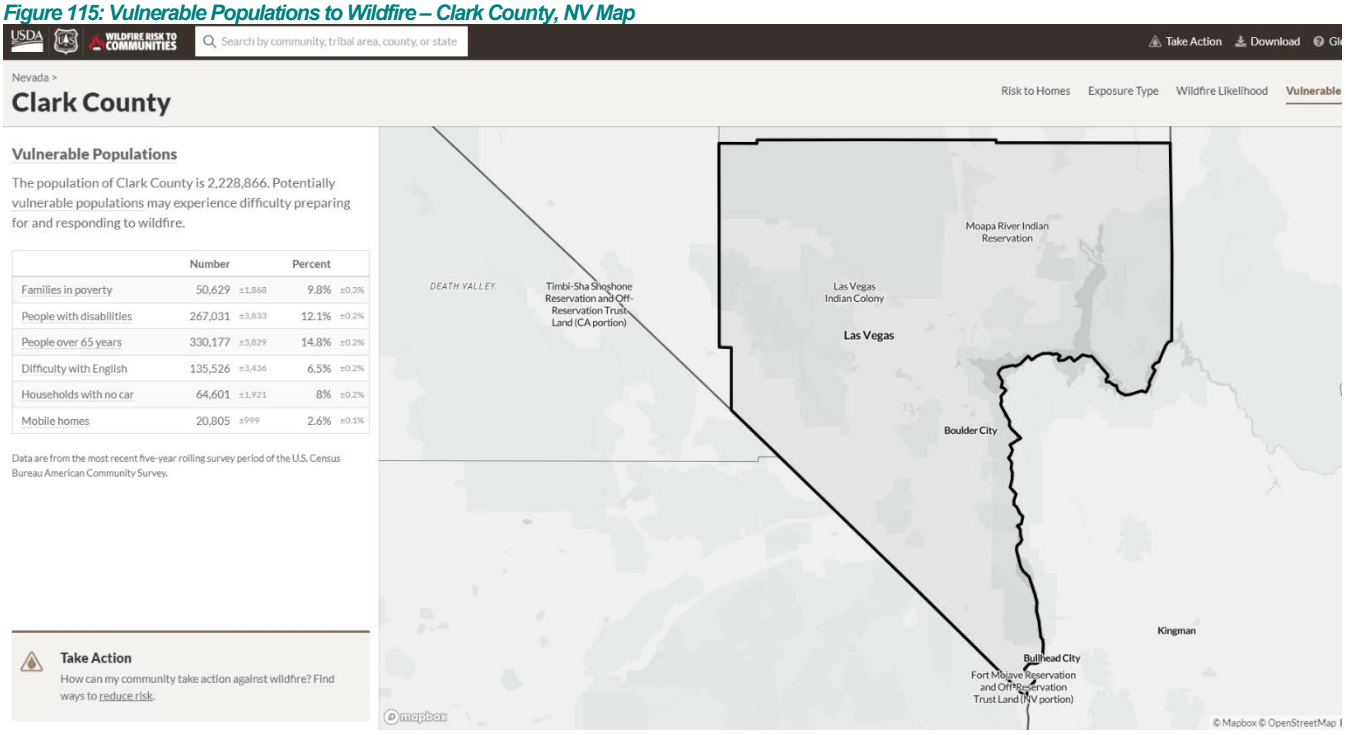
The greatest vulnerability of a jurisdiction(s)' population is the inability to properly evacuate in an emergency situation. In particular, the population can be caught off guard due to slow or improper warning systems, erratic weather conditions, etc., and become trapped in a rapidly growing wildfire. The following map from the USDA US Forestry Service's Wildfire Risk to Communities database illustrates the likelihood of a wildfire event occurring within the populated areas of the planning area as well as how a wildfire event can affect the vulnerable population within the County.

Figure 114: Wildfire Likelihood in Clark County Map



Data Source: USDA USFS Wildfire Risk to Communities

Figure 115: Vulnerable Populations to Wildfire – Clark County, NV Map



Data Source: USDA USFS Wildfire Risk to Communities

The Clark County Climate Vulnerability Study mentions how wildfire will affect the people and communities within Clark County related to housing, schools, correctional and detention centers, and critical health facilities:

- **Housing:** "Seven Clark County communities have "high" or "extreme" wildfire hazard ratings, including: Cold Creek, Kyle Canyon, Lee Canyon, Mountain Springs, Nelson, Torino Ranch, and Trout Canyon. Residents and homes in these communities are at greater risk of direct wildfire impacts. Local and regional wildfires can cause smoke inhalation and poor air quality, which negatively impact residents living in homes without adequate air filtration systems. Increasing development in wildland, urban interface areas (WUIs) across the state puts additional demand on public resources. Housing has low-moderate sensitivity (S1) and moderate adaptive capacity (AC2)."
- **Schools:** "The largest cities within the county served by CCSD include Las Vegas, Henderson, and North Las Vegas. But the district also services cities and rural areas as far north as Indian Springs and Mesquite and as far south as Laughlin and Searchlight. If Clark County's rural schools were grouped into their own district, it would be the fourth-largest rural district in the state. While not all schools are at equal risk of wildfire impacts, the school district is impacted by poor air quality due to wildfire smoke. These smoke events impact health and limited outdoor access for CCSD student, teachers, administrators, and staff, lead to moderate sensitivity and adaptive capacity."
- **Correctional Facilities & Detention Centers:** "In 2021, the Mt. Charleston facilities (Spring Mountain Youth Camp and Residential Center) had to evacuate due to impending wildfire—a process that was time and resource intensive. When not facing direct wildfire impacts, both corrections and detention inmates and staff are negatively impacted by poor air quality. This impacts lung health, exacerbates preexisting conditions, and limits incarcerated and detained individuals' access to outdoor spaces, leading to moderate-high sensitivity (S3) and moderate adaptive capacity (AC3)."
- **Critical Health Facilities:** "Critical health facilities observe increases in respiratory and cardiovascular cases when air quality is degraded, from particulate matter in wildfire smoke.99 These impacts to public health and air quality can occur from distant or regional wildfires, such as in 2021 from the Caldor Fire. Individuals with preexisting health conditions are more sensitive to the impacts from wildfire smoke, and Clark County observed a higher mortality rate (50.1 per 100,000) from Chronic Lower Respiratory Diseases (CLRD) in 2016-2018 compared to the national rate (40.4 per 100,000).100 Wildfires can directly affect the ability of emergency services to provide access to impacted areas, and indirectly impact facilities due to power disruptions. While healthcare facilities are generally equipped to handle additional cases of respiratory and cardiovascular illness, these facilities and workers are often at capacity. Critical health facilities have moderate-high sensitivity (S3) and moderate adaptive capacity (AC2)."

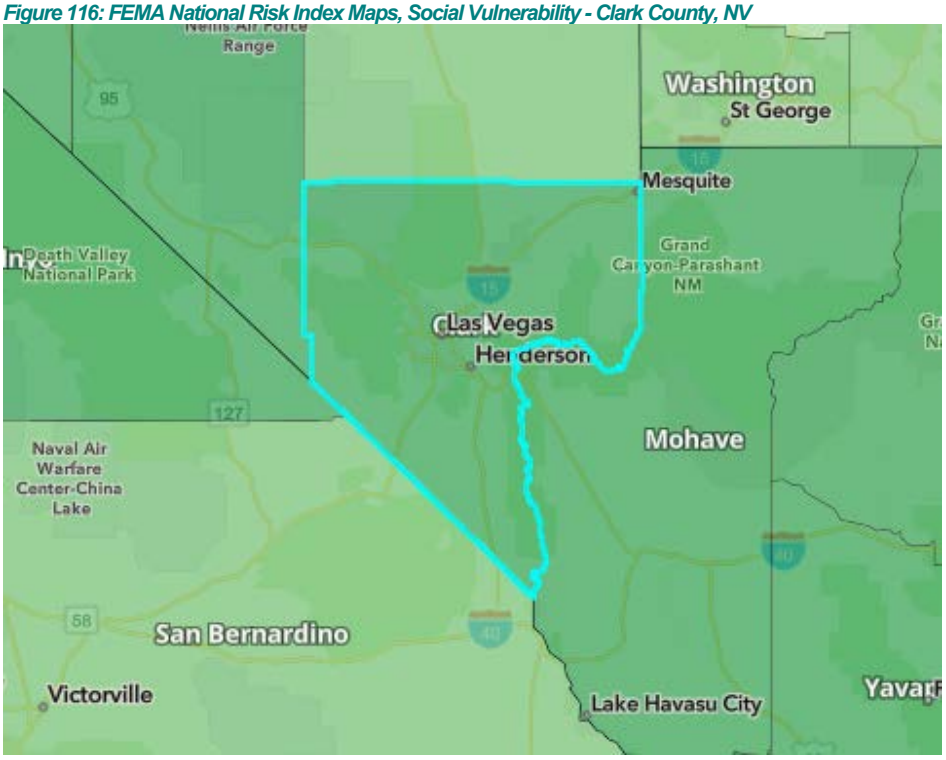
Finally, the FEMA National Risk Index map provides data on social vulnerability and community resilience wildfire. FEMA National Risk Index defines Social Vulnerability as the susceptibility of social groups to the adverse impacts of natural hazards, including death, injury, loss, or disruption of livelihood. FEMA defines Community Resilience as the ability for a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruption. The scoring of these FEMA National Risk Index categories are for all hazards, including wildfire are as follows:

- **Community Resilience**: the higher community resilience score results in a lower risk index score. **The Community Resilience score for Clark County is 49.9**, meaning communities within the County have a Very Low ability to prepare for anticipated natural hazards, adapt to conditions, and withstand and recover rapidly from disruptions compared to the rest of the U.S.
- **Social Vulnerability**: a higher social vulnerability score results in a higher Risk Index score. Social groups in Clark County, NV, have a Relatively High susceptibility to the

adverse impacts of natural hazards compared to the rest of the U.S. **The Social Vulnerability score for Clark County is 48.59.**

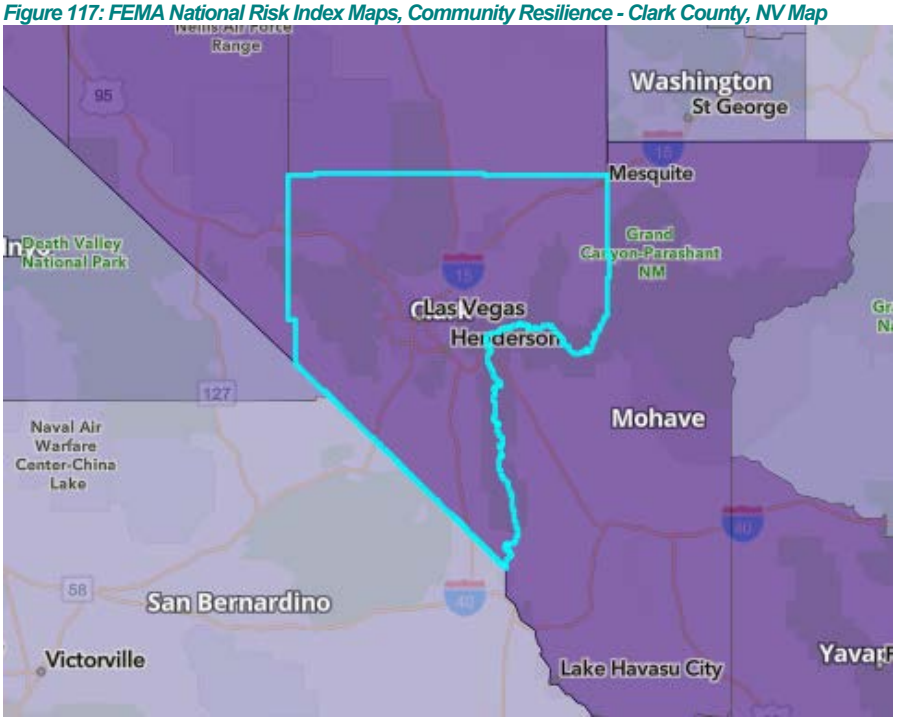
The following maps provide a snapshot of community resilience and social vulnerability scoring related to all hazards including wildfire for Clark County and its participating jurisdictions (which included Clark County Unincorporated area, and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).

Figure 116: FEMA National Risk Index Maps, Social Vulnerability - Clark County, NV



Data Source: The FEMA National Risk Index

Figure 117: FEMA National Risk Index Maps, Community Resilience - Clark County, NV Map

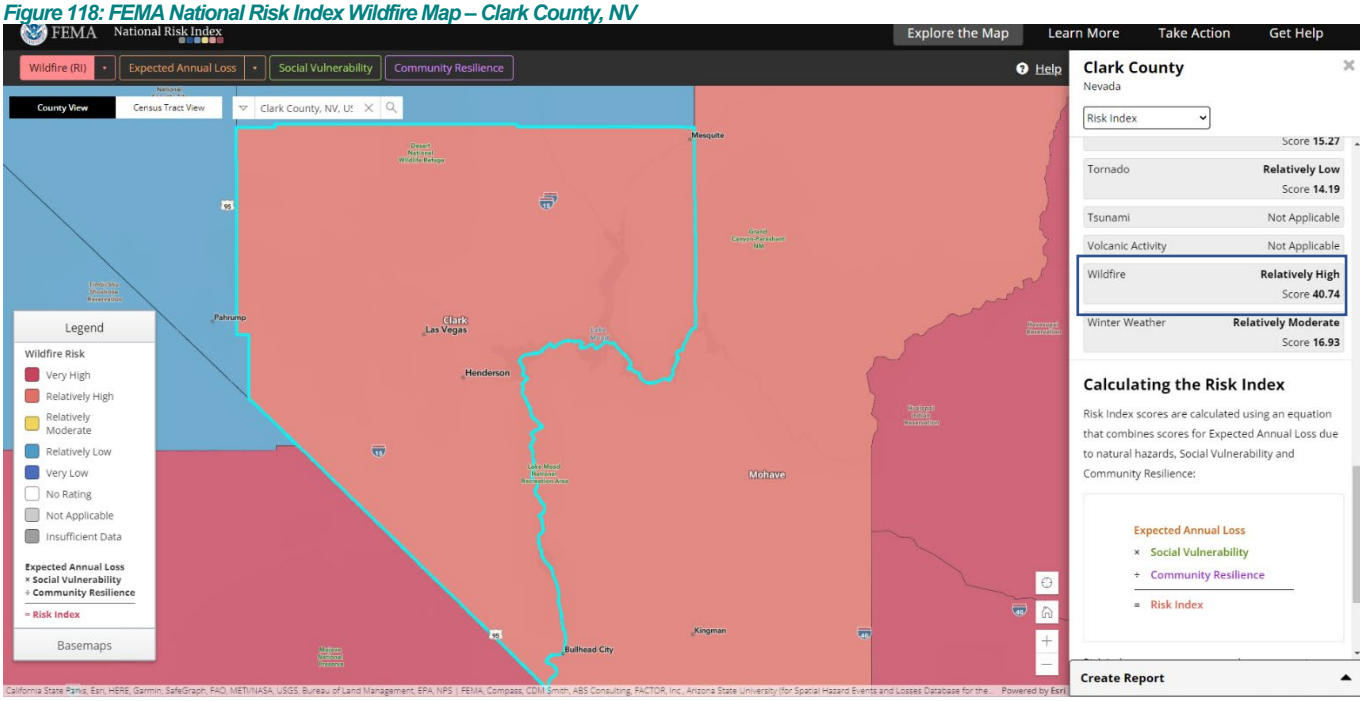


Data Source: The FEMA National Risk Index

Vulnerability of Systems

The FEMA National Risk Index for Natural Hazards is an online mapping system that identifies communities most at risk to 18 natural hazards. Related to wildfire, the National Risk Index, a Wildfire Risk Index score and rating represent a community's relative risk for wildfires compared to the rest of the United States. Clark County has a wildfire risk score of 40.74 (relatively high) compared to the rest of the Country. The map below illustrates that score visually.

Figure 118: FEMA National Risk Index Wildfire Map – Clark County, NV



Data Source: The FEMA National Risk Index

In the event a wildfire begins to burn and grow, evacuation routes may become blocked by the fire or by other people attempting to evacuate. The impingement of the local transportation system makes appropriate warning and information sharing paramount in mitigating wildfire risks for Clark County and its participating jurisdictions.

Impact of Climate Change

Climate change is predicted to cause longer, dryer, hotter summers. The results will cause tree deaths at higher elevations. The combination of large numbers of dead trees and longer fire seasons are likely to be a greater number of fires with a larger burn area.

Critical Facilities and Infrastructure

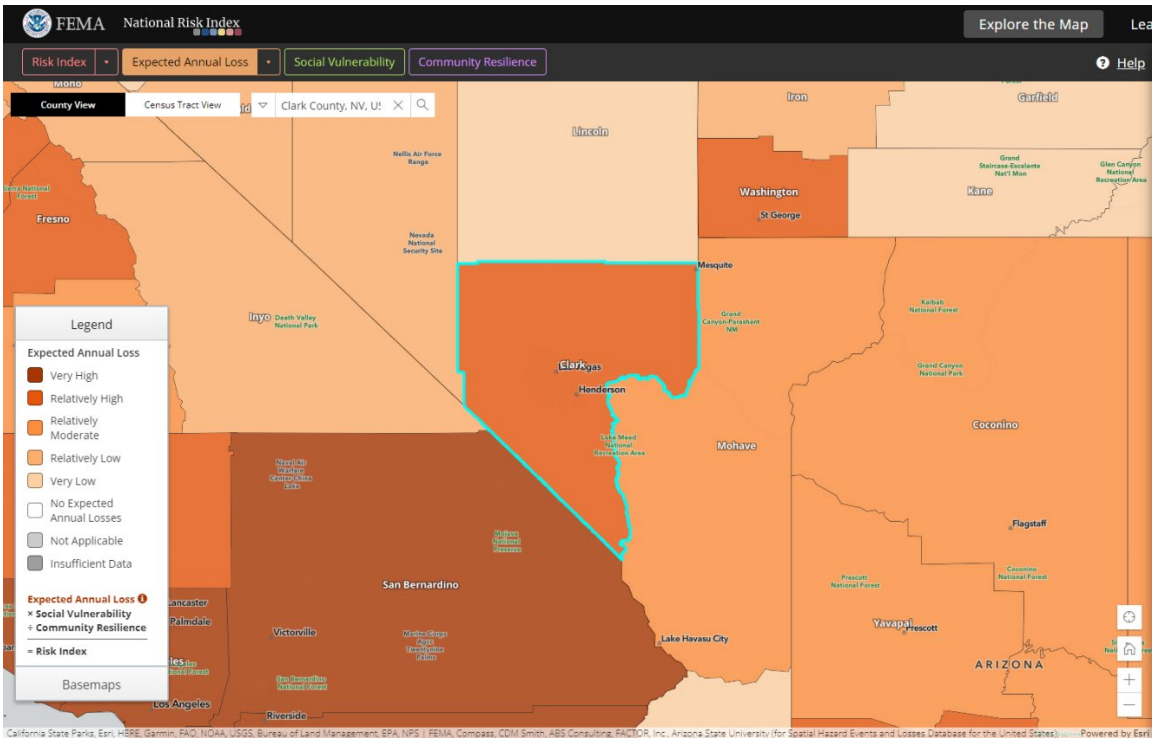
Wildfires have the potential to affect Clark County and its participating jurisdictions (which included Clark County Unincorporated area, and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation). A complete list of critical facilities and infrastructure can be found in Appendix D – Critical Facilities & Infrastructure.

Also, the National Risk Index scores provided by FEMA analyze potential exposure and estimated losses within the planning area related to wildfire. For this hazard, the National Risk Index uses the Wildfire Exposure value to represent community building values (in dollars), population (in both people and population equivalence), and agriculture value (in dollars) exposed to Wildfires. Exposure is a natural consequence factor for Annual Expected Loss, the natural hazard component of the National Risk Index. A jurisdiction with a higher exposure value will result in higher Expected Annual Loss and Risk Index scores. Clark County's Expected Annual Loss rating related to wildfire is 36.29, which is relatively high compared to the rest of the country. The other exposure data related to expected loss

wildfire is as follows:

- Expected Annual Loss: $4.9M
- Exposure: $0.25T
- Frequency: 0.283% events per year
- Historic Loss Ratio: Very Low

The following map illustrates the expected annual loss for fire, wildland urban interface (wildfire) in the planning area:



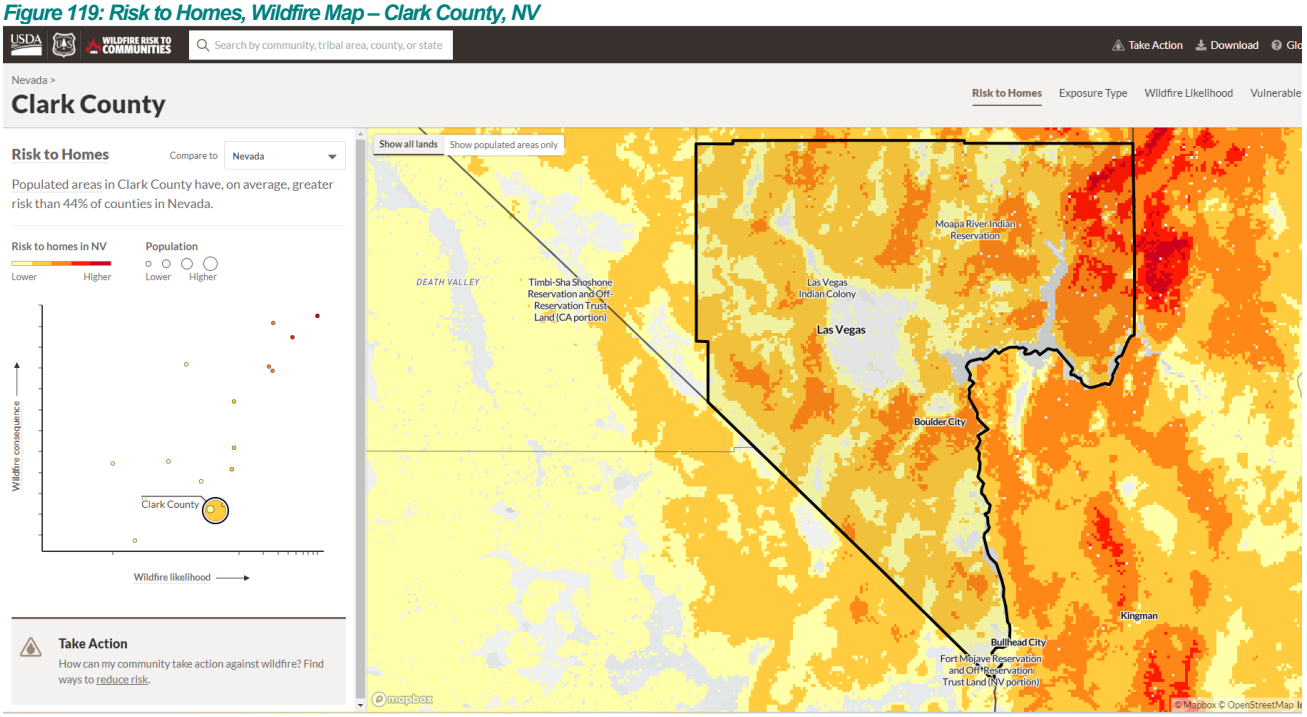
Data Source: The FEMA National Risk Index

Land Use and Development

Wildland fires throughout the western United States have become, larger, hotter, and more deadly over the past years. This is due to record drought which has resulted in 100's of millions of dead trees, hotter temperatures and forest management programs that left very high fuel loads in place. The potential for wildland fire has increased throughout the entire planning area, since completion of the previous MJHMP plan update (2018). As that plan stated, approximately 17.3 percent of land (1,396.1 square miles) in Clark County is located in high to very high wildfire hazard areas. The previous Clark County MJHMPs (2012 and 2018) both mentioned, the largest areas susceptible to wildfire are the areas just west and north of the Las Vegas Valley region. Additionally, communities with high and extreme fire hazard ratings are Cold Creek, Kyle Canyon, Lee Canyon, Mountain Springs, Nelson, Torino Ranch and Trout Canyon. Fortunately, the susceptible areas are not home to many residents and less than one percent of the County's population and residential buildings are in a wildfire hazard zone.

The following map from the USDA US Forestry Service Wildfire Risk to Communities shows "Risk to Homes" within populated areas in Clark County, on average, has a greater risk than 44% of counties in Nevada to wildfire. The following map illustrates that risk within the planning area:

Figure 119: Risk to Homes, Wildfire Map – Clark County, NV



Data Source: USDA USFS Wildfire Risk to Communities

Unique and Varied Risk

Wildfires can affect all, or a portion, of the entire planning area. Drought conditions, also identified as a hazard in the plan, can add to this risk. The table below reflects the risk characteristics within Clark County and its participating jurisdictions (which included the Clark County Unincorporated area and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) mentioned in the 2005 Nevada Community Wildfire Risk/Hazard Assessment Project for Clark County.

Table 67: Unique & Varied Risk, Fire, Wildland Urban Interface Fire (Wildfire)

Unique & Varied Risk, Fire, Wildland Urban Interface Fire (Wildfire)	
Jurisdictions	***Risk Characteristics (Interface Conditions and Community Hazard Rating)***
Cold Creek	Intermix Condition and High Rating
Kyle Canyon	Rural Condition and Extreme Rating
Lee Canyon	Intermix Condition and Extreme Rating
Mt. Springs	Intermix Condition and Extreme Rating
Nelson	Intermix Condition and High Rating
Torino Ranch	Classic Condition and High Rating

Unique & Varied Risk, Fire, Wildland Urban Interface Fire (Wildfire)	
Jurisdictions	***Risk Characteristics (Interface Conditions and Community Hazard Rating)***
Trout Canyon	Intermix Condition and Extreme Rating
Cactus Springs	Classic Condition and Moderate Rating
Goodsprings	Classic Condition and Moderate Rating
Moapa	Classic Condition and Moderate Rating
Sandy Valley	Intermix Condition and Moderate Rating
Searchlight	Intermix Condition and Moderate Rating
Arden	Occluded Condition and Low Rating
Blue Diamond	Intermix Condition and Low Rating
Boulder City	Classic Condition and Low Rating
Bunkerville	Classic Condition and Low Rating
CalNevAri	Classic Condition and Low Rating
Cottonwood Cove	Classic Condition and Low Rating
Glendale	Classic Condition and Low Rating
Henderson	Classic Condition and Low Rating
Indian Springs	Classic Condition and Low Rating
Las Vegas	Classic Condition and Low Rating
Laughlin	Classic Condition and Low Rating
Logandale	Classic Condition and Low Rating
Mesquite	Classic Condition and Low Rating
North Las Vegas	Classic Condition and Low Rating
Overton	Classic Condition and Low Rating

Unique & Varied Risk, Fire, Wildland Urban Interface Fire (Wildfire)	
Jurisdictions	***Risk Characteristics (Interface Conditions and Community Hazard Rating)***
Palm Gardens Estates	Classic Condition and Low Rating
Primm	Classic Condition and Low Rating
Sloan	Classic Condition and Low Rating

Data Source: 2005 Nevada Community Wildfire Risk/Hazard Assessment Project

Repetitive Loss Structure

Not applicable.

HAZUS® Models

Not applicable.

(INF) Infectious Disease - Epidemic

Hazard Description

The Mayo Clinic defines infectious diseases as disorders caused by organisms — such as bacteria, viruses, fungi, or parasites. Many organisms live in and on our bodies. They're normally harmless or even helpful. But under certain conditions, some organisms may cause disease. Some infectious diseases can be passed from person to person, and insects or other animals transmit some. Infectious disease outbreaks can cause public health emergencies like epidemics, pandemic, and endemics. The Columbia Mailman School of Public Health February 2021 article "Epidemic, Endemic, Pandemic: What are the Differences?

(https://www.publichealth.columbia.edu/public-health-now/news/epidemic-endemic-pandemic-what-are-differences) defines these outbreak types as the following:

- **Epidemic:** As defined by the Centers for Disease Control and Prevention (CDC), an epidemic is "a sudden increase in the number of cases of an infectious disease within a community or geographic area during a specific time period."
- **Pandemic:** The World Health Organization (WHO) declares a pandemic when a disease's growth is exponential. This means the growth rate skyrockets, and each day cases grow more than the day prior. In being declared a pandemic, the virus has nothing to do with virology, population immunity, or disease severity. It means a virus covers a wide area, affecting several countries and populations.
- **Endemic: disease**: An outbreak is endemic when it is consistently present but limited to a particular region. This makes the disease spread and rates predictable. Malaria, for example, is considered endemic in certain countries and regions.

The WHO defines pandemics, epidemics, and endemic diseases based on a disease's rate of spread. Thus, the difference between an epidemic and a pandemic isn't in the severity of the disease but in the degree to which it has spread. According to the Global Health Council, over 9.5 million people die each year from infectious diseases. Although progress has been made to control or eradicate many infectious diseases, humans remain vulnerable to many new emerging organisms, such as severe acute respiratory syndrome (SARS) and the West Nile virus. In addition, previously recognized pathogens can evolve to become resistant to available antibiotics and other treatments. For example, malaria, tuberculosis, and bacterial pneumonias are appearing in new forms that are resistant to drug treatments. The spread of infectious diseases also increases with population growth and the ease of travel. Some examples of modern-day infectious disease epidemics/pandemics are as follows:

- **Corona Viruses / SARS –Coronaviruses** cause a large percentage of colds and upper respiratory infections. Severe Acute Respiratory Syndrome (SARS) is a viral respiratory disease caused by a SARS-associated coronavirus. It was first identified on November 16, 2002, during an outbreak that emerged in China and spread to four other countries. It was quickly given the formal name of SARS due to its primary symptoms, and the CDC issued their first health alert on March 15, 2003. The current (2020) COVID-19 pandemic is spread by a coronavirus.
- **Influenza – Flu** epidemics and pandemics occur routinely, typically in the fall and winter. Because flu seasons fluctuate in length and severity, a single estimate cannot be used to summarize influenza-associated deaths. The U.S. Centers for Disease Control and Prevention (CDC) estimates that from the 1976-1977 flu season to the 2006-2007 season, flu-associated deaths ranged from a low of about 3,000 to a high of about 49,000.
- **Insect / Tick-Borne Disease** – Insects such as mosquitos and ticks can transmit various diseases. Diseases that mosquitoes carry include Eastern equine encephalitis; Malaria; West Nile virus; Zika virus. Diseases that can be contracted through a tick bite include Colorado tick fever; Ehrlichiosis; Lyme disease; Rocky Mountain spotted fever; Tularemia.

- **Plague** – Caused by the bacteria Yersinia pestis, a zoonotic bacterium usually found in small mammals and their flea, the plague is transmitted between animals and humans by the bite of infected fleas, direct contact with infected tissues, and inhalation of infected respiratory droplets. There are two primary clinical forms of plague infection: bubonic and pneumonic. Bubonic plague is the most common form and is characterized by painful swollen lymph nodes or 'buboes.' Plague can be a very severe disease in people, with a case-fatality ratio of thirty to sixty percent (30%-60%) for the bubonic type and is always fatal for the pneumonic kind when left untreated.
- **Anthrax** – Anthrax is a serious infectious disease caused by gram-positive, rod-shaped bacteria known as Bacillus anthracis. Although it is rare, people can get sick with anthrax if they come in contact with infected animals or contaminated animal products. Anthrax has the potential for and has been used as a biological weapon.
- **Hemorrhagic Fevers** – Viral hemorrhagic fevers are a group of illnesses caused by several distinct families of viruses. The term "viral hemorrhagic fever" is generally used to describe a severe multisystem syndrome. Characteristically, the overall vascular system is damaged, and the body's ability to regulate itself is impaired. These symptoms are often accompanied by hemorrhage. However, the bleeding is itself rarely life-threatening. While some types of hemorrhagic fever viruses can cause relatively mild illnesses, many of these viruses cause severe, life-threatening diseases. Hemorrhagic fevers include Ebola and Yellow Fever.

Pandemics have occurred throughout history. Some of the largest scale public health and pandemic incidents include:

- **COVID-19 (2019-Present)** – Beginning in December 2019, in the region of Wuhan, China, a new (“novel”) coronavirus appeared and rapidly spread. COVID-19, a shortened form of “coronavirus disease of 2019,” has affected every nation on the planet. It is the largest pandemic since the 1918-1919 Spanish Influenza.
- **HIV/AIDS (1976-Present, peak at 2005-2012)** – HIV/AIDs was first identified in the Democratic Republic of the Congo in 1976. HIV/AIDS is a global pandemic, having killed more than 36 million people since 1981. Currently, there are between 31 and 35 million people living with HIV infections.
- **H3N2 Flu (1968)** – A category 2 Flu pandemic, the 1968 flu pandemic was caused by the H3N2 strain of the Influenza A virus. Within three months, it had spread to the Philippines, India, Australia, Europe, and the U.S. While the 1968 pandemic had a comparatively low mortality rate (.5%), it still resulted in the deaths of more than a million people, including 500,000 residents of Hong Kong; approximately 15% of its population at the time.
- **H2N2 Flu (1956-1958)** – The Asian Flu was a pandemic outbreak of Influenza A of the H2N2 subtype that originated in China in 1956 and lasted until 1958. In its two year infectious duration, it resulted in approximately two million deaths worldwide and 69,800 in the U.S.
- **H1N1 Flu (1918-1920)** – A strain of H1N1 influenza resulted in a deadly outbreak that tore across the globe, infecting over a third of the world’s population and ending the lives of 20 to 50 million people. Of the 500 million people infected in the 1918 infection wave, mortality rates were estimated at 10% to 20%, with up to 25 million deaths in the first 25 weeks alone
- **Plague (1346 to 1353)** – The Black Death was an outbreak of Bubonic Plague that ravaged Europe, Africa, and Asia, with an estimated death toll between 75 and 200 million people. Thought to have originated in Asia, the pandemic most likely jumped continents via the fleas living on the rats found aboard merchant ships.

Public health emergencies, namely pandemics, can cause sudden, widespread morbidity and mortality and social, political, and economic disruption. These outbreaks require more public health and medical resources than a day-to-day operations. They may include responses such as infection control, contact tracing, quarantine, isolation, prophylaxis, and social distancing (https://ready.nola.gov/hazard-mitigation/hazards/infectious-disease-outbreak/). In fact, the financial

damage by itself can be devastating as workers stay home and/or businesses close their doors indefinitely. Even with the seasonal flu, the U.S. Department of Health & Human Services estimates that 111 million workdays are lost annually, equating to $7 billion in sick days and lost productivity. A global pandemic lasting a year could trigger a "major global recession," warned a 2008 report from the World Bank.

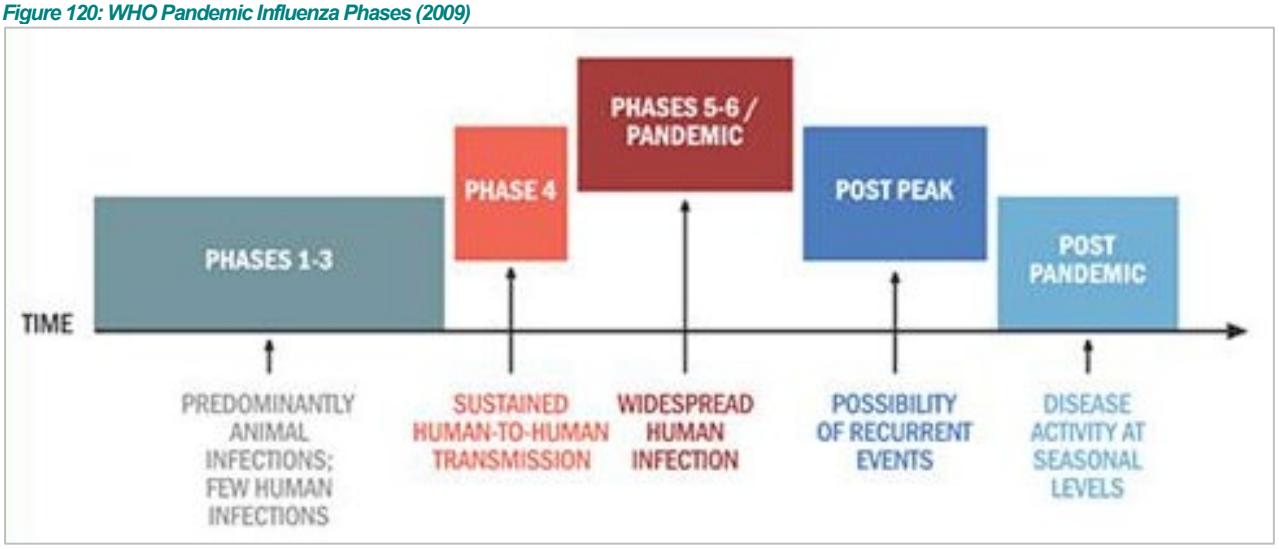
Location and Extent

As published on Medlineplus.gov website (https://medlineplus.gov/infectiousdiseases.html), “Germs, or microbes can be found everywhere. – in the air, soil and water. There are also germs on your skin and in your body. Many of them are harmless, and some can be helpful. But some of them can make you sick. Infectious diseases are diseases that are caused by germs. Infectious diseases can cause many different symptoms. Some are so mild that you may not even notice any symptoms, while others can be life-threatening.”

The extent of an epidemic or pandemic can vary greatly depending on a long list of factors. These include but are certainly not limited to identifying the disease and how it spreads; educating the public of the risk as well as how to protect themselves and others; preparing hospitals for possible med surge events; having ample personal protective equipment, or PPE, readily available; allowing people to work from home; and of course, practicing good handwashing and social distancing.

No location in the world, including the U.S., Nevada, and Clark County, is immune to communicable diseases like COVID-19. The previous MJHMP 2018 mentions that the State of Nevada has established a list of over 60 communicable (infectious) diseases, which, by law, must be reported by health providers to report to state or local public health officials. These diseases are those of public interest by reason of their communicability, severity, or frequency. For Clark County, the Southern Nevada Health District provides current data on the ongoing pandemic. The World Health Organization currently uses the Pandemic Influenza Phases to characterize pandemics as shown in Figure 120.

Figure 120: WHO Pandemic Influenza Phases (2009)

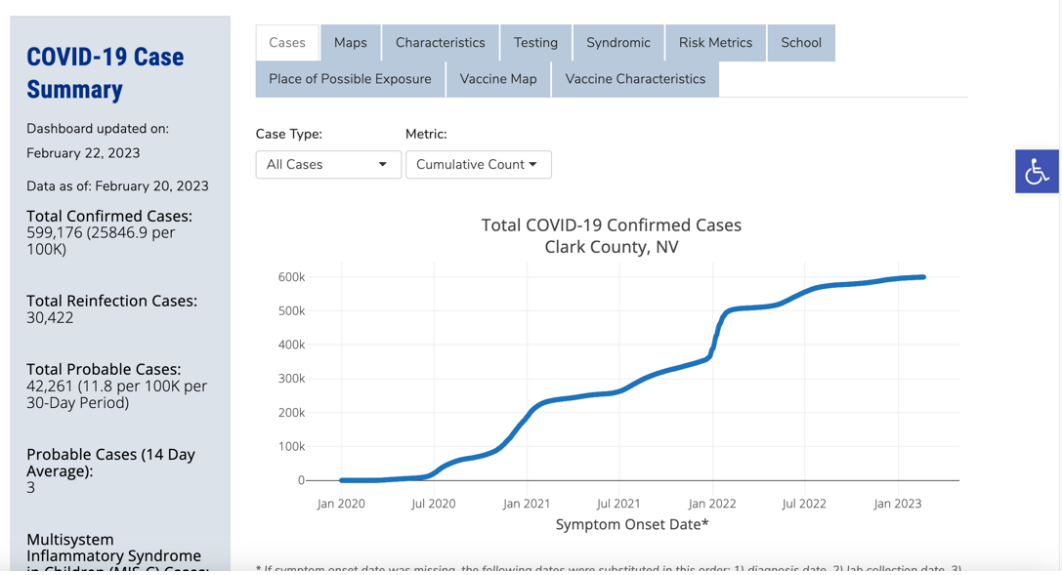


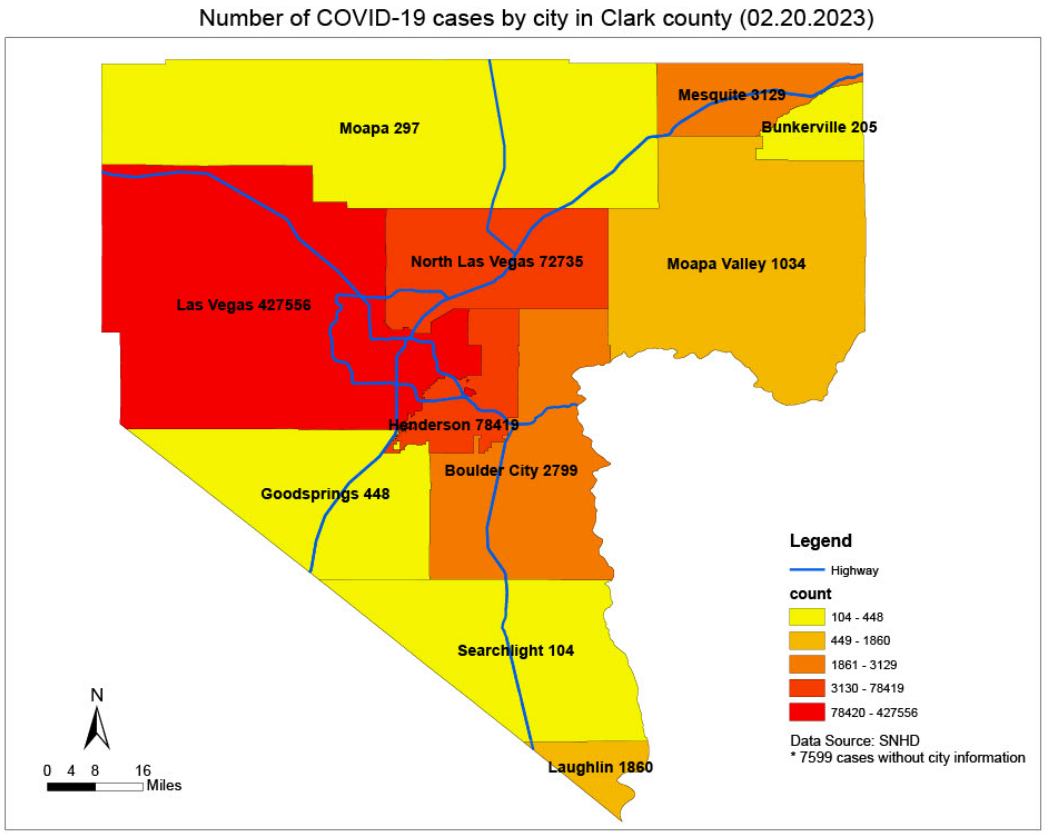
Data Source: World Health Organization (WHO)

Still, as evidenced by the COVID-19 pandemic, the extent can be far greater than once thought possible. Millions of people may become infected globally, and tens of thousands of people may die. Entire cities may shut down. Unemployment may skyrocket. Hospitals may fill to capacity. Schools may close. Government services may be limited or completely unavailable. Food, water, and other essentials may be scarce. Making matters worse, it could take weeks, if not months, for the situation to stabilize. This is especially true in large cities like New York where a phased reopening is presently underway. Even in Clark County, where there have been 599,176 total confirmed and probably cases of COVID-19 to date (February 28, 2023). The County provides residents a COVID-19 Summary for Clark County dashboard that provides metrics of confirmed/probable cases, deaths, recovery, and

hospitalizations (ICU and Non-ICU patients):

Figure 121: COVID-19 Map and Dashboard-Summary for Clark County Data Dashboard, February 28, 2023



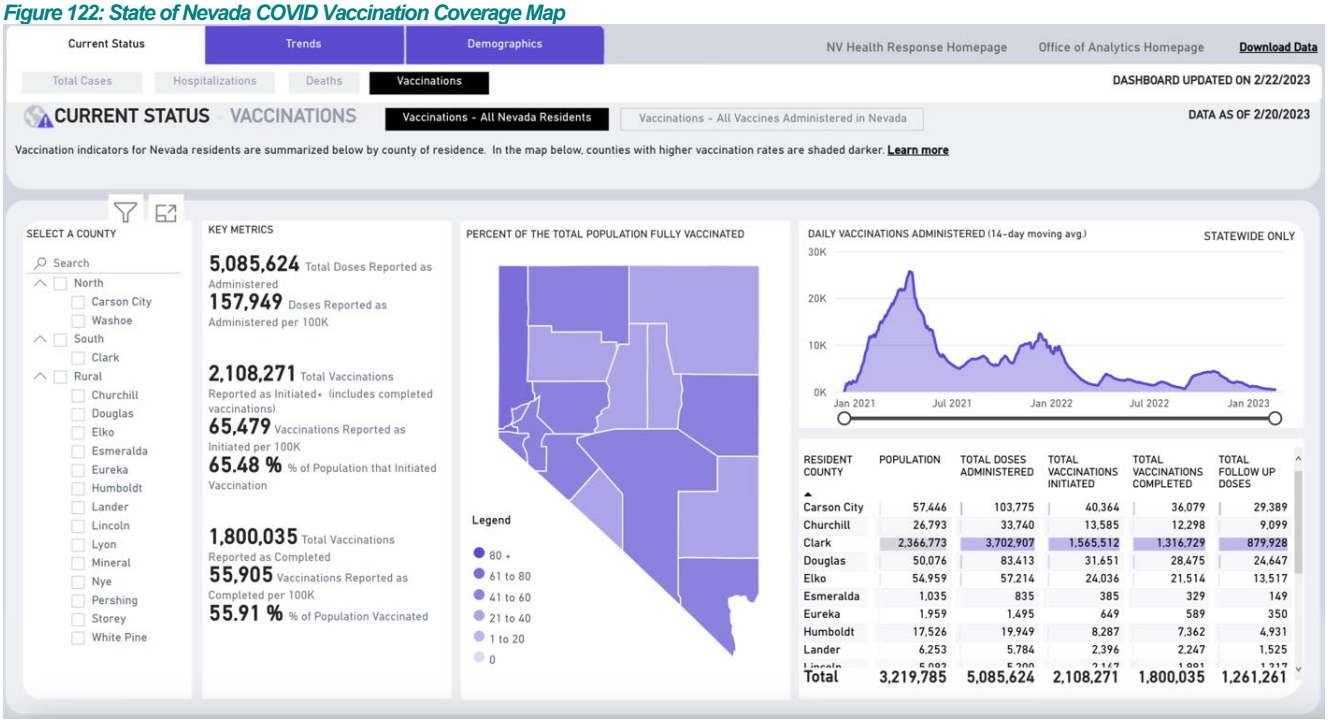


Map and Data Source: Southern Nevada Health District, COVID-19 Cases and Vaccine Data (https://covid.southernnevadahealthdistrict.org/data/reports/)

Further, a Presidential Disaster declaration (DR-4523-NV) remains in place for the State of Nevada. Due to the COVID-19 pandemic, Businesses and government offices are slow to return to normal. In fact, the County has created the "Clark County Re-opening guidelines website" which takes the health and safety of the community and its' employees seriously. This website provides resources, guidelines, and tools for Clark County to return to work safely and re-open safely in the community. (https://www.clarkcountynv.gov/top_services/covid19/reopening_guidelines.php). Also, in December 2020, the Federal Drug Administration (FDA), approved COVID-19 vaccinations for Emergency Use Authorization (https://www.fda.gov/emergency-preparedness-and-response/mcm-legal-regulatory-

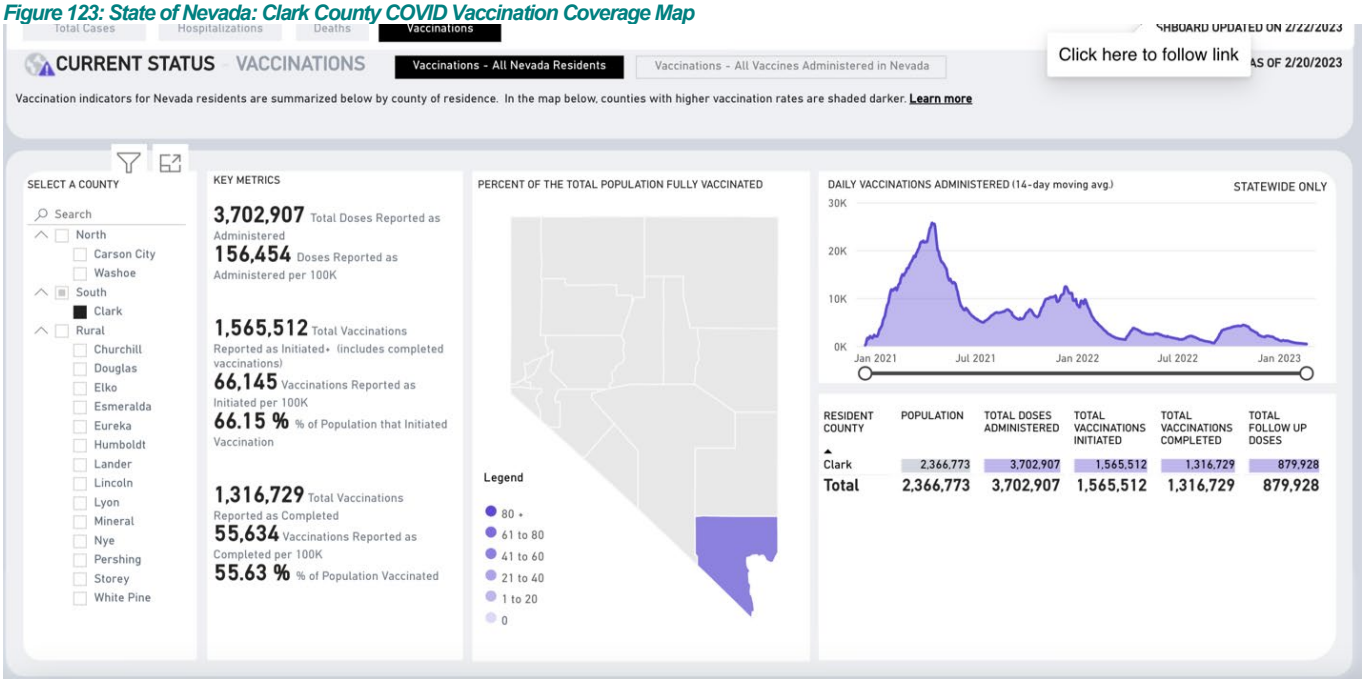
and-policy-framework/emergency-use-authorization). An Emergency Use Authorization (EUA) is a mechanism to facilitate the availability and use of medical countermeasures, including vaccines, during public health emergencies, such as the current COVID-19 pandemic. The first two approved were the Pfizer and Moderna Vaccines (date of first EUA issuance, December 2020), and a third vaccine, Janssen COVID-19 vaccine (date of first EUA issuance, February 2021). As of April 2021, the President of the United States made COVID-19 vaccines eligible for Adults within the United States effective April 19, 2021. At the time of this plan update (20xx), the state of Nevada has reported 5,085,624total doses reported as administered to Nevada residents and 65.48% of the population that have initiated COVID-19 vaccinations. As of February 28, 2023, Clark County currently has 1,316,729 of its 2,366,773 residents have coverage (completed two (2) doses of the Pfizer or Moderna or one (1) does of the Janssen (Johnson & Johnson or J&J) vaccines). The following maps show this completed vaccination coverage for Nevada and Clark County from the State's COVID-19 Vaccination dashboards (https://nvhealthresponse.nv.gov/):

Figure 122: State of Nevada COVID Vaccination Coverage Map



Data Source: Nevada Health Response (https://nvhealthresponse.nv.gov/)

Figure 123: State of Nevada: Clark County COVID Vaccination Coverage Map



Data Source: Nevada Health Response (https://nvhealthresponse.nv.gov/)

Previous Occurrence

Clark County, like other locations across the country and around the globe, has experienced outbreaks of communicable disease—the latest of which is the COVID-19 pandemic. As of this writing (February 23, 2023), the Southern Nevada Health District, the County's Public Health Department is reporting 599,176 confirmed cases and probably cases and 9,308 deaths (https://www.southernnevadahealthdistrict.org/download/COVID-19/updates/2023/February/20230220-Weekly-Aggregate-COVID19.pdf).

According to the CDC, community transmission of COVID-19 was first detected in the U.S. in February 2020. By mid-March 2020, all 50 states, the District of Columbia, New York City, and four U.S. territories had cases of the virus. As of February 21, 2023, the World Health Organization (WHO) reported 757, 264.511 confirmed cases and 6,850,594 deaths globally. Of those numbers and the CDC states the U.S. has 103,268,408 cases and has lost well over 1,115,637 lives due to the virus or complications from the virus. However, since the release of the vaccine and vaccine boosters, the total number of updated booster doses in the U.S. is 53,350,658. Approximately 876,294 of the U.S. confirmed, and probable cases are in the State of Nevada, which now has a COVID-19 death toll of 21,188 people.

Prior to the current coronavirus pandemic, the previous HMP (2018) mentions the entire County is susceptible to infectious diseases. Segments of the population at highest risk for contracting an illness from a pathogen are the very young, the elderly, or individuals who currently experience respiratory or immune deficiencies. These segments of the population are present throughout the region. Additionally, because of the communicable nature of these diseases, tourism centers or areas of high population density are considered more at risk. As a result, the population in and around the Las Vegas Strip may have an increased potential for exposure and spread of infectious diseases.

Probability of Future Events, Infectious Disease

Public health emergencies can occur at any time and in virtually any location, including the State of Nevada and Clark County. The previous plan update (2018) mentions the probability and magnitude of an infectious disease occurrence 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 indicates that disease related disasters do occur in humans with some regularity and varying degrees of severity. There is growing concern, however, about emerging infectious diseases. Infectious diseases constitute a significant risk to the population of Clark County. Minor outbreaks occur an estimated 30 times per year. The probability of a major infectious disease outbreak, with the potential of reaching the scale of an epidemic, however, is not nearly as common. Based upon past history, a major infectious disease outbreak occurs about once every 10 years.

Based on the Calculated Priority Risk Index (CPRI conducted for Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation), there is **a high risk probability (rank score of 3.0-3.9)** of Infectious Disease - Pandemic event in the planning area. The following table provides CPRI Rating for Infectious Disease - Pandemic related to the planning area.

Table 68: Clark County and Participating Jurisdiction CPRI Rating for Infectious Disease – Pandemic

Clark County and Participating Jurisdiction CPRI Rating for Infectious Disease – Pandemic							
Hazard: Infectious Disease		**Category and Weight**				**CPRI Score**	**Risk Level**
Index Rating (R) Weighted Score (WS)		**Probability 45%**	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**		
Clark County (including Incorporated and Unincorporated Areas	R	3	4	1	4	3.1	H
	WS	1.35	1.2	0.15	0.4		
Boulder City	R	4	3	1	4	3.25	H
	WS	1.8	0.9	0.15	0.4		
Henderson	R	4	3	1	4	3.25	H
	WS	1.8	0.9	0.15	0.4		
Las Vegas	R	4	4	2	4	3.7	H
	WS	1.8	1.2	0.3	0.4		
Mesquite	R	3	4	1	4	3.1	H
	WS	1.35	1.2	0.15	0.4		
North Las Vegas	R	3	4	2	4	3.25	H
	WS	1.35	1.2	0.3	0.4		
Special District: Clark County Water Reclamation District	R	4	4	1	4	3.55	H
	WS	1.8	1.2	0.15	.40		
Special District: Clark County School District	R	3	3	1	4	2.8	M
	WS	1.35	0.9	0.15	0.4		
Special District: Las Vegas Valley Water District/SWNA	R	3	3	1	4	2.8	M
	WS	1.35	0.9	0.15	0.40		
Tribal Nation: Las Vegas Valley Paiute	R	2	3	3	4	3.55	H
	WS	1.8	0.9	0.45	0.4		

Clark County and Participating Jurisdiction CPRI Rating for Infectious Disease – Pandemic							
Hazard: Infectious Disease		**Category and Weight**				**CPRI Score**	**Risk Level**
		Probability 45%	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**		
Index Rating (R) Weighted Score (WS)							
Tribal Nation: Moapa Band of Paiutes	R	4	4	3	3	3.75	**H**
	WS	1.8	1.2	0.45	0.3		

Note: *Though participating in the planning process, at the time of this update CPRI data for the City of Mesquite was not received. Therefore, the CPRI rating for the City of Mesquite is the same rating as Clark County due to the city being within the planning area.*

Also, given that the County has no significant occurrences of public health emergencies like an epidemic pandemic in the last plan update (2018), Clark County is currently within the COVID-19 pandemic that is affecting the County and state. Also, with new strains of highly infectious diseases, including influenza, steadily on the rise worldwide, it seems logical that the probability of future events is occasional. As a reminder, calculating probability is not the only predictor of future occurrences. Qualitative assessments will be given if necessary.

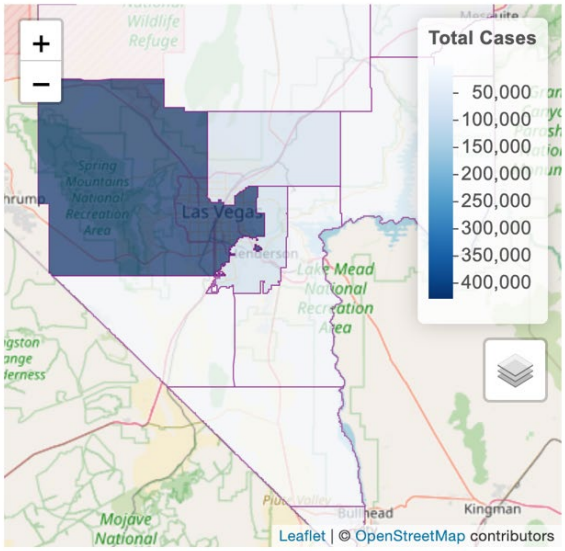
Vulnerability and Impact

Like other counties across the State of Nevada, other states across the U.S., and other countries around the world, all of Clark County is susceptible to communicable and potentially lethal disease(s). Depending on the severity, i.e., number of cases, number of recoveries, and number of deaths, along with the availability of vaccines, the impact of these diseases may be minimal, marginal, severe, or even catastrophic. Every situation is different, making it difficult to determine with certainty what the full impact, physically or financially, may be within the planning area.

Vulnerability of Population

Every resident of Clark County is vulnerable to communicable disease, whether it is the common cold, pandemic influenza, or novel coronavirus. Of course, depending on the disease, certain groups may be considered more susceptible. In the case of the COVID-19 pandemic, this includes the elderly and those with weakened immune systems or underlying medical conditions. It also includes those working on the front lines, i.e., nurses, doctors, EMS technicians and others, who must tend to the sick and dying. The following dashboard is the Total COVID-19 Cases by Township by Clark County, NV:

Total COVID-19 Cases by Township
Clark County, NV



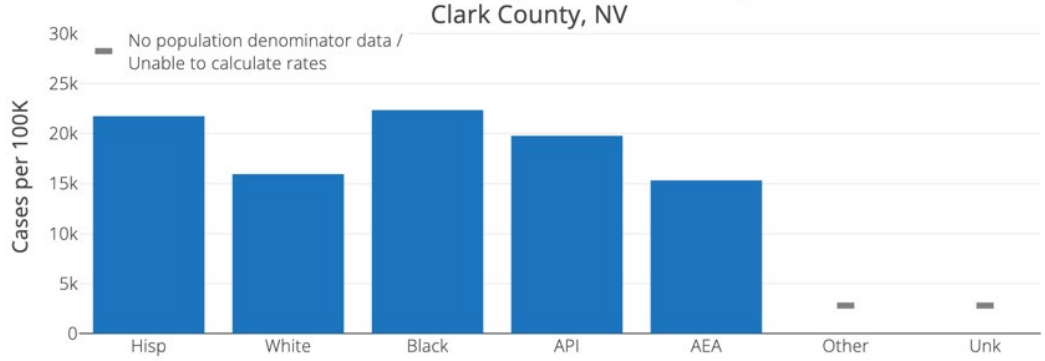
Search:

Township	Cases
Las Vegas	427,560
Henderson	78,421
North Las Vegas	72,736
Mesquite	3,129
Boulder City	2,799
Laughlin	1,860
Moapa Valley	1,034
Goodsprings	448

Showing 1 to 8 of 11 entries

Previous 1 2 Next

COVID-19 Cases by Race and Ethnicity
Clark County, NV



Choose y-axis:

Rate (per 100K) Percent (%) of Total

Abbrevations: Hisp, Hispanic Origin of Any Race; White, White Race Not of Hispanic Origin; Black, Black Race Not of Hispanic Origin; API, Asian or Pacific Islander Not of Hispanic Origin; AEA, American Indian, Eskimo, or Aleut Not of Hispanic Origin; Other, Other Race or Multiple Races Not of Hispanic Origin; Unk, Unknown.

Note: Rates for categories with fewer than 12 cases are suppressed due to high relative standard error.

Population data source for calculating rate estimates: 2019 ASRHO Estimates and Projections Summary for 2020, Office of the State Demographer for Nevada.

Data Source: Southern Nevada Health District: http://covid.southernnevadahealthdistrict.org/data/

Most public health and pandemics affect disadvantaged communities to a greater degree. This is due to more frequent, underlying health conditions among this population, less access to health care / health insurance and living in more densely occupied housing.

Without the availability (and use) of personal protective equipment (PPE), the vulnerability to disease

for the population of Clark County increases. It is further exacerbated by the lack of, or access to, certain medical equipment, such as ventilators, which can prove to be lifesavers.

Vulnerability of System

A public health crisis, namely a pandemic, has the potential to impact a number of critical systems. These include but are certainly not limited to healthcare, finance, education, and communications. For example, essential services, such as internet and phone, may be limited due to high use from at-home workers and students; and computer networks may be far more vulnerable to costly cyberattacks. Agriculture and manufacturing may also be impacted, disrupting the supply chain, and leaving essentials scarce on store shelves. Just as concerning, farmers like those in Clark County may find themselves having to discard or donate food (meat, fruits, vegetables, and milk) as the restaurants, schools, and other businesses that normally buy these items could close. This could lead to food shortages and higher prices in the future.

Impact of Climate Change

Climate change has no bearing on the profiled hazard of Infectious Disease - Epidemic.

Critical Facilities and Infrastructure

Though not physically harmful, an epidemic or pandemic, poses a number of issues for Clark County's infrastructure and critical facilities. Employees may be too sick to work, forcing businesses to alter their hours or close their doors. Government services, including law enforcement, public health, and even road maintenance, may be limited. Schools and daycares may close indefinitely. Hospitals may be short staffed, or just as concerning, short on beds in the case of medical surge event. A complete list of Clark County's critical facilities and infrastructure is available in Appendix D.

Land Use and Development

Land use and development has no bearing on the profiled hazard of Infectious Disease.

Unique and Varied Risk

All of Clark County is susceptible to the hazard Infectious Disease - Epidemic, so there is no unique and varied risk. However, it is known that elderly people, i.e., those residing in nursing homes, long-term care centers, and rehabilitation facilities are often more susceptible to communicable diseases like the flu and coronavirus. Additionally, those working on the front lines, e.g., nurses, doctors, law enforcement, and emergency medical service (EMS) providers are more likely to be exposed to contagions. It is uncertain, but highly likely that the same level of risk would be present during a flu pandemic, which is far more common than viruses like COVID-19.

However, the previous HMP plan (2018) mentions that Clark County is fortunate because it has an excellent public health system that constantly monitors the threats that could lead to a widespread and significant public health emergency. People who have weak immune systems are particularly vulnerable to infectious diseases. Infectious diseases can seriously affect those individuals who are infected with HIV or are receiving immunosuppressive therapy for cancer or organ transplants. Others who may be disproportionately affected by infectious diseases include the elderly; persons being cared for in institutional settings (such as hospitals and nursing homes); and persons with inadequate access to healthcare, such as the homeless, and others of low socioeconomic status. In addition, pregnant women and people who care for small children are generally at higher risk for acquiring infectious diseases.

The impact on safety, health, and economics will vary widely depending on the type and magnitude of a public health emergency. The Southern Nevada Health District has plans for emergency response actions and other information that is not included in this plan.

Link: (https://covid.southernnevadahealthdistrict.org/)

It is very difficult to predict future occurrences of many of the diseases affecting Clark County. The Clark County COVID-19 Resources that provides a communication toolkit and community resources and information to inform community members of the types of infectious disease present, baseline rates of communicable disease, and a brief history of the prevalence of select diseases. These resources can be found online here: https://covid.southernnevadahealthdistrict.org/resources/.

Repetitive Loss Structure

There are no repetitive loss properties associated with this particular hazard in the planning area.

HAZUS® Models

Not applicable to the identified hazard.

(INF) Infestation

Hazard Description

As defined by Federal Executive Order 13112 an invasive species is a non-native (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Invasive species can be plants, animals, and other organisms (e.g., microbes). Human actions are the primary means of invasive species introductions.

Infestations impact Nevada's economy through the destruction of crops and natural resources which also impacts tourism. Some of the plant infestations are highly flammable and assist in the spread of wildfires. The infestations of greatest concern in Clark County include noxious weeds as defined by the U.S. Department of Agriculture, noxious weeds are “species of plans that cause disease or are injurious to crops, livestock or land, and thus are detrimental to agriculture, commerce or public health.” Noxious weeds are considered invasive due to their ability to rapidly reproduce and spread, ultimately out-competing all other vegetation in an area.” In reference to agriculture, invasive weeds affect crop production. In reference to natural or wildland areas, invasive weeds cause a drastic change in the composition, structure, and function of ecosystems.

The Nevada Department of Agriculture has developed a list of 47 Noxious Weeds, divided into three categories (A, B and C):

- **Category A:** Weeds not found or limited in distribution throughout the state; actively excluded from the state and actively eradicated wherever found; actively eradicated from nursery stock dealer premises; control required by the state in all infestations.
- **Category B:** Weeds established in scattered populations in some counties of the state; actively excluded where possible, actively eradicated from nursery stock dealer premises; control required by the state in areas where populations are not well established or previously unknown to occur.
- **Category C:** Weeds currently established and generally widespread in many counties of the state; actively eradicated from nursery stock dealer premises; abatement at the discretion of the state quarantine officer.

Other invasive plants that are too widely distributed in Nevada to be included in the noxious weed list, but present problems in Nevada, include Cheatgrass and Red brome. Cheatgrass (bromus tectorum L.) is an annual grass that forms tuft up to two feet tall with leaves and sheathes that are covered in short soft hairs. The flowers occur as drooping, open, terminal clusters that can have a greenish, red, or purple hue. These annual plants will germinate in the fall or spring and senescence usually occurs in summer. Cheatgrass’s invasive nature is due to its potential to completely alter the ecosystem in which it invades, completely replacing native vegetation and changing fire regimes.

Red brome (bromus rubens L.) is a tufted, cool-season annual bunchgrass commonly found growing on shallow dry soil or poor textured, clayey soil. It becomes extremely competitive with other grasses and displaces native species. The accumulation of litter and necromass has the potential to increase fire frequency in the desert.

Location and Extent

According to the 2012 Census of Agriculture, 252 farms, covering 15,620 acres of land. Crop sales accounted for $3,291,000 and livestock sales accounted for $3,535,000 in 2012. As of the 2017 Census of Agriculture, Clark County contains 179 farms. This version of the Census of Agriculture did not include data for total acres data was withheld. The footnote indicated that this information was not included to avoid disclosing data for individual operations. Most of these important farmlands are located within the County’s unincorporates areas and zoned for agriculture use. Different pests can impact different crops in different ways; while there is no scale to define the extent of an infestation,

a pest could have a major economic impact on the value of infested crops. Infestations have occurred throughout Clark County in the following locations:

- **Noxious Weeds:** The majority of noxious weed infestations are north of Clark County. Sarah Mustard (brassica tournefortii) is the exception, which extends throughout the eastern half and southern portion of the County.
- **Cheatgrass and Red Brome:** Cheatgrass and Red brome prosper in similar habitats and are found particularly in areas of dry rangeland and shrub steppe habitats of the County.
- **Africanized Honeybees**: Africanized honeybees were first found in the U.S. in southern Texas in 1990. In 1998 their presence had been detected in Clark County and has since continued to spread north, into Lincoln and Nye Counties Nevada.
- **Banded Elm Bark Beetle (BEBB):** The BEBB is found in populations of elm trees throughout the County.
- **Mosquitos:** Mosquitos are quite active in throughout Southern Nevada. In May 2017, the Aedes aegypti mosquito has been identified in North Las Vegas.

There are no recognized scales to measure infestation. Most commonly, infestation is quantified by acres and percentage of area affected. Noxious weed which are defined as "any species of plant which is, or likely to be, detrimental or destructive and difficult to control or eradicate." are regulated by the Nevada Department of Agriculture. The extent of infestations in Clark County is based on many factors. Pests enter Clark County on commercial shipments of plants, food, and other materials. They may also be transported on vehicles, fruits, plants, seeds, or animals when travelers enter the County.

- **Noxious Weeds:** Of the 47 noxious weeds listed by the State of Nevada, only 13 are found in Clark County. Most of them do not have an overwhelming presence.
- **Cheatgrass and Red Brome:** Cheatgrass and Red brome have thrived in Nevada and cover about 9 million acres of land in Nevada, about 13 percent of the state's total acreage. Without human intervention, their populations will continue to grow.
- **Africanized Honeybees:** The Clark County Public Works Department notes that "the Africanized honey bee is well established in Las Vegas" and has recommended that residents "Stay Away From Honey Bee Colonies." In a report from February 2000 a state agriculturist said that the actual number of hives or swarms found in Las Vegas in 1999 was about 1,000, before 1998 there had been no reports of hives or swarms. Additionally, the Agriculture Department estimated that 75 percent of all bees in the valley are Africanized.
- **Banded Elm Bark Beetle:** The BEBB has invaded much of Nevada and the Western United States and the extent of its infestation continues to grow. Prior to the introduction of the BEBB a similar beetle, the European elm bark beetle (EEBB) was found in populations of elm trees. In a study to determine the relative abundance of the BEBB and the EEBB, presented at the annual USDA Interagency Research Forum on Invasive Species, beetle traps were set up in five states. In 2007, 43 percent of the beetles caught in the Nevada traps were BEBB. The following year a similar study was set up and BEBB increased in abundance in Nevada to 68 percent. It seems that the BEBB attacks standing trees more aggressively, may have displaced the EEBB and/or is better able to colonize regions beyond EEBB's range.
- **Quagga Mussels:** As an aquatic species their presence in Clark County has remained limited to the bodies of water along the Colorado River. However, since their introduction to Clark County, their presence has expanded to northern Nevada; in 2011 Quagga mussels were found in Lahontan Reservoir and Rye Patch Reservoir.
- **Asian Clam**: The presence of Asian Clams in the County has not extended beyond Lake Mead.
- **New Zealand Mudsnail**: The extent of the New Zealand Mudsnail appears to be confined to Lake Mead.
- **Aedes Aegypti:** The Aedes aegypti mosquito is the main type of mosquito that spreads Zika, dengue, chikungunya, and other viruses.

Previous Occurrence

In the previous MJHMP (2018) the following infestations have been documented to have occurred within Clark County:

- **Noxious Weeds:** Many non-native plants are introduced to new areas every year. Many are considered benign, but some species are classified as noxious because of their invasive nature; more than 500 weeds in North America are classified as noxious. The first widespread weed in Nevada considered to be invasive was a Russian thistle or tumbleweed that was introduced in the late 1800s. The Halogeton glomeratus was the second invasive species to reach Nevada and was discovered in 1934.
- **Cheatgrass:** Cheatgrass is native to Europe and parts of Africa and Asia. It was first introduced into the United States accidentally in the mid-1800s and by the early 1900s was found throughout the Great Basin (includes Nevada, and parts of California, Idaho and Utah).
- **Red Brome:** The red brome is native to Europe and parts of Africa and Asia. It was brought to North American before 1800. In contrast to accidental introductions, red brome was seeded near the University of Arizona at Tucson from 1906 to 1908 for evaluation as a forage plant; this grass soon escaped and became established along the Santa Cruz River. It continued to spread and by the 1960s was found throughout Nevada.
- **Africanized Honey Bees:** Africanized honey bees were first found in the U.S. in southern Texas in 1990. In 1998 their presence had been detected in Clark County and has since continued to spread into northern Nevada.
- **Banded Elm Bark Beetle:** The BEBB is native to northern China, Central Asia and Russia. The beetle was first detected in the United States in 2003 in Colorado and Utah. Since then the beetle has been collected in 21 states, including Nevada. However, the simultaneous detection across the country suggested that it was not a recent introduction and a survey of museum specimens established their presence in Denver Colorado in 1994.
- **Quagga Mussels:** Quagga mussels are native to Ukraine and were first sighted in the United States in 1989 in the Great Lakes. By 1995 quagga mussels were discovered outside of the Great Lakes basin and in January 2007 populations were discovered in Lake Mead near Boulder City.
- **Asian Clam:** The Asian clam is native to Asian and parts of Africa and was introduced into the United States in 1938. In 1959 the clam was discovered in Nevada in Lake Mead.
- **New Zealand Mudsnail:** The New Zealand Mudsnail is native to New Zealand and was first detected in the United States in 1987 in Idaho. No other populations were discovered until 1993 when they were found in Oregon. Since then, their invasion has expanded and the New Zealand Mudsnail is currently found in all western states, except New Mexico.
- **Mosquitos:** Two people died from the West Nile virus in 2017. Fourteen zip codes in the County returned positive tests for the virus in that year.

Probability of Future Events, Infestation

In the last 20 years, four new invasive species have been introduced to Clark County. The probability of future events for infestation in the planning area is likely due the more transient nature of the population, but also an increased ability track/study infestation/invasive species. As a reminder, calculating probability is not the only predictor of future occurrences. Qualitative assessments will be given if necessary.

Also, based on the Calculated Priority Risk Index (CPRI conducted for Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation), there is a **moderate risk probability (rank score of 2.0-2.9) of Infestation** event in the planning area.

The following table provides CPRI Rating for Infestation related to the planning area.

Table 69: Clark County and Participating Jurisdiction CPRI Rating for Infestation

Clark County and Participating Jurisdictions CPRI Rating for Infestation							
Hazard: Infestation **Index Rating (R)** **Weighted Score (WS)**		**Category and Weight** **Probability 45%**	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**	**CPRI Score**	**Risk Level**
Clark County (including Incorporated and Unincorporated Areas	R	2	2	1	4	2.15	M
	WS	0.9	0.6	0.15	0.4		
Boulder City	R	2	2	2	2	2.00	M
	WS	0.9	0.6	0.3	0.2		
Henderson	R	1	1	1	1	1.00	L
	WS	0.45	0.3	0.15	0.1		
Las Vegas	R	1	1	2	3	1.35	L
	WS	0.45	0.3	0.3	0.3		
Mesquite	R	2	2	1	4	2.15	M
	WS	0.9	0.6	0.15	0.4		
North Las Vegas	R	2	1	2	1	1.60	L
	WS	0.9	0.3	0.3	0.1		
Special District: Clark County Water Reclamation District	R	1	2	1	4	1.60	L
	WS	0.45	0.6	0.15	0.4		
Special District: Clark County School District	R	1	1	1	1	1.00	L
	WS	0.45	0.3	0.15	0.4		
Special District: Las Vegas Valley Water District/SWNA	R	2	2	1	4	2.15	M
	WS	0.9	0.6	0.15	0.1		
Tribal Nation: Las Vegas Valley Paiute	R	2	2	1	4	2.05	M
	WS	0.9	0.6	0.15	0.4		
Tribal Nation: Moapa Band of Paiutes	R	2	3	1	4	2.35	M
	WS	0.90	0.9	0.15	0.4		

Note: *Though participating in the planning process, CPRI data for the infestation for the City of Mesquite and Las Vegas Valley Water District/SWNA was not received at the time of this update. Therefore, the CPRI rating for the City of Mesquite and Las Vegas Valley Water District is the same as Clark County because the city and the special district are within the planning area.*

Vulnerability and Impact

Infestation and invasive species are a significant concern to Clark County.

Vulnerability of Population

A widespread infestation/invasive species affecting agriculture and livestock could result in severe consequences to the economic base of the County and its communities employed by the agriculture industry. Agricultural pests and diseases or significant crop losses can also impact communities if they result in limited food supplies and rises in food prices. Widespread crop losses due to contamination issues (foreign agents, biological disease) could also decrease the public's confidence in food safety. Rural communities closest to these agricultural operations may also be most vulnerable to these diseases, as livestock pathogens can infect host species, which may include wildlife and human.

Vulnerability of System

There are no widely accepted estimates of the impacts and loss estimates due to infestation/invasive species. The loss in biodiversity, increase in wildfire potential and other impacts is in the millions of dollars annually. The State of Nevada Enhanced Hazard Mitigation Plan (2018) mentions, Quagga muscles form massive clusters and can almost entirely halt water flow through plumbing or intake pipes. They cause millions of dollars of damage annually to boats and water systems, and disrupt native ecosystems, threatening sport fisheries. Not only that, but their excrement also poisons the lake's water and animals. Removing invasive species costs upwards of $150 an acre. To keep the invasives out, requires rapidly reintroducing native species which can cost several hundred dollars more per acre.

Impact of Climate Change

The success of invasive plants in native plant communities is highly influenced by factors related to environment (such as temperature, precipitation, and carbon dioxide), disturbance or resource availability, and biotic resistance (The kind of temperature changes observed, described and projected by several studies over the past decade may have notable effects on native vegetation and invasive plants. Although temperature shifts can alter invasive dynamics, the greatest effect of climate change in biotic communities arises from shifts in maximum and minimum temperatures rather than annual means. These changes can give invasive species an early season start, resulting in increased growth and recruitment relative to native species. An example is that higher low temperatures, during winter months, resulting in increased bark beetle larva survival rates with resultant large-scale damage/death to trees and more intense wildfires.

Critical Facilities and Infrastructure

Agriculture pests or diseases would not directly impact critical facilities assessed in this plan; however, the food and agriculture industry, which is considered a critical facility within the County would be affected. Impacts to farms and agriculture operations within the County would have debilitating effects on food security, public health, and the economy within the planning area. Also, Clark County farms and associated processing plants would be directly impacted economically by long-term disruptions in the food supply associated with crop losses due to infestation related to agriculture pests. A complete list of critical facilities and infrastructure can be found in Appendix D.

Land Use and Development

Most likely, good development practices and the ongoing implementation of the buffer policies within the Count would not have an impact on Clark County's vulnerability to noxious weeds, agricultural

pests, plant diseases, or tree mortality.

Unique and Varied Risk

The invasive species/infestation in Clark County will likely exist for years. However, more recent statistics show that new infestations are occurring more frequently. Clark County has taken steps to reduce the extent of infestations through laws, regulations, and planning (such as the 2000 Nevada State Weed Plan and the Establishment of an Interior quarantine due to Africanized honeybees [May 2001]), but it is not likely that these infestations will ever be eradicated. Furthermore, controls are even more challenging to regulate due to the transient nature of the County's invasive species. Historically new invasive species appeared, on average, every ten (10) years.

Related to noxious weeds are those weeds designated as a pest by state or federal law or regulation. The Nevada Weed Management Association (NWMA) mentions that Early Detection and Rapid Response (EDRR) and mapping are tools for managing noxious weeds related to infestation. The NWMA website notes Nevada is a partner state using the Early Detection & Distribution Mapping System (EDDMapS) app for reporting and learning more about invasive plants found throughout the state. This invaluable tool is available to both invasive species professionals and the general public and can be accessed here.

Repetitive Loss Structure

There are no repetitive loss properties associated with this particular hazard in the planning area.

HAZUS® Models

Not applicable to the identified hazard.

(HM) Hazardous Materials

Hazard Description

A hazardous material (HazMat) is defined as any material that, due to its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released. Hazardous materials include but are not limited to hazardous substances, hazardous wastes, and any material that a business or local implementing agency has a reasonable basis to believe would be dangerous to the health and safety of persons or would be harmful to the environment if released.

The U.S. Occupational Safety and Health Administration (OSHA) defines a hazardous material as any substance or chemical posing a health hazard, or physical hazard, including chemicals that are carcinogens, toxic agents, irritants, corrosives, sensitizers; agents that act on the hematopoietic system; agents that damage the lungs, skin, eyes, or mucous membranes; chemicals that are combustible, explosive, flammable, oxidizers, pyrophoric, unstable-reactive or water-reactive; and chemicals that, in the course of normal handling, use, or storage may produce or release dust, gases, fumes, vapors, mists or smoke that may have any of the previously mentioned characteristics. Effects of exposure may be felt over seconds, minutes, or hours (i.e., short-term effects) or not emerge until days, weeks, or even years after (i.e., long-term effects). Some substances are harmful after a single exposure of short duration, but others require long episodes of exposure or repeated exposure over time to cause harm.

Hazardous material releases can occur from industrial facilities at fixed sites or along transportation corridors such as rail and roadways. Past hazardous material releases are contained in the history section. Hazards from releases causes include fire, explosion, toxicity, corrosiveness, and asphyxiation. These releases may cause long-term impacts to both individuals affected by the initial release and the surrounding environment or personal property and can result in short-term or long-term evacuations, depending on the size and scale of the incident. The U.S. Department of Transportation (DOT) divides hazardous materials into nine major hazard classes. A hazard class is a group of materials that share a common major hazardous property, i.e., radioactivity, flammability, etc. These hazard classes include:

- Class 1—Explosives
- Class 2—Compressed Gases
- Class 3—Flammable Liquids
- Class 4—Flammable Solids; Spontaneously Combustible Materials; Dangers When Wet Materials/Water-Reactive Substances
- Class 5—Oxidizing Substances and Organic Peroxides
- Class 6—Toxic Substances and Infectious Substances
- Class 7—Radioactive Materials
- Class 8—Corrosives
- Class 9—Miscellaneous Hazardous Materials/Products, Substances, or Organisms

Mobile incidents include those that occur on a roadway or a railroad. These incident-related releases are dangerous because they can happen anywhere, including near human populations, critical facilities, or environmentally sensitive areas. Mobile incident-related releases can also be more difficult to mitigate because of the great area over which any given incident might occur and the potential distance of the incident site from response resources.

The release of hazardous substances from stationary sources such as storage facilities or manufacturing plants can be caused by human error, equipment failure, intentional dumping, acts of terrorism, or natural phenomena. Earthquakes pose a particular risk because they can damage or destroy facilities containing hazardous substances. The threat posed by a hazardous-material event can be amplified by restricted access, reduced fire suppression and spill containment capability, and

cutoff of response resources.

Specific incidents involving hazardous materials, whether in transit, stored, used, or produced, are reported to the federally established National Response Center (NRC). Staffed 24 hours a day by the U.S. Coast Guard officers and marine science technicians, the NRC is the designated federal point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the U.S. and its territories. Reports to the NRC activate the National Contingency Plan and the federal government's response capabilities. The NRC maintains reports of all releases and spills in a national database. In 2018, it logged 25,600 incidents nationwide.

Eight of the most common hazardous materials that first responders, HAZMAT teams, and perhaps the NRC's On-Scene Coordinator are likely to encounter in the event of an industrial accident or transportation-related incident are: carbon dioxide, chlorine, fireworks, gasoline, argon, sulfuric acid, propylene, and liquified petroleum gas (LPG). The "List of Lists: Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-To-Know Act (EPCRA), Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Section 112(r) of the Clean Air Act" is available from the U.S. Environmental Protection Agency (EPA).

While it is nearly impossible to eliminate HazMat incidents altogether, there are many precautions industries can take to stay safe in the event of industrial or accidental (i.e., transportation-related) spillage. The same holds true for the communities located near these industries and the highways, railroads, pipelines, and air/water transportation systems they routinely use to move hazardous materials. Risks can ultimately be minimized and remediation simplified by a better understanding of the hazardous materials common to a particular area, along with specifics on how best to react if and when an incident occurs.

Location and Extent

While it is nearly impossible to eliminate HazMat incidents altogether, there are many precautions industries can take to stay safe in the event of industrial or accidental (i.e., transportation-related) spillage. The same holds true for the communities located in close proximity to these industries, as well as the highways, railroads, pipelines, and air/water transportation systems they routinely use to move hazardous materials. Through a better understanding of the hazardous materials common to a particular area, along with specifics on how best to react if and when an incident occurs, risks can ultimately be minimized, and remediation simplified.

According to 2021 Preliminary Toxics Release Inventory (TRI) data, of the nation’s 21,087 toxics-releasing facilities, 146 are located in the state of Nevada. In fact, the State ranks number 1 out of 56 states/territories based on total releases per square mile. The following are the quick facts for the State of Nevada:

2021 TRI Factsheet: State – Nevada

Data Source: 2021 National Analysis Dataset (released October 2022)

The Toxics Release Inventory (TRI) tracks the management of certain toxic chemicals that may pose a threat to human health and the environment. Certain industrial facilities in the U.S. must report annually how much of each chemical is recycled, combusted for energy recovery, treated for destruction, and disposed of or otherwise released on- and off-site. This information is collectively referred to as production-related waste managed.

Map of TRI Facilities in Nevada



Quick Facts for 2021

	Nevada	United States
Number of TRI Facilities:	146	21,087
Total Production-Related Waste Managed:	559.7 million lbs	29.2 billion lbs
Total On-site and Off-site Disposal or Other Releases:	449.2 million lbs	3.3 billion lbs
Total On-site:	443.4 million lbs	2.8 billion lbs
• Air:	665.0 thousand lbs	571.1 million lbs
• Water:	601 lbs	196.3 million lbs
• Land:	442.7 million lbs	2.1 billion lbs
Total Off-Site:	5.8 million lbs	429.8 million lbs

Nevada ranks **1 out of 56** states/territories nationwide based on total releases per square mile (Rank 1 = highest releases)

Data Source: United States Environmental Protection Agency TRI Explorer

Of those 146 facilities reporting toxic release information in Nevada, fifty (50) are located in Clark County. The presence of these sites within and near Cobb County, along with the routine transportation of hazardous materials, contribute to the HazMat risk. The following quick facts for Clark County (2021) are provided by TRI.

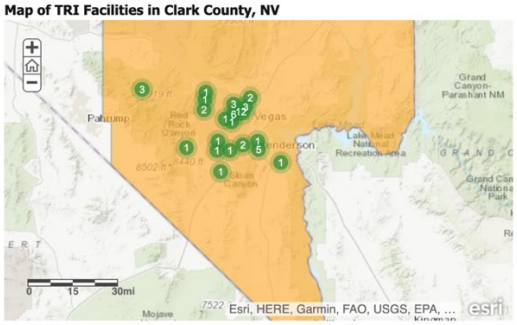
2021 TRI Factsheet: County – Clark, NV

Data Source: 2021 National Analysis Dataset (released October 2022)

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The Toxics Release Inventory (TRI) tracks the management of certain toxic chemicals that may pose a threat to human health and the environment. Certain industrial facilities in the U.S. must report annually how much of each chemical is recycled, combusted for energy recovery, treated for destruction, and disposed of or otherwise released on- and off-site. This information is collectively referred to as production-related waste managed.

Map of TRI Facilities in Clark County, NV



Quick Facts for 2021

	Clark County, NV	United States
Number of TRI Facilities:	50	21,087
Total Production-Related Waste Managed:	5.4 million lbs	29.2 billion lbs
Total On-site and Off-site Disposal or Other Releases:	5.0 million lbs	3.3 billion lbs
Total On-site:	3.2 million lbs	2.8 billion lbs
• Air:	54.4 thousand lbs	571.1 million lbs
• Water:	0 lbs	196.3 million lbs
• Land:	3.1 million lbs	2.1 billion lbs
Total Off-Site:	1.8 million lbs	429.8 million lbs

Nevada ranks **1 out of 56** states/territories nationwide based on total releases per square mile (Rank 1 = highest releases)

Data Source: United States Environmental Protection Agency TRI Explorer

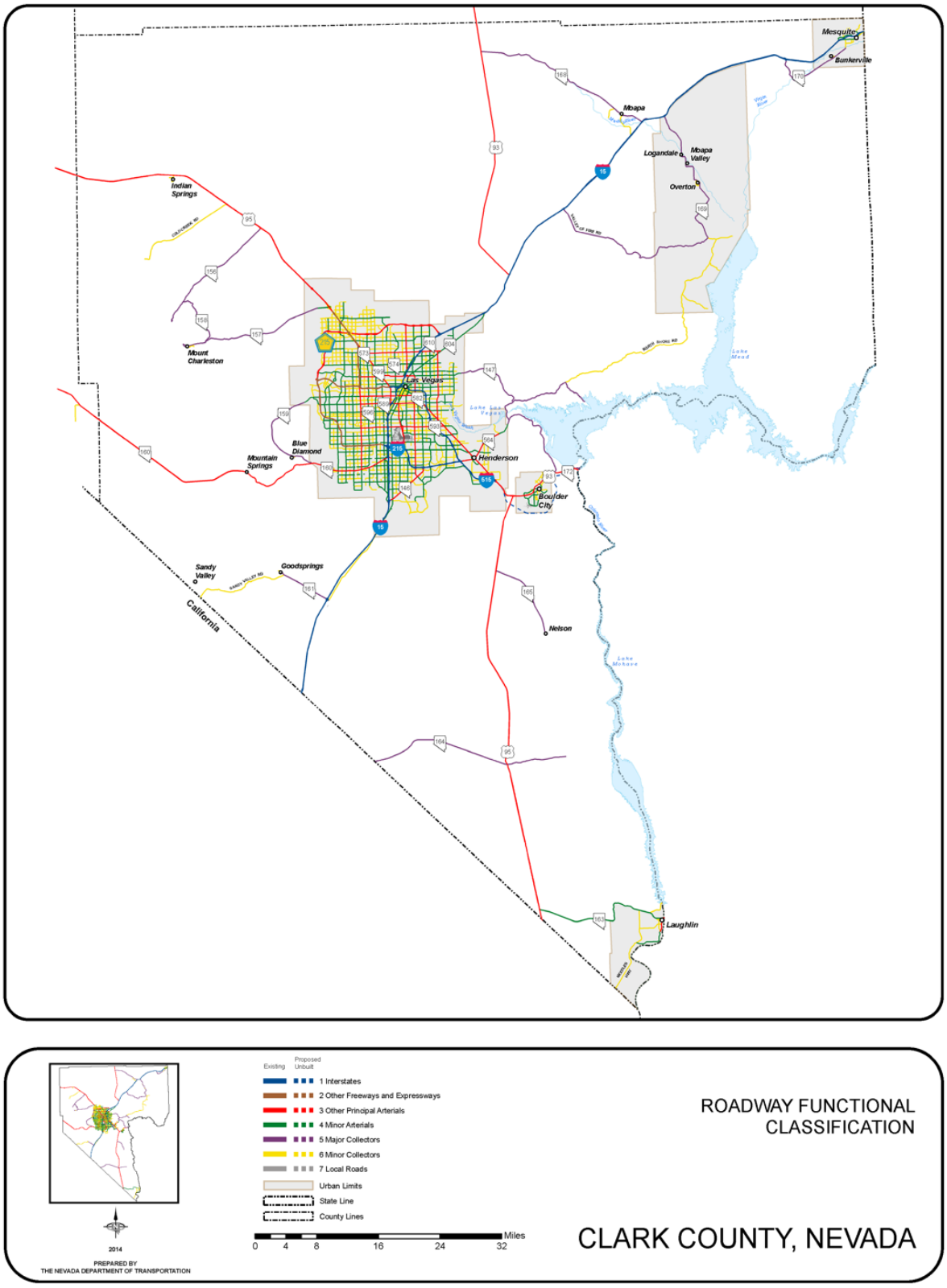
Clark County is situated on the southern tip of Nevada and served by a network of primary and secondary highways. The 2022 Clark County HazMat Emergency Response Plan indicates the following routes within the County: four major highways in Clark County: Interstate Highway I-15, U.S. Highway 95, U.S. Highway 93, and I-215 known as the Beltway. The Interstate I-15 connects the Las Vegas Valley with St. George & Salt Lake City, Utah toward the northeast and Barstow & San Bernardino, California toward the southwest. U.S. Highway 95 connects the Las Vegas Valley with Indian Springs and the Nevada National Security Site (NNSS) to the Northwest and Laughlin Nevada toward the South. U.S. Highway 93 connects the Las Vegas Valley with Ely & Caliente Nevada toward the north and Hoover Dam (U.S. 515) & the City of Boulder City. Interstate I-11 is now open which

includes 15 miles of new freeway around the southern perimeter of Boulder City from I-515 (U.S. 95) to U.S. Highway 93. At the eastern end, the I-11 connects to the Mike O'Callaghan-Pat Tillman Memorial Bridge and to Kingman, Arizona. The I-215 Beltway consists of three connected segments (northern, western, and southern) that together form a freeway ring or loop around a major portion of the Las Vegas Valley. The interchange between Interstate Highway I-15 and U.S. Highway 95 is commonly known as the Spaghetti Bowl.

Nestled within the County are the following incorporated cities of Las Vegas, North Las Vegas, Henderson, Boulder City, and Mesquite which are the counties' populated areas. Also, the County is home to the Country's 7th largest airport and world-renowned Casinos, which makes it a famous tourism market coupled with major interstate highway and rail transportation routes within the County as a target for terrorism/WMD and Hazmat incidents. The previous MJHMP (2018) indicates that other modes of transportation of hazardous materials include:

- Rail (two Union Pacific Railroad main lines) -the first runs across northern Nevada, linking central California with Salt Lake City. The other runs through the southern part of the state, including the Las Vegas Valley. The southern line connects Los Angeles - Long Beach with Salt Lake City and UP's transcontinental line to eastern destinations.
- Airports (Harry Reid International Airport (previously known as McCarran International Airport), five general aviation airports, and Nellis Air Force Base).
- Four major petroleum product pipelines.

Other hazardous material areas include Black Mountain Industrial, (2,717) EHS fixed facilities, wellheads, and the Nevada National Security Site. The following is a base map showing the major transportation routes in Clark County.



Data Source: Nevada Department of Transportation (NDOT)

HazMat incidents pose significant risk to humans, animals, or the environment in Clark County. Depending on the type of hazardous material(s) and the size of the area impacted, the losses could be minor, major, or significant.

Possible Losses to Critical Facilities

As noted in the previous MJHMP (2018), Clark County has experienced "serious" hazardous material transportation incidents. These incidents are defined as including a fatality or injury requiring in-patient hospitalization. On the fixed facility side, as of December 2017, there are 437 EHS facilities within the County that have chemicals above the Threshold Planning Qualities.

Previous Occurrence

Given the presence of fifty (50) TRI facilities in Clark County, and the continuous storage, production, use and transportation of hazardous materials across its main thoroughfares, the entire planning area is at risk of a HazMat incident.

Based on information obtained from the Nevada State Fire Marshal and State Emergency Response Commission Search (https://nevada.hazconnect.com), there were XX significant transportation-related HazMat (spill) incidences that occurred in Clark County and its participating jurisdictions (which included Clark County Unincorporated area, and the Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation). between January 1, 2018 and February 28, 2023.

The following citations were taken verbatim from the Nevada State Fire Marshal and State Emergency Response Commission Search. Details of the events are provided below:

Las Vegas, February 2023

A leak in the Kinder Morgan pipeline resulted in a shut down and fuel shortage. The Governor of Nevada to declare a state of emergency and Clark County to declare a fuel emergency3

[3] *KLAS – Las Vegas 8 (Feb. 10,2023). Pipeline shuts down supplies 90% of Las Vegas valley's fuel needs. 8 News Now Las Vegas. https://www.8newsnow.com/investigators/pipeline-shutdown-by-leak-provides-90-of-gasoline-to-las-vegas-valley/?ipid=promo-link-block1*

Probability of Future Events, Hazardous Materials

Although there is no single, comprehensive source of open-source information about hazardous materials. in the state, there are several specific sources that can be queried. The events that can produce a hazardous material release vary significantly, and therefore future releases are statistically independent of past events. The fact that all releases have a human component that makes prediction difficult. Based on the Calculated Priority Risk Index (CPRI conducted for Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation), there is a **moderate probability (rank score of 2.0-2.9)** of a terrorism event in the planning area. The following table provides CPRI Rating for hazardous materials related to Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).

Table 70: Clark County and Participting Jurisdictions - CPRI Ratings for Hazardous Materials

Clark County and Participating Jurisdictions CPRI Rating for Hazardous Materials							
Hazard: Hazardous Materials **Index Rating (R)** **Weighted Score (WS)**		**Category and Weight** Probability 45%	Magnitude/ Severity 30%	Warning Time 15%	Duration 10%	**CPRI Score**	**Risk Level**
Clark County (including Incorporated and Unincorporated Areas	R	3	2	4	3	2.85	**M**
	WS	1.35	0.6	0.6	0.3		
Boulder City	R	3	3	4	3	3.15	**H**
	WS	1.35	0.9	0.6	0.3		
Henderson	R	4	4	1	4	3.55	**H**
	WS	1.8	1.2	.15	.4		
Las Vegas	R	3	4	3	2	3.2	**H**
	WS	1.35	1.2	0.45	0.2		
Mesquite	R	3	2	4	3	2.85	**M**
	WS	1.35	0.6	0.6	0.3		
North Las Vegas	R	3	1	4	2	2.75	**M**
	WS	1.35	0.3	0.6	0.2		
Special District: Clark County Water Reclamation District	R	4	4	3	1	3.55	**H**
	WS	1.8	1.2	.45	.10		
Special District: Clark County School District	R	2	2	3	3	2.25	**M**
	WS	0.9	0.6	0.45	0.3		
Special District: Las Vegas Valley Water District/SWNA	R	2	3	4	3	2.7	**M**
	WS	0.9	0.9	0.6	0.30		
Tribal Nation: Las Vegas Valley Paiute	R	4	3	3	4	3.6	**H**
	WS	1.8	0.9	0.15	0.1		

Clark County and Participating Jurisdictions CPRI Rating for Hazardous Materials							
Hazard: Hazardous Materials **Index Rating (R)** **Weighted Score (WS)**		**Category and Weight** Probability 45%	Magnitude/ Severity 30%	Warning Time 15%	Duration 10%	**CPRI Score**	**Risk Level**
Tribal Nation: Moapa Band of Paiutes	R	3	3	4	2	3.05	H
	WS	1.35	0.9	0.6	0.2		

Note: *Though participating in the planning process, at the time of this update CPRI data for the City of Mesquite was not received. Therefore, the CPRI rating for the City of Mesquite is the same rating as Clark County due to the city being within the planning area.*

However, calculating future probability is not the only predictor of future occurrences. Unfortunately, the short period of recorded and observed historical data that contribute to the risk make it challenging to develop return periods for hazardous material release areas in Clark County. As stated previously, given the presence of fifty (50) TRI facilities in Clark County and the continuous storage, production, use, and transportation of hazardous materials across its main thoroughfares, the entire planning area is at risk of a HazMat incident.

Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation can expect a HazMat event with 3400% probability per year, or 34 events per year, as indicated in the following table. The qualitative chance of a hazardous materials event in the planning area is considered highly likely.

Table 71: Probability of Future Events, Hazardouts Materials, Clark County, NV

Probability of Future Events, Hazardous Materials, Clark County, NV	
Event Year	***Event Count***
2018	47
2019	35
2020	24
2021	32
2022	32
Total Recorded Events =	**170**
Total Years =	**5**
Yearly Probability =	***3400%**

Note: **Clark County and its participating jurisdictions can expect a hazardous material event with 3400% probability each year. This number was derived from the number of recorded events by the year range used. Calculating future probability is not the only predictor of future occurrences. The qualitative chance of a flood impacting the planning area is highly likely.*

Data Source: United States Coast Guard National Response Center (USCG NRC) (https://nrc.uscg.mil/)

Vulnerability and Impact

Hazard materials that are processed correctly and transported safely are not impactful to the community in a negative way. However, hazardous materials could have a significant impact if there was a chemical release or explosion involving chemicals within the planning area. The probability of a hazardous materials events in the planning area as depicted in the previous section, is 3400% events per year.

Vulnerability of Population

Depending upon the chemical, if a hazardous material incident were to occur, this could significantly impact the population of Clark County. Not only are the workers at the hazardous waste sites vulnerable, but so too are the communities around the facilities themselves. Train tracks and even major highways are also vulnerable. Anything from minor irritation to death can occur if certain materials are inhaled or exposed to humans.

Vulnerability of System

A hazardous materials event will affect transportation routes in and out of the Clark County. A train wreck involving a hazardous material event will force the tracks to be shut down. Similarly, a truck wreck on the interstate or other roadways in Clark County will stop traffic and may require the evacuation of area homes, schools, businesses, etc.

Impact of Climate Change

Climate change does not have a close correlation with hazardous material (HazMat) release incidents. While an increase in the number of storm events may result in a rise in transportation accidents annually, it is difficult to determine if this will result in additional or more severe releases.

Critical Facilities and Infrastructure

All critical facilities and infrastructure within the planning area are equally at risk of a HazMat incident. This is especially true for homes, schools, businesses, and critical facilities that are in close proximity to rail transportation and highways, including the following within the planning area: The Interstate I-15 connects the Las Vegas Valley with St. George & Salt Lake City, Utah toward the northeast and Barstow & San Bernardino, California toward the southwest. U.S. Highway 95 connects the Las Vegas Valley with Indian Springs and the Nevada National Security Site (NNSS) to the North West and Laughlin Nevada toward the South. U.S. Highway 93 connects the Las Vegas Valley with Ely & Caliente Nevada toward the north and Hoover Dam (U.S. 515) & the City of Boulder City. Interstate I-11 is now open which includes 15 miles of new freeway around the southern perimeter of Boulder City from I-515 (U.S. 95) to U.S. Highway 93. At the eastern end, the I-11 connects to the Mike O'Callaghan-Pat Tillman Memorial Bridge and to Kingman, Arizona. The I-215 Beltway consists of three connected segments (northern, western, and southern) that together form a freeway ring or loop around a major portion of the Las Vegas Valley. The interchange between Interstate Highway I-15 and U.S. Highway 95 is commonly known as the Spaghetti Bowl. A complete list of critical facilities and infrastructure can be found in Appendix D.

Land Use and Development

Clark County's previous MJHMP (2018) indicated that they planning area has no land use or development trends related to hazardous materials incidents. However, such events can have a prominent, direct environmental impact and cause long-term, insidious ecological damage. Water pollution is an immediate concern for direct human consumption, recreation, crop irrigation, and fish and wildlife consumption. Depending on the material, pollutants can bio accumulate to differing degrees, affecting animals high on the food chain long after a spill. A hazardous material incident could affect geology and significantly impact soils and farmlands, requiring expensive remediation. In terms of location and extent, when a hazardous material incident occurs in Clark County, there is a chance it will not only involve dirt or surface material but will also include flowing mater in ditches, ricers, or small streams. Other potential concerns for spills/leaks are for situations involving sabotage and terrorism.

Unique and Varied Risk

Clark County, as a whole, is vulnerable to this particular hazard due the large number of facilities storing hazardous materials, and the frequent transportation of hazardous materials by rail and road transportation. All of Clark County, to include its seven participating jurisdictions, is vulnerable to both fixed-location and transportation-related hazardous materials spills. Hazardous material releases or events are most likely to occur on one of the County's four major highway systems (I-15, U.S. 95, U.S. 93, and I-215); two Union Pacific Railroad main lines; six airports, including Harry Reid International Airport (McCarran) and Nellis Air Force Bases; four major petroleum product pipelines Black Mountain Industrial Park in the City of Henderson; EHS fixed facilities, wellheads, and the Nevada National Security Site in southeastern Nye County which is 65 miles northwest of the city of Las Vegas. Hazardous material events impacts include fires, impediments of transportation, evacuation and short- or longer-term displacement, and social disruption.

Repetitive Loss Structure

Not applicable to the identified hazard.

HAZUS® Models

Not applicable to the identified hazard.

(T) Terrorism

Hazard Description

The definition of terrorism by the U.S. Federal Bureau of Investigation (FBI) is "the unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives." The FBI defines cyberterrorism as the use of computer network tools to shut down critical national infrastructures (e.g., energy, transportation, government operations) or to coerce or intimidate a government or civilian population.

Terrorists may use one or more of the following types of weapons: chemical, biological, incendiary, radiological, or explosives. In addition to large-scale attacks, a full range of assault styles must be considered, including simple bombings, active shooter, assassinations with small arms, major bombings, and others. The use of explosive devices remains the weapon of choice for terrorist activity. Related activities include bomb threats that disrupt the normal operations of transit systems, government, or corporate facilities. Primary locations likely to be targeted include airports, mass transit targets, government facilities, and high population density locations, although so-called "soft targets" such as schools, local entertainment facilities, etc., are at risk. The potential for nuclear, biological, or chemical terrorism is also a concern. These types of emergencies would necessitate detailed contingency planning and preparation of emergency responders to protect their communities.

Weapons of mass destruction (WMD) typically used by terrorists are categorized by an acronym that lists the types of materials/weapons: CBRNE stands for chemical, biological, radiological, nuclear, and explosives; BNICE stands for biological, nuclear, incendiary, chemical, and explosives. The nature of each category of weapon is described briefly below:

- **Chemical** – These include blood and choking agents, nerve agents, blister agents, and toxic industrial chemicals. The advantages of using chemical weapons include being easy to make, readily available, inexpensive, having an immediate effect, and that they are easily spread. The disadvantages are that they require significant quantities for a mass effect, and that the production and deployment are potentially hazardous to the terrorist. Some chemical agents are odorless and tasteless and are difficult to detect, while others have distinct odors. They can have an immediate effect (i.e., a few seconds to a few minutes) or a delayed effect (i.e., several hours to several days). Routes of exposure for chemical weapons are inhalation, ingestion, absorption, and injection. Unlike many biological weapons, first responders can take self-protective measures by wearing personal protective equipment. First-aid measures and effective medical interventions are available, and chemical agent exposures can be decontaminated, and agents neutralized.
- **Biological** – These are defined as bacteria, viruses, or toxins used to produce illness or death in people, animals, or plants. The advantages of biological weapons include being easy to make, readily available, and relatively inexpensive. The disadvantages include delayed effects and potential deployment hazards to the terrorist. Routes of exposure for biological weapons are inhalation, ingestion, absorption, and injection. Biological agents can be dispersed as airborne particles or aerosols on food items or in water, or through an injection. Terrorists may use biological weapons because the agents are odorless, tasteless, and extremely difficult to detect.
- **Radiological / Nuclear** – These are typically in the form of a traditional fission device such as an atom bomb, a radiological dispersal device (i.e., often called a dirty bomb), or a conventional explosion at a nuclear facility. The advantages of radiological or nuclear weapons include availability of materials, devastating effects, and a great psychological impact on the population. The disadvantages include delayed effects, deployment is hazardous to the terrorists, and it is extremely expensive — in the millions of dollars for a nuclear weapon. Radiation cannot be detected by human senses. Consequences may include death, severe health risks to the public, damage to the environment, and extraordinary loss of, or damage to, property. The health effects of radiological or nuclear

materials include radiation burns, fragmentation wounds, acute radiological poisoning, and long-term effects, such as cancers and birth defects.

- **Explosives** – These are most terrorists' weapon of choice. 86% of domestic terrorist incidents involve the use of explosives. Explosives are readily available and have dramatic results, are low risk, require few skills to build and use, are easy to execute, allow for remote attacks, and do not require many people to execute. There are low explosives and high explosives. The effects include blast pressure, both positive and negative, fragmentation, and thermal. There are pipe bombs or bombs that can be easily concealed into a backpack, box, vehicles, or virtually any type of container, with numerous trigger mechanisms to set off the bomb. Bombings account for up to fifty percent of worldwide terrorist attack patterns.
- **Cyberterrorism** – According to the FBI, cyberterrorism is any "premeditated, politically motivated attack against information, computer systems, computer programs, and data which results in violence against non-combatant targets by sub-national groups or clandestine agents." As nations and critical infrastructure become more dependent on computer networks for their operations, new vulnerabilities are created. A cyberterrorist attack is designed to cause physical violence or extreme financial harm. Possible cyberterrorist targets include the banking industry, military installations, power plants, air traffic control centers, and water systems but could be against any facility that relies on computers, computer systems, and programs for their operations.
- **Active Shooter** – The U.S. Department of Homeland Security defines the active shooter as "an individual actively engaged in killing or attempting to kill people in a confined and populated area; in most cases, active shooters use firearms, and there is no pattern or method to their selection of victims." Active shooters may also use explosive devices during assaults to increase the likelihood of casualties or to commit suicide. Most incidents occur at locations in which the killers find little impediment in pressing their attack. Locations are generally described as soft targets that have limited security measures to protect members of the public. In most instances, shooters commit suicide, are shot by police, or surrender when confrontation with responding law enforcement is unavoidable.
- **Contamination** – Contamination of food and water supplies is an infrequent method of terrorism. In 1984, members of the Rajneeshee religious cult contaminated a city water supply tank in Dalles, Oregon, using Salmonella and infected 750 people. In 1992 The Kurdistan Workers' Party (PKK) put lethal concentrations of potassium cyanide in the water tanks of a Turkish Air Force compound in Istanbul. Contamination has the potential to injure large numbers of people and disrupt critical commodity supplies. Under the Environmental Protection Agency America's Water Infrastructures Act, water system operators are required to conduct a risk and resiliency assessment and develop an emergency response plan.

Per the National Advisory Committee on Criminal Justice Standards and Goals, every type of terrorist utilizes distinct methods of violence to get their message across. They can be anything from assault weapons or explosive devices to toxic chemicals that are released into the air. These attacks may occur at any time or place, which makes them an extremely effective method of instilling terror and uncertainty into the general public.

The U.S. Department of Homeland Security (DHS), created by the Homeland Security Act of 2002, is responsible for ensuring the safety and security of America from terrorist attacks and other disasters.

Location and Extent

The form and locations of many natural hazards are identifiable and, even in some cases, predictable. However, there is no defined geographic boundary for terrorism. In addition to direct physical damage, terrorist attacks breed fear. Even an unsuccessful attempt to attack the region would seriously impact the comfort of residents and affect local businesses. Terrorist incidents in this country before the September 11, 2001, attacks have included bombings of the World Trade Center (1993) in New York City, the United States Capitol Building in Washington, D.C., and Mobil Oil corporate headquarters in

New York City. There was also the 1995 bombing of the Murrah Federal Building in Oklahoma City. The notable incident that occurred within Clark County, primarily the City of Las Vegas, was the Las Vegas Shooting in October 2017. In this incident, at least 59 people died, and more than 500 people were injured due to a gunman opening fire from the 32nd floor of a Las Vegas hotel during a country music event. (https://www.nbcnews.com/storyline/las-vegas-shooting/las-vegas-police-investigating-shooting-mandalay-bay-n806461).

The previous Clark County MJHMP (2018) mentioned that the Department of Homeland Security's National Planning Scenario identifies possible terrorist strike locations it views as most plausible. The at-risk sites include cities that have economic and symbolic value, places with hazardous facilities, and areas where large groups of people congregate, such as an office building or sports arena. As such, the Las Vegas Strip is potentially a high-profile target. As one of 64 designated urban metropolitan areas, Las Vegas has been identified by the federal government as "high-threat, high-density," with regard to acts of terrorism. In addition to the Las Vegas Strip, the following locations are viewed as potential targets in Clark County: Fremont Street (Las Vegas, Nevada), individual casinos, Las Vegas Convention Center, Harry Reid International Airport (previously known as McCarran Internatioal Airport) (Las Vegas, Nevada), military bases, and dams. The damage caused by a terror attack depends on the attack method. Large bomb attacks could destroy major infrastructure, kill many people, and disrupt regional functioning for a significant time. Cyberterrorism would cause different types of damage, possibly severely hampering local government operations and businesses with no direct injuries or loss of life. The County experienced a cyberterrorism event in August 2020 when the Clark County School District experienced a ransomware attack that affected its students and employees (https://www.ktnv.com/news/clark-county-school-district-releases-update-about-recent-cyber-attack).

Since 9/11, like most states in the U.S., the State of Nevada and Clark County have implemented numerous homeland security measures to ensure its population's continued safety and security. The Nevada Legislature created the Nevada Commission on Homeland Security in 2003. Clark County is among the many local governments the Nevada Commission of Homeland Security supports on a continual basis. The Commission is tasked with several responsibilities directed towards making recommendations to the Governor, the Legislature, local governments, private businesses, and citizens about actions and measures that may be taken to protect the citizens and visitors to this State from potential acts of terrorism and related emergencies. For the County, the Las Vegas Metropolitan Police Department Homeland Security Division website mentions that it comprises the Emergency Operations Bureau, Southern Nevada Counter-Terrorism Center, Criminal Intelligence Section, and SWAT Bureau. The Southern Nevada Counter-Terrorism Center (Fusion Center) serves as the State of Nevada's designated Fusion Center.

Like every location across the U.S., Clark County is susceptible to the hazard of terrorism. This is why it is essential that the vital part that the whole community is a part of our homeland security efforts. If you observe suspicious activity requiring immediate response, contact Clark County 911 (https://www.dhs.gov/see-something-say-something/reporting/nevada). If you have information about suspicious activity, specifically in Clark County, call 1-702-828-SSSS (702-828-7777) or submit a tip on www.snctc.org.

Previous Occurrence

Due to the sensitive nature and vulnerability of terrorism in the planning area, much of the data relating to terrorist activities is confidential and, therefore, unavailable for this plan update. However, the following incidents have been reported in the previous MJHMPs (2012 and 2018) and the news:

January 7, 1967 – Clark County, Terrorism – Criminal Incident

Richard James Paris, a 28-year-old Army deserter, committed suicide by firing a handgun into a pile of dynamite at the Orbt Inn hotel.

March 8, 1972 – Clark County – Las Vegas, Terrorism – Terrorist Attack

During an apparent $2 million extortion plot against Trans World Airlines, a bomb exploded in an

empty Boeing 707 plane at Harry Reid International Airport (previously known as McCarran Internatioal Airport) in Las Vegas, seven hours after arriving from Kennedy International Airport in New York.

January 8, 2014 – Clark County – Terrorism – Right Wing

Two assailants shot and killed two police officers as they were eating lunch. The attackers then took the officers' weapons and ammunition before shooting and killing one other person inside a Walmart store across the street. One attacker shot the other before killing herself, Clark County investigators believe the attackers had a suicide pact.

April 5, 2017 – Clark County, Las Vegas – Terrorism

Nicolai Howard Mork, an MIT business school graduate faces terrorism charges in Las Vegas and unlawful acts related to weapons of mass destruction.

October 1, 2017 – Clark County, Las Vegas – Criminal Intent

Clark County experienced the largest mass shooting incident in the United States' history. The ongoing investigation reports that an active shooter killed 58 people and injured 515 more during an outdoor music festival on the Las Vegas Strip; and Clark County is experiencing significant economic impact and resource shortage in responding to these matters and anticipated continued economic obligation resulting in financial hardship for short term response and long-term recovery for the affected individuals and areas.

June 1, 2020 – Clark County, Las Vegas – Criminal Intent

A man shot and paralyzed a Las Vegas officer during a racial justice protest on the Las Vegas Strip.

August 27, 2020 – Clark County – Cyberterrorism

Clark County School District (CCSD) was the victim of a criminal ransomware attack. Upon learning of this attack, CCSD immediately notified law enforcement and began an investigation to determine the full nature and scope of this incident, including whether any CCSD data was impacted. As part of our response, CCSD's Technology staff isolated the infected systems and began taking certain systems offline to further limit the impact on CCSD.

March 5, 2022 – Clark County, Henderson – Terrorism, Terroristic Attack

A 21-year-old woman stabbed her date inside a Sunset Station Hotel and Casino hotel room in Henderson NV. Authorities said the stabbing was in retaliation for the death of an Iranian military leader who was killed by US drone strike in 2020.

Probability of Future Events, Terrorism

While authorities may receive tips, acts of terrorism are, for the most part, unpredictable. Based on the Calculated Priority Risk Index (CPRI conducted for Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation), there is a **moderate probability** (rank score of **2.0-2.9**) of a terrorism event in the planning area. The following table provides CPRI Rating for wildfire related to Clark County and its participating jurisdictions (which includes the Clark County Unincorporated area, and Tribal areas of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation).

Table 72: Clark County and Participating Jurisdictions CPRI Rating for Terrorism

Clark County and Participating Jurisdictions CPRI Rating for Terrorism							
Hazard: Terrorism		**Category and Weight**				**CPRI Score**	**Risk Level**
Index Rating (R) Weighted Score (WS)		**Probability 45%**	**Magnitude/ Severity 30%**	**Warning Time 15%**	**Duration 10%**		
Clark County (including Incorporated and Unincorporated Areas	R	2	3	4	4	2.8	M
	WS	0.9	0.9	0.6	0.4		
Boulder City	R	2	2	4	4	2.5	M
	WS	0.9	0.6	0.6	0.4		
Henderson	R	4	4	4	4	4	S
	WS	1.35	1.2	0.6	0.4		
Las Vegas	R	4	4	3	4	3.85	H
	WS	1.8	1.2	0.45	0.4		
Mesquite	R	2	3	4	4	2.8	M
	WS	0.9	0.9	0.6	0.4		
North Las Vegas	R	2	2	4	1	2.2	M
	WS	0.9	0.6	0.6	0.1		
Special District: Clark County Water Reclamation District	R	1	2	4	1	1.75	L
	WS	.45	.60	.60	.10		
Special District: Clark County School District	R	2	3	4	1	2.5	M
	WS	0.9	0.9	0.6	0.1		
Special District: Las Vegas Valley Water District/SWNA	R	2	3	4	3	2.7	M
	WS	0.90	0.90	0.60	0.30		
Tribal Nation: Las Vegas Valley Paiute	R	4	4	3	4	3.85	H
	WS	1.8	1.2	0.45	0.4		
Tribal Nation: Moapa Band of Paiutes	R	2	1	1	2	1.55	L
	WS	0.9	0.3	0.15	0.2		

Note: *Though participating in the planning process, at the time of this update CPRI data for the City of Mesquite was not received. Therefore, the CPRI rating for the City of Mesquite is the same rating as Clark County due to the city being within the planning area.*

However, calculating future probability is not the only predictor of future occurrences. This is especially true of terrorism, which is human-caused and, as previously mentioned, highly unpredictable. Due to the sensitive nature and vulnerability of this hazards, much of the data relating to terrorist activities in Clark County is confidential. However, there were events/ incidents of terrorism that were reported in the previous MJHMPs (2012 and 2018) and the news over the last five years. Clark County and its participating jurisdictions can expect terrorism event with 83.3% probability per year or 0.833 events per year, as indicated in the following table. The qualitative chance of a terrorism event within the planning are remains **highly likely.**

Table 73: Probability of Future Event, Terrorism, Clark County , NV

Probability of Future Events, Terrorism, Clark County, NV	
Event Year	***Event Count***
2017	2
2018	0
2019	0
2020	2
2021	0
2022	1
Total Recorded Events =	**5**
Total Years =	**6**
Yearly Probability =	**83.3%**

Data Source: Clark County 2012 Multi-Jurisdictional Hazard Mitigation Plan; Clark County 2018 Multi-Jurisdictional Hazard Mitigation Plan; KNTV13 ABC Affiliate Las Vegas; NBC News

Vulnerability and Impact

Terrorist attacks will continue into the future. They are likely to become more sophisticated, and potentially, more deadly. As terrorists increasingly target information technology systems through cyberattacks, critical infrastructure, finance, health, and transportation systems are at risk.

Vulnerability of Population

The entire population of Clark County, primarily the Las Vegas-Henderson Metropolitan Area, is vulnerable to the hazard of terrorism.

Vulnerability of System

Given the unpredictable nature of terrorism, it is difficult to determine which systems within Clark County, primarily the Las Vegas – Henderson Metropolitan area, may be impacted during an event. This is especially true for high-risk areas near main thoroughfares, interstates, railroads, airports, and chemical companies throughout the County. It is best to assume all are at risk of damage, disruption, or destruction.

Impact of Climate Change

Climate change does not have a close correlation with terrorist incidents.

Critical Facilities and Infrastructure

Critical Facilities & Infrastructure are high value targets for terrorists, and all should be presumed to be highly susceptible to terrorist attack. Based on previous events, it is presumed that critical facilities and services and large gatherings of people are at higher risk. Public transportation facilities have been a repeated target of terrorists. This is due to the open nature of the facilities, the large numbers of people that use them, and the paralyzing effects that terrorist attacks have on communities' ability to provide transportation for daily life. Terrorist attacks on transportation systems thus have an impact that is much greater than to loss of human life and injuries and the damage done to infrastructure. By shutting down vital services and requiring increased security, they have a disproportionate economic cost.

A complete list of critical facilities and infrastructure can be found in Appendix D – Critical Facilities & Infrastructure.

Land Use and Development

Land use and development has no bearing on this particular hazard.

Unique and Varied Risk

There is no unique and varied risk to the hazard of terrorism. However, everyone living and working in Clark County could be impacted by such an event in one way or another. Terrorism has the potential to negatively affect all of Clark County, especially the populated metropolitan area of Las Vegas – Henderson – North Las Vegas. There are no defined methods for estimating the losses from terrorism. Individual terrorist incidents, such as the 9/11 World Trade Center attack, have caused the loss of thousands of lives and resulted in billions of dollars in damage. Within the County, losses from terrorist attacks could be devastating. There are numerous laws and regulations that relate to terrorism both at the state and federal levels. Key laws that are particularly applicable to the County are:

- 18 United States Code Title 113B Section 2323 which describes prohibitions for bombings of places of public use, government facilities, public transportation, and infrastructure facilities.
- The Critical Infrastructure Information Act of 2002 (CII Act) facilitates greater sharing of critical infrastructure information among the owners and operators of the critical infrastructures and government entities with infrastructure protection responsibilities, thereby reducing the nation's vulnerability to terrorism.
- NRS Chapter 239C & BRS Section 293C.010 which is Chapter 239C is Nevada's Homeland Security legislation, which provided plans to respond to terrorism and related emergencies. Also, it promotes statewide preparation for acts of cyber-terrorism, environmental catastrophes, and other related incidents.

As a result, any future mitigation steps taken related to terrorist activities should be initiated on a countywide basis and include all participating jurisdictions.

Repetitive Loss Structure

Not applicable to the identified hazard.

HAZUS® Models

Not applicable to the identified hazard.

Excluded Hazards

Avalanche

Avalanche was excluded from Clark County's previous MJHMP (2018) and was not mentioned as a hazard of concern with this plan update.

Coastal Storm

Coastal Storm was excluded from Clark County's previous MJHMP (2018) and was not mentioned as a hazard of concern with this plan update.

Landslide

The State of Nevada Enhanced Hazard Mitigation Plan (2018) states that Landslide poses a hazard in the State of Nevada because in Nevada, rockslides are more common than normal landslides seen in other areas. They tend to be localized; however, this hazard can occur with earthquakes, major storms, floods, melting ice, and snow. However, with earthquake and flooding being hazards of concern for this MJHMP update, landslide was excluded from Clark County's 2018 MJHMP (2018) and was not mentioned as a hazard of concern with this plan update.

Tsunami/Seiche

The State of Nevada Enhanced Hazard Mitigation Plan (2018) states that Tsunami/Seiche poses a hazard in the State of Nevada because lakes in Nevada could have 10-meter-high waves generated by an earthquake under or adjacent to the lake. However, with Lake Meade located in the planning area and earthquake being a hazard of concern for this MJHMP update, tsunami/seiche was excluded from Clark County's 2018 MJHMP (2018) and was not mentioned as a hazard of concern with this plan update.

Volcano

The State of Nevada Enhanced Hazard Mitigation Plan (2018) does not identify Clark County as being at risk from Volcano. The hazard was excluded from Clark County's previous MJHMP (2018) and was not mentioned as a hazard of concern with this plan update.

Note: *Some human-caused hazards, though identified in the State of Nevada Enhanced Mitigation Plan (2018), are not included in Clark County's previous HMP (2018) nor this plan update. This includes Utility Failure.*

Hazard Risk Summary

Probability Categories/Range per Year

Probability Categories	Unlikely	Occasional	Likely	Highly Likely
Range (Per Year)	0%	1-10%	11-50%	51-100%

The table below outlines each participating jurisdictions' general risk to this plan's profiled hazards. The rankings are based on a composite evaluation of this plan's risk assessment, namely, a hazard's probability of occurring in the future, the vulnerability of a jurisdiction to a specific hazard, the intensity of past hazard impacts, and a joint evaluation of local experts and stakeholders. For reference, the probability categories/ percentages previously indicated in Table 26 shown above.

***Notes**: * Clark County acknowledges the risk posed by these man-made and technological hazards to the jurisdiction. However, in alignment with DMA 2000, it has selected to address these hazards through other planning mechanisms and initiatives.*
*** Clark County acknowledges the risk posed by climate change. For the purposes of this plan, it has elected to address this risk through mitigation of the natural hazards known to be exacerbated by climate change, as outlined in the hazard descriptions that follow.*
*** The hazard of drought is considered likely but without a definite calculation of probability. This is due to there being no record/data of dam failure in the planning period since the last plan update (2018).*
*** The hazard of dam failure is considered occasional but without a definite calculation of probability. This is due to there being no record/data of dam failure in the planning period since the last plan update (2018).*
*** The hazard of earthquake is considered likely but without a definite calculation of probability. This is due to there being no record/data of earthquake in the planning period since the last plan update (2018)*
****Clark County and its participating jurisdictions can expect a hazardous material event with 3400% probability each year. This number was derived from the number of recorded events by the year range used. Calculating future probability is not the only predictor of future occurrences. The qualitative chance of a flood impacting the planning area is highly likely.*
*****Severe Weather: The likelihood of severe weather occurring in Clark County is likely for a heavy rain, unlikely for a tornadoes, and highly likely, respectively for hail, wind, lightning, and thunderstorm wind events. However, for a combined likelihood of a severe weather event, it is highly likely for the entire planning area.*

Hazard Risk Summary - Natural Hazards									
Jurisdictions	Climate Change	Infrastructure, Dam Failure	Drought	Extreme/ Excessive Heat	Fissures & Subsidence	Flood, Landslides & Debris Flow, Flooding	Geohazards- Earthquake and Seismic Hazards	Severe Weather	Fire, Wildland Urban Interface Fire (Wildfire)
Clark County including Clark County Unincorporated Areas, Las Vegas	Highly Likely	Occasional**	Likely**	Highly Likely	Occasional	Highly Likely	Likely**	Highly Likely****	Highly Likely

Hazard Risk Summary - Natural Hazards									
Paiute Tribe, and Moapa Band of Paiutes									
City of Boulder City	Highly Likely	Occasional**	Likely**	Highly Likely	Occasional	Highly Likely	Likely**	Highly Likely****	Highly Likely
City of Henderson	Highly Likely	Occasional**	Likely**	Highly Likely	Likely	Highly Likely	Likely**	Highly Likely****	Highly Likely
City of Las Vegas	Highly Likely	Occasional**	Likely**	Highly Likely	Likely	Highly Likely	Likely**	Highly Likely****	Highly Likely
City of Mesquite	Highly Likely	Occasional**	Likely**	Highly Likely	Occasional	Highly Likely (760%)	Likely**	Highly Likely****	Highly Likely
City of North Las Vegas	Highly Likely	Occasional**	Likely**	Highly Likely	Likely	Highly Likely	Likely**	Highly Likely****	Highly Likely

Hazard Risk Summary - Man-Made Hazards					
Jurisdictions	Infrastructure, Dam Failure	Hazardous Materials	Infectious Disease	Infestation	Terrorism
Clark County including Clark County Unincorporated Areas, Las Vegas Paiute Tribe, and Moapa Band of Paiutes	Occasional**	Highly Likely	Occasional**	Likely	Highly Likely
City of Boulder City	Occasional**	Highly Likely	Occasional**	Likely	Highly Likely
City of Henderson	Occasional**	Highly Likely	Occasional**	Likely	Highly Likely
City of Las Vegas	Occasional**	Highly Likely	Occasional**	Likely	Highly Likely
City of Mesquite	Occasional**	Highly Likely	Occasional**	Likely	Highly Likely
City of North Las Vegas	Occasional**	Highly Likely	Occasional**	Likely	Highly Likely
Special District: Clark County School District	Occasional**	Highly Likely	Occasional**	Likely	Highly Likely
Special District: Las Vegas Valley Water District/SWNA	Occasional**	Highly Likely	Occasional**	Likely	Highly Likely

Section 5: Mitigation Strategy

Hazard Mitigation Statement

The 202X MJHMP represents the County's and participating jurisdiction's commitment to create safer, more resilient communities by taking actions to reduce risk and by committing resources to lessen the effects of hazards on the people and property.

Hazard Mitigation Goals and Objectives

Mitigation goals are guidelines that represent what the community wants to accomplish through the mitigation plan. Goals are broad statements that represent a long-term, community-wide vision. The Mitigation Planning Steering Committee reviewed the goals and objectives from the previous MJHMP (2018) and determined which best met their jurisdiction's mitigation capabilities and requirements. The result was a new streamlined set of unified hazard mitigation goals listed in the following table. The goals support addressing the hazards in the General Plans and reflect input provided by stakeholders and the public. The jurisdictions worked with their Planning Departments to align these goals, and their mitigation strategies, with their General Plan Safety Elements.

Table 74: Hazard Mitigation Goals

Hazard Mitigation Goals	
Goal	**Description**
1	Reduce the risk from natural hazard events utilizing community cooperation and an all-hazards approach.
2	Pursue additional, complete, and accurate data in support of mitigation planning, disaster preparedness, disaster response, and disaster recovery operations.
3	Improve public understanding of, and support for, hazard mitigation measure.
4	Integrate the multi-jurisdictional hazard mitigation plan's findings into the planning, and decision-making processes for all current and future emergency management and preparedness related activities.
5	Minimize the risk to property from climate change.
6	Minimize the risk to property from dam failure.
7	Minimize the risk to property from drought.
8	Minimize the risk to property from geohazards – earthquake and seismic hazard.
9	Minimize the risk to property from infrastructure – flood, landslides & debris flow, flooding.
10	Minimize the risk to property from fissures & subsidence.
11	Minimize the risk to property from fire, wildland urban interface (wildfire).
12	Minimize the risk to property from infrastructure - dam failure.
13	Minimize the risk to property from infestation.
14	Minimize the risk to property from infectious disease.
15	Minimize the risk to property from hazardous materials.
16	Minimize the risk to property from terrorism.

Capabilities

Federal regulations require local hazard mitigation plans identify goals for reducing long-term vulnerabilities to the identified hazards in the planning area (Section 201.6(c)(3)(i)). Elements of this requirement include a description of capabilities that support mitigation activities.

Table 75: FEMA Regulation Checklist: Capability Assessment

FEMA Regulation Checklist: Capability Assessment	
44 CFR § 201.6(c)(3)	The plan must include mitigation strategies based on the jurisdiction's "existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools."
Elements	
C1.	Does the plan document the jurisdiction's existing authorities, policies, programs and resources, and its ability to expand on and improve these existing policies and programs? 4 CFR § 201.6(c)(3).
C2.	Does the Plan address the jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? 44 CFR § 201.6(c)(3)(ii).

Data Source: FEMA, Local Mitigation Planning Handbook Review Tool, March 2013.

A capability assessment was conducted of the MJHMP participating jurisdictions' authorities, policies, programs, and resources. From the assessment, goals, and mitigation actions were developed.

Clark County and each participating jurisdictions' capabilities (planning and regulatory, administrative and technical, financial, and education and outreach) were reviewed and updated to provide any changes that reflect their current capabilities as described in the 2018 MJHMP plan update. Each jurisdiction was provided a Jurisdiction Capabilities Assessment Worksheet by CONSTANT to review their capabilities to be included in this plan update. Capabilities for the County and all participating jurisdictions' are described in detail below. The Yes/No column denotes if a particular jurisdiction has that specific capability.

Planning and Regulatory Capabilities

These include local ordinances, policies and laws to manage growth and development. Examples include land use plans, capital improvement plans, transportation plans, emergency preparedness and response plans, building codes and zoning ordinances. Based upon the specific authorities contained in each of these planning and regulatory capabilities, they may be used to support mitigation activities.

Planning and Regulatory Capability Assessment for Clark County

PLANS	**Yes/No**	• Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Community Wildfire Protection Plan	Yes	2005, The Nevada Community Wildfire Risk/Hazard Assessment Project for Clark County, 2005, has been considered the State of Nevada's Community Wildfire Protection Plan. The previous Clark County HMP (2012) mentions that Community specific information regarding wildfires can be found in the Nevada Community Wildfire Risk/Hazard Assessment Project report.
Comprehensive/Master Plan	Yes	Yes, it provides policies on both natural and manmade hazards
Continuity of Operations (COOP) Plan	Yes	Yes, at the time of this plan update, the Clark County COOP is being revised and updated
Capital Improvement Plan (CIP)	Yes	2023, Yes, The CIP is a 5-year plan for financing infrastructure improvements, government facility construction improvements and equipment acquisition.
Economic Development Plan	Yes	2015-2035, Yes, the Clark County Economic Development Plan is meant to accommodate and guide population and employment growth for the next 20 years. The most recent 20-year planning horizon 2015-2035.
Emergency Operations Plan (EOP)	Yes	Yes, last update to the EOP was 2019 and has been reviewed and will be for review and feedback in 2023. Yes, the Clark County EOP describes what the local jurisdiction's actions will be during a response to an emergency. Includes annexes that describe in more detail the actions required of the local jurisdiction's departments/agencies. Further, this plan describes the role of the Emergency Operation Center (EOC) and the coordination that occurs between the EOC and the local jurisdiction's departments and other response agencies. Finally, this plan describes how the EOC serves as the focal point among local, state, and federal governments in times of disaster.
Stormwater Management Plan	Yes	2009. Clark County addresses stormwater management through the 208 Area-Wide Water Quality Management Plan, which addresses aspects of environmental hazards. Defer to the SNWA representative as to how this may tie into mitigation strategy for drinking water usage.
Transportation Plan	No	
How can these capabilities be expanded and improved to reduce risk?		Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	• What type of codes? • Are codes adequately enforced?

PLANS	Yes/No	• Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Building Codes		Effective February 4, 2019, the Clark County Department of Building and Fire Prevention has adopted the 2018 International Building Codes. All permit applications (except standard plans) filed from this date forward must adhere to the 2018 Building Codes. Below are local amendments to the adopted codes. For more information about the Clark County Building Code can be found online here.
Site plan review requirements	Yes	County Building Inspector for Earthquake and Flood and Clark County Fire Prevention conducts site visits related to fire hazards (wildfire)
How can capabilities be expanded and improved to reduce risk?		Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.
LAND USE PLANNING & ORDINANCES	**Yes/No**	• Is the ordinance effective for reducing hazard impacts? • Is the ordinance adequately administered and enforced?
Floodplain ordinance	Yes	Yes, Clark County Regional Flood Control District provides floodplain management for the Unincorporated County. Participant in the Clark County Flood Control District (CCFCD). Chapter 3.16 – Flood Control District can be found online here.
Subdivision ordinance	Yes	Yes, update to take affect June – July 2023, Title 30 Unified Development Codes can be found online here.
Zoning ordinance	Yes	Yes, update to take affect June – July 2023, Title 30 Unified Development Codes can be found online here.
How can capabilities be expanded and improved to reduce risk?		Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.

Planning and Regulatory Capability Assessment for Clark County Water Reclamation District (CCWD)

PLANS	Yes/No	Answer these questions in the space below: • Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Community Wildfire Protection Plan	No	
Comprehensive/Master Plan	Yes	The District has multiple master plans based on service areas and a comprehensive service area plan. These items are then incorporated into the Capital Improvement Plan.
Continuity of Operations Plan	Yes	2022. Plan addresses hazards from the framework of managing personnel and essential functions but does not directly address hazards. Does not tie to a project in the mitigation strategy and cannot be used to implement mitigation actions.
Capital Improvement Plan	Yes	2019; yes, the CIP IDs green energy projects for the District. The plan identifies estimated costs to engineer (design and construct) mitigation projects.
Economic Development Plan	No	
Emergency Operations Plan	Yes	2022. Plan addresses hazards directly but focuses on short-term response. Does not tie to a project in the mitigation strategy and cannot be used to implement mitigation actions.
Stormwater Management Plan	Yes	2009. Clark County addresses stormwater management through the 208 Area-Wide Water Quality Management Plan; addresses some aspects of environmental hazards. Defer to SNWA representative as to how this may tie into mitigation strategy for drinking water usage.
Transportation Plan	No	
Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	**Answer these questions in the space below:** • What type of codes? • Are codes adequately enforced?
Building Codes	Yes	Follows current codes as required by Clark County.
Fire Code	Yes	Follows current codes as required by Clark County.
Hazardous Material Permitting	Yes	Follows current codes as required by Clark County.
Internal inspections/control	Yes	Follows Design and Construction Standards for Wastewater Collection Systems, Southern Nevada – 2019 4th Edition and CCWRD Service Rules.
NDEP Source Point and Discharge Permitting	Yes	Follows current codes as required by NRS or federal statutes.
Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		
LAND USE PLANNING & ORDINANCES	**Yes/No**	**Answer these questions in the space below:** • Is the ordinance effective for reducing hazard impacts? • Is the ordinance adequately administered and enforced?

PLANS	Yes/No	Answer these questions in the space below: • Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Floodplain ordinance	No	
Subdivision ordinance	No	
Zoning ordinance	No	
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		

Planning and Regulatory Capability Assessment for Boulder City

PLANS	Yes/No	Answer these questions in the space below: • Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Community Wildfire Protection Plan	No	The city does not have a substantial wildfire risk.
Comprehensive/Master Plan	No	Does not address hazard mitigation directly.
Continuity of Operations Plan	Yes	Yes. All departments have a COOP that was revised in 2023.
Capital Improvement Plan	Yes	Some foreseen hazards, but not unknown. FY 23, FY 24 will be approved in May 2024.
Economic Development Plan	Yes	The plan does not address hazards.
Emergency Operations Plan	Yes	2019. Yes, the current EOP addresses hazards & mitigation strategies. It is undergoing a revision in 2023.
Stormwater Management Plan	Yes	2023. Regional Flood Control Masterplan addresses hazards & mitigation strategies.
Transportation Plan	No	Pavement Management System due to growth ordinance that addresses hazards & mitigation strategies.
Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	**Answer these questions in the space below:** • What type of codes? • Are codes adequately enforced?
Building Codes	Yes	The 2018 ICC codes, 2018 U-codes, NFPA 72 are all adequately enforced. More information regarding the City of Boulder City building codes can be found online here.
Site plan review requirements	Yes	2018 IRC, IBC are enforced in the site plan reviews.
Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		
LAND USE PLANNING & ORDINANCES	**Yes/No**	**Answer these questions in the space below:** • Is the ordinance effective for reducing hazard impacts? • Is the ordinance adequately administered and enforced?
Floodplain ordinance	Yes	Yes, Flood Hazard Reduction Ordinance – Title 11, Chapter 40, as current as 01/23/2023. This ordinance does address hazard impacts and is adequately administered and enforced.
Subdivision ordinance	Yes	Yes, Subdivision Regulation – Chapter 39 as current as 01/23/2023, does address hazard impacts and is adequately administered and enforced.
Zoning ordinance	Yes	Same Title as Subdivisions and Floodplain which addresses hazard mitigation. The current codes (as current as 01/23/2023) can be found online here.
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		

Planning and Regulatory Capability Assessment for Henderson

PLANS	Yes/No Year	• Does the plan address hazards? • Does the plan ID projects to include in the mitigation strategy? • Can the plan be used to implement mitigation actions?
Capital Improvements Plan	Yes	2022. Yes, includes project identification and addresses community hazards, can be used to implement mitigation actions as needed.
Community Wildfire Protection Plan		
Comprehensive/Master Plan	Yes	2017. Describes hazard areas and regulates current and future development based on known hazard areas.
Continuity of Operations Plan	Yes	Annually updated, includes a Continuity of Government (COG) and all city departments, includes relocation strategies and devolution, succession and alternative sites.
Economic Development Plan	Yes	2017. Component of the Comprehensive Plan.
Emergency Operations Plan	Yes	All Hazards EOP updated biannually, includes all Emergency Support Functions (ESFs), basic plan, pandemic plan and recovery plan.
Stormwater Management Plan	Yes	2011. Yes, to all.
Transportation Plan	Yes	2022. Component of the Comprehensive Plan.
How can these capabilities be expanded and improved to reduce risk?		Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	• What type of codes? • Are codes adequately enforced?
Building Codes	Yes	2018-2021 IBC Code Suite. Codes are enforced. Plan reviews, inspections, regulated construction and structures in Henderson. More information for the City of Henderson Building Codes can be found on the City of Henderson's website and also here.
Site plan review requirements	Yes	2022 Title 19 Development Code. Code is enforced.
How can these capabilities be expanded and improved to reduce risk?		Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.
LAND USE PLANNING & ORDINANCES		• Is the ordinance effective for reducing hazard impacts? • Is the ordinance adequately administered and enforced?
Floodplain ordinance	Yes	Yes, City Code Chapter 15.50- Flood Control and Control of Draining can be found online here.
Subdivision ordinance	Yes	Multiple Subdivision ordinances can be found online here.
Zoning ordinance	Yes	Yes, to all. Known as Codes of Ordinances (Development Code – Zoning) can be found online here. The purpose of this code is to establish the minimum requirements to safeguard public health, safety, and general welfare through structural strength, means of egress facilities, and stability; access for persons with disabilities, sanitation, adequate lighting, ventilation and energy conservation; and safety for life and property from fire and other hazards attributed to the built environment.
How can these capabilities be expanded and improved to reduce risk?		Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.

Planning and Regulatory Capability Assessment for Las Vegas

PLANS	Yes/No	**Answer these questions in the space below:** • Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Community Wildfire Protection Plan	N/A	City of Las Vegas is an urban environment with no wildfire protection zone to manage
Comprehensive/Master Plan	Yes	CLV 2050 Master Plan identifies hazards, mitigation strategies. Approved by Council July 2022
Continuity of Operations Plan	Yes	CLV continuously updates COOP by department. Approved by City Manager's Office 2023 (on-going)
Capital Improvement Plan	Yes	Managed by Public Works, this plan is updated annually.
Economic Development Plan	Yes	Economic & Urban Development partners with Redevelopment Agency (RDA) and Las Vegas Global and Economic Alliance
Emergency Operations Plan	Yes	CLV certifies or updates EOP annually (2022)
Stormwater Management Plan	Yes	The **Stormwater Quality Management Committee (SQMC)** is a community partnership of the Clark County Regional Flood Control District and is committed to the development and implementation of stormwater pollution monitoring, control and outreach efforts within the Las Vegas Valley.
Transportation Plan	N/A	CLV participates on Clark County Regional Transportation Commission's ITS
Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	**Answer these questions in the space below:** • What type of codes? • Are codes adequately enforced?
Building Codes	Yes	The 2021 International Building Code (IBC) and International Fire Code (IFC) were adopted in September 2022. The effective date of these codes is March 23, 2023. More information for the City of Las Vegas Building Codes can be found here.
Site plan review requirements	Yes	Routine, Land Use and Fire Reviews for Buildings conducted by Community Development Dept
Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		
LAND USE PLANNING & ORDINANCES	**Yes/No**	**Answer these questions in the space below:** • Is the ordinance effective for reducing hazard impacts? • Is the ordinance adequately administered and enforced?
Floodplain ordinance	Yes	Las Vegas Municipal Code 20.08.040 - Methods of reducing flood losses (1987). This code can be found online here.
Subdivision ordinance	Yes	Las Vegas Municipal Code 20.08.370 - Subdivision proposals (1987). This code can be found online here.
Zoning ordinance	Yes	Las Vegas Municipal Code Title 19 (2011). This code can be found online here.
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more		

PLANS	Yes/No	**Answer these questions in the space below:** • Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
effective at preventing losses.		

Planning and Regulatory Capability Assessment for Las Vegas Valley Water District/SWNA

PLANS	Yes/No	Answer these questions in the space below: • Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Water Resource Plan	Yes	Water Resource Plan that provides a comprehensive overview of projected water demands in Southern Nevada, as well as the water resources available, or expected to be available, to meet those demands over time. Current Plan is 2023, updated annually.
Comprehensive/Master Plan	N/A	
Continuity of Operations Plan	Yes	Yes, identifies how to proceed with loss of facilities, relocation, reconstitution, delegation of authority, Succession planning, critical software/hardware, ETC
Capital Improvement Plan	Yes	2017 with a 10-year planning horizon. New one being worked through currently.
Economic Development Plan	N/A	
Emergency Operations Plan	Yes	Reviewed/updated 2022, In accordance with America's Water Infrastructure Act of 2018 (AWIA 2018), Covers a multitude of scenarios that cover all hazard threats, including terrorism, weather, natural disaster, human caused accidental and intentional.
Stormwater Management Plan	N/A	
Transportation Plan	N/A	
Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	**Answer these questions in the space below:** • What type of codes? • Are codes adequately enforced?
Building Codes	Yes	Yes, LVWD follows Clark County's Building Codes
Site plan review requirements	Yes	Yes, LVWD follows the Clark County Site plan review requirements.
Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		
LAND USE PLANNING & ORDINANCES	**Yes/No**	**Answer these questions in the space below:** • Is the ordinance effective for reducing hazard impacts? • Is the ordinance adequately administered and enforced?
Turf Removal, and other water use ordinances	***Yes***	Turf Removal Rebate Programs have been in place for 20 years. Recently, a requirement to remove nonfunctional turf as been adopted as well as pool size limits. Both to support water conservation goals set for the community.
Floodplain ordinance	Yes	
Subdivision ordinance	Yes	
Zoning ordinance	Yes	

PLANS	Yes/No	**Answer these questions in the space below:** • Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		

Planning and Regulatory Capability Assessment for Mesquite

PLANS	Yes/No	Answer these questions in the space below: • Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Community Wildfire Protection Plan	No	The city follows under the County and State mitigation work related to the river that are related to wildland fire risk
Comprehensive/Master Plan	N/A	Per the last MJHMP (2018), the City of Mesquite indicated that the State of Nevada requires jurisdictions to address seismic activity. Mesquite is working to confirm if have an updated copy of this plan for MJHMP record
Continuity of Operations Plan	Yes	Yes, updated in 2022
Capital Improvement Plan	Yes	Yes, updated October 2022
Economic Development Plan	Yes	Yes, updated October 2022
Emergency Operations Plan	Yes	Yes, and EOP was reviewed and updated January 2023 to meet state of NV compliance
Stormwater Management Plan	Yes	Yes, updated October 2022
Transportation Plan	Yes	Yes, updated October 2022
Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	**Answer these questions in the space below:** • What type of codes? • Are codes adequately enforced?
Building Codes	Yes	The IBC 2018 Code, however the City will be working to adopt 2004 IBC Code Suite. These codes are adequately enforced. More information for the City of Mesquite Building Codes can be found here.
Site plan review requirements	Yes	Yes, the City Building Inspector completed site plan review related to flooding and earthquake and the City Fire Inspector completes review for fire hazards.
Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		
LAND USE PLANNING & ORDINANCES	**Yes/No**	**Answer these questions in the space below:** • Is the ordinance effective for reducing hazard impacts? • Is the ordinance adequately administered and enforced?
Floodplain ordinance	Yes	Yes, updated October 2022. Title – Flood Control District Ordinance can be found online here.
Subdivision ordinance	Yes	Yes, updated October 2022, Chapter 6 Subdivision Regulations can be found online here.
Zoning ordinance	Yes	Yes, updated October 2022, Chapter 7 – Zoning Districts Ordinance can be found online here.
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		

Planning and Regulatory Capability Assessment for North Las Vegas

PLANS	Yes/No	Answer these questions in the space below: • Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Community Wildfire Protection Plan	No	No plan. No use for mitigation strategy or actions
Comprehensive/Master Plan	Yes	No, the plan address land development. No use for mitigation strategy or actions.
Continuity of Operations Plan	Yes	Annual updates. Yes, it addresses all hazards, identifies projects and includes mitigation strategies, and can be used to implement mitigation actions.
Capital Improvement Plan	Yes	Annual with forward projection. Yes, it addresses all hazards, identifies projects and includes mitigation strategies, and can be used to implement mitigation actions.
Economic Development Plan	Yes	Annual with forward projection. Yes, it addresses all hazards, identifies projects and includes mitigation strategies, and can be used to implement mitigation actions.
Emergency Operations Plan	Yes	Updated 2021. Yes, it addresses all hazards, identifies projects and includes mitigation strategies, and can be used to implement mitigation actions.
Stormwater Management Plan	Yes	The plan address city and developer storm water protection. No use for mitigation strategy or actions.
Transportation Plan	Yes	The plan address roadways. No use for mitigation strategy or actions.
Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	**Answer these questions in the space below:** • What type of codes? • Are codes adequately enforced?
Building Codes	Yes	The 2018 IBC Code Suite. Yes, codes are adequately enforced. ICC, yes enforced. For more information about the City of North Las Vegas Building Codes can be found here.
Site plan review requirements	Yes	Regional criteria. Yes, enforced by inspectors and engineers
Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		
LAND USE PLANNING & ORDINANCES	**Yes/No**	**Answer these questions in the space below:** • Is the ordinance effective for reducing hazard impacts? • Is the ordinance adequately administered and enforced?
Floodplain ordinance	Yes	Yes, as of March 14, 2023, City Ordinance Chapter 8.50 – Stormwater Regulations can be found online here.
Subdivision ordinance	Yes	Yes, as of March 14, 2023, City Ordinance Title 16 – Development Code, Title 16.01.190 – Subdivision can be found online here.
Zoning ordinance	Yes	Yes, as of March 14, 2023, City Ordinance Title 17 – Zoning Ordinances can be found online here.
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		

Planning and Regulatory Capability Assessment for Las Vegas Paiute Tribe

PLANS	Yes/No	Answer these questions in the space below: • Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Community Wildfire Protection Plan	No	
Comprehensive/Master Plan	No	
Continuity of Operations Plan	No	Though the Tribe doesn't have a COOP they understand the need and has included the creation and development of this plan as a priority/mitigation project for the next plan cycle
Capital Improvement Plan	N/A	
Economic Development Plan	N/A	
Emergency Operations Plan	Yes	Yes, there is one however, it is in draft but due to COVID, the Tribe is working to update the document to reflect the current capabilities of the Tribe
Stormwater Management Plan	N/A	
Transportation Plan	N/A	
Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	**Answer these questions in the space below:** • **What type of codes?** • **Are codes adequately enforced?**
Building Codes	N/A	
Site plan review requirements	N/A	
Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		
LAND USE PLANNING & ORDINANCES	**Yes/No**	**Answer these questions in the space below:** • **Is the ordinance effective for reducing hazard impacts?** • **Is the ordinance adequately administered and enforced?**
Floodplain ordinance	N/A	
Subdivision ordinance	N/A	
Zoning ordinance	N/A	
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		

Planning and Regulatory Capability Assessment for Moapa Band of Paiutes

PLANS	Yes/No Year	Does the plan address hazards? Does the plan ID projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Capital Improvements Plan	Yes, 2015	As per the 2015 Moapa Band of Paiutes Hazard Mitigation Plan, the tribe has a 5-year Master Plan.
Community Wildfire Protection Plan	N/A	
Comprehensive/Master Plan	Yes	
Continuity of Operations Plan	N/A	
Economic Development Plan	Yes	As per the 2015 Moapa Band of Paiutes Hazard Mitigation Plan, the tribe has an Economic Development Plan (Economic Development Department).
Emergency Operations Plan	Yes	Yes, the 2015 Moapa Band of Paiutes Hazard Mitigation Plan does mention having a stormwater management program within its regulatory capabilities.
Stormwater Management Plan	Yes	Yes, the 2015 Moapa Band of Paiutes Hazard Mitigation Plan does mention having a stormwater management program within its regulatory capabilities. However, the Stormwater Management Program needed to be reconstructed.
Transportation Plan	N/A	
How can these capabilities be expanded and improved to reduce risk?		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	**What type of codes? Are codes adequately enforced?**
Building Codes	Yes	Yes, as mentioned in the 2015 Moapa Band of Paiutes Hazard Mitigation Plans regulatory capabilities, the tribe follows unified building code.
Site plan review requirements	No	No, the 2015 Moapa Band of Paiutes Hazard Mitigation Plan does not mention any site plan review requirement within its regulatory capabilities.
How can these capabilities be expanded and improved to reduce risk?		Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.
LAND USE PLANNING & ORDINANCES		**Is the ordinance effective for reducing hazard impacts? Is the ordinance adequately administered and enforced?**
Floodplain ordinance	No	No, the 2015 Moapa Band of Paiutes Hazard Mitigation Plan does not mention any ordinances like floodplain for the tribal reservation.
Subdivision ordinance	N/A	N/A, the 2015 Moapa Band of Paiutes Hazard Mitigation Plan does not mention any ordinances like subdivision for the tribal reservation.
Zoning ordinance	N/A	N/A, the 2015 Moapa Band of Paiutes Hazard Mitigation Plan does not mention any ordinances like zoning for the tribal reservation.
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		

***Note**: As mentioned in the 2015 Moapa Band of Paiutes Hazard Mitigation Plan (April 2015), will adhere to the regulations, policies, program, regulatory capabilities related to hazard prone areas as described in the Clark County Plan, including pre-disaster hazard mitigation management and post-disaster mitigation management.*

Administrative and Technical Capabilities

These capabilities include community (public and private) staff and their skills and tools which can be used for mitigation planning and implementation. This capability includes engineers, planners, emergency managers, GIS analysts, building inspectors, grant writers, and floodplain managers. Small communities may rely on other government entities such as counties or special districts for resources. Based upon the specific expertise contained in each of these administrative and technical capabilities, they may be used to support mitigation activities.

Administrative and Technical Capability Assessment for Clark County

ADMINISTRATION	**Yes/No**	• Describe capability. • Is coordination effective?
Mutual aid agreements	Yes	Yes, the County participates in the NVMAC (NV Mutual Aid Compact).
Planning Commission	Yes	They are effective in communication with the County Commissioners.
TECHNICAL STAFF	**Yes/No and include if Full Time (FT) or Part Time (PT) position**	• Is staff trained on hazards and mitigation? • Is coordination between agencies and staff effective? • Have skills/expertise been used to assess/mitigate risk in the past?
Building Official	Yes	Yes, to all.
Community Planner	Yes	Yes, to all.
Emergency Manager	Yes	Yes, to all.
Engineer	Yes	Yes, to all.
Fire Chief	Yes	Yes, to all.
Floodplain Manager/Administrator	Yes	Yes, to all.
GIS/HAZUS Coordinator	Yes	Yes, to all.
Sheriff	Yes	Yes, to all.
Procurement Services Manager	Yes	Yes, to all.
By continuing to utilize and seek improved methods for including the necessary technical and planning staff in the development and updates of emergency operations plans, financial planning and mitigation planning efforts. An important component is the use of trained grant writers with the knowledge and skill sets to research and apply for federal funding opportunities.		

Administrative and Technical Capability Assessment for Clark County Water Reclamation District (CCWD)

ADMINISTRATION	Yes/No	Describe capability. Is coordination effective?
Mutual aid agreements	Yes	Yes, CCWRD participates in the statewide water/wastewater assistance network called NV WARN.
TECHNICAL STAFF	**Yes/No and include if Full Time (FT) or Part Time (PT) position**	**Answer these questions in the space below:** • Is staff trained on hazards and mitigation? • Is coordination between agencies and staff effective? • Have skills/expertise been used to assess/mitigate risk in the past?
GIS/HAZUS Coordinator	Yes	GIS staff available but may not be aware of all mitigation activities/hazards for the county.
Engineering Staff	Yes; FT	Team of engineers as FTE and available consulting firms on a wide-variety of mitigation-related infrastructure items.
Emergency Management Program-Coordinator and Analyst	Yes; FT	Staff communicate organization hazards both internally and externally to inform mitigation efforts.

Administrative and Technical Capability Assessment for Boulder City

ADMINISTRATION	Yes/No	Describe capability. Is coordination effective?
Mutual aid agreements	Yes	Yes, the city is multiple, current mutual aid agreements.
Planning Commission	Yes	They are effective in communication with the city council.
TECHNICAL STAFF	**Yes/No and include if Full Time (FT) or Part Time (PT) position**	**Answer these questions in the space below:** • Is staff trained on hazards and mitigation? • Is coordination between agencies and staff effective? • Have skills/expertise been used to assess/mitigate risk in the past?
Building Official	Yes	Yes, to all.
Community Planner	Yes	For the Community Development Director who oversees the Planner, yes to all.
Emergency Manager	Yes	Yes, to all.
Engineer	Yes	Yes, to all.
Fire Chief	Yes	Yes, to all.
Floodplain Manager/Administrator	Yes	Yes, to all.
GIS/HAZUS Coordinator	Yes	Yes, to all.
Police Chief	Yes	Yes, to all.
Procurement Services Manager	Yes	Yes, to all.
By continuing to utilize and seek improved methods for including the necessary technical and planning staff in the development and updates of emergency operations plans, financial planning and mitigation planning efforts. An important component is the use of trained grant writers with the knowledge and skill sets to research and apply for federal funding opportunities.		

Administrative and Technical Capability Assessment for Henderson

ADMINISTRATION	Yes/No	Describe capability. Is coordination effective?
Mutual aid agreements		
Planning Commission		
TECHNICAL STAFF	**Yes/No FT/PT**	**Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective? Have skills/expertise been used to assess/mitigate risk in the past?**
Building Official	Yes FT	All trained on hazards and mitigation, and we adhere to the NIMS training program
Community Planner	Yes FT	Yes, develops and maintains the Comprehensive Plan, including the safety element. Develops area plans based on the Comprehensive Plan, to provide more specific guidance for the development of more specific areas. Reviews private development projects and proposed capital improvements projects and other physical projects involving property for consistency and conformity with the Comprehensive Plan. Anticipates and acts on the need for new plans, policies, and code changes. Applies the approved plans, policies, code provisions, and other regulations to proposed land uses.
Emergency Manager	Yes FT	Yes, all hazards trained, National Incident Management System (NIMS) certified, Incident Command System (ICS) training, CBCP, coordinates with all departments and staff, uses skills to be mitigated and assess risk, experience managing a variety of incidents.
Engineer	Yes FT	Yes. Oversees the effective, efficient, fair, and safe enforcement of the Nevada Building Code. Provides direct or contract civil, structural, and mechanical engineering services, including contract, project, and construction management. Maintains and operates a wide range of local equipment and facilities as well as providing assistance to members of the public. These include providing sufficient clean fresh water and reliable sewer services. Maintains and operates of a wide range of local equipment and facilities as well as providing assistance to members of
Fire Chief	.	Yes, all hazards trained, NIMS certified, ICS training, coordinates with all departments and staff, uses skills to mitigate and assess risk, experience managing a variety of incidents.
Floodplain Manager/Administrator	Yes FT	Yes, enforces the jurisdiction's floodplain management ordinance, which requires that new development proposals do not increase flood risk, and that new developments are not located below the 100 year flood level. In addition, the Floodplain Administrator is responsible for planning and managing flood risk reduction projects throughout the jurisdiction.
GIS/HAZUS Coordinator	Yes FT	Yes, all staff go through ICS training and are equipped to identify and assess hazards
Sheriff	Yes FT	Police Chief
Procurement Services Manager	Yes FT	Yes, all hazards trained, NIMS certified, ICS training, coordinates with all departments and staff, uses skills to mitigate and assess risk, experience managing a variety of incidents.
How can capabilities be expanded and improved to reduce risk?		Additional training of staff in hazard mitigation and financial resources to pursue mitigation projects.

Administrative and Technical Capability Assessment for Las Vegas

ADMINISTRATION	Yes/No	Describe capability. Is coordination effective?
Mutual aid agreements	Yes	Nevada Emergency Management Assistance Compact
Planning Commission	Yes	Members appointed by City Council, monthly meetings open to public
TECHNICAL STAFF	**Yes/No and include if Full Time (FT) or Part Time (PT) position**	**Answer these questions in the space below:** • Is staff trained on hazards and mitigation? • Is coordination between agencies and staff effective? • Have skills/expertise been used to assess/mitigate risk in the past?
Building Official	Yes	Full Time position; yes to all.
Community Planner	Yes	Full Time position; yes to all.
Emergency Manager	Yes	Full Time position; yes to all.
Engineer	Yes	Full Time position; yes to all.
Fire Chief	Yes	Full Time position; yes to all.
Floodplain Manager/Administrator	Yes	Full Time position; yes to all.
GIS/HAZUS Coordinator	Yes	Full Time position; yes to all.
Sheriff	Yes	Full Time position; yes to all.
Procurement Services Manager	Yes	Full Time position; yes to all.
Additional technical expertise in climate adaptation and sustainability as well as economic recovery is key to success in identified mitigation activities.		

Administrative and Technical Capability Assessment for Las Vegas Valley Water District/SWNA

ADMINISTRATION	Yes/No	Describe capability. Is coordination effective?
Mutual aid agreements	Yes	Yes, NVWARN, and an agreement with two agencies in California.
Planning Commission	N/A	
TECHNICAL STAFF	**Yes/No and include if Full Time (FT) or Part Time (PT) position**	**Answer these questions in the space below:** • Is staff trained on hazards and mitigation? • Is coordination between agencies and staff effective? • Have skills/expertise been used to assess/mitigate risk in the past?
Building Official	N/A	
Community Planner	N/A	
Emergency Management Coordinator	Yes	Yes, to all.
Engineer-Infrastructure Management	Yes	Yes, to all
Risk Manager	Yes	Yes, to all
Floodplain Manager/Administrator	N/A	
GIS/HAZUS Coordinator	N/A	
Security Manager	Yes	Yes, and a staff of security officers to support.
Procurement Services Manager	Yes	Yes, to all
By continuing to utilize and seek improved methods for including the necessary technical and planning staff in the development and updates of emergency operations plans, financial planning and mitigation planning efforts. An important component is the use of trained grant writers with the knowledge and skill sets to research and apply for federal funding opportunities.		

Administrative and Technical Capability Assessment for Mesquite

ADMINISTRATION	Yes/No	Describe capability. Is coordination effective?
Mutual aid agreements	Yes	Yes, the City with Littlefield Beaver Dam Fire Dept (AZ), Clark County Station 71 in Bunkerville, and Lincoln County, NV for fire/rescue efforts. The City is written into the HAZMAT response plan for the County and will come into further MAA beginning in 2024.
Planning Commission	Yes	They are effective in communicating with the City Council.
TECHNICAL STAFF	**Yes/No and include if Full Time (FT) or Part Time (PT) position**	**Answer these questions in the space below:** • Is staff trained on hazards and mitigation? • Is coordination between agencies and staff effective? • Have skills/expertise been used to assess/mitigate risk in the past?
Building Official	Yes	Yes, to all.
Community Planner	Yes	Yes, to all.
Emergency Manager	Yes	Yes, the all. The Fire Chief also serves as the Emergency Manager for the City.
Engineer	Yes	Yes, to all.
Fire Chief	Yes,	Yes, the all. The Fire Chief also serves as the Emergency Manager for the City.
Floodplain Manager/Administrator	Yes	Ask Travis
GIS/HAZUS Coordinator	Yes	Yes, to all.
Sheriff	Yes	Yes, to all.
Procurement Services Manager	Yes	Yes, to all.
By continuing to utilize and seek improved methods for including the necessary technical and planning staff in the development and updates of emergency operations plans, financial planning and mitigation planning efforts. An important component is the use of trained grant writers with the knowledge and skill sets to research and apply for federal funding opportunities.		

Administrative and Technical Capability Assessment for North Las Vegas

ADMINISTRATION	Yes/No	Describe capability. Is coordination effective?
Mutual aid agreements	Yes	Yes
Planning Commission	Yes	They are effective in communication with the City Council.
TECHNICAL STAFF	**Yes/No and include if Full Time (FT) or Part Time (PT) position**	**Answer these questions in the space below:** • Is staff trained on hazards and mitigation? • Is coordination between agencies and staff effective? • Have skills/expertise been used to assess/mitigate risk in the past?
Building Official	Yes	Yes, to all.
Community Planner	Yes	Yes, to all.
Emergency Manager	Yes	Yes, to all.
Engineer	Yes	Yes, to all.
Fire Chief	Yes	Yes, to all.
Floodplain Manager/Administrator	Yes	Yes, to all.
GIS/HAZUS Coordinator	Yes	Yes, to all.
Sheriff	No.	City Police Chief
Procurement Services Manager	Yes	Procurement Manager and Accounting Manager
By continuing to utilize and seek improved methods for including the necessary technical and planning staff in the development and updates of emergency operations plans, financial planning and mitigation planning efforts. An important component is the use of trained grant writers with the knowledge and skill sets to research and apply for federal funding opportunities.		

Administrative and Technical Capability Assessment for Las Vegas Paiute Tribe

ADMINISTRATION	Yes/No	Describe capability. Is coordination effective?
Mutual aid agreements	Yes	
Planning Commission	No	
TECHNICAL STAFF	**Yes/No and include if Full Time (FT) or Part Time (PT) position**	**Answer these questions in the space below:** • **Is staff trained on hazards and mitigation?** • **Is coordination between agencies and staff effective?** • **Have skills/expertise been used to assess/mitigate risk in the past?**
Building Official	N/A	
Community Planner	N/A	
Emergency Manager	FT	Yes, to all
Engineer	FT	Yes, to all
Fire Chief	N/A	
Floodplain Manager/Administrator	N/A	
GIS/HAZUS Coordinator	N/A	
Chief of Police	FT	Yes, to all
Procurement Services Manager	N/A	
By continuing to utilize and seek improved methods for including the necessary technical and planning staff in the development and updates of emergency operations plans, financial planning and mitigation planning efforts. An important component is the use of trained grant writers with the knowledge and skill sets to research and apply for federal funding opportunities.		

Administrative and Technical Capability Assessment for Moapa Band of Paiutes

ADMINISTRATION	Yes/No	Describe capability. Is coordination effective?
Mutual aid agreements		
Planning Commission		
TECHNICAL STAFF	**Yes/No FT/PT**	**Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective? Have skills/expertise been used to assess/mitigate risk in the past?**
Building Official	Yes	Yes, Public Works Director
Community Planner	No	
Emergency Manager	Yes	Yes, Emergency Services Manager
Engineer	Yes	Yes, Tribal Planner
Floodplain Manager/Administrator	Yes	
GIS/HAZUS Coordinator	No	No, Indian Health Service
Grant writer	Yes	
How can capabilities be expanded and improved to reduce risk?		Additional training of staff in hazard mitigation and financial resources to pursue mitigation projects.

Note: *As mentioned in the 2015 Moapa Band of Paiutes Hazard Mitigation Plan (April 2015), the Moapa Band of Paiutes Emergency Management Program operates under the direction of the Moapa Band of Paiutes Tribal Council. Day-to-day operations and direction for the program is conducted under the management of the Tribal Chairman who has delegated coordination actions to the Moapa Band of Paiutes Emergency Coordinator. The final responsibility for all emergency management belongs to the Tribal Chairman. The Tribal Chairman and Council are responsible for all policy-level decisions. They are also required to be the approving body for public information releases to the public. During response operations, the elected officials will be available to their constituents to handle non-routine problems. The Tribal Emergency Management has responsibility for coordinating the entire emergency management program, within the boundaries of the Reservation, and can make routine decisions within the limits of disaster authority. During emergency operations, the Emergency Manager ensures that all parties are working in a concerted, supportive effort to overcome the disaster.*

Financial Capabilities

The following table contains a list of administrative and financial capabilities available to Clark County. Based upon procedures for each resource, these financial capabilities may be used to support mitigation activities.

Financial Capability Assessment for Clark County

FINANCIAL	Yes/No	Answer these questions in the space below: • Has the funding resource been used in past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities (BRIC)	Yes	
Hazard Mitigation Grant Program (HMPG)	Yes	
Pre-Disaster Mitigation grant program (PDM)	Yes	
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	No	
Flood Mitigation Assistance grant program (FMA)	Yes	
Water Preservation Funds (SWNA)	No	No, not for the county but the jurisdiction participation in this plan update
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)	Yes	Project specific – the City receives RFPs for the NV Division of Forestry to apply to secure funds for related projects
Capital improvements project funding	Yes	
Community Development Block Grant	Yes	Yes, 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. Grants award based on specific projects as they are identified.
Authority to levy taxes for specific purposes	N/A	
Impact fees for new development	N/A	
Incur debt through special tax bond	Yes	Variable amount. As stated in the previous MJHMP (2018), revenue bonds are used to finance capital projects that 1) have an identified budgetary stream for repayment (e.g. specified fees, tax receipts; 2) generate project revenue but rely on broader pledge of general fund revenues to reduce borrowing costs; 3) finance the acquisition and installation of equipment for the local jurisdiction's general governmental purposes.
Incur debt through general obligation bonds	Yes	Variable amount. As stated in the previous MJHMP (2018), general obligation bonds are appropriately used for the construction and/or acquisition of improvements to real property broadly available to residents and visitors. Such facilities include, but are not limited to, libraries, hospitals, parks, public safety facilities, and cultural and educational facilities.
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.

Financial Capability Assessment for Clark County Water Reclamation District (CCWRD)

FINANCIAL	Yes/No	Answer these questions in the space below: • Has the funding resource been used in the past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities Grant (BRIC)	No	
Hazard Mitigation Grant Program (HMPG)	No	
Pre-Disaster Mitigation grant program (PDM)	No	
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	No	
Flood Mitigation Assistance Grant Program (FMA)	No	
Water Preservation Funds (SWNA)	No	
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)	No	
Capital improvements project funding	Yes	Relies upon ratepayer fees and charges to fund the operations, maintenance and capital programs.
Community Development Block Grant	No	
Authority to levy taxes for specific purposes	Yes	While given the statutory authorization to assess ad valorem taxes, the District has not done so, relying upon fees and charges to fund the operations, maintenance and capital programs. The District has the authority to levy taxes, sell bonds, create assessment districts, and the right of eminent domain.
Impact fees for new development	Yes	The District assigns fees for new development/connection charges.
Incur debt through special tax bond	N/A	
Incur debt through general obligation bonds	Yes	Yes, this has been utilized in the past and the District is considering general obligation bonds in the future for capital improvements.
Recovery Funds	Yes	CCWRD is utilizing ARPA funds to pilot a septic conversion program in unincorporated Clark County to capture any additional return flow credits from septic tank residential areas.

Financial Capability Assessment for Boulder City

FINANCIAL	Yes/No	Answer these questions in the space below: • Has the funding resource been used in the past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities Grant (BRIC)	No	FEMA's BRIC grant program give states, local communities, tribes and territories funding to address future risks to natural disasters, including ones involving wildfires, drought, hurricanes, earthquakes, extreme heat, and flooding. Addressing these risks helps make communities more resilient. Boulder City could apply for assistance for such a project.
Hazard Mitigation Grant Program (HMPG)	No	
Pre-Disaster Mitigation grant program (PDM)	No	
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	No	
Flood Mitigation Assistance grant program (FMA)	No	Flood Mitigation Assistance funds may be used for projects such as Project Scoping; Technical Assistance; Community Flood Mitigation Projects; Individual Structure/Property-Level Flood Mitigation Projects; and Management Costs. Boulder City could apply for a apply for assistance for such a project.
Water Preservation Funds (SWNA)	Yes	Currently participating in rebate program for Water Smart Landscaping
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)	Yes	The fire department has a current, two-year agreement with the Division of Forestry to provide response and training services.
Capital improvements project funding	Yes	Receive funding from both RTC and CCRFC
Community Development Block Grant	Yes	Annually receives approximately $35K that is provided to Lend a Hand and Emergency Aid. Currently using grant for improvements to a building that will house Lend a Hand.
Authority to levy taxes for specific purposes	No/Yes	Have not used this in the past.
Impact fees for new development	No	
Incur debt through special tax bond	No	Debt over $1M must be approved by voters
Incur debt through general obligation bonds	Yes	Debt over $1M must be approved by voters. Before ballot question was approved debt was used for water line infrastructure.
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.

Financial Capability Assessment for Henderson

FINANCIAL	Yes/No	Answer these questions in the space below: • Has the funding resource been used in the past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities Grant (BRIC)	Yes	
Hazard Mitigation Grant Program (HMPG)	Yes	Supports pre- and post-disaster mitigation plans and projects. Available to Nevada communities after a Presidentially declared disaster has occurred in Nevada.
Pre-Disaster Mitigation grant program (PDM)	Yes	Supports pre-disaster mitigation plans and projects. Available on an annual basis as a nationally competitive grant.
Earthquake Mitigation Funds (Nevada Safety Council)	Yes	Allocates FEMA money for earthquake mitigation efforts/.
Flood Mitigation Assistance grant program (FMA)	Yes	Mitigates repetitively flooded structures and infrastructure. Available on an annual basis, distributed to Nevada communities by the Nevada DEM
Water Preservation Funds (SWNA)	Yes	Provides incentives to conserve and preserve water resources.
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)	Yes	Administers funding from FEMA, BLM, and U.S. Forest Service for certain types of wildfire emergency and mitigation funding
Capital improvements project funding	Yes	Can be used to address community hazards and implement mitigation actions as needed.
Community Development Block Grant	Yes	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
Authority to levy taxes for specific purposes	Yes	
Impact fees for new development	Yes	Established an assessment contribution on certain land uses to establish the equitable funding of infrastructure within a geographic boundary.
Incur debt through special tax bond	Yes	
Incur debt through general obligation bonds	Yes	General obligation bonds are appropriately used for the construction and/or acquisition of improvements to real property broadly available to residents and visitors. Such facilities include, but are not limited to, libraries, hospitals, parks, public safety facilities, and cultural and educational facilities
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.

Financial Capability Assessment for Las Vegas

FINANCIAL	Yes/No	**Answer these questions in the space below:** • Has the funding resource been used in the past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities Grant (BRIC)	No	Some mitigation activities planned in the next 5 years are eligible under this grant program.
Hazard Mitigation Grant Program (HMPG)	Yes	HMPG-Post Fire FFY2020, planning grant in progress.
Pre-Disaster Mitigation grant program (PDM)	No	Have not used this funding source in at least 15 years.
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	No	Potential source for seismic mitigation activities.
Flood Mitigation Assistance grant program (FMA)	No	Not a direct recipient, CLV supports applications made by Regional Flood Control District
Water Preservation Funds (SNWA)	No	Southern Nevada will soon surpass the region's 2035 goal to reduce consumption through conservation to 199 GPCD, CLV participates in the SNWA conservation planning.
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)	No	City of Las Vegas is an urban environment and is generally not involved in wildfire mitigation.
Capital improvements project funding	Yes	The Public Works Department manages all CIP funding on an annual basis. CIP may be used as a match source for PDM, HMPG or BRIC.
Community Development Block Grant	Yes	Most CDBG grants are used in support of low-income housing initiatives, may be used to support context-sensitive planning efforts.
Authority to levy taxes for specific purposes	No	The city is a political subdivision of the state and is not authorized to levy taxes.
Impact fees for new development	Yes	The city imposes fees for various development activities to support cost of government support services.
Incur debt through special tax bond	No	The city is a political subdivision of the state and is not authorized to levy taxes.
Incur debt through general obligation bonds	Yes	The city has utilized bonds for projects such as city hall, municipal court and the civic plaza.
How can capabilities be expanded and improved to reduce risk?		Utilize subject matter experts to identify and apply for FEMA program grants.

Financial Capability Assessment for Las Vegas Valley Water District/SWNA

FINANCIAL	Yes/No	Answer these questions in the space below: • Has the funding resource been used in the past and for what type of activities? • Could the resource be used to fund future mitigation actions?
LVVWD and SNWA General Funds and Reserve Policy	Yes	Among various other purposes, to mitigate one-time, unforeseen infrastructure or major capital equipment failures and other significant non-recurring impacts to operating revenues and expenses.
Building Resilient Infrastructure and Communities Grant (BRIC)	N/A	
Hazard Mitigation Grant Program (HMPG)		
Pre-Disaster Mitigation grant program (PDM)		
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	N/A	
Flood Mitigation Assistance grant program (FMA)	N/A	
Water Preservation Funds (SWNA)	N/A	
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)	N/A	
Capital improvements project funding	N/A	
Community Development Block Grant	N/A	
Authority to levy taxes for specific purposes	N/A	
Impact fees for new development	N/A	
Incur debt through special tax bond	N/A	
Incur debt through general obligation bonds	N/A	
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.

Financial Capability Assessment for Mesquite

FINANCIAL	Yes/No/ NA	Answer these questions in the space below: • Has the funding resource been used in the past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities Grant (BRIC)	NA	The City has not utilized this funding in the past. It is unknown if it could be a resource the city could utilize to fund mitigation actions.
Hazard Mitigation Grant Program (HMPG)	Yes	
Pre-Disaster Mitigation grant program (PDM)	Yes	
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	Yes	Project Specific
Flood Mitigation Assistance grant program (FMA)	Yes	Yes, it has been used in the past. Unknown if the resource could be used to fund future mitigation actions since the Flood Control District controls the resource funding
Water Preservation Funds (SWNA)	Yes	Project Specific
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)	Yes	Project specific – the City receives RFPs for the NV Division of Forestry to apply to secure funds for related projects
Capital improvements project funding	No	
Community Development Block Grant	Yes	Yes, as mentioned in the previous HMP (2018), 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. Grant award based on specific projects as they are identified.
Authority to levy taxes for specific purposes	Yes	Yes, it is allowable to use. Ability to use as a resource but has not been used yet.
Impact fees for new development	Yes	Yes, this has been used in the past, unknown at this time type of activities. Could be used in the future to fund mitigation activities
Incur debt through special tax bond	Yes	Yes, this has been used in the past, unknown at this time type of activities. Could be used in the future to fund mitigation activities
Incur debt through general obligation bonds	Yes	Yes, this has been used in the past, unknown at this time type of activities. Could be used in the future to fund mitigation activities
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.

Financial Capability Assessment for North Las Vegas

FINANCIAL	Yes/No	Answer these questions in the space below: • Has the funding resource been used in the past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities Grant (BRIC)	No	
Hazard Mitigation Grant Program (HMPG)	No	No prior awards. However, the City would like to pursue funding through this program for mitigation or flood activities.
Pre-Disaster Mitigation grant program (PDM)	No	No, the City does not currently have activities planned to fit into that funding.
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	No	No, the City does not currently have activities planned to fit into that funding.
Flood Mitigation Assistance grant program (FMA)	No	
Water Preservation Funds (SWNA)	Yes	Yes, the City currently has an active project funded through SNPLMA to support Water Preservation. The City is in the process of a Citywide Turf Reductions Program in Parks. The City also participates in Regional Water Preservation Programs with Southern Nevada Water Authority (SWNA). Additionally, the City plan to apply for BOR funding to increase water preservation abilities.
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)	No	No, the City does not currently have activities planned to fit into that funding.
Capital improvements project funding	Yes	Yes, The CIP is approved annually by City Council and managed by the Public Works Department. Many of the CIP projects are funded through a blend of local and federal grant dollars. Current CIP items included flood mitigation and control activities, water preservation, protection systems for water and sewer systems, City turf reduction, and park irrigation improvements.
Community Development Block Grant	Yes	Yes, CDBG formula grant is received annually by the City. These funds can be used for mitigation projects, but 51% or more beneficiaries must be low to moderate income persons. Additionally, the highest need for these funds at this time is community services. The City has requested HUD Community Project Funding for preparedness activities.
Authority to levy taxes for specific purposes	No	No, Per NRS, the City is not authorized to levy taxes.
Impact fees for new development	Yes	The City has a schedule for development fees. These fees are used to support the infrastructure growth and operational costs to services developing areas.
Incur debt through special tax bond	No	The City may, under the City Charter, levy a special assessment tax. However, the City does not have plans to do so.
Incur debt through general obligation bonds	Yes	Yes, the City may, under the City Charter, levy a special assessment or tax. However, the City does not have plans to do so. It has done so in the past for infrastructure, projects including water facilities.
How can capabilities be expanded and improved to		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as

reduce risk?	new legislation proposals to open the doors for improved funding opportunities.
How can capabilities be expanded and improved to reduce risk?	Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.

Financial Capability Assessment for Las Vegas Paiute Tribe

FINANCIAL	Yes/No	**Answer these questions in the space below:** • Has the funding resource been used in the past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities Grant (BRIC)	N/A	
Hazard Mitigation Grant Program (HMPG)	Yes	
Pre-Disaster Mitigation grant program (PDM)	Yes	
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	No	
Flood Mitigation Assistance grant program (FMA)	Yes	
Water Preservation Funds (SWNA)	Yes	
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)	No	
Capital improvements project funding	No	
Community Development Block Grant	No	
Authority to levy taxes for specific purposes	No	
Impact fees for new development	No	
Incur debt through special tax bond	No	
Incur debt through general obligation bonds	No	
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.

Financial Capability Assessment for Moapa Band of Paiutes

FINANCIAL	Yes/No	Answer these questions in the space below: • Has the funding resource been used in the past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Hazard Mitigation Grant Program (HMPG)	N/A	
Pre-Disaster Mitigation grant program (PDM)	Yes	
Flood Mitigation Assistance grant program (FMA)	Yes	
Capital improvements project funding	Yes	
Community Development Block Grant	Yes	
Authority to levy taxes for specific purposes	Yes	
Impact fees for new development	Yes	
Incur debt through special tax bond	Yes	
Incur debt through general obligation bonds	No	
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.

Note: *As mentioned in the 2015 Moapa Band of Paiutes Hazard Mitigation Plan (April 2015), identifies financial tools or resources that Moapa Band of Paiutes could potentially used to help fund activities in addition to Economic Development Activities.*

Education and Outreach Capabilities

The following tables list education and public outreach capabilities. These capabilities include programs such as fire safety programs, hazard awareness campaigns, public information or communications offices. Education and outreach capabilities can be used to inform the public on current and potential mitigation activities.

Education and Outreach Capability Assessment for Clark County

PROGRAM / ORGANIZATION	Access / Eligibility (Yes/No)	**Answer these questions in the space below:** • Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
Jurisdiction (County/City/Tribe) Website and Social Media (PIO/PAO Programming	Yes	The County maintains a website and accounts with Facebook, Instagram, Nextdoor, Twitter, and YouTube. County libraries, law enforcement, and fire/rescue agencies also maintain social media accounts. These resources are regularly used to convey hazard mitigation and disaster-related information to the public, as well as develop awareness of in-person and online events. They can be used to support future mitigation activities.
Firewise Communities certification	Yes	The Community Wildfire Protection Plans also serve to establish future mitigation projects and actions to support disaster resilience.
Storm Ready certification	Yes	The County Storm Ready Certification issued through the National Weather Service is current and due for renewal in 2023 (i.e., applies to all of the County).
Citizen groups focused on emergency preparedness, environmental protection, etc.	Yes	CERT (Community Emergency Response Team), MRC (Medical Reserve Corps), ARES (Amateur Radio Emergency Services), Faith Based organizations such as the First Baptist support group, Salvation Army, and United Way of Southern Nevada. These organizations provide responder Support and Emergency Management and EOC support to local communities and local government during times of disaster and preparedness training for local needs.
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)	Yes	The County frequently addresses public information needs through a variety of mechanisms. The local government organizations utilize a well-developed and coordinated PIO group with partners from all levels of government including city, county departments. and federal and state offices. This is especially effective during times of disaster. Clark County Emergency Management utilizes public presentations and media outlets (e.g., radio, print) to provide public outreach on emergency preparedness. The County website is a primary tool for dissemination of public information.
Public-private partnership initiatives addressing disaster-related issues	Yes	Examples of organizations for this effort include VOAD (Volunteer Organizations Active in Disaster), LEPC (Local Emergency Planning Committee) for addressing all hazard issues.
How can capabilities be expanded and improved to reduce risk?		This can be accomplished by including the organizations in our public outreach, planning, training and overall preparedness efforts and real time events.

Education and Outreach Capability Assessment for Clark County Water Reclamation District (CCRWD)

PROGRAM / ORGANIZATION	Access / Eligibility (Yes/No)	**Answer these questions in the space below:** • Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
Pain in the Drain	Yes	Pain in drain educates on appropriate use of wastewater collection systems. No does not implement mitigation activities.
How can capabilities be expanded and improved to reduce risk?		This can be accomplished by including the organizations in our public outreach, planning, training and overall preparedness efforts and real time events.

Education and Outreach Capability Assessment for Boulder City

PROGRAM / ORGANIZATION	Changes since 2018 Plan Update Yes or No	Access / Eligibility (Yes/No)	**Describe program/organization and how it relates to disaster resilience and mitigation.** • Could the program/organization help implement future mitigation activities?
Jurisdiction (County/City/Tribe) Website and Social Media (PIO/PAO Programming	No	Yes	The city maintains a website and accounts with Facebook, Instagram, Twitter, and YouTube. County libraries, law enforcement, and fire/rescue agencies also maintain social media accounts. These resources are regularly used to convey hazard mitigation and disaster-related information to the public, as well as develop awareness of in-person and online events. They can be used to support future mitigation activities.
Firewise Communities certification	No	No	
Storm Ready certification	No		
Citizen groups focused on emergency preparedness, environmental protection, etc.	No	No	This does not currently exist in Boulder City
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)	No	Yes	The Boulder City Fire Dept frequently addresses public information needs through a variety of mechanisms. The fire department social media sites and city website is a primary tool for dissemination of public information.
Public-private partnership initiatives addressing disaster-related issues	No	Yes	Examples of organizations for this effort include VOAD (Volunteer Organizations Active in Disaster), LEPC (Local Emergency Planning Committee) for addressing hazardous materials issues,
How can capabilities be expanded and improved to reduce risk?			This can be accomplished by including the organizations in our public outreach, planning, training and overall preparedness efforts and real time events.

Education and Outreach Capability Assessment for Henderson

PROGRAM / ORGANIZATION	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
City Website and Social Media (PIO/PAO Programming)	Yes	The City maintains a website and accounts with Facebook, Instagram, Twitter, and YouTube. Citty libraries, law enforcement, and fire/rescue agencies also maintain social media accounts. These resources are regularly used to convey hazard mitigation and disaster-related information to the public, as well as develop awareness of in-person and online events. They can be used to support future mitigation activities.
Firewise Communities certification	Yes	ISO classification Class 1
Storm Ready certification	Yes	
Citizen groups focused on emergency preparedness, environmental protection, etc.	Yes	
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)	Yes	CERT (Community Emergency Response Team), MRC (Medical Reserve Corps), ARES (Amateur Radio Emergency Services), Faith Based organizations such as the First Baptist support group, Salvation Army, and United Way of Northern Arizona. These organizations provide First Responder Support and Emergency Management and EOC support to local communities and local government during times of disaster and preparedness training for local needs. The City also has a robust volunteer program that includes police and fire volunteers
Public-private partnership initiatives addressing disaster-related issues	Yes No (for water use)	The City frequently addresses public information needs through a variety of mechanisms. The local government organizations utilize a well–developed and coordinated PIO group with partners from all levels of government including city, county departments. and federal and state offices. This is especially effective during times of disaster Emergency Management utilizes public presentations and media outlets (e.g. radio, print) to provide public outreach on emergency preparedness. The City website is a primary tool for dissemination of public information
How can capabilities be expanded and improved to reduce risk?		This can be accomplished by including the organizations in our public outreach, planning, training and overall preparedness efforts and real time events.

Education and Outreach Capability Assessment for Las Vegas

PROGRAM / ORGANIZATION	Changes since 2018 Plan Update Yes or No	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
Jurisdiction (County/City/Tribe) Website and Social Media (PIO/PAO Programming	Yes	Yes	The city maintains a website and accounts with Facebook, Instagram, Twitter, and YouTube. The Office of Emergency Management maintains a Twitter handle, @clvalerts and manages a mass notification / IPAWS system countywide, as well as maintains the Southern Nevada Emergency Preparedness app. City libraries, law enforcement, and fire/rescue agencies also maintain social media accounts. These resources are regularly used to convey hazard mitigation and disaster-related information to the public, as well as develop awareness of in-person and online events. They can be used to support future mitigation activities.
Firewise Communities certification	N/A	N/A	The city is an urban environment and supports urban fire prevention programs. Firewise is designed for wildfire prevention and resistance.
Storm Ready certification	Yes	Yes	Storm Ready Certification issued through the National Weather Service is due for renewal.
Citizen groups focused on emergency preparedness, environmental protection, etc.	Yes	Yes	CERT (Community Emergency Response Team), MRC (Medical Reserve Corps), ARES (Amateur Radio Emergency Services), American Red Cross, Faith Based organizations such as Latter-Day Saints support group, Salvation Army, Red Rock Search and Rescue, Fire Explorers and United Way of Southern Nevada. These organizations, along with state VOAD, provide First Responder Support and Emergency Management and EOC support to local communities and local government during times of disaster and preparedness training for local needs.
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)	Yes	Yes	The City of Las Vegas frequently addresses public information needs through a variety of mechanisms. The local government organizations utilize a well–developed and coordinated PIO group with partners from all levels of government including city, county departments. and federal and state offices. This is especially effective during times of disaster. City of Las Vegas Emergency Management utilizes public presentations and media outlets (e.g. radio, print) to provide public outreach on emergency preparedness. The City of Las Vegas government website is a primary tool for dissemination of public information.
Public-private partnership initiatives addressing disaster-related issues	Yes	Yes	Examples of organizations for this effort include VOAD (Volunteer Organizations Active in Disaster), LEPC (Local Emergency Planning Committee) for addressing hazardous materials issues. The city Office of Emergency Management established a Downtown Resort Emergency Management Working Group to address issues specific to the Fremont Street Experience corridor.
How can capabilities be expanded and improved to reduce risk?			Additional interaction with faith-based organizations outside of the VOAD structure to build community wide credibility for government announcements of emergency conditions.

Education and Outreach Capability Assessment for Las Vegas Valley Water District/SWNA

PROGRAM / ORGANIZATION	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
Website and Social Media (PIO/PAO Programming)	Yes	LVVWD and SNWA maintains a website and accounts with Facebook, Instagram, Twitter, LinkedIn, and YouTube. These resources are regularly used to convey drought mitigation to the public, as well as develop awareness of in-person and online events. They can be used to support future mitigation activities.
Firewise Communities certification		
Storm Ready certification	Yes	LVVWD has had Storm Ready Certification issued through the National Weather Service, unsure if it is still current.
Citizen groups focused on emergency preparedness, environmental protection, etc.		
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)	Yes	LVVWD and SNWA frequently addresses public information needs through a variety of mechanisms. They utilize a well-developed and coordinated PIO group that utilizes public presentations and media outlets (e.g. radio, print) to provide public outreach on responsible water use.
Public-private partnership initiatives addressing disaster-related issues	Yes	LVVWD and SNWA participate in LEPC and sub committees. Also, annual familiarity tours are offered to local first responders so that they would be more prepared to respond to emergencies on or properties.
How can capabilities be expanded and improved to reduce risk?		This can be accomplished by including the organizations in our public outreach, planning, training, and overall preparedness efforts and real time events.

Education and Outreach Capability Assessment for Mesquite

PROGRAM / ORGANIZATION	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
Jurisdiction (County/City/Tribe) Website and Social Media (PIO/PAO Programming	Yes	The County maintains a website and accounts with Facebook and Twitter. County libraries, law enforcement, and fire/rescue agencies also maintain social media accounts. These resources are regularly used to convey hazard mitigation and disaster-related information to the public, as well as develop awareness of in-person and online events. They can be used to support future mitigation activities.
Firewise Communities certification		
Storm Ready certification	Yes	The County Storm Ready Certification issued through the National Weather Service is current and due for renewal in July 2021 (i.e. applies to all of the County). The City fall under the County Certification
Citizen groups focused on emergency preparedness, environmental protection, etc.	Yes	CERT (Community Emergency Response Team), ARIS, and Volunteer police. These organizations provide First Responder Support and Emergency Management and EOC support to local communities and local government during times of disaster and preparedness training for local needs.
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)	Yes No (for water use)	The City frequently addresses public information needs through a variety of mechanisms. The local government organizations utilize a well–developed and coordinated PIO group with partners from all levels of government including city, county departments. and federal and state offices. This is especially effective during times of disaster. City of Mesquite Emergency Management utilizes public presentations and media outlets (e.g. radio, print) to provide public outreach on emergency preparedness. The City teaches the NFPA messaging to school and participates in Safety Rodeo events as community outreach
Public-private partnership initiatives addressing disaster-related issues	Yes	Examples of organizations for this effort include Mesquite Emergency Planning Committee meets twice a year and the faith based meets once a year for addressing all hazard events in the City as well as the City has a seat on the County LEPC.
How can capabilities be expanded and improved to reduce risk?		This can be accomplished by including the organizations in our public outreach, planning, training and overall preparedness efforts and real time events.

Education and Outreach Capability Assessment for North Las Vegas

PROGRAM / ORGANIZATION	Changes since 2018 Plan Update Yes or No	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
Jurisdiction (County/City/Tribe) Website and Social Media (PIO/PAO Programming		Yes	The County maintains a website and accounts with Facebook, Instagram, Twitter, LinkedIn, Nextdoor, and YouTube. City libraries, law enforcement, and fire/rescue agencies also maintain social media accounts. These resources are regularly used to convey hazard mitigation and disaster-related information to the public, as well as develop awareness of in-person and online events. They can be used to support future mitigation activities.
Firewise Communities certification		Yes	
Storm Ready certification		Yes	The County Storm Ready Certification issued through the National Weather Service is current and due for renewal in July 2021 (i.e., applies to all of the County).
Citizen groups focused on emergency preparedness, environmental protection, etc.		Yes	
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)		Yes No (for water use)	
Public-private partnership initiatives addressing disaster-related issues		Yes	
How can capabilities be expanded and improved to reduce risk?			This can be accomplished by including the organizations in our public outreach, planning, training and overall preparedness efforts and real time events.

Education and Outreach Capability Assessment for Las Vegas Paiute Tribe

PROGRAM / ORGANIZATION	Changes since 2018 Plan Update Yes or No	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Jurisdiction (County/City/Tribe) Website and Social Media (PIO/PAO Programming		Yes	The Tribe maintains a website and a Facebook account. Currently, in the event of a disaster, Law Enforcement officer go door to door to notify residents of a hazard related events within the tribe. Law enforcement is currently working on methods to convey hazard mitigation and disaster related information to the public. The Golf Course makes notifications via a PA system to visitors about hazard related information. They can be used to support future mitigation activities
Firewise Communities certification		No	
Storm Ready certification		No	
Citizen groups focused on emergency preparedness, environmental protection, etc.		No	
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)		Yes	In the future, the Tribe has a PIO which is also the Tribal Chairperson. The Police Department uses a group text to notify residents related to public outreach to Tribal residents. The Tribe is looking to implement a vendor to help with the creation of a notification system for the Tribe in the event hazard in the area.
Public-private partnership initiatives addressing disaster-related issues		No	
How can capabilities be expanded and improved to reduce risk?			This can be accomplished by including the organizations in our public outreach, planning, training and overall preparedness efforts and real time events.

Education and Outreach Capability Assessment for Moapa Band of Paiute Tribe

PROGRAM / ORGANIZATION	Changes since 2018 Plan Update Yes or No	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
Jurisdiction (County/City/Tribe) Website and Social Media (PIO/PAO Programming			
Firewise Communities certification			
Storm Ready certification			
Citizen groups focused on emergency preparedness, environmental protection, etc.			
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)			
Public-private partnership initiatives addressing disaster-related issues			
How can capabilities be expanded and improved to reduce risk?			This can be accomplished by including the organizations in our public outreach, planning, training and overall preparedness efforts and real time events.

Note: *The 2015 Moapa Band of Paiutes Hazard Mitigation Plan (April 2015), did not identify any education and outreach capabilities for the Tribe.*

National Flood Insurance Program Participation

Floodplain management is the operation of a community program of measures for reducing flood damage. These measures take a variety of forms; and generally, include zoning, subdivision, or building requirements, and special-purpose floodplain ordinances. Clark County's previous HMP (2018) indicates the National Flood Insurance Program's aim is to reduce the impact of flooding to residential and nonresidential buildings. It does so by providing insurance to property owners and by encouraging communities to adopt and enforce floodplain management regulations. These efforts help mitigate the effects of flooding on new and improved structures. Overall, the program reduces the socio-economic impact of disasters by promoting the purchase and retention of Risk Insurance in general, and National Flood Insurance in particular.

Joining the NFIP requires the adoption of a floodplain management ordinance by jurisdictions and following established minimum standards set forth by FEMA and the State of Nevada when developing in the floodplain. These standards require that all new buildings and substantial improvements to existing buildings will be protected from damage by the 100-year flood, and that new floodplain development will not aggravate existing flood problems or increase damage to other properties. As a participant in the NFIP, communities also benefit from having Flood Insurance Rate Maps (FIRM) that map identified flood hazard areas and can be used to assess flood hazard risk, regulate construction practices and set flood insurance rates.

If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the Federal Government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods.

The County and four of the six (6) incorporated jurisdictions currently participate in the NFIP. The following table summarizes their NFIP status and statistics.

NFIP Status for Clark County

Jurisdiction	Comm ID	NFIP Entry Date	Map Date (DFIRM)	CRS Entry Data	# of Policies	Total Coverage	Total Written Premium + FPF	Floodplain Management Role
Clark County*	320003#	09/29/1989	11/16/2011	10/01/1992	740	$248,822,700	$603,802	Provides floodplain management for the Unincorporated County. Participant in the Clark County Flood Control District (CCFCD). Floodplain Management Contact: Layne Weber – wleber@clarkcountyNV.gov.
Boulder City	320004#	09/16/1981	11/16/2011	N/A	12	$3,544,000	$5,954	Provides in-house floodplain management. Participant of the CCFCD. Floodplain

Jurisdiction	Comm ID	NFIP Entry Date	Map Date (DFIRM)	CRS Entry Data	# of Policies	Total Coverage	Total Written Premium + FPF	Floodplain Management Role
								Management Contact: Jim Kean – Jkean@BCNV.org.
Henderson*	32005#	06/15/1982	11/16/2011	10/01/1991	199	$66,119,100	$107,188	Provides in-house floodplain management. Participant of the CCFCD. Floodplain Management Contact: Albert "Al" Jankowiak - Albert.Jankowiak@cityofhenderson.com.
Las Vegas*	325276#	09/30/1980	11/16/2011	10/01/1991	330	$103,217,600	$186,150	Provides in-house floodplain management. Participant of the CCFCD. Floodplain Management Contact: Peter Jackson – pjackson@LasVegasNevada.com.
Mesquite*	320035#	09/28/90	12/04/2007	10/01/2002	34	$30,101,000	$19,811	Provides in-house floodplain management. Participant of the CCFCD. Floodplain Management Contact: Travis Anderson – tanderson@mesquitenv.gov.
North Las Vegas*	320007#	01/16/1981	11/16/2011	10/01/1991	96	$30,101,000	$57,771	Provides in-house floodplain management. Participant of the CCFCD. Floodplain Management Contact: Mark Escobedo – escobedom@cityofnorthlasvegas.com.

***Notes:** *Indicates CRS participating jurisdiction.*

Data Dictionary as mentioned in the NFIP Policy Information by State and Community document:

- Community ID: The 6-character community ID in which the policy resides.
- # of Policies: The number of policies in force for a given state and combination of attributes.
- Total Coverage: The total building and contents coverage for the policies in force.
- Total Written Premium + FPF: This represents the sum of the premium and the FPF (federal policy fee) for the policies in force.

Data Sources: Participation – FEMA's Community Status Book Report, Nevada, 03/01/2023. Policy statistics (current as of 03/01/2023) https://www.fema.gov/cis/NV.html
NFIP Policy Information by State (Policy statistics current as of 1/31/2023) https://nfipservices.floodsmart.gov/sites/default/files/nfip_policy-information-by-state_20230131.xlsx

Building codes and inspections provide local government with the means to maintain county structures that are resilient to natural hazards like flooding. Clark County and its participating jurisdictions have adopted the following building constructions codes within the County. These codes were adopted and amended by the State of Nevada Department of Administration State Public Works Division (https://publicworks.nv.gov/Services/Permitting_Code_Enforcement/Permitting___Code_Enforcement/).

Continued compliance with NFIP requirements within the planning area is listed for each jurisdiction below:

Clark County (including Clark County Unincorporated area)

County Ordinance Chapter 3.16 Flood Control District and Title 24 – Water, Sewage and other Utilities, Chapter 24.40.10. The County follows Clark County Regional Flood Control District's Uniform Regulations for Control Drainage effective September 30, 2022. Also, the Clark County Regional Flood Control District ensures compliance with Hydrologic Criteria and Drainage Design Manual (HCDDM) to produce flood resistant land development projects and effective flood control infrastructure. The focus areas of the HCDDM can be found here on the Regional Flood Control District website. For more information related to floodplain management contact Layne Weber at wleber@clarkcountyNV.gov.

Boulder City

City Code Flood Hazard Reduction ordinance – Title 11, Chapter 40. Also, Boulder City has adopted the Clark County Regional Flood Control District Rules, Regulations and Constructions Standards effective September 30, 2022. A copy of the Uniform Regulations Reference Document for CCRFD can be found here. For more information related to floodplain management in Boulder City, NV, contact Jim Kean at jkean@bcnv.org.

Henderson

City Code Flood Control and Control of Drainage – Title 15 Building and Construction, Chapter 15.50. Also, the City of Henderson follows these regulations by Clark County Regional Flood District related to drainage and drainage design:

- Title 15.50.010 – Uniform Regulations for Control Drainage, effective September 30, 2022
- Title 19.14.6 – Hydrologic Criteria and Drainage Design Manual, as of September 1999

For more information related to floodplain management in Henderson, NV, contact Al Jankowiak at Albert.Jankowiak@cityofhenderson.com.

Las Vegas

City Code Title 20- Flood Control. Also, the City of Las Vegas follows the Clark County Regional Flood Control District Title 15.50.010 – Uniform Regulations for Control Drainage, effective September 30, 2022. For more information related to floodplain management in Las Vegas, NV, contact pjackson@LasVegasNevada.com.

Mesquite

City Code Title 8 - Flood Control Ordinance. The City of Mesquite also follow the Clark County Flood Control Districts Uniform Regulation for Control Drainage effective September 30, 2022. Also, the following ordinances have passed regarding Flood Control and Draining within the City of Mesquite:

- **City Ordinance 160:** an ordinance of the city of Mesquite, Nevada, amending the Mesquite Municipal Code, Title 8, Chapter 10, Section 10-080 (A) to conform to action of City Council and Section 10-040(A) deleting typographical errors in the original ordinance not consistent with the adopted draining regulations and all matters relating thereto.
- **City Ordinance #40:** An ordinance amending ordinance #39, dated jus, Mesquite Municipal Code Chapter 3, Title 1, Enacting Uniform Regulations for the control of drainage, wording in Section 10 regarding flood hazard reduction, defining and identifying floodways, and certain other word changes throughout, and any other matters properly related thereto.
- **City Ordinance #62:** An ordinance of the City of Mesquite, repealing Ordinance #39 Uniform Regulations for control of drainage and all amendments thereto, repealing Mesquite Municipal Code Title 3 in its entirety, and adopting the following set of Uniform Regulations for the Control of Drainage as mandated by NRS 543.595(1), governing the subdivision of land, parcel maps, division of land and any new development and/or substantial improvement of land in order to be eligible to participate in the regional fund for control of floods, and any other matters relating thereto.
- **City Ordinance #292:** An ordinance amending Mesquite Municipal code, Title 8, Chapter 1, Section 9 there of entitled “definitions” and specifically amending the revision of the definitions entitled “Base Flood Elevation”; amending section 10.020 thereof entitled “areas of Special Flood Hazard” and specifically amending the subsections thereof entitled “Floodway Fringe: and “Areas of Shallow Flooding”; amending section 10.100 thereof entitled “Hazard Mitigation” and specifically amending the subsections thereof entitled “General Standards” (Elevation and Floodproofing) and “Specific Standards” (Residential Construction, Non-Residential Construction and Manufactured Homes); and other matters properly related thereto.
- **City Ordinance #273:** An ordinance amending Mesquite Municipal Code, Title 8, Chapter 1, Part 1, Sub Part B, Section 10.020, entitled “Areas of Special Flood Hazard’” and amending Mesquite Municipal Code, Title 9, Chapter 7, Article K, Section 9, Subsection K93) entitled “Duties of Operator” and Subsection M entitled “Prohibited Activities;” incorporating conditions related to recreational vehicles required to be adopted by the Federal Emergency Management Agency (FEMA).
- **City Ordinance #472:** An ordinance of the City Council of the City of Mesquite, Nevada, amending Title 8 of the Mesquite Municipal Code, entitled “Drainage Control Regulation: by amending Section 8: “Definitions;” Section 10.020: Areas of Special Flood Hazard;” Section 20: Effective Date”; Section 32: “Definitions”; Section 34: Permit Requirements”; and other matters properly related thereto.
- **City Ordinance #510:** An ordinance amending City of Mesquite Code, Title 8 Flood Control Ordinance, replacing section 8-1-Part II: Excavation and Grading with a New Section 8-2 Excavation and Grading Standards, and to provide for other matters properly related thereto.

For more information related to floodplain management for Mesquite, NV, contact Travis

Anderson at tanderson@mesquitenv.gov.

North Las Vegas

City Code Chapter 8.50 – Stormwater Regulations. Also, the City of North Las Vegas follows Clark County Regional Flood Control District's Uniform Regulations for Control Drainage effective September 30, 2022

***Note**: Information related to Repetitive Loss properties in the planning area can be found in Flooding Hazard profile of this MJHMP update under – Repetitive Loss Structure.*

The Clark County Regional Flood Control District (CCRFCD) reviews all plans related to land development to ensure compliance with NFIP and local floodplain regulations can be found on the CCRFCD website under "Land Development ." This compliance includes construction adjacent to and within the floodplain with the County. This process meets the minimum federal regulations set forth by the NFIP. CCRFCD website mentions that the submission of land development can be submitted electronically. For more information about the land development review process, can be found here: https://www.regionalflood.org/programs-services/projects-engineering/land-development-review-status. For more information related to floodplain management in the North Las Vegas, NV, contact Mark Escobedo at escobedom@cityofnorthlasvegas.com.

Mitigation Actions/Projects and Implementation Strategy

The following section contains the status of mitigation actions from the previous MJHMP. It also provides for ongoing mitigation actions from the 2018 plan and the new mitigation action for this MJHMP.

Previous Mitigation Actions / Projects Assessment

Table 76: FEMA Regulation Checklist: Plan Review and Revision

FEMA Regulation Checklist: Plan Review and Revision	
Progress in Local Mitigation Efforts	
44 CFR § 201.6(c)(d)(3)	"A local jurisdiction must review and revise its plan to reflect . . . progress in local mitigation efforts . . .."
Elements	
D2.	Was the Plan revised to reflect progress in local mitigation efforts? 44 CFR § 201.6(d)(3).

Data Source: FEMA, Local Mitigation Plan Review Tool, March 2013.

The 2018 MJHMP contained mitigation actions for the County and each participating jurisdiction. Many of the mitigation actions were completed or carried out to some degree or are considered ongoing. Some of the mitigation actions were duplicative, some were better categorized as emergency preparedness or recovery activities, and others were either not addressed during the time period or were not feasible to accomplish. The tables below describe the current status of mitigation action from the previous plan.

Previous Mitigation Plans Accomplishments – Completed Projects

Previous Plan's Mitigation Accomplishments, Clark County, NV

Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Structural Emphasis (in 2018 MHJMP)	Cost Estimate	Estimated Timeline	Potential Funding Source	Status
Flood Projects through the CCRFCD	Las Vegas Wash - Sloan Channel to Stewart Avenue and Flamingo Wash below Nellis Boulevard - North Reach in LV Wash from Nellis to Stewart consisting of 7200 LF of concrete channel.	Flood	CCPW/ CCRFCD	Existing	$20,440,260	1-5 years	CCRFCD	Substantial Completion 12/2017
Flood Projects through the CCRFCD	Duck Creek at Dean Martin - Triple barrel 14' X 6' RCBC	Flood	CCPW/ CCRFCD	Existing	$3,087,867	1-5 years	CCRFCD	Substantial Completion 02/2018
Flood Projects through the CCRFCD	Muddy River Logandale Levee - Approximately 3000 LF of earthen levee, with concrete slope protection	Flood	CCPW/ CCRFCD	Existing	$6,731,520	1-5 years	CCRFCD	Substantial Completion 02/2018
Flood Projects through the CCRFCD	Duck Creek Las Vegas Boulevard - Approximately 6700 LF of RCBC ranging from 7' X 6' to 20' X 8'	Flood	CCPW/ CCRFCD	Existing	$5,921,331	1-5 years	CCRFCD	Substantial Completion 06/2018
Flood Projects through the CCRFCD	Flamingo Wash, Eastern Avenue - Add addition RCBC cell at Eastern and minor channel improvements to approach	Flood	CCPW/ CCRFCD	Existing	$1,313,020	1-5 years	CCRFCD	Substantial Completion 10/2018
Flood Projects through the CCRFCD	Searchlight - South, Encinitas Street Storm Drain - 2,040 LF of 36" to 72" RCP	Flood	CCPW/ CCRFCD	Existing	$2,001,892	1-5 years	CCRFCD	Substantial Completion 10/2019
Flood Projects through the CCRFCD	SR 163 at Casino Drive, Laughlin - 84" RCP and 8'x5' RCB from the CO River to existing RCB under Casino Drive, transition and junction structures	Flood	CCPW/ CCRFCD	Existing	$1,790,675	1-5 years	CCRFCD	Substantial Completion 01/2020
Flood Projects through the CCRFCD	Duck Creek Haven Street - App. 2,800 LF RCB within Haven St from Cactus to Pyle	Flood	CCPW/ CCRFCD	Existing	$3,037,061	1-5 years	CCRFCD	Substantial Completion 04/2021
Flood Projects through the	Craig Rd SD - El Capitan to Ft Apache - Approximately 3,000 LF 54" RCP to 6'x4' RCB from Ft	Flood	CCPW/ CCRFCD	Existing	$2,539,801	1-5 years	CCRFCD	Substantial Completion 12/2021

Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Structural Emphasis (in 2018 MHJMP)	Cost Estimate	Estimated Timeline	Potential Funding Source	Status
CCRFCD	Apache to GONO 0181							
Flood Projects through the CCRFCD	Duck Creek Jones Blvd - Phase 2 - App 4,700 LF RCB within Jones Blvd from Irvin to Pyle	Flood	CCPW/ CCRFCD	Existing	$10,256,050	1-5 years	CCRFCD	Substantial Completion 06/2022
Flood Projects through the CCRFCD	Silverado Ranch Detention Basin and Outfall - 170 ac-ft detention basin, 1170 LF of 14' X 8' RCBC, 670 LF of 72" outlet pipe	Flood	CCPW/ CCRFCD	Existing	$19,384,238	1-5 years	CCRFCD	Substantial Completion 12/2022
Flood Projects through the CCRFCD	Las Vegas Wash - Sloan Channel to Stewart Avenue and Flamingo Wash below Nellis Boulevard - North Reach in LV Wash from Nellis to Stewart consisting of 7200 LF of concrete channel.	Flood	CCPW/ CCRFCD	Existing	$20,440,260	1-5 years	CCRFCD	Substantial Completion 12/2017
Emergency Power	Provide additional emergency power, such as a generator equipment, for new and existing critical facilities to operate continuously but cannot do so for long durations of power outage. Provide additional emergency power (generator) to Clark County Multi-Agency Coordination Center/EOC.	Earthquake, Flood, Climate Change, Wildfire	CCFD (Office of Emergency Management & Homeland Security)	Existing	N/A	2018-2019	PDM, other applicable federal programs	Completed in 202-2021

Previous Plan's Mitigation Accomplishments, Boulder City, NV

Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Structural Emphasis (in 2018 MHJMP)	Cost Estimate	Estimated Timeline	Potential Funding Source	Status
Flood Control	Alleviate the damage associated with flooding through new and reinforced flood control projects, including storm drains, culverts, drop inlets, channels, and detention basins. Hemenway Watershed Improvements Phase IIB – Hemenway channel improvements to meet flood control freeboard requirements, improve access for maintenance, and reduce erosion around existing facilities. Project Update: Since the last plan update (2018), the Hemenway Watershed Improvements Phase IIB – Hemenway channel improvements to meet flood control freeboard requirements, improve access for maintenance, and reduce erosion around existing facilities maintenance and freeboard extensions was completed in 2022.	Flood, Dam Failure	Boulder City Public Works Department	New	$5.5M	1-5 years	FEMA Grants; Potential CIP Funding	Completed
Flood Control	Alleviate the damage associated with flooding through new and reinforced flood control projects, including storm drains, culverts, drop inlets, channels, and detention basins. North Railroad Conveyance Phase 2 – Improvements to install a channel around the Veterans Home to convey flows from the drainage basin to the North Railroad Detention Basin. The project will also increase the capacity of the North Railroad Detention Basin to accommodate additional flows. **Project Update:** Since the last plan update (2018), North Railroad Conveyance Phase 2 – Improvements to install a channel around the Veterans Home to convey flows from the drainage basin to the North Railroad Detention Basin. The project will also increase the capacity of the North Railroad Detention Basin to accommodate additional flow was completed in 2019.	Flood, Dam Failure	Boulder City Public Works Department	New	$2.5M	1-5 years	FEMA Grants; Potential CIP Funding	Complete

Previous Plan's Mitigation Accomplishments, Mesquite, NV

Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Structural Emphasis (in 2018 MHJMP)	Cost Estimate	Estimated Timeline	Potential Funding Source	Status
Emergency Power	Provide additional emergency power, such as a generator equipment, for new and existing critical facilities to operate continuously but cannot do so for long durations of power outage. Generator power needed a primary shelter (City of Mesquite Fire & Rescue)	Earthquake, Flood, Climate Change, Wildfire	City of Mesquite Fire and Rescue	New/Proposed	$280,000	1-5 years	FEMA Grant (PDM)	Completed
Mesquite Town Wash, Abbott Wash	Assessment of wash, inspection, cleaning and reshaping, vegetation control, species survey and removal, erosion control	Flood	City of Mesquite Public Works	Existing	$300,000	Ongoing	City Budget, FDA, NDA	Completed

Previous Plan's Mitigation Accomplishments, Moapa Band of Paiute

Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Structural Emphasis (in 2018 MHJMP)	Cost Estimate	Estimated Timeline	Potential Funding Source	Status
Emergency Power	Alleviate the damage associated with flooding through new and reinforced flood control projects including storm drains, culverts, drop inlets, channels, and detention basins	Flood	Moapa Band of Paiutes Business Department	New/Proposed	$2 Million	1-5 years	FEMA Grant	Completed. This mitigation project was a priority of Tribe during the last plan update period and was completed in 2020.

Previous Mitigation Plan Projects – Deferred Projects

Deferred Mitigation Projects from Clark County MJHMP 2018 – Clark County and Unincorporated Areas

Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Structural Emphasis (in 2018 MHJMP)	Cost Estimate	Estimated Timeline	Potential Funding Source	Status
Flood Projects through the CCRFCD	Reduce the threat of flood and flash flooding through development of flooding facilities and public awareness.	Flooding	CCRFCD	Existing	N/A	1-5 years	N/A	This project was one of the ongoing projects listed in the previous MJHMP. For the 2023 plan update, this project will be deferred and not carried over, due to the actual project being divided among the jurisdictions during the last plan cycle.
HMP Integration	Continue to integrate the Clark County HMP, in particular the hazard analysis and mitigation strategy sections, into local planning documents, including general plans, emergency operations plan, and capital improvement plans. 2017 Clark County Comprehensive Master Plan – Safety Element and the 2017 State of Nevada and Las Vegas Urban Area THIRA and SPR Report acknowledge the 2012 HMP.	All Hazards	Existing	Clark County Departments	N/A	N/A	N/A	This project is deferred for the plan update due to lack of staff, time, and resources. For the 2023 plan update, this project will be included as a new project named "Annual Review and Update of Hazard Mitigation Plan".

Deferred Mitigation Projects from Clark County MJHMP 2018 – Clark County Water Reclamation District

Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Structural Emphasis (in 2018 MHJMP)	Cost Estimate	Estimated Timeline	Potential Funding Source	Status
Laughlin Water Resource Facility	Rehabilitate systems, including emergency storage pond.	Flooding	Clark County Water Reclamation District	Existing	N/A	N/A	N/A	Deferred Project from the 2018 MJHMP.

Deferred Mitigation Projects from Clark County MJHMP 2018 – Henderson

Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Structural Emphasis (in 2018 MHJMP)	Cost Estimate	Estimated Timeline	Potential Funding Source	Status
Regional Flood Control Maintenance Work Program	Annual program to inspect and maintain Regional Flood Control District facilities to ensure the system conveys flows safely and efficiently. Funded by the Clark County Regional Flood Control District.	Flood, Dam Failure	City of Henderson	Existing	N/A	N/A	Funded by the Clark County Regional Flood Control District.	Deferred Project from the 2018 MJHMP.
Drop Inlet Inspection and Maintenance Program	Annual program to inspect and maintain drop inlets to ensure the system conveys flows safely and efficiently.	Flood	City of Henderson	Existing	N/A	N/A	N/A	Deferred Project from the 2018 MJHMP.
Turf Limits Program	Turf limits restrict or prohibit the amount of grass to be planted at new properties. The restrictions prohibiting types of grass that can be planted apply to all property owners.	Drought	City of Henderson	Existing	N/A	N/A	N/A	Deferred Project from the 2018 MJHMP.
Emergency Power	Provide additional emergency power, such as generator equipment, for new and existing critical facilities to operate continuously but cannot do so for long durations of power outage. Acquire and install permanent emergency generators and appropriate connections for the permanent generators at Downtown and Multi-Generational Recreation Centers. Acquire one (1) portable emergency generator and acquire and install appropriate connections for the portable emergency generator at Heritage Park, Whitney Ranch and Heritage Aquatics Recreation Centers. These centers will potentially be used as shelter locations.	All Hazards	City of Henderson Public Works Parks and Recreation	New	N/A	N/A	FEMA grant funding	Deferred Project from the 2018 MJHMP.

Mitigation Projects

The Clark County 2018 Multi-Jurisdictional Hazard Mitigation Plan (update) contained a risk assessment of identified hazards for the County and participating municipalities, and a mitigation strategy to address these hazards' risk and vulnerability. Accordingly, an open discussion took place with the Mitigation Planning Steering Committee (MPSC) during the planning phase to determine the current mitigation action/priorities to include in this plan update. Among them, and considered a key part of the planning process, Clark County Office of Emergency Management (CCOEM) solicited participation from the County's participating jurisdictions and stakeholders to help identify mitigation activities/goals/projects for plan inclusion. Typically, mitigation activities/goals/projects focus on strengthening infrastructure and facilities. Clark County's cities and stakeholder's participation in the activities related to the mitigation strategy allowed for CCOEM to learn more about each jurisdictions' needs, facilities, and infrastructure. A Clark County mitigation planning steering committee meeting in November 2022, focused on the Mitigation Strategy Update. Facilitated by Clark County OEM and CONSTANT Associates, Clark County's steering committee members were provided with information on how to offer valuable insight related to the hazards within Clark County. The Clark County mitigation planning steering committee members learned how CONSTANT Associates would assist them in providing input to update the mitigation projects from the previous plan as well as how and when to offer any new/proposed projects to include in the current HMP update.

Following this meeting, representatives from CONSTANT Associates worked with Clark County OEM and the County's participating jurisdictions to provide updates relevant to previous mitigation projects (2018), including the current status (completed, deferred, or carryover). The MPSC was also tasked with identifying any new mitigation projects for this plan update and completing a new mitigation action worksheet created specifically for Clark County. During the planning process, Clark County was able to update these worksheets with its mitigation projects from the 2018 plan update along with the new/proposed projects for the next five-year plan cycle.

The list of mitigation projects and actions selected for this plan update is based upon the potential to reduce risk to life and property with an emphasis on new and existing infrastructure, ease of implementation, community and agency support, consistency with local jurisdictions' plans and capabilities, available funding, vulnerability, and total risk. As identified in the previous MJHMP (2018), the County and its participating municipalities continue to take a multi-jurisdictional approach for this plan update as indicated in Clark County's previous HMP plan updates in 2012. The goals and objectives for the County and its participating jurisdictions will continue to no longer differentiate from that of the County to facilitate a more thorough and standardized approach to mitigation planning.

This plan update includes 30 "carryover" projects from Clark County's previous MJHMP (2018), as they are still relevant, in progress, or ongoing. Also, the hazards, mitigation goals, objectives, and measures that were developed jointly between Clark County and the Cities of Boulder City, NV; Henderson, NV; Las Vegas, NV, Mesquite, NV, and North Las Vegas, NV along with The Tribal Governments of the Las Vegas Paiute Tribe and Moapa Band of Paiutes, (in the previous plan - 2018) have been carried over to this plan update due to being deferred because of a lack of funding and/or resources to complete the mitigation projects/actions during the last five-year cycle.

Clark County and participating jurisdictions have completed 17 mitigation projects and deferred seven (7) since the last plan was approved in August 2018. The following tables describe those completed and deferred mitigation projects by jurisdiction.

The final mitigation action plans identify desired mitigation actions for each participating jurisdiction pending future funding – they are not obligations or funding commitments. For further information on evaluation criteria for the proposed and carried mitigation projects/actions, please see Mitigation Project Evaluation & Prioritization. The full list of mitigation projects, their descriptions, and prioritization per jurisdiction and stakeholder can be found in Appendix H – Mitigation Project Prioritization.

Note: *Any and all mitigation projects and actions will be reviewed and enhanced as a part of the MJHMP plan maintenance cycle to ensure vulnerable populations are included in the MJHMP update.*

Note: *Some projects and actions mitigation risk and vulnerability to multiple hazards. Some of these projects and actions list participating jurisdictions that are only at risk from one or a few of the mitigated hazards. For instance, the HMP Integration project which is for the County and all participating jurisdictions to review the hazard mitigation plan at least annually to review the hazards addressed in the plan and ensure the implementation of the projects addressed in the 20XX plan update. This project addresses all hazards including climate change, dam failure, drought, earthquake, excessive/extreme heat, flooding, fissures & subsidence, severe weather, wildfire, hazardous materials, infectious disease, infestation, and terrorism.*

Mitigation Projects/Activity Summary – Clark County

Mitigation Project or Activity	Related Hazards	Jurisdictions
Implementing Benchmarking Ordinance with Energy/Water Assistance for Building	Drought	Clark County Environment and Sustainability
Efficiency Program Stacking Model	All Hazards	Clark County Environment and Sustainability
Develop and implement a regional education program on topics like resilience and sustainability	All Hazards	Clark County Environment and Sustainability
State Renewable Portfolio Standard Advocacy Initiatives	All Hazards	Clark County Environment and Sustainability
Expansion of Community Solar Program	All Hazards	Clark County Environment and Sustainability
Community Resilience Hubs	All Hazards	Clark County Environment and Sustainability
Community Wildfire Protection Plans	Wildfire	Clark County-Rural Fire
Homeowner Education and Outreach	Wildfire	Fire, Public works, GIS, Parks Department
Fire Breaks Near Public Lands	Wildfire	Fire, Public works, GIS, Parks Department
Generator Installation, Searchlight FS 75	All Hazards	RPM
Generator Installation, Indian Springs FS 83	All Hazards	RPM
Bunkerville Generator Replacement	All Hazards	Clark County RPM
Phase II-Unreinforced Masonry Structure Survey	Earthquake	Clark County Building Department
Research into earthquake hazard	Earthquake	UNR and Nevada Earthquake Council

Mitigation Project or Activity	Related Hazards	Jurisdictions
Wildfire Awareness	Wildfire	Clark County Fire
Flood Projects through the CCRFCD - Blue Diamond Channel 02, Decatur-Le Baron to Richma	Flood	Clark County Public Works/Clark County Regional Flood Control District (CCRFCD)
Flood Projects through the CCRFCD -Wagon Trail Channel, Sunset Road to Teco Ave	Flood	Clark County Public Works/Clark County Regional Flood Control District (CCRFCD)
Flood Projects through the CCRFCD - Blue Diamond Wash, Arville Street	Flood	Clark County Public Works/Clark County Regional Flood Control District (CCRFCD)
Flood Projects through the CCRFCD-Harry Reid Airport Peaking Basin - East Outfall	Flood	Clark County Public Works/Clark County Regional Flood Control District (CCRFCD)
Flood Projects through the CCRFCD - Fairgrounds Detention Basin and outfall, Moapa Valley	Flood	Clark County Public Works/Clark County Regional Flood Control District (CCRFCD)
Flood Projects through the CCRFCD-Reduce the threat of flood and flash flooding through development of flooding facilities and public awareness.	Flood	CCRFCD
Emergency Power	Earthquake, Flood, Climate Change, Wildfire	CCFD (Office of Emergency Management & Homeland Security)
Fuel Management	Wildfire	CCFD - Rural Fire Division
Mosquito Abatement Program	Infectious Disease, Infestation	Clark County Public Works (Vector Control)/ Southern Nevada Health District
Flamingo Wash, Maryland Parkway to Palos Verdes Street	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD
Jim McGaughey Detention Basin, Collection & Outfall	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD
Las Vegas Wash -Branch 02 - Monson Channel - Jimmy Durante to Boulder Hwy	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD
Orchard Detention Basin Collector - Charleston to Linden	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD
Goodsprings Phase I	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD

Mitigation Project or Activity	Related Hazards	Jurisdictions
Blue Diamond Railroad Channel	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD
Windmill Wash Detention Basin Expansion and Jess Waite Levee Facilities	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD
SR163 at Casino Drive - Phase 2 Sediment Basin	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD
Airport Channel - Naples	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD
Duck Creek/Blue Diamond, Bermuda Road to Las Vegas Blvd	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD
Blue Diamond Channel Amigo to Haven	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD
Flamingo, Cimarron Branch - Russell Road to Patrick Lane	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD
Hiko Springs Wash Detention Basin Expansion	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD
Flamingo Wash, UPRR to Hotel Rio Drive	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD
Sunset Park - Duck Creek Wash to Eastern Avenue	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD
Annual Review and Update of Hazard Mitigation Plan	All Hazards	Clark County OEM; All Jurisdictions (Clark County Departments, Cities of Boulder City, Henderson, Las Vegas, Mesquite, North Las Vegas, Clark County Water Reclamation District, and the Tribes of Las Vegas Paiute and Moapa Band of Paiutes
Annual Review and Update of County Continuity of Operations (COOP) Plan	All Hazards	Clark County OEM; All Jurisdictions (Clark County Departments, Cities of Boulder City, Henderson, Las Vegas, Mesquite, North Las Vegas, Clark County Water Reclamation District, and the Tribes of Las Vegas Paiute and Moapa Band of Paiutes
Development of a County Sheltering Plan	All Hazards	Clark County OEM; All Jurisdictions (Clark County Departments, Cities of Boulder City, Henderson, Las Vegas, Mesquite, North Las Vegas, Clark County Water Reclamation District, and the Tribes of Las Vegas Paiute and Moapa Band of Paiutes
Annual Review and Update of Local Emergency Operations Plan (LEOP)	All Hazards	Clark County OEM; Clark County Local Emergency Planning Commission (LEPC); All Jurisdictions (Clark County Departments, Cities of Boulder City, Henderson, Las Vegas, Mesquite, North Las Vegas, Clark County Water Reclamation District, and the Tribes of Las Vegas Paiute and Moapa Band of Paiutes
Animal Evacuation Measures Public Awareness Campaign	All Hazards	Clark County PIO/Communication Office; Clark County Animal Protection Service
Procure Emergency Evacuation	All Hazards	Clark County Administrative Services

Mitigation Project or Activity	Related Hazards	Jurisdictions
Trailer		
Temporary Sheltering Needs for Animal Services	All Hazards	Clark County Administrative Services

Mitigation Projects/Activity Summary – Clark County Water Reclamation District

Mitigation Project or Activity	Related Hazards	Jurisdictions
Emergency Power	Earthquake, Flood, Climate Change, Wildfire	Clark County Water Reclamation District
Mosquito Abatement Program	Infectious Disease and Infestation	Clark County Water Reclamation District
Green Energy Projects	All Hazards	Clark County Water Reclamation District
Surge Pond Overflow Protection	Flooding	Clark County Water Reclamation District

Mitigation Projects/Activity Summary – Boulder City

Mitigation Project or Activity	Related Hazards	Jurisdictions
Implement floodplain and stream restoration projects	Flooding	Boulder City
Maximize Maintenance Funding for Existing Flood Control Facilities	Flooding	Boulder City
Continue Water Conservation Measures	Drought	Boulder City
Flood Control Improvements	Flooding	Boulder City
Emergency Power	Earthquake, Flood, Climate Change, Wildfire	Boulder City
Implement floodplain and stream restoration projects	Flooding	Boulder City
Maximize Maintenance Funding for Existing Flood Control Facilities	Flooding	Boulder City

Mitigation Projects/Activity Summary – Henderson

Mitigation Project or Activity	Related Hazards	Jurisdictions
Unreinforced Masonry Database	Earthquake, Flood, Climate Change, Wildfire	Henderson
Critical Infrastructure Flood Risk Reduction	Flood, Dam Failure	Henderson
Critical Facilities & Infrastructure Seismic Retrofit or Replacement	Earthquake, Dam Failure, Climate Change	Henderson
Flood Control	Flood, Dam Failure	Henderson

Mitigation Projects/Activity Summary – Las Vegas

Mitigation Project or Activity	Related Hazards	Jurisdictions
Hazard Prevention Framework	All Hazards	Las Vegas
Cooling Infrastructure Investment	Drought	Las Vegas
Hazard Economic Recovery Framework	All Hazards	Las Vegas
Update of RFCD Master Plan Improvements within the City	Flooding	Las Vegas
Seasonal Monsoon Season Study	Flooding	Las Vegas
Low Impact Development of Natural Drainage Techniques	Flooding; Subsidence & Fissures	Las Vegas
Early Warning Notification Education Program	Flooding	Las Vegas
Turf Limits Program	Drought, Climate Change	Las Vegas
Critical Infrastructure Flood Risk Reduction (Bonnevile Stormwater)	Flood	Las Vegas
Emergency Power (Shelter Generators)	Earthquake, Dam Failure, Flood, Climate Change	Las Vegas
Aquifer Storage and Recovery (Water Use and Conservation)	Drought, Subsidence & Fissures	Las Vegas
NIPP's Security and Resilience Challenge (Smart City)	Hazardous Materials, Terrorism	Las Vegas
NIPP's Security and Resilience Challenge (Connected Corridors)	Hazardous Materials, Terrorism	Las Vegas
Hazard Prevention Framework	All Hazards	Las Vegas
Cooling Infrastructure Investment	Drought	Las Vegas
Hazard Economic Recovery Framework	All Hazards	Las Vegas

Mitigation Projects/Activity Summary – Las Vegas Valley Water District/SWNA

Mitigation Project or Activity	Related Hazards	Jurisdictions
Installation of Perimeter Fence	Terrorism	Las Vegas Valley Water District LVVWD)/SWNA
Septic to Sewer Conversions	Drought, Climate Change	Las Vegas Valley Water District LVVWD)/SWNA
Treatment Facility Network Improvements	Terrorism	Las Vegas Valley Water District LVVWD)/SWNA
Equip Riverbank Well	Drought, Climate Change	Las Vegas Valley Water District LVVWD)/SWNA
Replace Aging/Failed Surveillance and Networking Equipment	Terrorism	Las Vegas Valley Water District LVVWD)/SWNA
Risk Solutions Software for Continuity of Operations Plan Management	All Hazards	Las Vegas Valley Water District LVVWD)/SWNA
Design and Installation of Horizon Lateral	Earthquake, Flood, Climate Change, Wildfire	Las Vegas Valley Water District LVVWD)/SWNA
Purchase generators and develop plan to use well water to provide critical service water supply if treatment plants operations are disrupted	Earthquake, Flood, Climate Change, Wildfire	Las Vegas Valley Water District LVVWD)/SWNA
Turf Limits	Drought, climate change	Las Vegas Valley Water District LVVWD)/SWNA
Water Conservation Program	Drought, Climate Change	Las Vegas Valley Water District LVVWD)/SWNA

Mitigation Projects/Activity Summary – Mesquite

Mitigation Project or Activity	Related Hazards	Jurisdictions
Damage Assessment Forms for Flooding and Earthquake	Earthquake, Flood, Climate Change	Mesquite
Flooding-Levy Build Up	Flood	Mesquite
Senior Center Backup Power Supply	All Hazards	Mesquite
Recreation Center Backup Power Supply	All Hazards	Mesquite
Drought-Water Conservation Planning	Drought, Climate control	Mesquite

Mitigation Projects/Activity Summary – North Las Vegas

Mitigation Project or Activity	Related Hazards	Jurisdictions
Lower Las Vegas Wash Detention Basin Inflow Channel	Flooding	North Las Vegas
Range Wash - Las Vegas Diversion Channel	Flooding	North Las Vegas
Las Vegas Boulevard Storm Drain	Flooding	North Las Vegas
Range Wash Beltway Conveyance	Flooding	North Las Vegas
Beltway Collection System - Pecos	Flooding	North Las Vegas
Speedway North Detention Basin and Outfall	Flooding	North Las Vegas
Speedway #3 Detention Basin Expansion and Inflow/Outflow Facilities	Flooding	North Las Vegas
North Apex - System 1 Detention Basin and Outfall	Flooding	North Las Vegas
Turf Conversion Subsidy	Drought	North Las Vegas
Flood Control	Flood, Dam Failure	North Las Vegas
Emergency Power	Earthquake, Flood, Climate Change, Wildfire	North Las Vegas

Mitigation Projects/Activity Summary – Las Vegas Paiute Tribe

Mitigation Project or Activity	Related Hazards	Jurisdictions
Purchase of Law Enforcement Facility Generator	Drought, Earthquake, Flooding	Las Vegas Paiute Tribe
Flood Control Project Maintenance Project - US 95 Highway Culvert	Flooding	Las Vegas Paiute Tribe
Flood Control Project - Paiute Golf Course - Wolf Course Channel Extension	Flooding	Las Vegas Paiute Tribe
Protect Snow Mountain Water Well	Drought, Excessive Heat, Wildfire, Earthquake	Las Vegas Paiute Tribe
Acquire Water Well Backup Generator for Snow Mountain	Drought, Earthquake, Flooding, Wildfire, Hazardous Materials, and Terrorism	Las Vegas Paiute Tribe
Create a Tribal Continuity of Operations Plan (COOP)	All Hazards	Las Vegas Paiute Tribe

Mitigation Projects/Activity Summary – Moapa Band of Paiutes

Mitigation Project or Activity	Related Hazards	Jurisdictions
Emergency Power for Admin and Law Enforcement	All Hazards	Moapa Band of Paiutes
Tribal Emergency Preparation (Training, Purchasing, Planning, and Events Planning)	All Hazards	Moapa Band of Paiutes

Mitigation Project Evaluation and Prioritization

STAPLE+E

Clark County and its participating jurisdiction(s)' (which includes Clark County Unincorporated Area and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) primary hazard risks, and thus priorities are climate change, drought, earthquake, flooding, fissures & subsidence, wildfire, dam failure, infectious disease, hazardous materials, and terrorism. A composite evaluation matrix was used to prioritize Clark County and its participating jurisdiction(s)' mitigation projects and activities. The evaluation was conducted for each mitigation project and activity for each participating jurisdiction. All priorities were re-assessed using STAPLE+E for this plan update to ensure that the projects reflect current priorities. The composite evaluation matrix is comprised of the three factors detailed below.

The first factor is the STAPLE+E evaluation which is best for measuring feasibility and ease of implementation. The tables in this section provide the STAPLE+E evaluation criteria and the evaluation itself.

The second factor is the effectiveness of the mitigation project. How well does it mitigate the impact of a particular hazard? This is determined by its ability to protect citizens, property, and systems. For instance, wires installed to pin down trees and other objects will reduce their ability to become uprooted or take flight during hazards of high wind but are not as effective at reducing impacts from tornadoes or strong winds as are properly constructed and reinforced buildings. This factor is rated as: **Low = 0.5**, **Medium = 1**, and **High = 1.5**.

The third factor is a hazard risk-based evaluation. It draws on the hazard risk summary found in Section 4.3 of this plan. Each risk rating is assigned a value based on the assessment (None = 0, Low = 5, Medium = 10, and High = 15). A summary of these results is displayed in this section, while the full, per jurisdiction per hazard tables are located in Appendix H.

(HRT) = (HR1 + HR2 + HRn)

The total evaluation score is based on the hazard risk total multiplied by the effectiveness factor, added to the STAPLE+E score.

- **Hazard Risk Total (HRT):** The sum of values (low through high) of each hazard the project is designed to mitigate.
- **Mitigation Project Effectiveness (MPE):** A multiplier based on the project's effectiveness to mitigate against a chosen hazard.
- **STAPLE+E Evaluation:** A raw score comprised of positive and negative feasibility.

(Priority) = (STAPLE+E) + (MPE * HRT)

Upon completing the evaluations, a composite score is calculated and prioritized based on their total score **(Low = 0 – 25, Medium = 26 – 50, High = > 50).**

Table 77: STAPLE+E Criteria

STAPLE+E Criteria	
Evaluation Category	**Source of Information**
Social	Mitigation actions are acceptable to the community if they do not adversely affect a particular segment of the population, do not cause relocation of lower income people, and if they are compatible with the communities' social and cultural values.
Technical	Mitigation actions are technically most effective if they provide long-term reduction of losses and have minimal secondary adverse impacts.
Administrative	Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.
Political	Mitigation actions can truly be successful if all stakeholders have been offered an opportunity to participate in the planning process and if there is public support for the action.
Legal	It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.
Economic	Budget constraints can significantly deter the implementation of mitigation actions. Hence, it is important to evaluate whether an action is cost-effective, as determined by a cost-benefit review, and possible to fund.
Environmental	Sustainable mitigation actions that do not have an adverse effect on the environment, that comply with Federal, State, and local environmental regulations, and that are consistent with the community's environmental goals, have mitigation benefits while being environmentally sound.

Benefit-Cost Analysis

FEMA provides detailed guidance for analyzing the economic feasibility of mitigation activities. Benefit-Cost Analysis (BCA) is the method by which the future benefits of a hazard mitigation project are determined and compared to its costs. The end result is a Benefit-Cost Ratio (BCR), which is calculated by a project's total benefits divided by its total costs. The BCR is a numerical expression of the "cost-effectiveness" of a project. A project is considered to be cost effective when the BCR is 1.0 or greater, indicating the benefits of a prospective hazard mitigation project are sufficient to justify the costs.

FEMA requires a BCA to validate cost effectiveness of proposed hazard mitigation projects prior to funding. There are two drivers behind this requirement: 1) the Office of Management and Budget's (OMB) Circular A-94 Revised, "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs" and 2) the Stafford Act.

Conducting BCA for a mitigation activity can assist the County in determining whether a project is worth undertaking now, in order to avoid disaster related damages later. Cost-effectiveness analysis evaluates how to best spend a given amount of money to achieve a specific goal. Determining the economic feasibility of mitigating hazards can provide decision makers with an understanding of the potential benefits and costs of an activity, as well as a basis for comparing alternative projects. Additional information on BCA is available on the FEMA BCA website.

STAPLE+E Project Tables for Clark County and its participating Jurisdictions

STAPLE+E Ranking, Clark County, NV

STAPLE+E Rankings – Clark County, NV																							
X = Not Applicable	+ = Favorable/Positive Impact										- = Not Favorable/Negative Impact												
STAPLE+E Criteria	Social		Technical			Administrative			Political			Legal			Economic				Environmental					Total Impact
Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribute to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Community Goals	Consistent with Federal Law	
Implementing Benchmarking Ordinance with Energy/Water Assistance for Building	+	x	+	+	x	+	+	+	+	+	+	x	+	+	+	+	+	+	+	x	x	+	+	18
Efficiency Program Stacking Model	+	x	+	+	x	+	+	+	+	+	+	x	+	+	+	+	+	+	+	x	x	+	+	18
Develop and implement a regional education program on topics like resilience and sustainability	+	x	+	+	x	+	+	+	+	+	+	x	+	+	+	+	-	+	x	x	x	+	x	15

STAPLE+E Rankings – Clark County, NV																							
X = Not Applicable	**+ = Favorable/Positive Impact**										**- = Not Favorable/Negative Impact**												
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
State Renewable Portfolio Standard Advocacy Initiatives	+	x	+	+	x	+	+	+	+	+	+	+	+	+	+	+	+	+	x	x	x	+	x	17
Expansion of Community Solar Program	+	x	+	+	x	+	+	+	+	+	+	x	+	+	+	+	+	+	+	x	x	+	+	18
Implementing Benchmarking Ordinance with Energy/Water Assistance for Building	+	x	+	+	x	+	+	+	+	+	+	x	+	+	+	+	+	+	+	x	x	+	+	18
Efficiency Program Stacking Model	+	x	+	+	x	+	+	+	+	+	+	x	+	+	+	+	+	+	+	x	x	+	+	18

STAPLE+E Rankings – Clark County, NV																							
X = Not Applicable	**+ = Favorable/Positive Impact**										**- = Not Favorable/Negative Impact**												
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Develop and implement a regional education program on topics like resilience and sustainability	+	x	+	+	x	+	+	+	+	+	+	x	+	+	+	+	-	+	x	x	x	+	x	15
Community Wildfire Protection Plans	-	+	-	+	-	X	+	x	+	+	x	+	+	+	+	+		x	+	x	x	+	+	13
Homeowner Education and Outreach	-	+	+	+	-	x	+	x	+	+	x	+	+	-	+	+	x	+	+	x	x	+	+	14
Fire Breaks Near Public Lands	+	+	+	+	-	x	+	+	+	+	x	+	+	x	+	+	x	+	+	x	x	+	+	16

STAPLE+E Rankings – Clark County, NV																							
X = Not Applicable	**+ = Favorable/Positive Impact**											**- = Not Favorable/Negative Impact**											
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Generator Installation, Searchlight FS 75	+	+	+	+	-	x	+	+	+	+	x	+	+	x	+	+	x	+	+	+	x	x	+	+	16
Generator Installation, Indian Springs FS 83	+	+	+	+	-	x	+	+	+	+	x	+	+	x	+	+	X	+	+	+	X	X	+	+	16
Bunkerville Generator Replacement	+	+	+	+	-	X	+	+	+	+	X	+	+	X	+	+	X	+	+	+	X	X	+	+	16
Phase II-Unreinforced Masonry Structure Survey	X	X	+	X	-	x	x	x	x	x	x	+	+	x	+	+	-	-	+	x	x	x	+	+	8
Research into earthquake hazard	+	X	+	x	-	x	x	x	+	x	x	+	+	+	x	+	+	-	+	x	x	x	+	+	11
Wildfire Awareness	x	+	+	-	-	x	x	x	+	x	x	+	+	+	+	+	-	-	+	x	x	x	+	+	11

STAPLE+E Rankings – Clark County, NV																							
X = Not Applicable	**+ = Favorable/Positive Impact**										**- = Not Favorable/Negative Impact**												
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Flood Projects through the CCRFCD - Blue Diamond Channel 02, Decatur-Le Baron to Richma	x	+	+	+	x	+	+	+	+	x	x	+	+	+	+	+	x	-	+	x	x	+	+	15
Flood Projects through the CCRFCD - Wagon Trail Channel, Sunset Road to Teco Ave	x	+	+	+	x	+	+	+	+	x	x	+	+	+	+	+	x	-	+	x	x	+	+	15
Flood Projects through the CCRFCD - Blue Diamond Wash, Arville Street	x	+	+	+	x	+	+	+	+	x	x	+	+	+	+	+	x	-	+	x	x	+	+	15

STAPLE+E Rankings – Clark County, NV																							
X = Not Applicable	**+ = Favorable/Positive Impact**										**- = Not Favorable/Negative Impact**												
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Flood Projects through the CCRFCD- Harry Reid Airport Peaking Basin - East Outfall	x	+	+	+	x	+	+	+	+	x	x	+	+	+	+	+	x	-	+	x	x	+	+	15
Flood Projects through the CCRFCD - Fairgrounds Detention Basin and outfall, Moapa Valley	x	+	+	+	x	+	+	+	+	x	x	+	+	+	+	+	x	-	+	x	x	+	+	15

STAPLE+E Rankings – Clark County, NV																							
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STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Flood Projects through the CCRFCD- Reduce the threat of flood and flash flooding through development of flooding facilities and public awareness.	x	+	+	+	x	+	+	+	+	x	x	+	+	+	+	+	x	-	+	x	x	+	+	15
Fuel Management	-	+	x	+	x	x	-	-	+	x	+	+	+	+	+	+	x	+	+	x	+	+	+	14
Mosquito Abatement Program	+	-	+	x	x	x	x	+	x	x	x	+	+	x	+	+	x	+	+	x	x	+	+	11

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Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Flamingo Wash, Maryland Parkway to Palos Verdes Street	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11
Jim McGaughey Detention Basin, Collection & Outfall	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11
Las Vegas Wash -Branch 02 - Monson Channel - Jimmy Durante to Boulder Hwy	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11
Orchard Detention Basin Collector - Charleston to Linden	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11

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Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Goodsprings Phase I	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11
Blue Diamond Railroad Channel	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11
Windmill Wash Detention Basin Expansion and Jess Waite Levee Facilities	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11
SR163 at Casino Drive - Phase 2 Sediment Basin	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11
Airport Channel - Naples	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11

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Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Duck Creek/Blue Diamond, Bermuda Road to Las Vegas Blvd	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11
Blue Diamond Channel Amigo to Haven	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11
Flamingo, Cimarron Branch - Russell Road to Patrick Lane	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11
Hiko Springs Wash Detention Basin Expansion	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11

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Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Flamingo Wash, UPRR to Hotel Rio Drive	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11
Sunset Park - Duck Creek Wash to Eastern Avenue	+	+	x	x	-	x	+	+	x	x	x	+	+	x	+	+	x	-	+	x	x	+	+	11
Annual Review and Update of Hazard Mitigation Plan	+	-	+	+	-	+	-	x	+	+	x	+	+	-	+	+	x	+	x	x	x	+	+	13
Annual Review and Update of Continuity of Operations (COOP) Plan	+	-	+	+	-	+	-	x	+	+	x	+	+	-	+	+	x	+	x	x	x	+	+	13
Development of a County Sheltering Plan	+	-	+	+	-	+	-	x	+	+	x	+	+	-	+	+	x	+	x	x	x	+	+	13

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Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Annual Review and Update of Local Emergency Operations Plan (LEOP)	+	-	+	+	-	+	-	x	+	+	x	+	+	-	+	+	x	+	x	x	x	+	+	13
Animal Evacuation Measures Public Awareness Campaign	x	+	+	+	x	+	-	X	+	x	x	+	+	x	+	+	X	+	x	x	x	+	+	12
Procure Emergency Evacuation Trailer	x	+	+	+	x	+	-	X	+	x	x	+	+	x	+	+	X	+	x	x	x	+	+	12
Temporary Sheltering Needs for Animal Services	x	+	+	+	x	+	-	x	+	x	x	+	+	x	+	+	X	+	x	x	x	+	+	12

STAPLE+E Ranking, Clark County, NV Water Reclamation District

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Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Emergency Power	+	-	+	+	-	+	+	+	+	X	+	X	+	-	+	+	+	+	-	-	+	+	+	16
Mosquito Abatement Program	-	-	+	+	-	+	+	+	+	X	+	+	+	-	+	+	+	x	x	-	x	+	+	14
Green Energy Projects	+	x	+	+	-	x	x	+	x	x	x	x	+	-	+	+	+	x	-	x	x	+	+	10
Surge Pond Overflow Protection	x	x	+	+	-	x	+	+	x	x	x	+	+	-	+	+	+	+	+	-	x	x	+	12

STAPLE+E Ranking, Boulder City, NV

STAPLE+E Ranking – City of Boulder City, NV																							
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Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribute to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Community Goals	Consistent with Federal Law	
Implement floodplain and stream restoration projects	+	x	+	+	-	+	-	+	+	x	+	x	+	+	+	x	+	-	+	+	x	+	+	15
Maximize Maintenance Funding for Existing Flood Control Facilities	+	-	+	+	-	+	+	+	+	x	+	x	+	+	+	+	+	+	-	-	-	+	+	16
Continue Water Conservation Measures	+	-	x	+	-	+	+	+	+	+	+	x	+	+	+	x	-	+	+	-	-	+	+	15
Flood Control Improvements	+	-	+	+	-	+	+	+	+	+	+	x	+	-	+	+	+	+	x	x	x	+	x	15
Emergency Power	+	-	+	+	-	+	-	+	+	+	+	x	+	-	+	x	+	-	x	-	-	x	x	11

STAPLE+E Ranking, Henderson, NV

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Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribute to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Community Goals	Consistent with Federal Law	
Unreinforced Masonry Database	+	-	+	+	-	x	-	x	+	+	x	+	+	x	+	x	+	+	x	x	x	+	+	12
Critical Infrastructure Flood Risk Reduction	x	x	+	+	-	x	-	+	+	x	x	+	+	x	+	x	+	+	+	x	x	+	+	12
Critical Facilities & Infrastructure Seismic Retrofit or Replacement	x	-	+	x	-	x	-	+	+	x	x	+	+	x	+	x	+	+	+	x	x	+	+	11
Flood Control	+	-	+	x	-	x	-	+	+	x	x	+	+	x	+	x	+	+	+	x	x	+	+	12

STAPLE+E Ranking, Las Vegas, NV

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Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Hazard Prevention Framework	+	X	+	X	-	+	+	X	+	X	X	+	+	X	+	+	+	+	X	X	X	+	X	12
Cooling Infrastructure Investment	+	x	+	x	-	+	+	+	+	x	x	+	+	x	+	+	+	+	+	x	x	+	+	15
Hazard Economic Recovery Framework	+	+	+	+	x	+	+	+	x	x	x	+	+	x	+	x	+	+	-	-	-	+	+	14
Update of RFCD Master Plan Improvements within the City	+	x	+	+	x	x	x	+	+	x	+	+	+	-	+	+	+	+	+	x	x	x	x	13
Seasonal Monsoon Season Study	-	-	+	+	-	+	+	+	x	x	x	+	+	-	+	+	+	+	-	-	-	+	x	12

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Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Low Impact Development of Natural Drainage Techniques	+	x	+	+	x	+	+	+	x	x	x	+	+	+	+	+	+	+	+	x	x	+	+	16
Early Warning Notification Education Program	-	-	+	+	-	+	+	+	+	x	+	+	+	+	+	+	+	+	-	-	-	+	+	16
Turf Limits Program	-	-	+	+	-	+	+	+	+	x	x	+	+	+	+	x	+	+	+	+	X	X	+	15
Critical Infrastructure Flood Risk Reduction (Bonnevile Stormwater)	-	-	+	+	-	+	+	+	+	x	+	+	+	-	+	x	+	+	+	X	+	+	+	16
Emergency Power (Shelter Generators)	-	-	+	-	-	+	+	+	+	x	+	+	+	-	+	x	+	+	X	X	X	+	+	13

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Aquifer Storage and Recovery (Water Use and Conservation)	-	-	+	+	-	+	+	+	+	x	+	+	+	+	+	x	+	+	+	+	X	+	+	17
NIPP's Security and Resilience Challenge (Smart City)	-	-	+	+	-	+	+	+	+	x	+	+	+	+	+	x	+	+	-	-	-	+	+	15
NIPP's Security and Resilience Challenge (Connected Corridors)	-	-	+	+	-	+	+	+	+	x	+	+	+	+	+	x	+	+	-	-	-	+	+	15

STAPLE+E Ranking, Las Vegas Valley Water District/SWNA

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Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribute to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Community Goals	Consistent with Federal Law	
Installation of Perimeter Fence	+	x	+	+	x	+	+	+	+	+	+	+	+	+	+	+	x	+	-	x	x	x	x	15
Septic to Sewer Conversions	+	x	+	+	x	+	+	+	+	+	+	x	+	+	+	+	+	+	+	x	x	+	+	18
Treatment Facility Network Improvements	+	x	+	+	x	+	+	+	+	+	+	x	+	+	+	+	+	+	x	x	x	x	x	15
Equip Riverbank Well	+	x	+	+	x	+	+	+	+	+	+	x	+	+	+	+	+	+	x	x	x	+	x	16
Replace Aging/Failed Surveillance and Networking Equipment	+	x	+	+	x	+	+	+	+	+	+	x	+	+	+	+	-	+	x	x	x	x	x	14

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Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Risk Solutions Software for Continuity of Operations Plan Management	+	x	+	+	x	+	+	+	+	+	+	+	+	+	+	+	+	+	x	x	x	x	x	16
Design and Installation of Horizon Lateral	+	x	+	+	x	+	+	+	+	+	+	+	+	+	+	+	+	+	x	x	x	x	x	16
Purchase generators and develop plan to use well water to provide critical service water supply if treatment plants operations are disrupted	+	x	+	+	x	+	x	+	+	+	+	+	+	+	+	+	+	x	x	x	x	+	x	15
Turf Limits	+	x	+	+	x	+	x	+	+	+	+	+	+	+	x	+	-	x	+	x	x	+	+	15

STAPLE+E Ranking, Mesquite, NV

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Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Damage Assessment Forms for Flooding and Earthquake	x	-	+	x	-	x	-	x	+	+	x	+	+	x	+	+	x	+	+	+	x	x	+	+	11
Flooding-Levy Build Up	x	+	+	+	x	x	+	+	+	+	x	+	+	x	+	+	-	+	-	+	x	x	+	+	14
Senior Center Backup Power Supply	+	+	+	x	-	+	-	+	+	+	x	+	+	x	+	+	-	+	-	+	x	x	+	+	14
Recreation Center Backup Power Supply	+	+	+	x	-	+	-	+	+	+	x	+	+	x	+	+	-	+	-	+	x	x	+	+	14
Drought-Water Conservation Planning	x	-	+	x	-	+	+	x	+	+	x	+	+	x	+	+	+	+	+	+	x	x	+	+	14
Channel, Pulsipher Wash Channel"	+	+	+	+	-	x	+	+	+	+	x	+	+	x	+	+	+	-	+	+	x	x	+	+	16

STAPLE+E Rankings – City of Mesquite, NV																							
X = Not Applicable	**+ = Favorable/Positive Impact**										**- = Not Favorable/Negative Impact**												
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Town Wash Detention Basin, Abbott Wash Detention Basin, Pulsipher Wash Detention Basin	+	+	+	+	-	x	+	+	+	+	x	+	+	x	+	+	+	-	+	x	x	+	+	16

STAPLE+E Ranking, North Las Vegas, NV

STAPLE+E Rankings – City of North Las Vegas, NV																							
X = Not Applicable	**+ = Favorable/Positive Impact**										**- = Not Favorable/Negative Impact**												
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Lower Las Vegas Wash Detention Basin Inflow Channel	x	+	+	+	+	x	x	-	+	+	x	+	+	x	+	x	+	+	x	x	x	+	+	13
Range Wash - Las Vegas Diversion Channel	x	+	+	+	+	x	x	-	+	+	x	+	+	x	+	x	+	+	x	x	x	+	+	13
Las Vegas Boulevard Storm Drain	x	+	+	+	+	x	x	-	+	+	x	+	+	x	+	x	+	+	x	x	x	+	+	13
Range Wash Beltway Conveyance	x	+	+	+	+	x	x	-	+	+	x	+	+	x	+	x	+	+	x	x	x	+	+	13
Beltway Collection System - Pecos	x	+	+	+	+	x	x	-	+	+	x	+	+	x	+	x	+	+	x	x	x	+	+	13
Speedway North Detention Basin and Outfall	x	+	+	+	+	x	x	-	+	+	x	+	+	x	+	x	+	+	x	x	x	+	+	13

STAPLE+E Rankings – City of North Las Vegas, NV																							
X = Not Applicable	**+ = Favorable/Positive Impact**										**- = Not Favorable/Negative Impact**												
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Speedway #3 Detention Basin Expansion and Inflow/Outflow Facilities	x	+	+	+	+	x	x	-	+	+	x	+	+	x	+	x	+	+	x	x	x	+	+	13
North Apex - System 1 Detention Basin and Outfall	x	+	+	+	+	x	x	-	+	+	x	+	+	x	+	x	+	+	x	x	x	+	+	13
Turf Conversion Subsidy	x	+	+	+	+	-	+	x	+	+	x	+	x	x	+	-	+	+	+	+	x	x	+	14
Flood Control	x	-	+	+	+	-	x	x	+	+	x	+	x	+	+	-	+	+	+	x	x	x	+	12
Emergency Power	x	-	+	+	+	-	x	x	+	+	x	+	x	+	+	-	+	+	+	+	x	x	+	13

STAPLE+E Ranking, Las Vegas Paiute Tribe

STAPLE+E Rankings – Las Vegas Paiute Tribe																							
X = Not Applicable	+ = Favorable/Positive Impact										- = Not Favorable/Negative Impact												
STAPLE+E Criteria	Social		Technical			Administrative			Political			Legal			Economic				Environmental					Total Impact
Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribute to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Community Goals	Consistent with Federal Law	
Purchase of Law Enforcement Facility Generator	+	-	+	x	x	-	-	+	+	+	+	x	+	x	+	+	-	+	x	-	-	+	+	12
Flood Control Project Maintenance Project - US 95 Highway Culvert	+	+	+	+	-	-	-	+	+	+	+	x	+	x	+	+	+	+	x	-	-	+	+	15
Flood Control Project - Paiute Golf Course - Wolf Course Channel Extension	+	+	+	+	-	-	-	+	+	+	+	x	+	x	+	+	+	+	x	-	-	+	+	15
Protect Snow Mountain water well	+	+	+	+	-	+	-	+	+	+	x	x	+	x	+	+	-	+	x	-	-	+	+	14

STAPLE+E Rankings – Las Vegas Paiute Tribe																							
X = Not Applicable	**+ = Favorable/Positive Impact**											**- = Not Favorable/Negative Impact**											
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	**Community Acceptance**	**Effect on Segment of Population**	**Technical Feasibility**	**Long-term Solution**	**Secondary Impacts**	**Staffing**	**Funding Allocated**	**Maintenance/ Operations**	**Political Support**	**Local Champion**	**Public Support**	**State Authority**	**Existing Local Authority**	**Potential Legal Challenge**	**Benefit of Action**	**Cost of Action**	**Contribute to Economic Goals**	**Outside Funding Required**	**Effect on Land/Water**	**Effect on Endangered Species**	**Effect on HAZMAT/Waste Sites**	**Consistent with Community Goals**	**Consistent with Federal Law**	
Acquire Water Well Backup Generator for Snow Mountain	+	+	+	+	-	+	-	+	+	+	x	x	+	x	+	+	-	+	x	-	-	+	+	14
Create a Tribal Continuity of Operations Plan (COOP)	+	-	+	+	-	+	-	+	+	+	x	x	+	x	+	+	-	+	x	-	-	+	+	13

STAPLE+E Ranking, Moapa Band of Paiute Tribe

STAPLE+E Rankings – Moapa Band of Paiute Tribe																							
X = Not Applicable	+ = Favorable/Positive Impact										- = Not Favorable/Negative Impact												
STAPLE+E Criteria	Social		Technical			Administrative			Political			Legal			Economic				Environmental					Total Impact
Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/ Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribute to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT/Waste Sites	Consistent with Community Goals	Consistent with Federal Law	
Emergency Power for Admin and Law Enforcement	+	-	+	x	-	x	-	+	+	+	+	x	+	+	+	+	-	+	x	x	x	+	+	13
Tribal Emergency Preparation (Training, Purchasing, Planning, and events planning)	+	-	+	x	-	x	-	+	+	+	+	x	+	+	+	+	-	+	x	x	x	+	+	13

Mitigation Action Project Prioritization Tables (Proposed and Carry-Over Projects) for Clark County, NV and its Participating Jurisdictions

Mitigation Action Project Prioritization (Proposed and Carry-Over Projects), Clark County, NV Departments (Clark County Unincorporated)

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Clark County 1	Flood Projects through the CCRFCD - Blue Diamond Channel 02, Decatur-Le Baron to Richma	Blue Diamond Channel 02, Decatur-Le Baron to Richmar - Approximately 980 feet of 10'x6' RCB along Decatur Boulevard connecting to the Silverado Ranch DB - Combined with RTC Roadway Project	Flood	Clark County Public Works/Clark County Regional Flood Control District (CCRFCD)	Medium (37.5)	Existing	$1,778,560	1-5 years	CCRFD	This project was a carry-over project from the 2018 MJHMP update however, the project is near completion and will be completed by the end of the upcoming plan cycle.
Clark County 2	Flood Projects through the CCRFCD - Wagon Trail Channel, Sunset Road to Teco Ave	Wagon Trail Channel, Sunset Road to Teco Ave - 10’ x 6’ reinforced concrete box culvert in Procyon Street from Sunset Road to Teco Avenue	Flood	Clark County Public Works/Clark County Regional Flood Control District (CCRFCD)	Medium (37.5)	Existing	$2,371,530	1-5 years	CCRDF	This project was a carry-over project from the 2018 MJHMP update however, the project is near completion and will be completed by the end of the upcoming plan cycle.
Clark County 3	Flood Projects through the CCRFCD - Blue Diamond Wash, Arville Street	Blue Diamond Wash, Arville Street to I-15 - 66” diameter reinforced concrete pipe storm drain in Robindale Road from	Flood	Clark County Public Works/Clark County Regional Flood	Medium (37.5)	Existing	$7,155,769	1-5 years	CCRFD	This project was a carry-over project from the 2018 MJHMP

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		Arville Street to I-15		Control District (CCRFCD)						update however, the project has an estimated completion date of 8/2023.
Clark County 4	Flood Projects through the CCRFCD- Harry Reid Airport Peaking Basin - East Outfall	Harry Reid Airport Peaking Basin - East Outfall - App .85 mile 54" RCP, 6x6 RCB, and 8x4 RCB from Airport Peaking Basin to Fla Wash	Flood	Clark County Public Works/Clark County Regional Flood Control District (CCRFCD)	Medium (37.5)	Existing	$7,026,705	1-5 years	CCRFD	This project was a carry-over project from the 2018 MJHMP update however, the project has an estimated completion date of 8/2023.
Clark County 5	Flood Projects through the CCRFCD - Fairgrounds Detention Basin and outfall, Moapa Valley	Fairgrounds Detention Basin and outfall, Moapa Valley - 130 ac-ft detention basin and approx. 4,100 LF 7' x 5' RCB	Flooding	Clark County Public Works/Clark County Regional Flood Control District (CCRFCD)	Medium (37.5)	Existing	$20,683,226	1-5 years	CCRFD	This project was a carry-over project from the 2018 MJHMP update however, the project has an estimated completion date of 1/2024.
Clark County 6	Generator Installation, Indian Springs FS 83	Install generators at stations in order to provide community sheltering and maintain emergency response during power outages. One generator to be installed per year at two different stations. Year 2, Indian Springs FS 83 generator install. This rural community would not otherwise would not be able to take on capital projects like these. These	All Hazards	Clark County RPM	Medium (40)	New	$120,000	1 Year	HMGP	Proposed project for the 2023 plan update.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		projects would contribute to community security by providing resiliency to volunteer firefighters that serve the area as well as emergency sheltering in a community that have very little public space capable of providing community needs during a disaster.								
Clark County 7	Bunkerville Generator Replacement	The first generator is located at Station 71 in Bunkerville. This station has a generator just outside the station. The generator currently does not service the station, it was installed for the Emergency Communication Center (ECC) located onsite and communications tower located outside. The station his station also provides emergency radio information via a low power FM radio station housed onsite and transmitted locally on FM95.1. This radio station has been used in the past few years to broadcast emergency information both from Clark County and the City of Mesquite. The unique nature of Station 71 and its equipment places it as a community lifeline providing safety/security and communications, both components of FEMA's National Preparedness Goal. We are seeking to replace this small generator with one that services the station as well as the communication equipment. The station power needs would require replacing the 45kw generator attached to the	All Hazards	Clark County RPM	Medium (40)	New	$530,000	1-2 years	HMGP	Proposed project for the 2023 plan update.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		tower and replacing it with a 90kw generator serving both the station and tower. This generator is already in an enclosure but would enable remote monitoring and expanded capacity.								
Clark County 8	Generator Installation, Searchlight FS 75	Install generators at stations in order to provide community sheltering and maintain emergency response during power outages. One generator to be installed per year at two different stations. Year 1, Searchlight FS 75 generator install	All Hazards	RPM	Medium (33.31)	New	$120,000	1 Year	HMGP	Proposed project for the 2023 plan update.
Clark County 9	Community Wildfire Protection Plans	Work with the BLM, USFS, and NDF to create specific Community Wildfire Protection Plans for the communities at extreme or very high wildfire risk; Trout Canyon, Mt. Springs, Mt. Charleston, Torino Ranch, Nelson, Cold Creek Evaluate Blue Diamond, Cal Nev Ari, Searchlight, Indian Springs, Goodsprings, Sandy Valley, Corn Creek for inclusion to the list of high hazard areas. The development of CWPPs and community specific outreach and public education is 1 year. Assisting with the development of these projects are the Nevada Division of Forestry Fire Adapted Community Coordinator and the Shared Stewardship Working Group with all federal and local land management agencies.	Wildfire	Clark County – Rural Fire	Medium (32)	New	$50,000	1 year	BLM Community Fire Assistance	Proposed project for the 2023 plan update.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Clark County 10	Fire Breaks Near Public Lands	Create and maintain fire breaks near public lands to mitigate threats to communities originating from outside the jurisdictional boundary of the municipality. install generators at stations in order to provide community sheltering and maintain response during power outages. Three generators installed during the next four (4) years at different stations - Year 1 Searchlight FS 75 generator install. This would be the install of a new 60kw generator, pad, sound attenuation, permits, and remote monitoring. This would enable resilient power supply to this critical building in a small rural community. Fire Station 75 years has lost power several times in the past year, which requires a manual release of the apparatus bay doors from the motorized trolley to open them. The installation of a generator at the station would provide resiliency against power interruption, enable continuity of service by the local volunteer firefighters, and provide a safe refuge area for the community should be extended sheltering be required for long term needs following a natural disaster.	Wildfire	Clark County Fire, Clark County Public Works, Clark County GiS Department, and Clark County Parks Department	Medium (32)	New	$150,000	2 years	BLM Community Fire Assistance	Proposed project for the 2023 plan update.
Clark County 11	National Cohesive Wildland Fire Management Strategy (also known as Fuel	Reduce the understory fuel around lines, areas or zones where structures and other human development meet or intermingle with wildland or	Wildfire	CCFD – Rural Division	Medium (28)	Existing	$200,000-$400,000	3-5 years	USFS, BLM, or NDF along with public/private partnerships with NV	Carry-over Project from 2018 plan update.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
	Management from the CCMJHP 2018 update)	vegetative fuels (including invasive species). Focus should be placed on larger areas (such as those surrounding neighborhoods that have varying degrees of fire resistance and defensible space) that have a history of large destructive fires and a high-density concentration of understory fuel. Conduct annual fuel reduction activities in highest risk areas for wildland/urban interface, including the Spring Mountains (Trout Canyon, Mountain Springs), and Northeast Clark County (Moapa/Moapa Valley). **Project Update:** As part of a multiyear effort in 2023-2028 this strategy will be operationalized by educating threatened communities on defensible space awareness, helping residents make meaningful steps to increase resilience to wildfires, and assisting in the maintenance of public spaces within Clark County. Community Wildfire Protection Plans (CWPP) will be created in 2023 to better communicate hazard messaging with the public as well as guide protective actions within the project timeline. Specific actions to be taken include the carry-over of action items from 2018's are as follows: there are a number of extreme fire danger areas							Energy and Valley Electric or the Clark County General Fund.	

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		within Clark County that have already been identified including Cold Creek, Mountain Springs, Trout Canyon, and Lovell Canyon to Torino Ranch. These areas will see fuel reduction in the community tie into projects implemented by federal land managers in the last decade. In 2022 alone the USFS completed fuel reduction in over 2000 acres of the SMNRA and hazardous fuel reduction in these areas is ongoing. The expected timeline for defensible space awareness, public education, and fuel reduction projects on intermingled private/public lands along with Clark County infrastructure sites within Clark County jurisdiction is 3-5 years.								
Clark County 12	Flamingo Wash, Maryland Parkway to Palos Verdes Street	Open channel improvements from Maryland to Cambridge and from Swenson to Palos Verde. The project is expected to encumber construction funding April-23 and advertise for bids August 2023.	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD	Medium (27.5)	New	$14,344,543	1-5 years	Clark County Regional Flood Control District CCRFCD	Proposed Project for the 2023 Plan update
Clark County 13	Jim McGaughey Detention Basin, Collection & Outfall	88 AC-FT Detention Basin, 6' x 6' RCB and Open Channel inflow facilities, and RCP outfall. This project is expected to encumber construction funding May-23 and advertise for bids Sept-23	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD	Medium (27.5)	New	$14,344,543	1-5 years	Clark County Regional Flood Control District CCRFCD	Proposed Project for the 2023 Plan update
Clark County	Las Vegas Wash -Branch	Culvert crossings, new RCB, and open channel	Flood	Clark County Public Works	Medium	New	$14,742,513	1-5 years	Clark County Regional	Proposed Project for

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
14	02 - Monson Channel - Jimmy Durante to Boulder Hwy	improvements adjacent to Flamingo Rd. This project is expected to encumber construction funding July-23 and advertise for bids October 2023.		(CCPW)/Clark County Regional Flood Control District CCRFCD	(27.5)				Flood Control District CCRFCD	the 2023 Plan update
Clark County 15	Orchard Detention Basin Collector - Charleston to Linden	4765 LF of soil cement lined levee extending north of Charleston. This project is expected to encumber construction funding Dec-23 and advertise for bids March 2024.	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD	Medium (27.5)	New	$6,485,481	1-5 years	Clark County Regional Flood Control District CCRFCD	Proposed Project for the 2023 Plan update
Clark County 16	Goodsprings Phase I	approximately 3000 LF of earthen and rip rap channel with 80 LF of 6' X 5' RCBC. This project is expected to encumber construction funding Dec-23 and advertise for bids March 2024.	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD	Medium (27.5)	New	$1,000,000	1-5 years	Clark County Regional Flood Control District CCRFCD	Proposed Project for the 2023 Plan update
Clark County 17	Blue Diamond Railroad Channel	App 1-mile open Channel Improvements adjacent to UPRR from Blue Diamond Rd to Rainbow Blvd. This project is expected to encumber construction funding Dec-23 and advertise for bids March 2024.	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD	Medium (27.5)	New	$22,725,070	1-5 years	Clark County Regional Flood Control District CCRFCD	Proposed Project for the 2023 Plan update
Clark County 18	SR163 at Casino Drive - Phase 2 Sediment Basin	This project will add sediment basin u/s of LUBC0010 in Laughlin. The expected to encumber construction funding Dec-23 and advertise for bids March 2024.	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD	Medium (27.5)	New	$5,174,070	1-5 years	Clark County Regional Flood Control District CCRFCD	Proposed Project for the 2023 Plan update
Clark County 19	Airport Channel - Naples	This project will construct 2500 LF of 20' X 6' concrete channel, 120-AC-FT peaking basin. The expected to encumber construction funding Dec-23 and advertise for bids March 2024.	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD	Medium (27.5)	New	$20,503,634	1-5 years	Clark County Regional Flood Control District CCRFCD	Proposed Project for the 2023 Plan update

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Clark County 20	Duck Creek/Blue Diamond, Bermuda Road to Las Vegas Blvd	RCB and open channel improvements to DC/BD Wash from LV Blvd to Bermuda. This project expected to encumber construction funding Dec-23 and advertise for bids March 2024.	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD	Medium (27.5)	New	$2,500,00	1-5 years	Clark County Regional Flood Control District CCRFCD	Proposed Project for the 2023 Plan update
Clark County 21	Blue Diamond Channel Amigo to Haven	Open channel and underground SD improvements from Amigo to Haven St. The expected to encumber construction funding Dec-23 and advertise for bids March 2024.	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD	Medium (27.5)	New	$7,514,396	1-5 years	Clark County Regional Flood Control District CCRFCD	Proposed Project for the 2023 Plan update
Clark County 22	Flamingo, Cimarron Branch - Russell Road to Patrick Lane	RCP west of Cimarron Rd alignment from Russell Rd to Patric Ln. This project expected to encumber construction funding Jan-24 and advertise for bids May 2024.	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD	Medium (27.5)	New	$3,000,000	1-5 years	Clark County Regional Flood Control District CCRFCD	Proposed Project for the 2023 Plan update
Clark County 23	Hiko Springs Wash Detention Basin Expansion	308-acre-foot expansion to Hiko Springs Detention Basin. This project expected to encumber construction funding Mar-24 and advertise for bids July 2024.	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD	Medium (27.5)	New	$30,000,000	1-5 years	Clark County Regional Flood Control District CCRFCD	Proposed Project for the 2023 Plan update
Clark County 24	Flamingo Wash, UPRR to Hotel Rio Drive	approximately 700 LF of gabion channel with 20-foot bottom width. This project expected to encumber construction funding Mar-24 and advertise for bids July-24	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD	Medium (27.5)	New	$5,696,000	1-5 years	Clark County Regional Flood Control District CCRFCD	Proposed Project for the 2023 Plan update
Clark County 25	Sunset Park - Duck Creek Wash to Eastern Avenue	RCB in Sunset Rd from DC Wash to Tomiyasu Ln then extending southwest through Sunset Park. This project expected to encumber construction funding Dec-24 and advertise for bids March-25	Flood	Clark County Public Works (CCPW)/Clark County Regional Flood Control District CCRFCD	Medium (27.5)	New	$19,4169,042	1-5 years	Clark County Regional Flood Control District CCRFCD	Proposed Project for the 2023 Plan update

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Clark County 26	Annual Review and Update of Hazard Mitigation Plan	All jurisdictions review the Hazard Mitigation Plan at least annually to ensure implementation of the mitigation projects addressed in the 2023 plan update.	All Hazards	Clark County OEM; All Jurisdictions (Clark County Departments, Cities of Boulder City, Henderson, Las Vegas, Mesquite, North Las Vegas, Clark County Water Reclamation District, and the Tribes of Las Vegas Paiute and Moapa Band of Paiutes	Low (24.54)	New	Staff Time and Resources	Ongoing, continuous through the five-year plan cycle. Will be conducted annually beginning January 2024.	Federal and State Grants; City/County General Fund	Proposed Project for the 2023 Plan update
Clark County 27	Annual Review and Update of Continuity of Operations (COOP) Plan	Annually review and update the Clark County COOP to ensure compliance.	All Hazards	Clark County OEM; All Jurisdictions (Clark County Departments, Cities of Boulder City, Henderson, Las Vegas, Mesquite, North Las Vegas, Clark County Water Reclamation District, and the Tribes of Las Vegas Paiute and Moapa Band of Paiutes	Low (24.54)	New	Staff Time and Resources	Ongoing, continuous through the five-year plan cycle. Will be conducted annually beginning January 2024.	Federal and State Grants; City/County General Fund	Proposed Project for the 2023 Plan update
Clark County 28	Development of a County Sheltering Plan	A regional plan based upon the newly developed Shelter Inventory Catalog, needs to be developed pulling all existing city plans together into one overarching document so as to deconflict resource needs and identify gaps as well introduce a common	All Hazards	Clark County OEM; All Jurisdictions (Clark County Departments, Cities of Boulder City, Henderson, Las Vegas, Mesquite,	Low (24.54)	New	Staff Time and Resources	Ongoing, continuous through the five-year plan cycle. Will be conducted annually beginning	Federal and State Grants; City/County General Fund	Proposed Project for the 2023 Plan update

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		operating picture and how county resources such as one example, the Department of Social Service and how they would be asked to support across the region.		North Las Vegas, Clark County Water Reclamation District, and the Tribes of Las Vegas Paiute and Moapa Band of Paiutes				January 2024.		
Clark County 29	Annual Review and Update of Local Emergency Operations Plan (LEOP)	Annual review and updated the County's LEOP to ensure compliance with NV DEM requirements	All Hazards	Clark County OEM; Clark County Local Emergency Planning Commission (LEPC); All Jurisdictions (Clark County Departments, Cities of Boulder City, Henderson, Las Vegas, Mesquite, North Las Vegas, Clark County Water Reclamation District, and the Tribes of Las Vegas Paiute and Moapa Band of Paiutes	Low (24.54)	New	Staff Time and Resources	Ongoing, continuous through the five-year plan cycle. Will be conducted annually beginning January 2024.	Federal and State Grants; City/County General Fund	Proposed Project for the 2023 Plan update
Clark County 30	Procure Emergency Evacuation Trailer	Procure an emergency evacuation animal trailer and vehicle to tow it to hold household pets during evacuation periods for all hazards where temporary shelter/transportation of animals is needed	All Hazards	Clark County Administrative Services	Low (23.54)	New	Need Cost Estimate	1-5 years	General Funds	Proposed Project for the 2023 Plan update
Clark County 31	Mosquito Abatement Program (Vector Control's 2023 Aquatic Insect	Continue the countywide Vector Surveillance Program for early warning disease introduction and the countywide long-term abatement program to target treatment areas,	Infectious Disease, Infestation	Clark County Public Works (Vector Control)/ Southern	Low (22)	Existing	$25,000-$50,000	2018-2022	PDM and Post-Event Mitigation funds, if applicable	Carry-over from the 2018 plan.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
	Suppression Program)	particularly those prone to flooding. Continue Annual Clark County Mosquito Abatement Program to prevent and respond to mosquito infestations, including outreach to the general public and affected area residents. **Project Update**: Vector Control's 2023 Aquatic Insect Suppression Program is a year-round program. This program includes mosquitoes, midges, black flies, and caddisflies. This program covers all of Unincorporated Clark County & Bullhead City (though an inter-local agreement with Bullhead City). All other municipalities in need of Vector Control services would be on direction from the Office of Emergency Management & Homeland Security for intervention procedures. Those municipalities would cover any additional funding for their needs or request for mitigation actions. All vector related mitigation inventory and equipment is on hand at our facility. Communication protocols are already in place with the SNHD's mosquito surveillance team. Both the SNHD and Vector Control are connected with the Nevada Department of Agriculture.		Nevada Health District						
Clark County 32	Windmill Wash Detention Basin Expansion and	Construct upstream levee facilities and expand detention basin volume. This project is expected to encumber construction	Flood	Clark County Public Works (CCPW)/Clark County	Low (22)	New	$2,500,000	1-5 years	Clark County Regional Flood Control	Proposed Project for the 2023 Plan update

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
	Jess Waite Levee Facilities	funding Dec-23 and advertise for bids March 2024.		Regional Flood Control District CCRFCD					District CCRFCD	
Clark County 33	Homeowner Education and Outreach	Conduct homeowner education and clean up in communities to improve access to properties by fire apparatus, provide defensible space, add spark arrestors to fireplaces, remove ladder fuels and implement strategies contained in Chapter 6 of the municipality. Create and maintain fire breaks near public lands to mitigate threats to communities originating from outside the jurisdictional boundary of the municipality.	Wildfire	Clark County Fire, Clark County Public Works, Clark County GIS, Clark County Parks Department	Low (21)	New	$25,000	2 Years	BLM Fire Assistance	Proposed Project for the 2023 Plan update
Clark County 34	Animal Evacuation Measures Public Awareness Campaign	Conduct awareness campaign to increase public knowledge for small and large animal evacuation measures including the need to take kennels, crates, leashes, harnesses, leads, bowls, food, medicine, etc. with them as they evacuate.	All Hazards	Clark County PIO/Communication Office; Clark County Animal Protection Service	Low (18)	New	Staff Time and Resources	Ongoing, continuous through the five-year plan cycle.	General Funds	Proposed Project for the 2023 Plan update
Clark County 35	Temporary Sheltering Needs for Animal Services	Procure large tents, generators, kennels, and crates for temporary sheltering of household pets for all hazards requiring emergency sheltering operations.	All Hazards	Clark County Administrative Service	Low (17.77)	New	Need Cost Estimate	1-5 years	General Funds	Proposed Project for the 2023 Plan update
Clark County 36	Research into earthquake hazard	UNR and the Nevada Earthquake Safety Council (NESC) continue to study earthquake hazard and risk in the Las Vegas Valley **Project Update**: To be provided by Clark County	Earthquake	UNR and Nevada Earthquake Council	Low (16.5)	Existing	Need Cost Estimate	Need Estimated Timeline	Need Funding Source	This project was one of the ongoing projects listed in the previous MJHMP. This project did not list the timeline for it being

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
										ongoing in the previous plan.
Clark County 37	Wildfire Awareness	Public Awareness of threat of wildfire and actions to reduce the threat. **Project Update:** This project was included in the last MJHMP update but due to the lack of staff and funding, this project is being carried over to the 2023 MJHMP update.	Wildfire	Clark County Fire and Clark County Public Information Officer	Low (16.5)	Existing	Staff Time and Resources	Ongoing, continuous throughout the five-year cycle	FEMA EPMG Grant Funding	Carry-over from the 2018 plan.
Clark County 38	Phase II-Unreinforced Masonry Structure Survey	Continue to update and validate the Clark County Unreinforced Masonry (URM) Inventory Database by undertaking the following activities: attempt to complete screening for structures that were not able to be screened during the first phase of the project; expand the scope of project to include screening of URM's within the incorporated cities in Clark County; prepare a GIS enabled map layer showing the validated database of URM structures; work collectively with state and local officials to determine the next appropriate step in mitigating the potential hazards associated with URM structures.	Earthquake	Clark County Building Department	16	Existing	2 years	$52,000	Federal Grants; Department/ General Funds	Carry-over from the 2018 plan.

Mitigation Action Project Prioritization (Proposed and Carry-Over Projects), Clark County, NV Water Reclamation District

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
CCWRD 1	Surge Pond Overflow Protection	Surge Pond Overflow Protection-This project will provide the design and construction of new flood walls to protect equipment and allow for additional contingency options for diverting flows.	Flooding	CCRWD Engineering Operations	Medium (34.5)	New	$2M	5-10 years	Capital Funds; BRIC	Proposed project for the 2023 plan update.
CCWRD 2	Emergency Power	Provide additional emergency power with long-term goal of temporary/emergency power that uses alternative sources that are environmentally friendly **Project Update:** Continuing to work on switchgears and other power upgrades to provide system redundancy. Completion date is estimated in 2025, though equipment delays have impacted dates.	Earthquake, Flooding, Climate Change, Wildfire	CCWRD Operations and Engineering	Low (22.25)	Existing	Total $135 million, combined with other infrastructure upgrades	10+ years	BRIC Funds	Carry-over project from 2018 plan.
CCWRD 3	Mosquito Abatement Program	Continue the countywide Vector Surveillance Program for early warning disease introduction and the countywide long term abatement program to target treatment areas, particularly those prone to flooding. Continue Mosquito Abatement Program to prevent and respond to mosquito infestations, including outreach to the general public and affected area residents. **Project Update:** Since the last plan update, the mosquito abatement program continues throughout Clark County.	Infestation, Infectious Disease	CCWRD Collection Systems & Maintenance and Clark Co Vector Control	Low (21.5)	Existing	$50,000/year	Ongoing, continuous through the five-year cycle.	PDM and Post-Event Mitigation Funds (if applicable)	Carry-over project from 2018 plan.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
CCWRD 4	Green Energy Projects	Green Energy Projects- Included will be modifications at LWRC, DBWRC, and MVWRC to utilize solar energy generation and modifications at FWRC to employ hydroelectric and/or anaerobic digestion for energy generation. LWRC and DBWRC will be the first areas of focus. Up to 1MW of power will be generated with solar energy.	All Hazards	CCWD Engineering, Operations, and Collection Systems	Low (20)	New	$4M Minimum	10+years	Capital Funds; BRIC Funds	Proposed project for the 2023 plan update.

Mitigation Action Project Prioritization (Proposed and Carry-Over Projects), Boulder City

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Boulder City 1	Implement floodplain and stream restoration projects	Alleviate the damage associated with flooding through new and reinforced flood control projects, including storm drains, culverts, drop inlets, channels, and detention basins. Implement floodplain and stream restoration projects to reduce flood risk and erosion by providing stable reaches and also mitigate drought impacts by providing baseflow recharge, water supply augmentation, floodwater storage, terrestrial and aquatic wildlife habitat, and recreation opportunities by restoring the site's soil, hydrology and vegetation conditions that mimic pre-development channel flow and floodplain connectivity. **Project Update:** Maximize the use of maintenance funding provided by the Clark County Regional Flood Control District for the maintenance of existing flood control facilities.	Flooding	Boulder City Public Works	Medium (37.5)	New	$33M	1-5 years	CCRFCD	Carry-over project from the 2018 plan.
Boulder City 2	Flood Control Improvements	Facilitate design and construction of flood control improvements identified in the 2023 Boulder City Flood Control Master Plan Update.	Flooding	Boulder City Public Works	Medium (37.5)	New	$32.6M	1-5 years	CCRFCD	Proposed project for the 2023 plan update.
Boulder City 3	Emergency Power	Provide additional emergency power, such as a generator equipment, for new and existing critical facilities to operate continuously but cannot do so for long durations of power outage. **Project Update:** In the last five years, the emergency generators for critical facilities projects is partially complete and will be carried over to the 2023 plan update. The facilities were a	Earthquake, Flooding, Climate Change, Wildfire	Boulder City Fire Department	Medium (31.625)	Existing	$300K	1-5 years	CIP	Carry-over project from the 2018 plan.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		emergency generator was added or maintenance were the following: PD, FD, WWTP, Red Mountain communication site, City Hall/Parks & Rec. are complete. The maintenance yard with fueling site 1 should be complete within a year. (Generator is on site and electrical work needs to be completed.)								
Boulder City 4	Maximize Maintenance Funding for Existing Flood Control Facilities	Maximize the use of maintenance funding provided by the Clark County Regional Flood Control District for the maintenance of existing flood control facilities.	Flooding	Boulder City Public Works	Medium (31)	Existing	$2.0M	Ongoing, Continuous through the five-year plan cycle.	CCRFCD	Carry-over project from the 2018 plan.
Boulder City 5	Continue Water Conservation Measures	Continue water conservation measures in coordination with the Southern Nevada Water Authority (SNWA) and other purveyor members. Measures include prohibiting new golf course development, reducing golf course water budgets, converting cool season turf, implementing large water user policy, implementing AB356 (non-functional turf removal), implementing pool development standards, enhancing leak resolutions, implementing park efficiency improvements, implementing cooling efficiency standards, enhancing landscape watering compliance, making asset management investments, limiting new turf installations, implementing pricing changes, and optimizing return-flow credits.	Drought	Boulder City Public Works, Community Development, &Utilities	Medium (25)	Existing	$6.5M	Ongoing, Continuous through the five-year plan cycle.	ARPA Funds	Carry-over project from the 2018 plan.

Mitigation Action Project Prioritization (Proposed and Carry-Over Projects), Henderson

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Henderson 1	Unreinforced Masonry Database	Continue to update and validate the Clark County Unreinforced Masonry (URM) Inventory Database by undertaking the following activities: complete screening for structures that were not able to be screened during this phase of the project; expand the scope of project to include screening of URMs within the incorporated cities in Clark County; prepare a GIS enabled map layer showing the validated database of URM structures; work collectively with state and local officials to determine the next appropriate step in mitigating the potential hazards associated with URM structures.	Earthquake, Flood, Climate Change, Wildfire	City of Henderson Community Development	Medium (25.75)	New	1-5 years	$1M	Federal and State Funding	Proposed project for 2023 plan.
Henderson 2	Critical Infrastructure Flood Risk Reduction	Reinforce roads/bridges that are prone to repetitive flooding and/or flash flooding through protection activities, including elevating the roads/bridges and installing/widening culverts beneath the roads/ bridges or upgrading storm drains.	Flood, Dam Failure	City of Henderson Public Works	Low (22)	New	5 years	$45M	Federal and State Funding, CIP, Maintenance	Proposed project for 2023 plan.
Henderson 3	Flood Control	Alleviate the damage associated with flooding through new and reinforced flood control projects, including storm drains, culverts, drop inlets, channels, and detention basins. Implement the Clark County Regional Flood Control District (CCRFCD) Capital Improvement Plan to	Flood, Dam Failure	City of Henderson Public Works	Low (22)	Existing	1-5 years	$20M	FEMA grant Funding, CIP, Maintenance	Carry-over project from the 2018 plan.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		design and construct master plan flood control facilities.								
Henderson 4	Critical Facilities & Infrastructure Seismic Retrofit or Replacement	Seismically retrofit or replace critical facilities and infrastructure that are categorized as structurally deficient and are located in strong to very strong ground shaking areas and/or are necessary to use during and/or immediately after a disaster or emergency. Retrofit existing potable water reservoirs with seismic couplings at inlet and outlet connections	Earthquake, Dam Failure, Climate Change	City of Henderson Public Work; City of Henderson Parks and Recreation; City of Henderson Utilities	Low (21)	Existing	5 Years	$5M	Federal and State Funding	Carry-over project from the 2018 plan.

Mitigation Action Project Prioritization (Proposed and Carry-Over Projects), Las Vegas

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Las Vegas 1	Update of RFCD Master Plan Improvements within the City	Construct the recommended improvements contained within the RFCD's Master Plan to eliminate as much of the FEMA designated flood zone within the City as possible, thereby protecting residents and property	Flooding	Las Vegas Public Works, RFCD	Medium (35.5)	New	$200M+	5+ years	CIP, General Fund, BRIC	Proposed project for the 2023 plan update.
Las Vegas 2	Critical Infrastructure Flood Risk Reduction (Bonnevile Stormwater)	Reinforce roads/bridges that are prone to repetitive flooding and/or flash flooding through protection activities, including elevating the roads/bridges and installing/widening culverts beneath the roads/bridges or upgrading storm drains. Bonneville Underpass is constructed below the groundwater table, so constant groundwater dewatering is required to keep the underpass dry. Groundwater is contaminated and requires treatment before discharge into storm drain. The project is ongoing since 1992. The maintenance of pumping station costs approximately $40,000 per year. **Project Update:** New pump and generator installation will start this year and will be completed in approximately 2-year. The cost of this replaces is approximately $7million. The maintenance of pumping station will continue with approximate annual cost of $40,000 per year.	Flooding	Las Vegas Public Works	Medium (31)	Existing	$7Million to replace pump and $40,000 annual maint. cost	Ongoing, Continuous through the five-year plan cycle.	CIP, Clark County Regional Flood Control District Grant Programs	Carry-over project from the 2018 plan.
Las Vegas 3	Cooling Infrastructure Investment	Prepare for long-term, seasonal hazards such as extreme heat by investing in cooling infrastructure and developing urban design standards that mitigate the urban heat island effect	Drought	Las Vegas Community Development; Las Vegas Public Works; Las Vegas Parks & Recreation	Medium (30)	New	$50M+	5+ years	CIP, BRIC	Proposed project for the 2023 plan update.
Las Vegas 4	NIPP's Security and Resilience	Strengthen the security and resilience of critical infrastructure through state-of-the-art, cost-effective technology, tools, processes, and methods as part	Hazardous Materials, Terrorism	Public Works, Operations and Maintenance, Information	Medium (30)	Existing	**Need Cost Estimate**	1-2 year (2025)	CIP	Carry-over project from the 2018 plan.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
	Challenge (Smart City)	of the 2017 National Infrastructure Protection Plan's (NIPP) Security and Resilience Challenge. The city is underway with a robust connected vehicle corridor deployment. To date, 14 traffic signals within the region have been instrumented with Dedicated Short-Range Communications (DSRC) radios. Our experience includes the installation, inspection, and integration of the data into our regional traffic system. The city is developing a network of connected corridors within our Innovation District for deployment of Connected Autonomous Vehicles (CAVS). The roadways include Main and Fourth streets, Stewart, Bonneville and Clark avenues and Casino Center Boulevard. The connected corridor project is underway and will install 24 additional DSRC radios in the downtown Innovation District again using our significant fiber optic investment. This project will provide a solid backbone for the safe assessment of CAVs, that use this area as a proving ground, and offers the capability of monitoring the performance of various technology deployments. **Project Update:** To be provided by City of Las Vegas		Technologies, Planning / City of Las Vegas						
Las Vegas 5	NIPP's Security and Resilience Challenge (Connected Corridors)	Strengthen the security and resilience of critical infrastructure through state-of-the-art, cost-effective technology, tools, processes, and methods as part of the 2017 National Infrastructure Protection Plan's (NIPP) Security and Resilience Challenge. The city is underway with a robust connected vehicle corridor deployment. To date, 14 traffic signals within the region have been instrumented with Dedicated Short-Range Communications (DSRC) radios. Our experience includes the installation,	Hazardous Materials, Terrorism	Public Works, Innovation and Technology Planning / City of Las Vegas	Medium (30)	Existing	**Need Cost Estimate**	Need Estimated Timeline	CIP	Carry-over project from the 2018 plan.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		inspection, and integration of the data into our regional traffic system. The city is developing a network of connected corridors within our Innovation District for deployment of Connected Autonomous Vehicles (CAVS). The roadways include Main and Fourth streets, Stewart, Bonneville and Clark avenues and Casino Center Boulevard. The connected corridor project is underway and will install 24 additional DSRC radios in the downtown Innovation District again using our significant fiber optic investment. This project will provide a solid backbone for the safe assessment of CAVs, that use this area as a proving ground, and offers the capability of monitoring the performance of various technology deployments. **Project Update:** To be provided by City of Las Vegas								
Las Vegas 6	Low Impact Development of Natural Drainage Techniques	Increase the number of multi-use facilities and utilize low-impact development and other natural drainage techniques	Flooding; Subsidence & Fissures	Las Vegas Parks & Recreation; Las Vegas Public Works	Medium (28.5)	New	$1M	5+years	CIP, General Fund, BRIC	Proposed project for the 2023 plan update.
Las Vegas 7	Aquifer Storage and Recovery (Water Use and Conservation)	Maximize the use of recycled water in areas where return flow to the Colorado River system is not practical, by creating aquifer storage and recovery (ASR). Source waters for injection into ASR wells range from potable water, reclaimed water, partially treated surface water, and raw groundwater. Explore use of Aquifer Recharge and Recovery (ARAR), where water is recharged to an aquifer either under gravity or injected for the purpose of recharging the aquifer. The primary source of water for the Las Vegas region is the Colorado River. The city plays a crucial role in the conservation and	Drought, Subsidence & Fissures	Parks and Rec, Planning / City of Las Vegas	Medium (27)	Existing	**Need Cost Estimate**	Need Estimated Timeline	CIP	Carry-over project from the 2018 plan.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		management of the water supply for its residents and businesses by supporting regional management efforts by the Southern Nevada Water Authority. Since 2008, the city has reduced its water consumption from 1.47 billion gallons to 1.18 billion gallons in 2016. These savings were achieved through the replacement of more than 40-acres of grass with synthetic turf at city sports fields and parks. City landscaping utilizes drought tolerant plants and public art. More than 75 million gallons of water per day have been recycled at the city's wastewater treatment plants and used at golf courses around the valley or returned to Lake Mead. In the community, water use has declined from approximately 350 gallons per person per day (GPCD) in 1990 to less than 220 GPCD today. Southern Nevada will soon surpass the region's 2035 goal to reduce consumption through conservation to 199 GPCD. Overall Colorado River water consumption has decreased 40 billion gallons despite an increase of 500,000 residents over the last decade. **Project Update:** To be provided by City of Las Vegas								
Las Vegas 8	Emergency Power (Shelter Generators)	Provide additional emergency power, such as a generator equipment, for new and existing critical facilities to operate continuously but cannot do so for long durations of power outage. Two shelter locations have been identified with a need for back-up power improvements. At least two new trailer mounted diesel generator sets with quick connection cables and temporary fencing will be required. **Project Update:** To be provided by City of Las Vegas	Earthquake, Dam Failure, Flood, Climate Change	Building and Safety, Community Services, Facilities, Emergency Management / City of Las Vegas	Low (24.25)	Existing	**Need Cost Estimate**	1-3 years	EMPG; CIP	Carry-over project from the 2018 plan.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Las Vegas 9	Early Warning Notification Education Program	Continue coordinating with the RFCD and National Weather Service on early warning notifications and education on the risks of flooding	Flooding	Las Vegas Emergency Management; RFCD; NWS; Las Vegas Communications	Low (23.5)	New	$50,000	5+years	General Fund, EMPG	Proposed project for the 2023 plan update.
Las Vegas 10	Turf Limits	Turf limits restrict or prohibit the amount of grass to be planted at new properties. The restrictions prohibiting types of grass that can be planted apply to all property owners. **Project Update:** To be provided by City of Las Vegas	Drought; Climate Change	Las Vegas Parks & Rec, Las Vegas Planning Department	Low (21.5)	Existing	**Need Cost Estimate**	**Need Estimated Timeline**	**Need Potential Funding Source**	Carry-over project from the 2018 plan.
Las Vegas 11	Hazard Economic Recovery Framework	To lessen economic severity of all types of hazards, develop a comprehensive economic recovery framework that's context sensitive and adaptable to a variety of hazard scenarios	All Hazards	Las Vegas Emergency Management, Las Vegas Economic & Urban Development, Las. Vegas Community Development and Las Vegas Public Works	Low (19.77)	New	$200,000	5 years	EPMG, PDM, General Fund	Proposed project for the 2023 plan update.
Las Vegas 12	Seasonal Monsoon Season Study	Determine the effect an increasingly active monsoonal season may have on storm water infrastructure	Flooding	Las Vegas Public Works, National Weather Service	Low (19.5)	New	$100,000	2-4 years	General Fund	Proposed project for the 2023 plan update.
Las Vegas 13	Hazard Prevention Framework	Develop hazard prevention, mitigation, vulnerability, and recovery frameworks that apply to hazards	All Hazards	Las Vegas Emergency Management, Las Vegas Economic & Urban Development, Las. Vegas Community Development and Las Vegas	Low (17.77)	New	$200,000	5 years	EPMG, PDM, General Fund	Proposed project for the 2023 plan update.

Mitigation Action Project Prioritization (Proposed and Carry-Over Projects), Las Vegas Valley Water District (LVWD)/SWNA

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
LVWD 1	Septic to Sewer Conversions	Connect properties currently on septic systems to the sewer system so that indoor use water can be captured and recycled.	Drought, Climate Change	Las Vegas Valley Water District	Medium (30.5)	New	$2.6M	1-2 years	Proposed ARPF/Federal and State Funds	Proposed Project for 2023 plan.
LVWD 2	Installation of Perimeter Fence	Installation of approximately 4,000 linear feet of perimeter fence around the existing Reservoir site go improve security required due to increased foot and vehicle traffic near the Raiders stadium.	Terrorism	Las Vegas Valley Water District	Medium (30)	New	$12.1M	1-3 years	Federal and State Funds	Proposed Project for 2023 plan.
LVWD 3	Treatment Facility Network Improvements	Network Improvements to harden Industrial Control Systems from Cyber vulnerabilities.	Terrorism	Las Vegas Valley Water District	Medium (30)	New	$10.0M	1-2 years	LVVWD General Fund	Proposed Project for 2023 plan.
LVWD 4	Purchase generators and develop plan to use well water to provide critical service water supply if treatment plants operations are disrupted	This plan and equipment will provide a limited emergency potable water supply to critical services in the community if there were a large-scale interruption of the SNWA treatment facilities.	Earthquake, Flood, Climate Change, Wildfire	BBWD (Big Bend Water District, Laughlin)	Medium (28.75)	New	$0.8M	1-2 years	Proposed SRF Funding	Proposed Project for 2023 plan.
LVWD 5	Water Conservation Program	A Southern Nevada Water Authority program that focuses on reductions in consumptive Colorado River water use, specifically changing the outdoor water use habits of residents, since outdoor use accounts for the greatest consumption of water. **Project Update:** This project was one of the ongoing projects listed in	Drought, Climate Change	BBWD (Big Bend Water District, Laughlin)	Medium (28.5)	New	$0.75M	1-2 years	Proposed SRF Funding	Carry-over project from the 2018 plan.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		the previous MJHMP. Per SWNA, this has been a continuous ongoing project for the last 20 years in the community therefore this project will be considered a carry-over project for the 2023 plan update.								
LVWD 6	Risk Solutions Software for Continuity of Operations Plan Management	Continuity of Operations Planning (COOP) is important to our organization to enable rapid response and recovery when faced with emergencies brought on by all hazards. This software will make the COOP current and easily accessible to all staff while maintaining document control.	All Hazards	SWNA	Medium (27.54)	New	$9M	3-5 years	SWNA General Fund	Proposed Project for 2023 plan.
LVWD 7	Design and Installation of Horizon Lateral	Install line to provide redundancy in a large part of the service area.	Earthquake, Flood, Climate Change, Wildfire	SWNA	Low (22.875)	New	$1.0M	1-2 years	SWNA General Fund	Proposed Project for 2023 plan.
LVWD 8	Equip Riverbank Well	Obtain and install equipment for the Riverbank Well in Laughlin Nevada to provide an alternate source of water for the Big Bend system.	Drought, Climate Change	Las Vegas Valley Water District	Low (22.25)	New	$1.3M	1 year	LVVWD General Fund	Proposed Project for 2023 plan.
LVWD 9	Replace Aging/Failed Surveillance and Networking Equipment	CCTV is a main component of the district's physical security program. Updating the system ensures reliability and keeps the system up to date. The CCTV program offers our security force real time information on any intrusions and enables a quick response and	Terrorism	Las Vegas Valley Water District	Low (21.5)	New	$1.9M	1 year	LVVWD General Fund	Proposed Project for 2023 plan.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		accurate reporting to law enforcement.								
LVWD 10	Turf Limits	Advertising, turf removal, water smart landscaping program. Turf limits restrict or prohibit the amount of grass to be planted at new properties. The restrictions prohibiting types of grass that can be planted apply to all property owners. **Project Update**: This project was one of the ongoing projects listed in the previous MJHMP. This project did not list the timeline for it being ongoing in the previous plan.	Drought, Climate Change	BBWD (Big Bend Water District, Laughlin)	Low (21.25)	New	$2.4M	2-4 years	Proposed SRF Funding	Carry-over project from the 2018 plan.

Mitigation Action Project Prioritization (Proposed and Carry-Over Projects), Mesquite

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Mesquite 1	Town Wash Detention Basin, Abbott Wash Detention Basin, Pulsipher Wash Detention Basin	Assessment of basin, inspection, cleaning and reshaping, vegetation control, species survey and removal, erosion control **Project Update:** This project is being carried over to this plan update because it is still in process and is 80% complete.	Flood	City of Mesquite Public Works	Medium (38.5)	Existing	$500,000	Ongoing, Continuous through the five-year plan cycle.	City Budget, FDA, NDR	Carry-over project from the 2018 plan
Mesquite 2	Flooding-Levy Build Up	Build up the Levy of the Virgin River to ensure homes, building and resources are protected during floods.	Flood	City of Mesquite Public Works	Medium (30.3636365)	New	$20 million	5 years	Regional Flood Control District	Proposed Project for the 2023 plan update.
Mesquite 3	Damage Assessment Forms for Flooding and Earthquake	Provide training for building inspector to properly perform building assessment after earthquakes or floods	Earthquake, Flood, Climate Change	City of Mesquite Developmental Services and Emergency Management	Medium (26)	New	$10,000	1-2 years	Mesquite General Fund Federal Funds	Proposed Project for the 2023 plan update.
Mesquite 4	Recreation Center Backup Power Supply	Provide backup power supply to the Recreation Center as the identified shelter facility to operate independently.	All Hazards	City of Mesquite Public Works	Medium (25.54)	New	$200,000	1-2 Years	ARPA	Proposed Project for the 2023 plan update.
Mesquite 5	Senior Center Backup Power Supply	Provide backup power supply to the Senior Center as the identified shelter facility to operate independently.	All Hazards	City of Mesquite Public Works	Medium (25.54)	New	$100,000	1 Year	ARPA	Proposed Project for the 2023 plan update.
Mesquite 6	Drought-Water Conservation Planning	Develop and implement a city education program, focusing on resilience and drought conservation topics. Community members will be more prepared for climate hazards and can learn how to practice drought conservation sustainable planning	Drought, Climate Change	Virgin Valley Water District	Low (21.5)	New	$250,000	Ongoing, Continuous through the five-year plan cycle.	Virgin Valley Water District (VVWD)	Proposed Project for the 2023 plan update.

Mitigation Action Project Prioritization (Proposed and Carry-Over Projects), North Las Vegas

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
NLV 1	Lower Las Vegas Wash Detention Basin Inflow Channel	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (35.5)	New	$4M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.
NLV2	Range Wash - Las Vegas Diversion Channel	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (35.5)	New	$11M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.
NLV 3	Las Vegas Boulevard Storm Drain	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (35.5)	New	$10M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.
NLV 4	Range Wash Beltway Conveyance	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (35.5)	New	$15M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.
NLV 5	Beltway Collection System - Pecos	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (35.5)	New	$5M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.
NLV 6	Speedway North Detention Basin and Outfall	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (35.5)	New	$16.5M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.
NLV 7	Speedway #3 Detention Basin Expansion and Inflow/Outflow Facilities	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (35.5)	New	$5M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.
NLV 8	Turf Conversion Subsidy	Turf Conversion Study - Provide an additional turf conversion to supplement the already existing Southern Nevada Water Authority Program	Drought	North Las Vegas Public Works	Medium (29)	New	$500,000	2-5 years	Federal and State Funds	Carry-over project from the 2018 plan. This project was carried over from the 2018 MJHMP update due to lack of staffing and funding.
NLV 9	North Apex - System 1 Detention Basin and Outfall	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (28)	New	$31M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
NLV 10	Flood Control	Alleviate the damage associated with flooding through new and reinforced flood control projects, including storm drains, culverts, drop inlets, channels, and detention basins. Oak Island Storm Drain Mitigation Project: The City will eliminate the last residential Flood Zone "A" lots in the City's jurisdiction; 100% capture of water flow; flow redirect conservation. Protect existing county/city assets and new developments from effects of floods within the 100-year floodplain.	Flood, Dam Failure	North Las Vegas Public Works	Medium (27)	New	Upon receipt of grant funding, within grant funding period.	2-5 years	FEMA Grants with Match from Clark County Regional Flood Control District	Carry-over project from the 2018 plan. This project was carried over from the 2018 MJHMP update due to lack of staffing and funding.
NLV 11	Emergency Power	Provide additional emergency power, such as a generator equipment, for new and existing critical facilities to operate continuously but cannot do so for long durations of power outage. Emergency Generators for Critical Infrastructure and Sheltering Facilities	Earthquake Flood Climate Change Wildfire	North Las Vegas Public Works	Low (20.5)	New	Grant Application Opportunities	2-5 years	FEMA Grants; Potential CIP Funding	Carry-over project from the 2018 plan. This project was carried over from the 2018 MJHMP update due to lack of staffing and funding.

Mitigation Action Project Prioritization (Proposed and Carry-Over Projects), Las Vegas Paiute Tribe

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Las Vegas Paiute 1	Flood Control Project Maintenance Project - US 95 Highway Culvert	Reinforce roads/bridges that are prone to repetitive flooding and/or flash flooding through protection activities, including elevating the roads/bridges and installing/widening culverts beneath the roads/bridges or upgrading storm drains. The Las Vegas Paiute Tribe is seeking funding for continued channel maintenance near U.S. 95 due to flooding. Following the 2013 flooding event, the highway was reconstructed to widen the culverts under the freeway to drain water past the resorts. The Tribe wants to continue channel maintenance efforts along U.S. 95 before another significant flooding event.	Flooding	Las Vegas Paiute Tribe (LVPT) Police Department	Medium (30)	New	$30,000-$50,000	1-5 years	Federal Grants and State Grants	Proposed Project for the 2023 Plan Update
Las Vegas Paiute 2	Flood Control Project - Paiute Golf Course - Wolf Course Channel Extension	The Tribe is seeking funds to extend a flood channel located on the Paiute Golf Resort - Wolf Course. The existing channel must be extended past the east fence on the golf course grounds. The extension of this channel will alleviate the damage associated with flooding through existing ends near Wolf Course, where river rocks have filled up over the past five years.	Flooding	Las Vegas Paiute Emergency Management Team; Las Vegas Paiute Public Works Department; NV Department of Transportation; Las Vegas Valley Water District	Medium (30)	New	$350,000-$500,000	1-5 years	Federal Grants and State Grants	Proposed Project for the 2023 Plan Update
Las Vegas Paiute 3	Acquire Water Well Backup	The Tribe does not have portable water access during a hazard event on	Drought, Earthquake, Flooding,	Las Vegas Paiute Golf Resort and	Medium (27.33333)	New	$200,000-$400,000	1-5 years	Federal Grants	Proposed Project for the 2023

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
	Generator for Snow Mountain	the reservation and is looking to provide additional potable water (new water tank) to operate continuously for long durations during drought, severe storms, floods, or other disaster situations where water availability may be limited. Bringing 220v power to the existing water tank and adding an emergency power generator will allow the water pump at Snow Mountain to work during an extended power outage that could leave the residents of Snow Mountain without access to water in the event of an emergency.	Wildfire, Hazardous Material, and Terrorism	LVPT Maintenance Dept;						Plan Update
Las Vegas Paiute 4	Protect Snow Mountain Water Well	The Snow Mountain Water Well is a vital critical facility to the Tribe and provides water to the residents of this part of the Tribe. The Tribe seeks funds to protect with measures like updating the tank, ensuring the well has the proper fencing, and protection against hazards like drought, earthquake, excessive heat, and wildfires.	Drought, Excessive Heat, Wildfire, and Earthquake	LVPT Maintenance Department	Medium (26.5)	New	$50,000-$100,000	1-5 years	Federal Grants and State Grants	Proposed Project for the 2023 Plan Update
Las Vegas Paiute 5	Purchase of Law Enforcement Facility Generator	Law Enforcement Department is looking to purchase a generator due to power supply issues causing loss in communication with tribal citizens and their officers in the field in the event of an emergency.	Drought, Earthquake, Flooding, Wildfire, Hazardous Materials, and Terrorism	LVPT Maintenance Department	Medium (25.333)	New	$90,000-$100,000	1-5 years	Federal Grants and State Grants	Proposed Project for the 2023 Plan Update

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Las Vegas Paiute 6	Create a Tribal Continuity of Operations Plan (COOP)	The Las Vegas Valley Paiute Tribe is seeking funding for professional contracted services to develop a Continuity of Operations Plan (COOP) to ensure the capability exists to continue essential Tribal functions in the event of an all-hazards event. The COOP will provide for the continuation of vital Tribal services across a wide range of potential emergencies. The professional contractor will work with Tribal Governments Officials and Tribal Government Departments to develop a continuity plan.	All Hazards	Las Vegas Paiute Emergency Management Team; Las Vegas Paiute Tribal Government	Low (18.769231)	New	$5,000-$10,000	1-5 years	Federal Grants and State Grants	Proposed Project for the 2023 Plan Update

Mitigation Action Project Prioritization (Proposed and Carry-Over Projects), Moapa Band of Paiutes Tribe

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Moapa 1	Emergency Power for Admin and Law Enforcement	The tribe is seeking to purchase and install backup generators for the Admin and Law enforcement buildings. The purpose would be to keep the Government working during Power Outages and have cooling stations during emergency events within the Tribal land.	All Hazards	Moapa Band of Paiutes Business Department; Moapa Band of Paiutes Government, and Moapa Band of Paiutes Law Enforcement	Medium (34.4285)	New	$1 Million	1-5 years	Federal and State Grants; Moapa Band of Paiutes	Proposed Project for the 2023 Plan Update
Moapa 2	Tribal Emergency Preparation (Training, purchasing, planning and events planning)	The Tribal Emergency Manager will work on preparing the community (Elders) and help prepare for events (Emergency or Non-Emergency) disasters by assessing Tribe's Emergency Preparedness and Event Planning efforts.	All Hazards	Moapa Band of Paiutes Business Department; Moapa Band of Paiutes Government, and Moapa Band of Paiutes Law Enforcement	Medium (34.4285)	New	$500,000	1-5 years	Federal and State Grants; Moapa Band of Paiutes	Proposed Project for the 2023 Plan Update

Planning Integration

Mitigation does not end at plan approval. Plan approval is only the beginning. The successful implementation of any number of mitigation activities and projects requires the coordination and collaboration of a number of local agencies, departments, and organizations. Each group has varying decision-making processes and authorities governing their actions. This plan, once approved, must be integrated into their decision-making processes as a tool for improving their respective resiliencies.

Clark County intends to incorporate this Clark County Multi-Jurisdictional Hazard Mitigation Plan (update) into other planning documents the County and its participating jurisdiction(s)' (which includes Clark County Unincorporated Area, cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, NV, and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) utilizes. Where applicable, portions of the previous MJHP (2012 and 2018) were considered for incorporation into other jurisdictions plans (i.e., participating cities and tribal government comprehensive/master plans) and programs. Also, portions of the previous MJHMP (2012 and 2018) in some form was incorporated into the Clark County Emergency Operations Plan (2019), and other existing or future public safety-related plans. This plan is not only useful for implementing mitigation activities and projects but also critical in creating development plans and capital improvement projects. The risk assessment in this plan can prevent unmanaged and dangerous development in identified hazard areas or other portions of the planning area that decrease a community's overall resiliency.

Democratic Governments and Boards

These organizations rely on agenda proposals, deliberation, discussion, and voting to solidify their decision-making. This type of decision-making makes up the majority of Clark County's participating jurisdictions and stakeholders.

This plan should be integrated into the agenda proposal's design and cross-referenced during deliberation and discussion of the proposed activity. By using this plan's risk assessment, development and capital improvement projects can be appropriately implemented taking into consideration a community's resiliency.

The Clark County MJHMP update (20XX) will be incorporated into existing planning mechanisms in varying processes. These processes will be tailored to the unique characteristics of the planning mechanism and the governing structure of Clark County and its participating jurisdictions.

Mitigation Plan Funding

Upon adoption of an HMP plan or other emergency management-related plans, CCOEM will notify all participating jurisdictions when the next mitigation planning steering committee (MPSC) meeting topic will be reviewing mitigation project and action selections. Each jurisdiction then approves a list of mitigation actions and projects they want to pursue according to the mechanism listed in the table on the following page. During the MPSC meeting, CCOEM will assist the jurisdictions in determining which grant program and path will be appropriate for the project. If additional funding is necessary, the jurisdictions will have to return to their community and pass a resolution to secure the funding. The resolution is subject to the process listed in table on the following page.

Emergency Management Planning

All participating jurisdictions (which includes Clark County Unincorporated Area, cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, NV, and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) in the Clark County Multi-Jurisdictional Hazard Mitigation Plan Update, each of the jurisdictions have the authority to declare an emergency at the jurisdictional level.

State of Nevada Enhanced Mitigation Plan (2018) – The State's HMP is required by FEMA regulations to include assessments and integration of local and tribal mitigation plans. The process of integrating the Clark County's Multi-Jurisdictional Hazard Mitigation Plan Update into the State's plan is already an established process and is managed by the Nevada Division of Emergency Management.

Link:
…….(http://data.nbmg.unr.edu/Public/NEHMP/StateOfNevadaEnhancedHazardMitigationPlan2018.pdf)

Nevada Threats & Hazards (September 2020) – The Nevada Threats and Hazards document is a document created by the State of Nevada Division of Emergency Management (DHS)/Office of Homeland Security (DHS). Within the documents statement of purpose, the reason for this document was that upon further research, FEMA, state agencies, and local jurisdictions were using various terms to define specific threats and hazards. In order to support this effort, DEM has developed a standardized list of threats and hazards to be used in the planning process. The standardized list of terms combines FEMA definitions with a list of hazards specific to geography and industry in Nevada. This document is also a tool that may be used for jurisdictions to facilitate THIRA/SPR planning, plan development and updates (such as the MJHMP update), and grant applications through DEM and DHS.

Infrastructure, Development, and Construction Projects Related to Hazard Mitigation

All jurisdictions and Tribal Governments in Clark County approach infrastructure, development, and construction projects related to hazard mitigation in the same way. The demographics of Clark County allows for planning to exist through collaboration with their Local Emergency Planning Committee (LEPC) and planning area stakeholders.

Clark County Local Emergency Planning Committee (LEPC) & Multi-Jurisdictional Hazard Mitigation Plan Steering Committee (MPSC)

The Clark County LEPC and MPSC is a conduit for all mitigation actions and projects. It is headed by CCOME and meets every quarter (February, May, August, and November) and meetings are open to the public. Note, meetings may only be held via teleconference, please check the agenda of the respective meeting you are attending.

Link:
(https://www.clarkcountynv.gov/government/departments/fire_department/emergency_management/lepc_agendas___minutes.php)

Their meetings are held in the Clark County Fire Administration Office, 575 E. Flamingo Road. Members of the LEPC and MPSC come from all jurisdictions and from a wide variety of local agencies and departments as well as industry and the general public.

Mitigation Projects and Actions Implementation

As stated in the previous MJHMP (2012), mitigation actions will be monitored and updated through the use of the Mitigation Project Progress Report. During each annual review, each department or agency currently administering a mitigation project will submit a progress report to the Clark County OEM&HS to review and evaluate. For projects that are being funded by a FEMA mitigation grant, FEMA quarterly reports may be used as the preferred reporting tool. As shown in Appendix F of the 2012 MJHMP update document, the progress report will discuss the current status of the mitigation project, including any changes made to the project, identify implementation problems, and describe appropriate strategies to overcome them. After considering the findings of the submitted progress reports, the Clark County OEM may request that the implementing department or agency meet to discuss project conditions.

Upon adoption of an MJHMP plan or other emergency management-related plans, CCOEM will notify all participating jurisdictions (which includes Clark County Unincorporated Area, cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, NV, and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) when the next mitigation planning committee (MPSC) meeting topic will be reviewing mitigation project and action selections. Each jurisdiction then approves a list of mitigation actions and projects they want to pursue according to the mechanism listed in the table on the following page. If additional funding is necessary, the jurisdictions will have to return to their community and pass a resolution to secure the funding. The resolution is subject to the process listed in table on the following page.

Capital Improvement & Economic Development Planning Related to Hazard Mitigation

All of the participating jurisdictions (which included Clark County and the cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, NV, and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) currently have capital improvement or economic development plans.

Upon adoption of this plan, CCOEM will notify each participating jurisdictions' governing authority. The notification will also contain a special notice to incorporate the following procedure to any capital improvement or economic development plans related to hazard mitigation that may be developed in the future.

Upon project conception, the county commissioners, mayors, council members, and tribal government officials, may contact CCOEM for funding guidance and grant assistance. In Clark County and its participating jurisdictions' improvement and development projects rely on grant funding. CCOEM may advise the project proposing jurisdiction on which grant program is appropriate.

Following a funding source decision, the proposals will then be returned to the project proposing jurisdiction and undergo a vote by the appropriate governing body for approval. Upon approval by the governing body, CCOEM may assist in applying for grant funding for the new improvement or development project.

All economic development plans initiated or supported by a jurisdiction will undergo a hazard application process in which all hazard risk assessments from the MJHMP plan will be weighed into the benefit cost analysis. This can be done at the local level prior to working with the Clark County LEPC or CCOEM or exist as a known future consideration and requirement. However, if done at the local level, it must be reviewed and approved by the Clark County LEPC/MPSC.

Section 6: Plan Approval and Adoption

Overall Intent

Adoption by local governing body demonstrates the jurisdiction's commitment to fulfilling the hazard mitigation commitment to the hazard mitigation goals and actions outlined in the plan. Adoption legitimizes the plan and authorizes responsible agencies to perform their responsibilities. Updated plans are adopted anew to demonstrate the community's recognition of the current planning process, acknowledge changes from the previous five years, and validate the priorities for hazard mitigation actions. Without adoption, the jurisdiction has not completed the mitigation planning process and will not be eligible for certain FEMA assistance, such as HMA or HHPD grant program funding for mitigation actions.

Table 78: FEMA Regulation Checklist: Plan Adoption

FEMA Regulation Checklist: Plan Adoption	
44 CFR § 201.6(c)(5)	**Documentation of Plan Adoption:** This plan 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). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.
Elements	
F1.	For single-jurisdiction plans, does the governing body of the jurisdiction formally adopt the plan to be eligible for certain FEMA assistance? 44 CFR 201.6(c)(5)
F2.	For multi-jurisdictional plans, has the governing body of each jurisdiction officially adopted the plan to be eligible for certain FEMA assistance? 44 CFR 201.6(c)(5)

Data Source: FEMA, Local Mitigation Planning Policy Guide, Released April 19, 2022, Effective April19, 2023

Plan Adoption Resolutions

Resolution, Clark County

Resolution Pending

Resolution, City of Boulder City

Resolution Pending

Resolution, City of Henderson

Resolution Pending

Resolution, City of Las Vegas

Resolution Pending

Resolution, City of Mesquite

Resolution Pending

Resolution, City of North Las Vegas

Resolution Pending

Resolution Pending

Resolution, Las Vegas Paiute Tribe – Tribal Government

Resolution Pending

Resolution, Moapa Band of Paiutes – Tribal Government

Resolution Pending

State of Nevada Approval Letter

Pending adoption

FEMA Approval Letter

Pending approval

Appendix A – Local Mitigation Plan Review Tool

Cover Page

The Local Mitigation Plan Review Tool (PRT) demonstrates how the local mitigation plan meets the regulation in 44 CFR § 201.6 and offers states and FEMA Mitigation Planners an opportunity to provide feedback to the local governments, including special districts.

1. The Multi-Jurisdictional Summary Sheet is a worksheet that is used to document how each jurisdiction met the requirements of the plan elements (Planning Process; Risk Assessment; Mitigation Strategy; Plan Maintenance; Plan Update; and Plan Adoption).
2. The Plan Review Checklist summarizes FEMA's evaluation of whether the plan has addressed all requirements.

For greater clarification of the elements in the Plan Review Checklist, please see Section 4 of this guide. Definitions of the terms and phrases used in the PRT can be found in Appendix E of this guide.

Plan Information	
Jurisdiction(s)	Click or tap here to enter text.
Title of Plan	Click or tap here to enter text.
New Plan or Update	Click or tap here to enter text.
Single- or Multi-Jurisdiction	Choose an item.
Date of Plan	Click or tap to enter a date.
Local Point of Contact	
Title	Click or tap here to enter text.
Agency	Click or tap here to enter text.
Address	Click or tap here to enter text.
Phone Number	Click or tap here to enter text.
Email	Click or tap here to enter text.

Additional Point of Contact	
Title	Click or tap here to enter text.
Agency	Click or tap here to enter text.
Address	Click or tap here to enter text.
Phone Number	Click or tap here to enter text.
Email	Click or tap here to enter text.

Review Information	
State Review	
State Reviewer(s) and Title	Click or tap here to enter text.
State Review Date	Click or tap to enter a date.
FEMA Review	
FEMA Reviewer(s) and Title	Click or tap here to enter text.
Date Received in FEMA Region	Click or tap to enter a date.
Plan Not Approved	Click or tap to enter a date.
Plan Approvable Pending Adoption	Click or tap to enter a date.
Plan Approved	Click or tap to enter a date.

Multi-Jurisdictional Summary Sheet

In the boxes for each element, mark if the element is met (Y) or not met (N).

#	Jurisdiction Name	A. Planning Process	B. Risk Assessment	C. Mitigation Strategy	D. Plan Maintenance	E. Plan Update	F. Plan Adoption	G. State Requirements
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Plan Review Checklist

The Plan Review Checklist is completed by FEMA. States and local governments are encouraged, but not required, to use the PRT as a checklist to ensure all requirements have been met prior to submitting the plan for review and approval. The purpose of the checklist is to identify the location of relevant or applicable content in the plan by element/sub-element and to determine if each requirement has been "met" or "not met." FEMA completes the "required revisions" summary at the bottom of each element to clearly explain the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is "not met." Sub-elements in each summary should be referenced using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each element and sub-element are described in detail in Section 4: Local Plan Requirements of this guide.

Plan updates must include information from the current planning process.

If some elements of the plan do not require an update, due to minimal or no changes between updates, the plan must document the reasons for that.

Multi-jurisdictional elements must cover information unique to all participating jurisdictions.

Element A: Planning Process

Element A Requirements	Location in Plan (section and/or page number)	Met / Not Met
A1. Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement 44 CFR § 201.6(c)(1))		
A1-a. Does the plan document how the plan was prepared, including the schedule or time frame and activities that made up the plan's development, as well as who was involved?	Click or tap here to enter text.	Choose an item.
A1-b. Does the plan list the jurisdiction(s) participating in the plan that seek approval, and describe how they participated in the planning process?	Click or tap here to enter text.	Choose an item.
A2. Does the plan document 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 non-profit interests to be involved in the planning process? (Requirement 44 CFR § 201.6(b)(2))		
A2-a. Does the plan identify all stakeholders involved or given an opportunity to be involved in the planning process, and how each stakeholder was presented with this opportunity?	Click or tap here to enter text.	Choose an item.

Element A Requirements	Location in Plan (section and/or page number)	Met / Not Met
A3. Does the plan document how the public was involved in the planning process during the drafting stage and prior to plan approval? (Requirement 44 CFR § 201.6(b)(1))		
A3-a. Does the plan document how the public was given the opportunity to be involved in the planning process and how their feedback was included in the plan?	Click or tap here to enter text.	Choose an item.
A4. Does the plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement 44 CFR § 201.6(b)(3))		
A4-a. Does the plan document what existing plans, studies, reports and technical information were reviewed for the development of the plan, as well as how they were incorporated into the document?	Click or tap here to enter text.	Choose an item.
ELEMENT A REQUIRED REVISIONS		
Required Revision: Click or tap here to enter text.		

Element B: Risk Assessment

Element B Requirements	Location in Plan (section and/or page number)	Met / Not Met
B1. Does the plan include a description of the type, location, and extent of all natural hazards that can affect the jurisdiction? Does the plan also include information on previous occurrences of hazard events and on the probability of future hazard events? (Requirement 44 CFR § 201.6(c)(2)(i))		
B1-a. Does the plan describe all natural hazards that can affect the jurisdiction(s) in the planning area, and does it provide the rationale if omitting any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area?	Click or tap here to enter text.	Choose an item.
B1-b. Does the plan include information on the location of each identified hazard?	Click or tap here to enter text.	Choose an item.
B1-c. Does the plan describe the extent for each identified hazard?	Click or tap here to enter text.	Choose an item.
B1-d. Does the plan include the history of previous hazard events for each identified hazard?	Click or tap here to enter text.	Choose an item.

Element B Requirements	Location in Plan (section and/or page number)	Met / Not Met
B1-e. Does the plan include the probability of future events for each identified hazard? Does the plan describe the effects of future conditions, including climate change (e.g., long-term weather patterns, average temperature and sea levels), on the type, location and range of anticipated intensities of identified hazards?	Click or tap here to enter text.	Choose an item.
B1-f. For participating jurisdictions in a multi-jurisdictional plan, does the plan describe any hazards that are unique to and/or vary from those affecting the overall planning area?	Click or tap here to enter text.	Choose an item.
B2. Does the plan include a summary of the jurisdiction's vulnerability and the impacts on the community from the identified hazards? Does this summary also address NFIP-insured structures that have been repetitively damaged by floods? (Requirement 44 CFR § 201.6(c)(2)(ii))		
B2-a. Does the plan provide an overall summary of each jurisdiction's vulnerability to the identified hazards?	Click or tap here to enter text.	Choose an item.
B2-b. For each participating jurisdiction, does the plan describe the potential impacts of each of the identified hazards on each participating jurisdiction?	Click or tap here to enter text.	Choose an item.
B2-c. Does the plan address NFIP-insured structures within each jurisdiction that have been repetitively damaged by floods?	Click or tap here to enter text.	Choose an item.
ELEMENT B REQUIRED REVISIONS		
Required Revision: Click or tap here to enter text.		

Element C: Mitigation Strategy

Element C Requirements	Location in Plan (section and/or page number)	Met / Not Met
C1. Does the plan document each participant's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement 44 CFR § 201.6(c)(3))		
C1-a. Does the plan describe how the existing capabilities of each participant are available to support the mitigation strategy? Does this include a discussion of the existing building codes and land use and development ordinances or regulations?	Click or tap here to enter text.	Choose an item.

Element C Requirements	Location in Plan (section and/or page number)	Met / Not Met
C1-b. Does the plan describe each participant's ability to expand and improve the identified capabilities to achieve mitigation?	Click or tap here to enter text.	Choose an item.
C2. Does the plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement 44 CFR § 201.6(c)(3)(ii))		
C2-a. Does the plan contain a narrative description or a table/list of their participation activities?	Click or tap here to enter text.	Choose an item.
C3. Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement 44 CFR § 201.6(c)(3)(i))		
C3-a. Does the plan include goals to reduce the risk from the hazards identified in the plan?	Click or tap here to enter text.	Choose an item.
C4. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement 44 CFR § 201.6(c)(3)(ii))		
C4-a. Does the plan include an analysis of a comprehensive range of actions/projects that each jurisdiction considered to reduce the impacts of hazards identified in the risk assessment?	Click or tap here to enter text.	Choose an item.
C4-b. Does the plan include one or more action(s) per jurisdiction for each of the hazards as identified within the plan's risk assessment?	Click or tap here to enter text.	Choose an item.
C5. Does the plan contain an action plan that describes how the actions identified will be prioritized (including a cost-benefit review), implemented, and administered by each jurisdiction? (Requirement 44 CFR § 201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))		
C5-a. Does the plan describe the criteria used for prioritizing actions?	Click or tap here to enter text.	Choose an item.
C5-b. Does the plan provide the position, office, department or agency responsible for implementing/administrating the identified mitigation actions, as well as potential funding sources and expected time frame?	Click or tap here to enter text.	Choose an item.
ELEMENT C REQUIRED REVISIONS		
Required Revision: Click or tap here to enter text.		

Element D: Plan Maintenance

Element D Requirements	Location in Plan (section and/or page number)	Met / Not Met
D1. Is there discussion of how each community will continue public participation in the plan maintenance process? (Requirement 44 CFR § 201.6(c)(4)(iii))		
D1-a. Does the plan describe how communities will continue to seek future public participation after the plan has been approved?	Click or tap here to enter text.	Choose an item.
D2. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a five-year cycle)? (Requirement 44 CFR § 201.6(c)(4)(i))		
D2-a. Does the plan describe the process that will be followed to track the progress/status of the mitigation actions identified within the Mitigation Strategy, along with when this process will occur and who will be responsible for the process?	Click or tap here to enter text.	Choose an item.
D2-b. Does the plan describe the process that will be followed to evaluate the plan for effectiveness? This process must identify the criteria that will be used to evaluate the information in the plan, along with when this process will occur and who will be responsible.	Click or tap here to enter text.	Choose an item.
D2-c. Does the plan describe the process that will be followed to update the plan, along with when this process will occur and who will be responsible for the process?	Click or tap here to enter text.	Choose an item.
D3. Does the plan describe a process by which each community will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement 44 CFR § 201.6(c)(4)(ii))		
D3-a. Does the plan describe the process the community will follow to integrate the ideas, information and strategy of the mitigation plan into other planning mechanisms?	Click or tap here to enter text.	Choose an item.
D3-b. Does the plan identify the planning mechanisms for each plan participant into which the ideas, information and strategy from the mitigation plan may be integrated?	Click or tap here to enter text.	Choose an item.
D3-c. For multi-jurisdictional plans, does the plan describe each participant's individual process for integrating information from the mitigation strategy into their identified planning mechanisms?	Click or tap here to enter text.	Choose an item.
ELEMENT D REQUIRED REVISIONS		
Required Revision: Click or tap here to enter text.		

Element E: Plan Update

Element E Requirements	Location in Plan (section and/or page number)	Met / Not Met
E1. Was the plan revised to reflect changes in development? (Requirement 44 CFR § 201.6(d)(3))		
E1-a. Does the plan describe the changes in development that have occurred in hazard-prone areas that have increased or decreased each community's vulnerability since the previous plan was approved?	Click or tap here to enter text.	Choose an item.
E2. Was the plan revised to reflect changes in priorities and progress in local mitigation efforts? (Requirement 44 CFR § 201.6(d)(3))		
E2-a. Does the plan describe how it was revised due to changes in community priorities?	Click or tap here to enter text.	Choose an item.
E2-b. Does the plan include a status update for all mitigation actions identified in the previous mitigation plan?	Click or tap here to enter text.	Choose an item.
E2-c. Does the plan describe how jurisdictions integrated the mitigation plan, when appropriate, into other planning mechanisms?	Click or tap here to enter text.	Choose an item.
ELEMENT E REQUIRED REVISIONS		
Required Revision: Click or tap here to enter text.		

Element F: Plan Adoption

Element F Requirements	Location in Plan (section and/or page number)	Met / Not Met
F1. For single-jurisdictional plans, has the governing body of the jurisdiction formally adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))		
F1-a. Does the participant include documentation of adoption?	Click or tap here to enter text.	Choose an item.
F2. For multi-jurisdictional plans, has the governing body of each jurisdiction officially adopted the plan to be eligible for certain FEMA assistance? (Requirement 44 CFR § 201.6(c)(5))		
F2-a. Did each participant adopt the plan and provide documentation of that adoption?	Click or tap here to enter text.	Choose an item.

ELEMENT F REQUIRED REVISIONS		
Required Revision: Click or tap here to enter text.		

Element G: High Hazard Potential Dams (Optional)

HHPD Requirements	Location in Plan (section and/or page number)	Met / Not Met
HHPD1. Did the plan describe the incorporation of existing plans, studies, reports and technical information for HHPDs?		
HHPD1-a. Does the plan describe how the local government worked with local dam owners and/or the state dam safety agency?	Click or tap here to enter text.	Choose an item.
HHPD1-b. Does the plan incorporate information shared by the state and/or local dam owners?	Click or tap here to enter text.	Choose an item.
HHPD2. Did the plan address HHPDs in the risk assessment?		
HHPD2-a. Does the plan describe the risks and vulnerabilities to and from HHPDs?	Click or tap here to enter text.	Choose an item.
HHPD2-b. Does the plan document the limitations and describe how to address deficiencies?	Click or tap here to enter text.	Choose an item.
HHPD3. Did the plan include mitigation goals to reduce long-term vulnerabilities from HHPDs?		
HHPD3-a. Does the plan address how to reduce vulnerabilities to and from HHPDs as part of its own goals or with other long-term strategies?	Click or tap here to enter text.	Choose an item.
HHPD3-b. Does the plan link proposed actions to reducing long-term vulnerabilities that are consistent with its goals?	Click or tap here to enter text.	Choose an item.
HHPD4-a. Did the plan include actions that address HHPDs and prioritize mitigation actions to reduce vulnerabilities from HHPDs?		
HHPD4-a. Does the plan describe specific actions to address HHPDs?	Click or tap here to enter text.	Choose an item.
HHPD4-b. Does the plan describe the criteria used to prioritize actions related to HHPDs?	Click or tap here to enter text.	Choose an item.

HHPD Requirements	Location in Plan (section and/or page number)	Met / Not Met
HHPD4-c. Does the plan identify the position, office, department or agency responsible for implementing and administering the action to mitigate hazards to or from HHPDs?	Click or tap here to enter text.	Choose an item.
HHPD Required Revisions		
Required Revision: Click or tap here to enter text.		

Element H: Additional State Requirements (Optional)

Element H Requirements	Location in Plan (section and/or page number)	Met / Not Met
This space is for the State to include additional requirements.		
Click or tap here to enter text.	Click or tap here to enter text.	Choose an item.

Plan Assessment

These comments can be used to help guide your annual/regularly scheduled updates and the next plan update.

Element A. Planning Process

Strengths
[insert comments]
Opportunities for Improvement
[insert comments]

Element B. Risk Assessment

Strengths
[insert comments]
Opportunities for Improvement
[insert comments]

Element C. Mitigation Strategy

Strengths
[insert comments]
Opportunities for Improvement
[insert comments]

Element D. Plan Maintenance

Strengths
[insert comments]
Opportunities for Improvement
[insert comments]

Element E. Plan Update

Strengths
[insert comments]
Opportunities for Improvement
[insert comments]

Element G. HHPD Requirements (Optional)

Strengths
[insert comments]
Opportunities for Improvement
[insert comments]

Element H. Additional State Requirements (Optional)

Strengths
[insert comments]
Opportunities for Improvement
[insert comments]

Appendix B – Mitigation Planning Steering Committee Documentation

Appendix B contains reference documents and data sources used to draft the Clark County MJHMP (20XX) update. This appendix also includes documentation of the planning process for the MJHMP Planning Team, including meetings, presentations, emails, etc. Each jurisdiction conducted additional, informal, planning efforts to support the MJHMP Planning Team. This was primarily due to the operational requirements of the ongoing COVID-19 response. Only one of these supplementary efforts was conducted formally. It is documented herein.

Reference Documents:

- **Local Mitigation Planning Policy Guide (FP 206-21-0002)**, FEMA, released April 19, 2022, Effective April 19, 2023
- Hazard Mitigation Assistance Program Assistance Program and Policy Guide (FP-206-0001), FEMA, March 2023
- Local Mitigation Plan Review Guide, FEMA, 2011
- Local Mitigation Planning Handbook, FEMA, 2013
- Tribal Mitigation Planning Handbook, FEMA, May 2019
- Mitigation Ideas A Resource for Reducing Risk to Natural Hazards, FEMA, 2013
- Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000, FEMA, 2008
- National Mitigation Framework, Second Edition, Department of Homeland Security, 2016
- Guidelines and Specifications for Flood Hazard Mapping Partners, FEMA, 2002
- HAZUS Inventory Technical Manual for HAZUS 6.0, FEMA, November 2022
- Understanding Your Risks: Identifying Hazards and Estimating Losses (FEMA 386-2), FEMA, 2001

Data Sources:

Quantitative Data Sources

8NewsNow.com

U.S Census Quick Facts

U.S Census (data.census.gov)

Clark County School District (CCSD)

Clark County, NV Master Plan

Clark County, NV Comprehensive Planning Department

Clark County, NV Fire Plan

Clark County, NV Information Technology, GIS Management Office (GISMO)

Clark County, NV Economic Development

Clark County, NV Regional Flood Control District

Clark County Sustainability and Climate Plan

Clark County Vulnerability Assessment

City of Boulder City

City of Henderson

City of Las Vegas

City of Mesquite

City of North Las Vegas

Las Vegas Paiute Tribe

Moapa Band of Paiute

Clark County Water Reclamation District

Southern Nevada Health District

Columbia School of Public Health

FEMA National Risk Index

FEMA Disaster Information – Federal Disaster Declarations

Federal Drug Administration (FDA)

Las Vegas Review-Journal

Centers for Disease Control and Prevention (CDC)

State of Nevada Enhanced Hazard Mitigation Plan

State of Nevada Division of Water Resources

Southern Nevada Counter-Terrorism Center (Fusion Center)

Nevada Weed Management Association (NWMA)

Ready.nola.gov

Las Vegas Metropolitan Police Department Homeland Security Division

Medlineplus.gov

Nevada Threats & Hazards, September 2020

The Nevada Independent

NCEI/NOAA Storm Events Database

National Park Service

The Nature Conservancy

National Drought Mitigation Center (www.drought.unl.edu)

National Flood Insurance Program (NFIP)

National Interagency Coordination Center (NICC)

Nevada Department of Agriculture

Nevada Division of Emergency Management (NVDEM)

Nevada Seismological Laboratory (Seismo Lab)

National Geographic

National Response Center (NRC)

NBC News

KTNV.com

U.S. Environmental Protection Agency (EPA)

U.S. Army Corps of Engineers (USACE)

United States (U.S.) Bureau of Reclamation

U.S. Department of Homeland Security (DHS)

U.S. Federal Bureau of Investigation (FBI)

USDA, National Agricultural Statistics Service

USFA – WDAS Wildland Fire Assessment System

U.S. Geological Survey (USGS)

U.S. Geological Survey (USGS) National Center for Earth Resources Observation and Science (EROS)

U.S Geological Survey (USGS) National Water Information

U.S. Occupational Safety and Health Administration (OSHA)

U.S. Department of Transportation (USDOT)

VegDRI – National Drought Mitigation Center (NDMC)

Washington State Department of Natural Resources

World Health Organization (WHO)

Geographic Data Sources

Clark County, NV Information Technology, GIS Management Office (GISMO)

Clark County Sustainability and Climate Plan

Clark County Water Reclamation District

U.S. Drought Monitor/Drought.gov

USGS Geological Survey Bulletin (1991)

USGS Geological Survey

FEMA HAZUS® Database

FEMA National Risk Index

FEMA Flood Map Service Center

FEMA Dam Awareness Fact Sheet, May 2018

NOAA Climate Report (2010)

NCEI/NOAA

National Inventory of Dams (NID)

National Park Maps

National Weather Service

Nevada Resources and Fire Information Portal Public Viewer

My Hazards Nevada – Nevada Bureau of Mines and Geology

Nevada Health Response

Nevada Department of Transportation (NDOT)

RCI Report – Clark County, NV Fire Plan

USDA, USFS Wildfire Risk to Communities

USFA – WDAS Wildland Fire Assessment System

U.S. Environmental Protection Agency (EPA)

VegDRI – National Drought Mitigation Center (NDMC)

Virginia Department of Conservation and Recreation – Dam Safety Education – Dam Failures

Southern Nevada Water Authority

Southern Nevada Health District

State of Nevada Enhanced Hazard Mitigation Plan (2018)

Mitigation Planning Steering Committee Meetings:

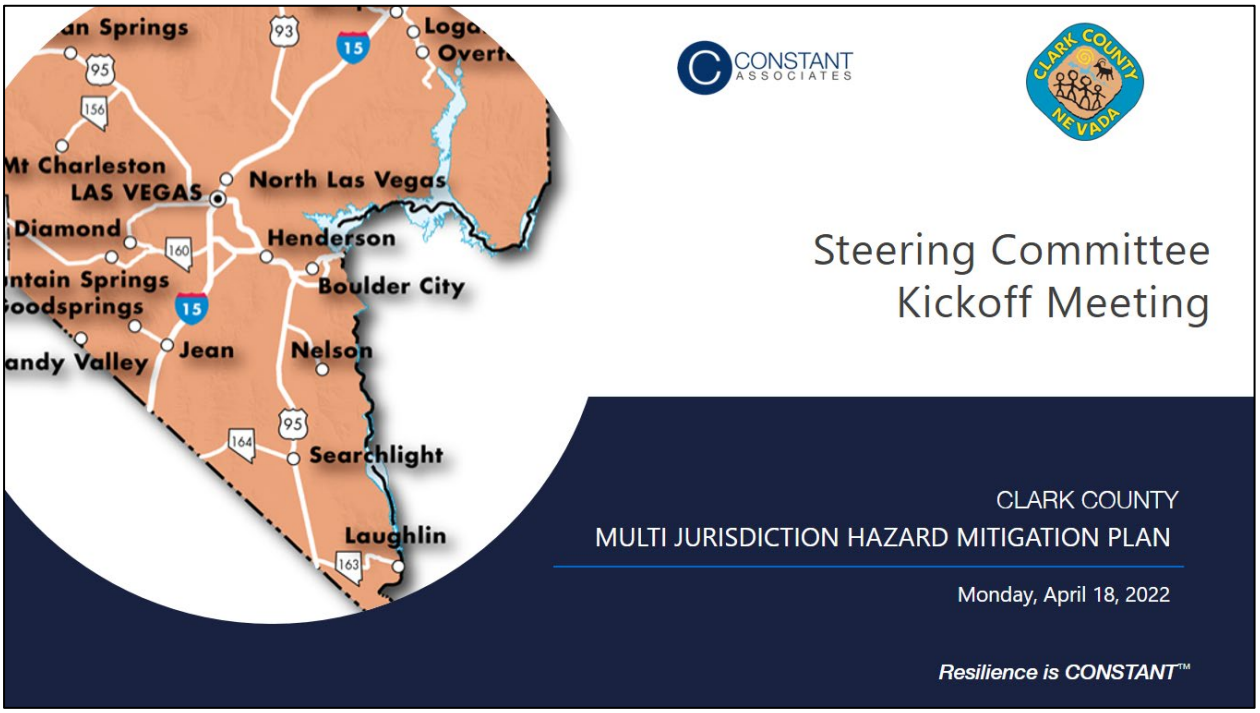
Meeting Date	Meeting Title	Meeting Handouts, Presentation Included in MJHMP
Apr. 18, 2022	Clark County MJHMP Steering Committee Kickoff Meeting	• Presentation (cover only) • Meeting Minutes with attendance sheet
May 9, 2022	Clark County MJHMP Steering Committee Meeting	• Agenda • Presentation (cover only) • Meeting Minutes with attendance sheet
May 24, 2022	Clark County MJHMP Steering Committee Meeting	• Presentation (cover only) • Meeting Minutes with attendance sheet
Aug. 16. 2022	Clark County MJHMP Steering Committee Meeting	• Agenda • Presentation (cover only) • Meeting Minutes with attendance sheet
Nov. 29, 2022	Clark County MJHMP Steering Committee Meeting	• Invitation • Presentation (cover only) • Meeting Minutes with attendance sheet
Dec. 2022 – Jan. 2023	Clark County MJHMP Steering Committee Technical Assistance 1:1 Meetings (Mitigation Action Worksheet Completion)	• Invitation • Meeting Schedule
Feb. 15, 2023	Clark County MJHMP Steering Committee Meeting	• Invitation • Presentation (cover only) • Meeting Minutes with attendance sheet
Apr. 26, 2023	Clark County MJHMP Steering Committee Meeting	• Invitation • Presentation (cover only) • Meeting Minutes with attendance sheet

1. Project Kickoff Meeting

Date/Time: April 18, 2022 @ 1:00PM-2:00PM PST

Location: Microsoft Teams (virtual meeting)

Presentation:



Meeting Minutes (with attendance sheet):

Steering Committee Kickoff Meeting Minutes

Date: April 18, 2022
Time: 1:00-2:00pm PST
Notetaker: Amanda Ozaki-Laughon

Table 1: Action Items

#	Action Item	Assignee	Date
1.	Distribute meeting minutes to Clark Co. Project Manager and then the Steering Committee Members	CONSTANT	04/22/2022
2.	Schedule quarterly Steering Committee meetings based on response to Doodle polls	CONSTANT	04/25/2022
3.	Develop and share drafted Public Involvement Plan	CONSTANT	04/30/2022
4.	Respond to Doodle polls for quarterly Steering Committee meeting availability	Steering Committee	04/22/2022
5.	Identify local events where public engagements can occur	Steering Committee	04/30/2022
6.	Seek clarification regarding the Paiute Tribe's 2019 annex update and the expectation to align with 2023 Clark Co MJHMP	Clark Co PM	Ongoing

I. Welcome and Administrations

1. Introductions and Opening Remarks
2. Ms. Mann started the meeting with opening remarks and a welcome, and housekeeping items regarding participation via Zoom.
3. Mr. Hynds welcomed the group as the workgroup lead and explained the purpose of the group and the MJHMP project.
4. Ms. Mann then led the group through a round of brief introductions.

5. Following introductions, she explained the difference in members, alternates, and subject-matter experts (SME). The SMEs may be called upon to provide input during certain phases of the project including hazard identification, hazard or community profiles, impacts, etc.

II. Meeting Purpose

1. Ms. Mann noted that the meeting would provide an overview on hazard mitigation, clarify the project's scope, and focus on time-sensitive deliverables, including the timeline of Steering Committee and SME involvement.
2. Ms. Mann asked if there were any questions or comments. Hearing none, she passed the meeting to Mr. Rosenberg.

III. Hazard Mitigation Overview

1. Mr. Rosenberg led the group through an explanation of hazard mitigation planning. He defined key terms, discussed the Federal Disaster Mitigation Act of 2000, and the expiration date of the Clark County MJHMP, last updated in 2018.
2. Mr. Rosenberg emphasized the utility of the plan with regard to applying and receiving grant funding from the federal government.
3. Mr. Rosenberg asked if there were any questions. Hearing none, he passed the meeting to Ms. Mann to discuss the project scope.

IV. Project Scope

1. Ms. Mann led the group through the objectives as expressed in the project contract, emphasizing the update of mitigation strategies based on current hazards in Clark County. She asked Mr. Hynds if he had any additions.
2. Mr. Hynds stated that the State of Nevada is paralleling this effort to list and uniformly describe the hazards for the state.
3. Mr. Rosenberg stated that this uniformity is very important and admirable of the State to take on.
4. Ms. Mann asked if there were any further questions.
5. Ms. Parker stated that the Paiute Tribe updated its annex after the 2018 MJHMP, at the request of the government due to some changes through FEMA regarding tribal mitigation plans. The annex was approved in 2019, and she inquired as to whether the tribe will follow the Clark County timeline.
6. Mr. Hynds expressed his understanding that the plan, as a whole, is expiring, and all of the annexes would be included in this new update. Additional clarification will be sought to determine if the tribe is on the same schedule as this plan update.

V. Deliverables

1. Ms. Mann walked the group through the four tasks of the project including the planning process, risk assessment, mitigation strategy, and plan maintenance and adoption.
2. She asked if the group had any questions. Hearing none, she moved to discuss the project timeline.

3. Ms. Mann led the group through a discussion of the project timeline, including key project milestones, contingencies for holidays, and adoption by September 2023.

VI. Steering Committee Management

1. Ms. Mann asked to Ms. Ozaki-Laughon to discuss the quarterly meeting schedule.
2. Ms. Ozaki-Laughon explained the process of using Doodle poll to fill out availability and responded to questions regarding Friday scheduling and error messages with Doodle poll. She asked if there were further questions. Hearing none, she passed the meeting back to Ms. Mann.

VII. Next Steps and Action Items

1. Ms. Mann led the group through next steps, including scheduling quarterly Steering Committee meetings, distribution of meeting minutes, distribution of a shared site for documentation sharing, and development of a drafted Public Involvement Plan.
2. Ms. Mann highlighted action items for the Project Management team for Clark County, including preparation for one of the project's community engagements during the July 9 Local Emergency Planning Committee (LEPC) meeting, and search for local events to maximize participation and involvement.
3. The Doodle polls for each Steering Committee Meeting are listed below:

   May 2022 Quarterly Meeting:
   https://doodle.com/meeting/participate/id/bkR586Ja
   September 2022 Quarterly Meeting:
   https://doodle.com/meeting/participate/id/eVO5JlBa
   January 2023 Quarterly Meeting:
   https://doodle.com/meeting/participate/id/b4xkW3Vb
   June 2023 Quarterly Meeting:
   https://doodle.com/meeting/participate/id/dR6M8yKd

4. Ms. Mann asked if there were any other questions or any further feedback. Hearing none, she concluded the meeting.

Table 2: Meeting Attendees

#	Name	Position	Organization/Department
1.	Holly Mann	Project Manager	CONSTANT
2.	Amanda Ozaki-Laughon	Deputy Project Manager	CONSTANT
3.	Jeremy Hynds	Emergency Manager	City of Henderson
4.	Lee Rosenberg	Subcontracted support	Navigating Preparedness Associates
5.	Jim Sims	Project Sponsor	CONSTANT

6.	A.J. Cieplenski	Subject Matter Expert	Harry Reid International
7.	Angeline Szymanski	Steering Committee Member	Clark County Water Reclamation District
8.	Billy Samuels# Clark County - OEM	Steering Committee Member	Clark County Fire Department
9.	Bradley Iverson	Steering Committee Alternate	City of Las Vegas
10.	Brian O'Neal	Subject Matter Expert	CCFD Rural Division
11.	Carlito Rayos	Steering Committee Member	Clark County
12.	Carolyn Levering	Steering Committee Member	City of Las Vegas
13.	Clint J Spencer	Steering Committee Member	Clark County Public Works
14.	Dan Berc	Subject Matter Expert	NOAA
15.	Geir Gabrielson	Subject Matter Expert	Nevada National Guard
16.	Greg Chesser	Steering Committee Member	Boulder City
17.	Harriett Parker	Steering Committee Member	Las Vegas Paiute Tribe
18.	Janelle Woodward	Steering Committee Member	State of Nevada
19.	Jason Manzo	Subject Matter Expert	Southern Nevada Area Communications Council
20.	Jeff Harper	Steering Committee Member	Moapa Paiute Tribe
21.	Jeremy Hynds	Steering Committee Lead	City of Henderson
22.	Jim Andersen	Subject Matter Expert	Clark County
23.	Jim Owens	Steering Committee Alternate	Las Vegas Paiute Tribe
24.	Josie Ross	Steering Committee Alternate	City of Henderson
25.	Leigh Ann Anders	Subject Matter Expert	Clark County
26.	Misty Robinson	Subject Matter Expert	Southern Nevada Health District
27.	Phil Klevorick	Subject Matter Expert	Clark County
28.	Robert Vega	Subject Matter Expert	Clark County
29.	Ryan Gerchman	Steering Committee Member	State of Nevada
30.	Sam Baker-	Steering Committee Member	Environment and Sustainability

31.	Sam Palmer	Subject Matter Expert	Clark County
32.	Sarah Wright	Subject Matter Expert	Clark County
33.	Solome Barton	Steering Committee Alternate	City of North Las Vegas
34.	Stephen Neel	Subject Matter Expert	Moapa Valley Fire District
35.	Werner K. Hellmer	Subject Matter Expert	Clark County

2. Clark MJHMP Steering Committee Quarterly Meeting

Date/Time: May 9, 2022 @ 2:00PM – 3:30PM PDT

Location: Microsoft Teams (virtual meeting)

Agenda:

Clark County, Nevada
Multi-Jurisdictional Hazard Mitigation Plan
Steering Committee Quarterly Meeting

Steering Committee Quarterly Meeting Agenda

Location: Virtual
Date: May 9, 2022
Time: 2:00-3:30PM PDT
YouTube Livestream Link: https://youtu.be/VRG70R7LjJ0

I. Welcome & Administration
   i. Steering Committee Membership Attendance
   ii. April 18 Steering Committee Kickoff Meeting, Minutes*
   iii. Quarterly Meeting Purpose

II. Steering Committee Management
   i. Quarterly Meeting Schedule*
   ii. SharePoint Site Access and Use

III. Public Engagement
   i. Public Involvement Plan*
   ii. Community Events*:
   iii. May 2022
   iv. June 2022
   v. June 2022
   vi. July 9, 2022, LEPC

IV. Hazard Mitigation Planning Questionnaire*

V. Next Steps & Action Items
   i. CONSTANT Support Team
   ii. County PM / City of Henderson
   iii. Steering Committee*

VI. Next Scheduled Meeting
   i. Steering Committee quarterly meeting - Sept 2022

**Indicates action required of the Steering Committee members.*

CONSTANT ASSOCIATES

Presentation (cover only):



CONSTANT ASSOCIATES

CLARK COUNTY NEVADA

Steering Committee Quarterly Meeting

CLARK COUNTY

MULTI JURISDICTION HAZARD MITIGATION PLAN

Monday, May 9, 2022

Resilience is CONSTANT™

Steering Committee Kickoff Meeting Minutes

Date: April 18, 2022
Time: 1:00-2:00pm PST
Notetaker: Amanda Ozaki-Laughon

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   https://doodle.com/meeting/participate/id/b4xkW3Vb
   June 2023 Quarterly Meeting:
   https://doodle.com/meeting/participate/id/dR6M8yKd

4. Ms. Mann asked if there were any other questions or any further feedback. Hearing none, she concluded the meeting.

Table 2: Meeting Attendees

#	Name	Position	Organization/Department
1.	Holly Mann	Project Manager	CONSTANT
2.	Amanda Ozaki-Laughon	Deputy Project Manager	CONSTANT
3.	Jeremy Hynds	Emergency Manager	City of Henderson
4.	Lee Rosenberg	Subcontracted support	Navigating Preparedness Associates
5.	Jim Sims	Project Sponsor	CONSTANT

6.	A.J. Cieplenski	Subject Matter Expert	Harry Reid International
7.	Angeline Szymanski	Steering Committee Member	Clark County Water Reclamation District
8.	Billy Samuels# Clark County - OEM	Steering Committee Member	Clark County Fire Department
9.	Bradley Iverson	Steering Committee Alternate	City of Las Vegas
10.	Brian O'Neal	Subject Matter Expert	CCFD Rural Division
11.	Carlito Rayos	Steering Committee Member	Clark County
12.	Carolyn Levering	Steering Committee Member	City of Las Vegas
13.	Clint J Spencer	Steering Committee Member	Clark County Public Works
14.	Dan Berc	Subject Matter Expert	NOAA
15.	Geir Gabrielson	Subject Matter Expert	Nevada National Guard
16.	Greg Chesser	Steering Committee Member	Boulder City
17.	Harriett Parker	Steering Committee Member	Las Vegas Paiute Tribe
18.	Janelle Woodward	Steering Committee Member	State of Nevada
19.	Jason Manzo	Subject Matter Expert	Southern Nevada Area Communications Council
20.	Jeff Harper	Steering Committee Member	Moapa Paiute Tribe
21.	Jeremy Hynds	Steering Committee Lead	City of Henderson
22.	Jim Andersen	Subject Matter Expert	Clark County
23.	Jim Owens	Steering Committee Alternate	Las Vegas Paiute Tribe
24.	Josie Ross	Steering Committee Alternate	City of Henderson
25.	Leigh Ann Anders	Subject Matter Expert	Clark County
26.	Misty Robinson	Subject Matter Expert	Southern Nevada Health District
27.	Phil Klevorick	Subject Matter Expert	Clark County
28.	Robert Vega	Subject Matter Expert	Clark County
29.	Ryan Gerchman	Steering Committee Member	State of Nevada
30.	Sam Baker-	Steering Committee Member	Environment and Sustainability
31.	Sam Palmer	Subject Matter Expert	Clark County

32.	Sarah Wright	Subject Matter Expert	Clark County
33.	Solome Barton	Steering Committee Alternate	City of North Las Vegas
34.	Stephen Neel	Subject Matter Expert	Moapa Valley Fire District
35.	Werner K. Hellmer	Subject Matter Expert	Clark County

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3. Clark County MJHMP Steering Committee Quarterly Meeting

Date/Time: May 24, 2022 @ 2:00PM – 3:00PM PDT

Location: Zoom (virtual meeting)

Presentation (cover only):



Meeting Minutes with attendance sheet:

Steering Committee Quarterly Meeting Minutes

Date: May 24, 2022
Time: 2:00-3:00pm PDT
Notetaker: Tracy To

Table 1: Action Items

#	Action Item	Assignee	Date
1.	Confirm access to SharePoint: https://constantassociates.sharepoint.com/sites/ClarkCountyMJHMP	Steering Committee MEMBERs and ALTERNATEs	As soon as possible
2.	Confirm jurisdiction/agency's intent to be included in the Public Involvement Plan (PIP) for this Project. • Where the final PIP will be posted • If a community survey link will be available • If the MJHMP project will be shared during an upcoming community meeting/engagement	Each jurisdiction/agency that will contribute to & adopt the Clark Co MJHMP	As soon as possible. Steering Committee Members please email your responses to: Holly Mann Amanda Ozaki-Laughon
3.	Complete the Hazard Mitigation Planning Questionnaire.	Each jurisdiction/agency that will contribute to & adopt the Clark Co MJHMP	By July 1, 2022 Please upload to your corresponding folder on SharePoint (CLICK HERE)
4.	Provide requested documentation: • General Plan Safety Element • Zoning Ordinance • General Plan Land Use Element • Fire Code • National Flood Insurance Program • Emergency Operations Plan	Each jurisdiction/agency that will contribute to & adopt the Clark Co MJHMP	By July 1, 2022 Please upload to your corresponding folder on SharePoint (CLICK HERE)

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	• Climate Action/Adoption Plans • Development Code • Community Design Guidelines • Capital Improvement Plans • Storm Water Management Plans		
5.	Issue calendar invitations for the following quarterly Steering Committee Meeting dates: • Tuesday, SEPT 13, 2022 - 11:00AM PT • Tuesday, JAN 17, 2023 - 11:00AM PT • Tuesday, JUNE 06, 2023 - 11:00AM PT	CONSTANT	As soon as possible
6.	Complete the May 24 Steering Comm Meeting Minutes/Notes	CONSTANT	June 1, 2022

I. Welcome and Administrations
   a. Introductions and Opening Remarks
   b. Ms. Mann started the meeting with opening remarks and a welcome, and housekeeping items regarding participation via Zoom.
   c. Ms. Mann then took attendance for the group.

II. Quarterly Meeting Purpose
   a. Ms. Mann noted that the purpose of meeting would cover the quarterly meeting schedule and project timeline, SharePoint site access and use, public engagement, and the hazard mitigation planning questionnaire.
   b. The tentative dates for the quarterly meetings will take place at 11AM on the following dates:
      i. September 13, 2022
      ii. January 17, 2023
      iii. June 6, 2023
   c. Ms. Mann asked if there were any questions or comments. Hearing none, she moved on to Public Engagement.

III. Public Engagement
   a. Ms. Mann noted that the public involvement plan should be tailored to each jurisdiction responsible for updating the multi-jurisdictional hazard mitigation plan (MJHMP).
   b. Ms. Mann led the group through the plan document that was shared prior to the meeting. She discussed the entities that were part of the adoption process for 2018 and emphasized that there is a need to include and engage jurisdictions and entities that should be involved for the 2023 update and identify what has changed since 2018.
   c. Ms. Mann stated that Constant will provide a scripted summary of the project to allow each jurisdiction to utilize during public engagement meetings to announce the project is underway. A survey will be used to engage the public. Ms. Ross asked if the script was already developed. Ms. Mann stated that the script is to be developed to allow members to review the script prior to finalizing.

d. Ms. Mann asked if there were any questions. Hearing none, she passed the meeting to Mr. Rosenberg to discuss the questionnaire.

IV. Hazard Mitigation Planning Questionnaire

a. Mr. Rosenberg led the group through information required for the hazard mitigation planning, which include National Flood Insurance Program structures, critical infrastructure community assets, prior mitigation efforts and resources, cultural and historical resources, and community engagement.

b. Mr. Rosenberg further requested that each jurisdiction/organization provide a list of capabilities with a one-month deadline.

c. Mr. Rosenberg gave a brief update on the FEMA hazard mitigation tool kit, which requires climate change to be addressed in all hazard mitigation plans either as its own hazard or in individual hazards, such as flooding and extreme heat. FEMA also requires addressing equity as well.

d. Mr. Rosenberg emphasized that having concrete actionable items in the hazard mitigation plan will help make jurisdictions eligible for grant funding when applying.

e. Ms. Mann mentioned that the questionnaire will be made into a fillable form to make it easier for distribution to stakeholders.

f. Ms. Mann asked if there were any further questions. Hearing none, she moved on to next steps and action items.

V. Next Steps and Action Items

a. Ms. Mann led the group through next steps, including finalizing the Public Involvement Plan (PIP), distribution of meeting minutes, redistribution of a shared site for documentation sharing, and assist hosting jurisdictions with public engagements.

b. Ms. Mann highlighted action items for the Project Management team for Clark County, including preparation for one of the project's community engagements during the July 9 Local Emergency Planning Committee (LEPC) meeting.

c. Ms. Mann requested that the Steering Committee members add supporting documentation to the SharePoint site, complete the questionnaire, and coordinate with CONSTANT for support on public engagements.

d. Ms. Mann asked if there were any other questions or any further feedback. Hearing none, she concluded the meeting.

Table 2: Meeting Attendees

#	Name	Position	Organization/Department
1.	Holly Mann	Project Manager	CONSTANT
2.	Tracy To	Project Support	CONSTANT
3.	Lee Rosenberg	Subcontracted Support	Navigating Preparedness Associates
4.	Angeline Szymanski	Steering Committee Member	Clark County Water Reclamation District
5.	Arthur Perillo	Steering Committee Member	City of Las Vegas, Fire

6.	Bradley Iverson	Steering Committee Alternate	City of Las Vegas
7.	Brian Richmond	Steering Committee Member	State of Nevada
8.	Brian Scroggins	Steering Committee Member	City of Las Vegas
9.	Carlito Rayos	Steering Committee Member	Clark County
10.	Clint J Spencer	Steering Committee Member	Clark County Public Works
11.	Corey Ross	Steering Committee Member	City of Las Vegas Valley Water District
12.	Craig McDougall	Steering Committee Member	Clark County, Regional Flood
13.	Dustin Schelin	Steering Committee Member	Las Vegas Fire & Rescue
14.	Harriett Parker	Steering Committee Member	Las Vegas Paiute Tribe
15.	Jeff Harper	Steering Committee Member	Moapa Paiute Tribe
16.	Jeremy Hynds	Steering Committee Lead	City of Henderson
17.	Josie Ross	Steering Committee Alternate	City of Henderson
18.	Michael Wilson	Steering Committee Member	Clark County School Districts
19.	Misty Richardson	Steering Committee Member	Clark County Office of Emergency Management and Homeland Security
20.	Misty Robinson	Subject Matter Expert	Southern Nevada Health District
21.	Sam Baker	Steering Committee Member	Environment and Sustainability
22.	Travis Anderson	Steering Committee Member	City of North Las Vegas

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4. Project Planning Team Mitigation Action Planning Meeting

Date/Time: August 16, 2022 @ 11:00AM – 12:00PM PST

Location: Zoom Meeting (virtual meeting)

Agenda:

Clark County, Nevada
Multi-Jurisdictional Hazard Mitigation Plan
Steering Committee Quarterly Meeting

August Quarterly Meeting Agenda

Location: Virtual
Date: August 16, 2022
Time: 11:00-12:30pm PDT
YouTube Livestream Link: https://youtu.be/NhUKhlJnZB0

I. Welcome & Administration
   i. Steering Committee Membership Attendance
   ii. May 2022 Quarterly Meeting Minutes
   iii. Quarterly Meeting Purpose

II. Steering Committee Management
   i. Project Progress and Steering Committee Roles
   ii. Hazard Questionnaire Progress and Data Gaps*
   iii. Community Survey Distribution and Outreach Progress*

III. Mitigation Goals and Actions
   i. Past Mitigation Goals
   ii. Updating Mitigation Goals

IV. Next Steps & Action Items
   i. CONSTANT Support Team
   ii. County PM / City of Henderson
   iii. Steering Committee*

V. Next Scheduled Meeting
   i. Steering Committee Quarterly Meeting – January 17, 2023

*Indicates action required of the Steering Committee members.

Presentation (cover only):



Steering Committee Quarterly Meeting

CLARK COUNTY

MULTI JURISDICTION HAZARD MITIGATION PLAN

August 16, 2022

Resilience is CONSTANT™

Meeting Minutes with attendance sheet:

Steering Committee Quarterly Meeting Minutes

Date: Tuesday August 16, 2022
Time: 11:00-12:00pm PST
Facilitator: Amanda Ozaki-Laughon
Notetaker: Lenah Mansour

Table 1: Action Items

#	Action Item	Assignee	Date
1	Send meeting minutes, agenda and slide deck	CONSTANT	COMPLETE
2	Provide support regarding public engagement and documentation of community survey posts	Clark County	Ongoing
3	Send CPRI worksheet to the Steering Committee	CONSTANT	08/26/2022
4	Approve meeting minutes from August Steering Committee Meeting	Clark County PM and the City of Henderson	08/23/2022
5	Conclude the hazard planning questionnaire and wrap up public engagement documentation on the community survey	Steering Committee	08/31/2022
6	Complete prior mitigation action worksheet and CPRI worksheet	Steering Committee	09/09/2022
7	Provide mapping GIS products that can be included in the plan as it is being drafted	Steering Committee	10/01/2022

I. Welcome and administration
   a. Introductions and Opening Remarks
      i. Ms. Ozaki-Laughon started the meeting with opening remarks and a welcome, and housekeeping items regarding participation via Zoom.
      ii. Ms. Ozaki-Laughon then took attendance for the group.

II. Meeting Purpose

a. Ms. Ozaki-Laughon noted that the purpose of meeting is to provide a quarterly project progress update, review outstanding data requirements, answer any outstanding data questions regarding the project task and move into the mitigation strategy phase.

b. A secondary purpose for the meeting is to provide an update on the project schedule and discussing and answering any outstanding questions the committee may have.

c. Ms. Ozaki-Laughon informed the committee that meeting minutes with be taken and will be sent out following this conversation. She asked if there were any questions. Hearing none, she proceeded with a roll call.

d. Ms. Ozaki-Laughon informed the attendees that the next scheduled meeting will take place on January 17, 2023.

III. Project Progress Update

a. Ms. Ozaki-Laughon presented the actions taken and tasks completed in this project since March 2022. Ms. Ozaki-Laughon:

b. Disseminated meeting minutes from the May Quarterly Meeting

c. Developed and shared the Hazard Questionnaire with Steering Committee members

d. Developed and shared the Community Survey for the public via Survey Monkey, which has collected over 500 responses

    i. Began analyzing potential losses and community descriptions/community capabilities

e. Ms. Ozaki-Laughon proceeded to present the challenges and support needs:

f. There is need to post the community survey to jurisdiction websites and social media, and forward documentation to CONSTANT

g. There are outstanding data requirements for community capabilities and potential losses from the hazard questionnaire

h. Ms. Ozaki-Laughon presented the next steps foreseen for this project:

i. Collect information necessary for risk assessment and complete analysis

j. Develop and finalize mitigation strategy, action plan, and mitigation action specifications

k. Outstanding Data Requests:

l. Ms. Ozaki-Laughon went over the outstanding data requirements in each jurisdiction, asking for clarification on the status. The status of each jurisdiction is included in the below table:

Table 2: Status Update on Data Collection Efforts

Jurisdiction	Community Survey Substantiation	Hazard Assessment Questionnaire
Boulder City	Boulder City will post the survey on a webpage and will send the URL of that webpage to MS. Ozaki-Laughon.	Boulder City will resend the PDF with the north-wind historic preservation district survey pdf as it was a damaged file. They informed Ms. Ozaki-Laughon that the tables have already been completed and sent to CONSTANT.
City of Henderson	Completed	Ms. Ozaki-Laughon will work with Ms. Josie offline on the Hazard Assessment Questionnaire
City of Las Vegas	Las Vegas will post the questionnaires on their webpage	Questionnaire is still in progress
City of Mesquite	Will post the news article on the webpage	Jayson Andreus will provide follow up to Ms. Ozaki-Laughon before the end of this meeting regarding the status update of the questionnaire
City of North Las Vegas	Completed	Completed
Clark County	Completed	Completed
Clark County School District	CONSTANT will follow up offline as there were no representatives from the meeting	
Clark County Water Reclamation District	Completed	Ms. Ozaki-Laughon verified that tables left blank indicate that the information was not applicable for the water reclamation district.
Las Vegas Paiute Tribe	CONSTANT will follow up offline as there were no representatives from the meeting	
Las Vegas Valley Water District	Completed	Ms. Ozaki-Laughon will schedule a meeting with Cory Raos to assist with the hazard assessment questionnaire.
Moapa Band of Paiutes	Ms. Ozaki-Laughon will follow up with Jeff regarding posting the community survey.	Ms. Ozaki will follow up with Jeff offline regarding updates concerning the blank table in the hazard assessment questionnaire.



m. Ms. Ozaki-Laughon followed up with the presentation to demonstrate the important of the Community Survey substantiation and the Hazard Assessment questionnaire.

n. Mr. Rosenberg informed the Steering Committee that they need to provide input into developing hazard mitigation activities or action items to meet the FEMA requirement.

o. Mr. Rosenberg also requested the jurisdictions provide past emergency declarations/proclamations for their communities. This would include COVID-19 public health declarations.

p. Mr. Rosenberg plans to use content from the questionnaire to update the four major capabilities for each jurisdiction, and he stands available to follow-up with any questions.

q. Jayson Andrus requested a follow-up meeting with Mr. Rosenberg.

r. Project Timeline

    i. Ms. Ozaki-Laughon reviewed the project timeline and informed the participants that CONSTANT completed the majority of community engagement and is entering into the final phase of risk analysis and mitigation goal drafting

IV. Mitigation Goals and Actions

a. Hazard Selection Process

b. Mr. Rosenberg moved on to go through the hazard selection process and asked for feedback from the committee.

c. Mr. Rosenberg informed the participants that FEMA requires to perform a thorough job. In describing the hazards and documenting the history, location, extent, impact from climate change, the probability and severity of the hazard.

d. Mr. Rosenberg informed the committee that he won't need to list all the hazard in the plan and that the major focus is to select those that are most applicable to Clark County and participating organizations.

e. Hazard identification process:

    i. Avalanche: Upon going through the Avalanche hazard, Mr. Rosenberg asked Ms. Richardson to send him the avalanche study.

    ii. Health Hazard: Mr. Rosenberg suggested to combine the epidemic and pandemic under one category being health hazard.

    iii. Flood: Ms. Richardson does not consider flood to be problematic from the area

    iv. Ms. Richardson suggested to look at the national weather partners to help with the language encompassing each of the severe weather, hail, thunderstorm, and windstorm.

    v. Infestation: Mr. Rosenberg asked if infestation should be included in the plan along with the associated mitigation activities. Ms. Richardson informed Mr. Rosenberg that this opinion should given by the agriculture group who were not available for that meeting

    vi. Mr. Rosenberg suggested to group snowfall and severe storm under winter storm. Misty asked Mr. Rosenberg if he could provide a subset to that information.

    vii. Mr. Rosenberg suggested including Tornados under severe storm, hail, thunderstorm and high wind.

viii. Volcano: Ms. Richardson informed the committee that there is nothing active in the region

f. Mr. Rosenberg informed the participants that he will be incorporating the elements discussed in the conversation to the plan and then followed by requesting jurisdictions send CONSTANT mapping GIS products that can be included in the plan (e.g. for hazards that include pipeline locations, railroads, fire danger zones and dam inundation).

i. Mr. Rosenberg and the Steering Committee agreed to dam inundation under floods.

ii. The Steering Committee agreed to include civil unrest in the first draft. Mr. Rosenberg will take a look at the long-term loss of power as he develops the draft.

iii. Mr. Rosenberg informed the participating organization that each of them is going to have a tailored list of hazards with their CPRI (consolidated prioritized risk index) available to them.

iv. In the comment section, Ms. Szymanski suggested adding power reliance.

g. Cumulative Prioritized Risk Index (CPRI)

i. Ms. Ozaki-Laughon moved to the next slide to go over the Hazard Identification & Prioritization tool with Mr. Rosenberg.

ii. Mr. Rosenberg informed the participants that this is a tool that FEMA is pleased for CONSTANT to use. This tool shows that an analysis has been conducted prior to selecting the hazards and turns of risk and priorities.

iii. Mr. Rosenberg informed the committee that four items have been selected and are weighed against probability, magnitude, warning time and duration.

iv. Mr. Rosenberg stated this tool will be sent to the attendees to be used when determining the scores for each of their applicable hazards.

v. Mr. Rosenberg showed a CPRI sample of hazards to provide an example of how the analysis will be made. He then informed the participants that he will be developing a CPRI overall for each participating organization based on their input and will include it in the plan.

vi. Mr. Rosenberg carried out a live CPRI workshop with the committee, went through a couple of hazards and explained the process behind the CPRI analysis.

vii. Since FEMA requires climate change to be included as a hazard, Mr. Rosenberg suggested providing a climate change index to each hazard resulting from climate change.

viii. Wildfire and pandemic CPRI analysis were configured as an example by Mr. Rosenberg. Probability, magnitude and severity, duration and warning time were given respective scores by the committee.

V. Mitigation Action Planning

a. Ms. Ozaki-Laughon moved on to the mitigation action planning section to inform the participants that once the level of severity for each of the identified hazards have been rated the next step forward will be addressing mitigation actions to address these hazards.

b. Ms. Ozaki-Laughon informed the Steering Committee that Mitigation Goals are a limited number of overall goals that will be matched to mitigation actions. Each jurisdiction will have a mitigation action plan as an appendix in the MJHMP.

c. She highlighted the four mitigation goals in the 2018 MJHMP and asked for feedback from the Steering Committee. Mr. Rosenberg added that a sample list of goals can be sent to the Committee.

d. Ms. Ozaki-Laughon stated that once the goals are finalized, CONSTANT will request an update on the mitigation actions found in the 2018 MJHMP. These status updates should be limited to:

   i. Not Started/Not Funded
   ii. In Progress/Ongoing
   iii. Completed

e. Mr. Rosenberg suggested expanding the Mitigation Goals to include education and outreach/engagement of the public.

f. Ms. Ozaki-Laughon asked if there were any further comments. Hearing none, she proceeded to the next section.

VI. Next Steps and Action Items

a. Action Items:

CONSTANT:

a. Send follow-up on public outreach documentation. Survey extended to September 1, 2022.
b. Send completed meeting minutes and slide deck to Steering Committee.
c. Send CPRI worksheet to Steering Committee members, due September 9
d. Send Mitigation Actions Worksheet, due September 9

Clark County PM/Steering Committee Oversight Group

e. Approve meeting minutes from Steering Committee Meeting
f. Provide support with Steering Committee members completion of hazard questionnaire and public engagement documentation

Steering Committee

g. Complete hazard questionnaire by August 31
h. Send public engagement documentation by August 31
i. Complete CPRI worksheet and Mitigation Action worksheet by September 9

Table 3: Meeting Attendees

#	Name	Project Role
1	Lee Rosenberg	Project Manager, CONSTANT
2	Misty Richardson	Project Manager, Clark County
3	Carlito Rayos	Steering Committee Member

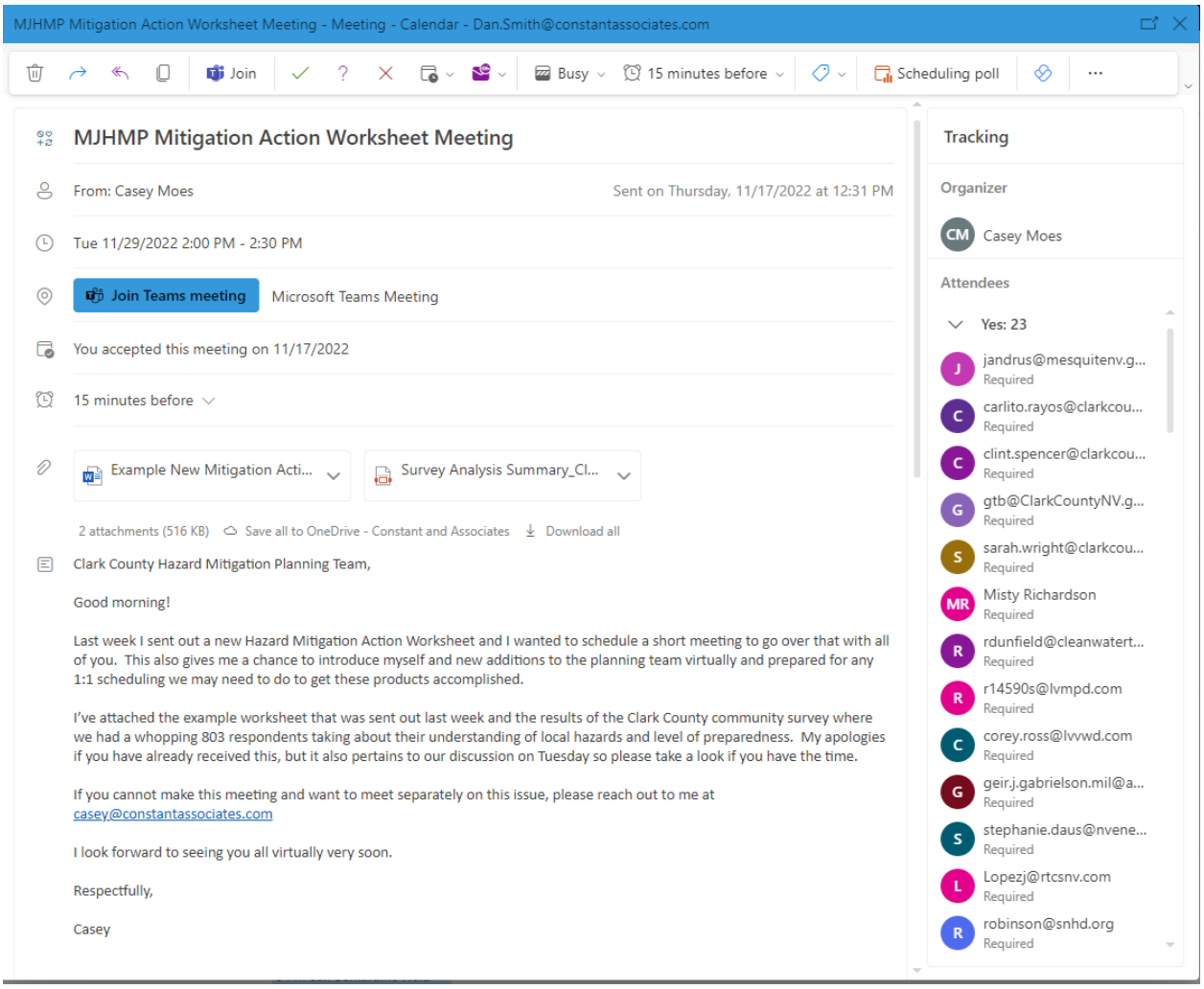
4	Samantha Baker	Steering Committee Member
5	Clint Spencer	Steering Committee Member
6	Ryan Turner	Steering Committee Member
7	Greg Chesser	Steering Committee Member
8	Bradley Iverson	Steering Committee Member
9	Travis Anderson	Steering Committee Member
10	Angeline Szymanski	Steering Committee Member
11	Jeff Harper	Steering Committee Member
12	Billy Samuels	Steering Committee Member
13	Todd Myers	Steering Committee Member
14	Craig McDougall	Steering Committee Member
15	Corey Ross	Steering Committee Member
16	Sanders Smiles	Steering Committee Member
17	Jeff Ohs	Steering Committee Member
18	Skye Dunfield	Steering Committee Member

5. Clark County MJHMP Steering Committee Meeting

Date/Time: November 29, 2022 @ 11:00AM – 12:00PM PST

Location: Microsoft Teams (virtual meeting)

Invitation:



Presentation (cover only):



Meeting Minutes with attendance sheet:

Clark County MJHMP
Steering Committee Special Update Meeting
Meeting Minutes

Meeting Minutes

Date: November 29, 2022

Time: 11:00 AM (PST)

Location: Conference Call

Table 1: Action Items

#	Action Item	Responsible	Due Date
1	Clean Up Outstanding CPRI Worksheets	CONSTANT	Ongoing
2	1:1 Sessions for filling out New Action Mitigation Worksheets	CONSTANT	Ongoing
3	Continue to assist with outreach	Clark County	Ongoing
4	Direct questions and concerns to CONSTANT team	Clark County	Ongoing
5	Clean up and Complete prior Mitigation Action Worksheets	Steering Committee	December 15
6	Complete any outstanding CPRI Worksheet	Steering Committee	December 15
7	Schedule 1:1 Session with CONSTANT	Steering Committee	December 8
8	Complete New Hazard Mitigation Action Worksheet	Steering Committee	January 30

I. Welcome/Introductions
   a. Casey Moes, CONSTANT, introduced herself as the project manager, as well as the rest of the CONSTANT Team. The new CONSTANT members attending this meeting were Casey, Mona Bontty, Emily Long and Dan Smith.
   b. Meeting Participants can be found on Table 2: Participants
   c. Casey provided the purpose of the meeting to the group. She stated that this meeting was to update everyone on the change in the team, new timeline and do a brief overview of the newest requirement – the New Mitigation Action Worksheet.

II. Project Overview
   a. Casey provided basic information around hazard mitigation.

      Casey mentioned financial assistance and grant sources associated to the Hazard Mitigation Plan (HMP) that are necessary for implementing many of their required mitigation.
   b. Casey covered importance of Hazard Mitigation plan updates
      i. Completed Mitigation Projects

CONSTANT ASSOCIATES

ii. Carry Over Projects

iii. Proposed Projects

III. New Action Mitigation Worksheet

a. Casey described each component of the mitigation worksheet. She used a few minutes to talk about the action description, estimated timeline (i.e. 2-5 years), potential funding source, estimated costs, and responsible party.

b. Casey also showed a few examples of a completed New Action Mitigation Worksheet and went step by step on how she got the information.

IV. Project Timeline

a. Casey provided updated timeline for the project. She and the Clark County MJHMP Project Managers decided to move key deliverables back in order to allow a more thorough review of current resources and delivery of New Action Mitigation Plans.

b. The new timeline for portions of the Hazard Mitigation Plan

Section of the Hazard Mitigation Plan	New Due Date
Section 3: Planning Area	January 5th
Section 4: Hazard Risk Assessment	January 5th
Overall Risk Portion of Plan to Steering Committee	January 31st
Add Mitigation Capabilities information (Floodplain Management, Planning Integration)	February 8th
Add Mitigation Projects New and Old	February 15th
Section 5: Draft Mitigation Strategy to Steering Committee	March 15th
Final Draft Available for Review	April 17th

V. 1:1 Mitigation Worksheet Sessions

a. Casey stressed open time slots for each jurisdiction to go over their prior and new action mitigation worksheets. Jurisdictions could register for 1:1 session to cover either completing the form or going over completed forms

b. Each jurisdiction can sign up on Calendly or by writing Dan Smith. Here is the link https://calendly.com/dan-smith-7/30min.

VI. Next Steps

a. See Action Items (Table 1)

b. Outstanding CPRI Worksheets and previous mitigation actions area due no later than December 15th, 2022.

VII. Questions/Comments.

a. Ryan Gerchman from Nevada OEM introduced himself as the state Hazard Mitigation Plan point of contact and offered to assist in any way possible.

b. Jeremy Hynds, North Las Vegas, also introduced himself and asked a few follow up questions of Emily Long.

VIII. Adjourn

Table 2: Participants

	Name	Role	Organization
1	Casey Moes	Project Manager	CONSTANT
2	Dan Smith	DPM	CONSTANT
3	Emily Long	Project Support	CONSTANT
4	Mona Botty	Project Sponsor	CONSTANT
5	Lee Rosenberg	Lead Writer	CONSTANT
6	Sarah Wright	EM Support	Clark County GIS
7	Misty Richardson	Clark County MJHMP Project Manager	CCOEM
8	Misty Robinson	Public Health Supervisor	Southern Nevada Health District
9	Jim Anderson	Director Code Enforcement	Clark County
10	Josie Ross	EM Specialist/ DPM Clark County MJHMP	CCOEM
11	Dean Mosher	Public Works	Clark County
12	Clint Spenser	Manager Public Works	Clark County Public Works
13	Carlito Rayos	Hazmat Coordinator	Clark County Fire Department
14	Brian O'Neal	Assistant Chief	Clark County Fire Rurals
15	AJ Cieplenski	Airport Emergency Administrator	Harry Reid International Airport (LAS)
16	Jim Andersen	Code Enforcement/Animal Protection Services	Clark County
17	Corey Ross	Emergency Manager	LVVWD/SNWA
18	Jason Manzo	SNACC	Clark County
19	Mike Atherall	Emergency Management	LVMPD
20	Gil Doucet	Safety Officer	CAEP- Olin Chemical Factory
21	Ryan Gerchman	Hazard Mitigation Planner	Nevada Division of Emergency Management

22	Kendall Herzer	Lower Colorado Basin	US Bureau of Reclamation
23	Sam Baker	Department of Environment and Sustainability	Clark County
24	Jeremy Hynds	Emergency Management	City of North Las Vegas
25	Stephanie Daus	Emergency Management Specialist	NV Energy
26	Greg Chesser	Manager	Boulder City
27	LTC Gier Gabrielson	Subject Matter Expert	Nevada National Guard (NVNG)
28	Jeff Ohs	Assistant EM	University of Las Vegas

6. Clark County MJHMP Steering Committee Technical Assistance 1:1 Meeting (Mitigation Action Worksheet Completion)

Date: December 2022 – January 2023

Location: Teams Meeting (virtual meeting)

Technical Assistance Sign-up Link: https://calendly.com/dan-smith-7/30min

Invitation:

From: Casey Moes <casey@constantassociates.com>
Sent: Wednesday, November 30, 2022 11:12 AM
To: Gregory Chesser <gchesser@bcnv.org>; kherzer@usbr.gov; boneal@clarkcountynv.gov; jbrianscroggins@gmail.com; Bradley Iverson <biverson@lasvegasnevada.gov>; Carolyn Levering <clevering@lasvegasnevada.gov>; jandrus@mesquitenv.gov; bartons@cityofnorthlasvegas.com; Travis Anderson <andersont@cityofnorthlasvegas.com>; Carlito Rayos <carlito.rayos@clarkcountynv.gov>; clint.spencer@clarkcountynv.gov; james.andersen@clarkcountynv.gov; dean.mosher@clarkcountynv.gov; leigh.ann.anders@clarkcountynv.gov; rgv@clarkcountynv.gov; Sam.Palmer@ClarkCountyNV.gov; wkh@ClarkCountyNV.gov; papazian@clarkcountynv.gov; gtb@ClarkCountyNV.gov; klevorick@clarkcountynv.gov; Jeremy Hynds <hyndsj@cityofnorthlasvegas.com>; sarah.wright@clarkcountynv.gov; billy.samuels@clarkcountynv.gov; Misty Richardson <richardsonm@ClarkCountyNV.gov>; Samantha Baker <Samantha.Baker@ClarkCountyNV.gov>; chris.wardlaw@clarkcountynv.gov; coleenl@clarkcountynv.gov; wilsomf@nv.ccsd.net; kiernnd@nv.ccsd.net; Angeline Szymanski <aszymanski@cleanwaterteam.com>; rdunfield@cleanwaterteam.com; adolphc@mccarran.com; r14590s@lvmpd.com; Harriett Parker <hparker@lvpaiute.com>; jowens@lvpaiute.com; Corey Ross <corey.ross@lvvwd.com>; jharper@moapatribalpd.com; stephen.neel@clarkcountynv.gov; jorge.gonzalez@clarkcountynv.gov; geir.j.gabrielson.mil@army.mil; daniel.berc@noaa.gov; stephanie.daus@nvenergy.com; GJDoucet@olin.com; Lopezj@rtcsnv.com; jmanzo@clarkcountynv.gov; robinson@snhd.org; janell.woodward@dem.nv.gov; rgerchman@dem.nv.gov; rebecca.feiden@spcsa.nv.gov; gregg.maye@unlv.edu; jeffrey.ohs@unlv.edu; cmcdougall@regionalflood.org; tmeyers@regionalflood.org; Dan Smith <Dan.Smith@constantassociates.com>; Emily Long

<emily.long@constantassociates.com>; josie.ross@cityofhenderson.com
Cc: Mona Bontty <mona.bontty@constantassociates.com>; Robert Palumbo <PalumboR@rtcsnv.com>; Sam Baker <Sam.Baker@ClarkCountyNV.gov>; lee rosenberg <lee.rosenberg@navigatingpreparedness.com>; Adolph Cieplenski <adolphc@lasairport.com>; Jodi Carl <J10171C@LVMPD.COM>; hyndsj@cityofnorthlasvegas.com
Subject: Slides, Thank you and link for Sign up

Clark County HMP Team,

Thank you for jumping on this hastily scheduled meeting yesterday. I've enclosed the slidedeck as promised yesterday and included the link to Dan's Calendly here https://calendly.com/dan-smith-7/30min

I hope to speak with many of you soon and thank you to those that have already knocked out all the required tasks to get this plan written.

Respectfully,

Casey

Casey Moes (She/Her)
Associate
(845) 505-0675
8(a) and WOSB Certified Business
Website | Newsletter | LinkedIn | Facebook



---Original Appointment---
From: Casey Moes
Sent: Thursday, November 17, 2022 12:31 PM
To: Casey Moes; gchesser@bcnv.org; kherzer@usbr.gov; boneal@clarkcountynv.gov; jbrianscroggins@gmail.com; biverson@lasvegasnevada.gov; clevering@lasvegasnevada.gov; jandrus@mesquitenv.gov; bartons@cityofnorthlasvegas.com; andersont@cityofnorthlasvegas.com; carlito.rayos@clarkcountynv.gov; clint.spencer@clarkcountynv.gov; james.andersen@clarkcountynv.gov; Dean.Mosher@ClarkCountyNV.gov; leigh.ann.anders@clarkcountynv.gov; rgv@clarkcountynv.gov; Sam.Palmer@ClarkCountyNV.gov; wkh@ClarkCountyNV.gov; papazian@clarkcountynv.gov;

gtb@ClarkCountyNV.gov; klevorick@clarkcountynv.gov; sarah.wright@clarkcountynv.gov; billy.samuels@clarkcountynv.gov; Misty Richardson (richardsonm@ClarkCountyNV.gov); samantha.baker@clarkcountynv.gov; chris.wardlaw@clarkcountynv.gov; coleenl@clarkcountynv.gov; wilsomf@nv.ccsd.net; kiernnd@nv.ccsd.net; aszymanski@cleanwaterteam.com; rdunfield@cleanwaterteam.com; adolphc@mccarran.com; r14590s@lvmpd.com; hparker@lvpaiute.com; jowens@lvpaiute.com; corey.ross@lvvwd.com; jharper@moapatribalpd.com; stephen.neel@clarkcountynv.gov; jorge.gonzalez@clarkcountynv.gov; geir.j.gabrielson.mil@army.mil; daniel.berc@noaa.gov; stephanie.daus@nvenergy.com; GJDoucet@olin.com; Lopezj@rtcsnv.com; jmanzo@clarkcountynv.gov; robinson@snhd.org; Janell.Woodward@dem.nv.gov; rgerchman@dem.nv.gov; rebecca.feiden@spcsa.nv.gov; gregg.maye@unlv.edu; jeffrey.ohs@unlv.edu; CMcDougall@regionalflood.org; tmeyers@regionalflood.org; Dan Smith; Emily Long; Josie Ross
Cc: Mona Bontty; Robert Palumbo; Sam Baker; lee rosenberg; Adolph Cieplenski; Jodi Carl; hyndsj@cityofnorthlasvegas.com
Subject: MJHMP Mitigation Action Worksheet Meeting
When: Tuesday, November 29, 2022 2:00 PM-2:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

Clark County Hazard Mitigation Planning Team,

Good morning!

Last week I sent out a new Hazard Mitigation Action Worksheet and I wanted to schedule a short meeting to go over that with all of you. This also gives me a chance to introduce myself and new additions to the planning team virtually and prepared for any 1:1 scheduling we may need to do to get these products accomplished.

I've attached the example worksheet that was sent out last week and the results of the Clark County community survey where we had a whopping 803 respondents taking about their understanding of local hazards and level of preparedness. My apologies if you have already received this, but it also pertains to our discussion on Tuesday so please take a look if you have the time.

If you cannot make this meeting and want to meet separately on this issue, please reach out to me at casey@constantassociates.com

I look forward to seeing you all virtually very soon.

Respectfully,

Casey

Casey Moes (She/Her)
Associate
(845) 505-0675
8(a) and WOSB Certified Business
Website | Newsletter | LinkedIn | Facebook



Jurisdictions	Clark County NV, Mitigation Planning Steering Committee - Mitigation Strategy Technical Assistance Appointments: Mitigation Action Worksheet Completion											
	12/1/22	12/6/22	12/8/22	12/12/22	12/14/22	12/15/22	1/4/22	1/6/22	1/9/22	1/11/22	1/13/22	Comments/ Notes
Clark County Animal Protective Service				10:00-10:30 (Pacific) Clark County Animal Protective Service Contact: Jim Andersen								
Clark County Department of Sustainability			2:00-2:30 (Pacific) Clark County Contact: Sam Baker, Ariel Choinard									
Clark County Departments (Public Work, OOEM, etc)												
City of Boulder City												
City of Henderson							12:00-12:30PM Pacific City of Henderson Contact: Josie Ross, Douglas Bergstorm					
City of Las Vegas												

Jurisdictions	Clark County NV, Mitigation Planning Steering Committee - Mitigation Strategy Technical Assistance Appointments: Mitigation Action Worksheet Completion											
	12/1/22	12/6/22	12/8/22	12/12/22	12/14/22	12/15/22	1/4/22	1/6/22	1/9/22	1/11/22	1/13/22	Comments/ Notes
City of Mesquite		11:30-12:00 (Pacific) City of Mesquite Contact: Jayson Andrus and Spencer Lewis				11:30-12:00 (Pacific) City of Mesquite Contact: Jayson Andrus and Spencer Lewis						Another meeting to follow after project list is provided
City of North Las Vegas										9:30-10:00 (Pacific)City of North Las Vegas Contact: Jeremy Hynds		
Las Vegas Paiute Tribe												
Moapa Band of Paiutes												
Clark County Water Reclamation												
Clark County School District												
Las Vegas Water District					2:00-2:30 (Pacific) Las Vegas Valley Contact: Corey Ross							

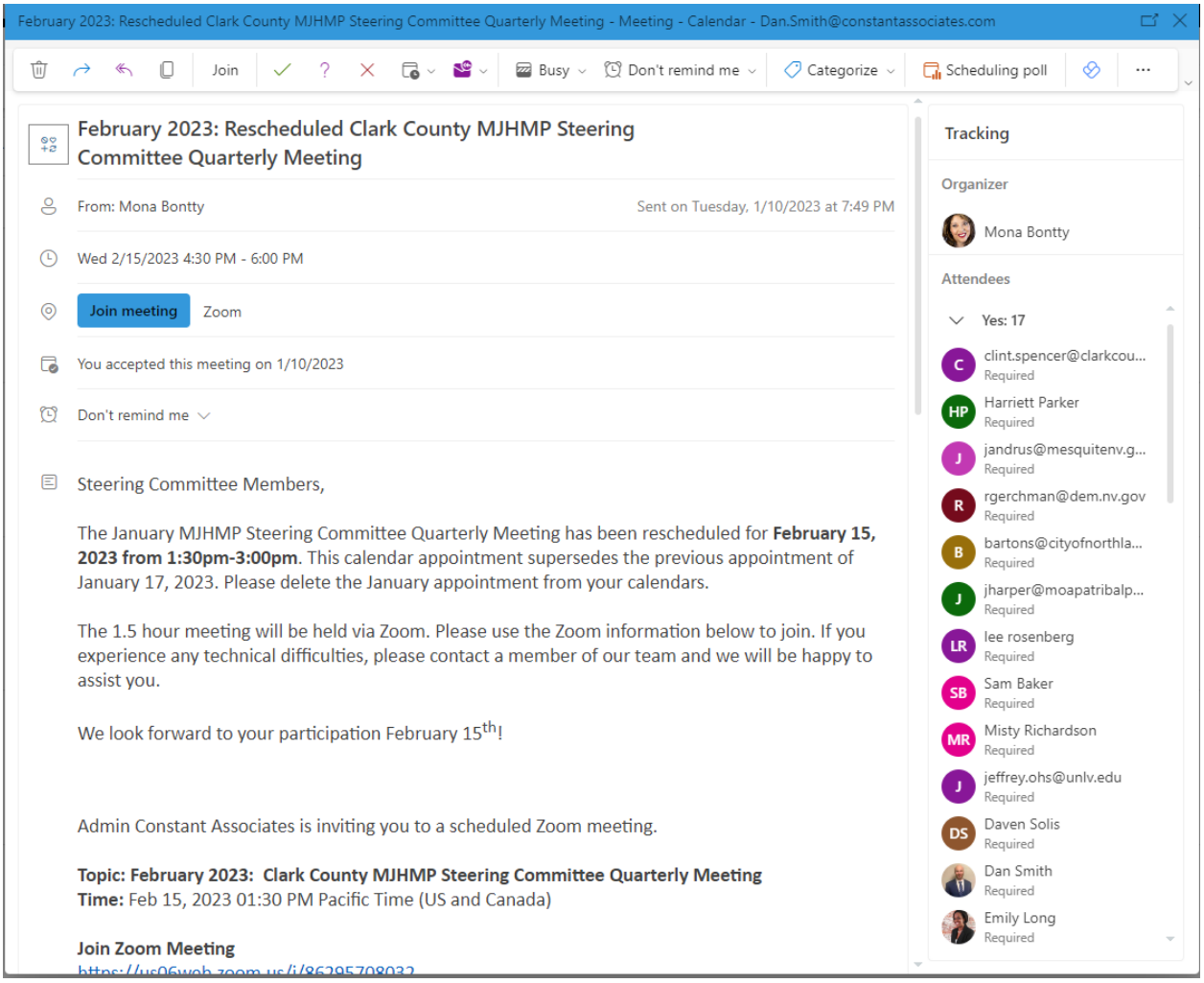
Jurisdictions	Clark County NV, Mitigation Planning Steering Committee - Mitigation Strategy Technical Assistance Appointments: Mitigation Action Worksheet Completion											
	12/1/22	12/6/22	12/8/22	12/12/22	12/14/22	12/15/22	1/4/22	1/6/22	1/9/22	1/11/22	1/13/22	Comments/ Notes
Las Vegas Metro Police Department			1:30-2:00 (Pacific) Las Vegas MPD Contact: Michael Atherall, Rachel Skidmore									
Constant Associates Facilitation Team Appointment		11:30 - Mona/Dan	1:30 - Mona	10:00 - Casey/Dan	2:00 - Mona/Dan	Mona/Dan	12:00 - Casey/Emily			9:30 - Mona/Emily		
			2:00 - Mona/Casey									
Color Coding Meaning												
Technical Assistance Appointment Not Scheduled												
Technical Assistance Appointment Scheduled												

7. Clark County MJHMP Steering Committee Meeting

Date/Time: February 19, 2023 @ 1:30PM – 3:00PM PST

Location: Zoom (virtual meeting)

Invitation:



Presentation (Cover only):



Meeting Minutes with attendance sheet:

Clark County MJHMP
Steering Committee Meeting #3
Meeting Minutes

Meeting Minutes

Date: February 15, 2023
Time: 1:30 PM (PST)
Location: Zoom Conference Call

Table 1: Action Items

#	Action Item	Responsible	Due Date
1	Follow up on additional information needed from submitted Mitigation Action Worksheets	CONSTANT	Ongoing
2	Send out Capabilities Assessment Worksheets	CONSTANT	Ongoing
	Submit Section 5: Draft Mitigation Strategy	CONSTANT	Mar. 15
3	Continue to assist with outreach	Clark County/CONSTANT	Ongoing
4	Submit Mitigation Action Worksheets	Steering Committee	Feb. 17
5	Submit Jurisdiction Capabilities Assessment Worksheet	Steering Committee	Feb. 28
6	Open Public Comment Period		May 1

I. Welcome/Introductions

- Mona Bontty, CONSTANT, introduced herself as the Project Manager, as well as the rest of the CONSTANT Team. The additional CONSTANT members attending this meeting were Emily Long, Dan Smith and subcontractor Lee Rosenberg.
- Mona completed Steering Committee roll call. Meeting Participants can be found on Table 2: Participants.

II. Quarterly Project Activities

- Mona provided updates on the following:
  - Work that has been competed since the last Steering Committee Meeting
  - Bi-Weekly Project Status Meetings held with Misty and Josie
  - Submissions of the draft of Section 3 and Section 4 to (Misty/Josie) for review.
  - Meetings with individual jurisdictions on Hazard Mitigation Worksheets were held
  - Coordination and information gathering efforts completed to obtain Critical Facilities Data
  - Meetings held with the State of Nevada, Janelle and Ryan. Their support to the MJHMP update has been appreciated

- Misty has been involved in the engagement of the area tribal communities/government
- Presentation by CONSTANT at the LEPC meeting on the project and the current status need for mitigation projects
- Multiple meetings held regarding in-kind tracking for this project

III. Mitigation Action Worksheet Status

- CONSTANT conducted multiple 1:1 interviews with jurisdictions to support the completion of their Mitigation Action Worksheets
- Mona provided the list of jurisdictions who have submitted their Mitigation Action Worksheets:
  - Boulder City
  - Clark County (Office of Environmental & Sustainability)
  - Clark County Water Reclamation District
  - Las Vegas Valley Water District
  - City of North Las Vegas
- Additional information might be needed, especially on detailed project descriptions
- What is needed, outstanding jurisdictional Mitigation Action information:
  - City of Henderson
  - City of Las Vegas
  - City of Mesquite
  - Clark County Public Works Department
  - Clark County Building and Fire Safety
  - Las Vegas Paiute Tribe
  - Moapa Band of Paiutes
- Spencer Lewis, City of Mesquite, gave an update on their status of their Mitigation Action Worksheet, estimate of submission by beginning of next week
- Mona reviewed the information needed in the Hazard Mitigation Action Worksheet
- Mona mentioned that CONSTANT will be following up with jurisdictions that have submitted worksheets and have any missing or additional; information that is required
  - Deadline for Submission of Mitigation Action Worksheets is Friday, February 17, 2023
  - Projects to include Completed Mitigation Projects, Carry-Over Projects, and Proposed Projects
- Emily, CONSTANT, complimented the team on what has been submitted so far and mentioned that during her analysis the edits that are required are minor, information has also been taken from prior worksheets that were submitted from prior requests

IV. Capabilities Assessment

Emily presented the following regarding the Capabilities Assessment Worksheet:

- Capabilities Assessment for each jurisdiction is the next piece of information needed for the MJHMP update The FEMA Tribal Mitigation Planning Handbook explanation of a Capabilities Assessment
    - The Capabilities Assessment is the primary part of mitigation planning and reviewing mitigation strategies for the mitigation plan
    - The primary types of capabilities:
        - Planning and Regulatory – Capabilities that are based on the implementation of ordinances, policies, local laws and State statutes, and plans and programs that relate to guiding and managing growth and development
        - Administrative and Technical – Refers to the community's staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions
        - Financial – Resources that a jurisdiction has access to or is eligible to use to fund mitigation actions. The costs associated with implementing mitigation activities vary. Some mitigation actions such as building assessment or outreach efforts require little to no costs other than staff and time and existing operating budgets
        - Education and Outreach – Refers to education and outreach programs and method already in place that could be used to implement mitigation activities and communicate hazard-related information
- Potential project examples that would wall under these categories
- Worksheets will be emailed to jurisdictions and are due back to CONSTANT on **February 28, 2023**

V. Open Comment Period and MJHMP Submission

- Emily covered the next steps following submission of Mitigation Action Process
- Looking to conduct Steering Committee Close Out – April 26, 2023
- Open Comment Period: May 1 – 22, 2023, supporting documentation for Open Comment advertisement will be provided
- Emily mentioned the options for when process of adoption and approval can begin
- Jeremy, City of North Las Vegas, had a question regarding whether or not the County had to approve the MJHMP prior to Jurisdictions approving
- Misty, Clark County OEM, commented via chat, "We have only ever had the county approve first, I'm not certain if cities must wait."
- Lee, CONSTANT, mentioned that Tribal government or Special Districts do not have to wait for County approval
- Emily mentioned that the approval process should occur around the time of BRIC Grant application submission, for that grant the requirements include approved HMP and project must be included in HMP
- Ryan, State of Nevada, mentioned an Approval Pending Adoption option
- Misty, commented via chat, "Due to this being multi-jurisdictional we have typically taken the lead through adoption 1st by the Board of County Commissioners followed by municipalities"

No further questions or comments asked by Steering Committee Members

VI. Project Timeline Highlights

Updates to the Hazard Mitigation Plan Project Timeline

Hazard Mitigation Plan Task	**Status and Due Date**
Section 3: Planning Area	Draft Completed
Section 4: Hazard Risk Assessment	Draft Completed
Receive Outstanding Mitigation Action Worksheets to input data into MJHMP Plan Draft	Friday, February 17, 2023
Submit Jurisdiction Capabilities Assessment Worksheet	Tuesday, February 28, 2023
Section 5: Draft Mitigation Strategy Submission	Wednesday, March 15, 2023
Open Public Comment Period	Monday, May 1, 2023 – Monday, May 22, 2023
Final Draft to Nevada Department Division of Emergency Management/Homeland Security & FEMA	Thursday, June 1, 2023

VII. Next Steps

- See Action Items (Table 1)

VIII. Questions/Comments.

IX. Adjourn

Table 2: Participants

	Name	Role	Organization
1	Mona Bontty	Project Manager/Sponsor	CONSTANT
2	Dan Smith	DPM	CONSTANT
3	Emily Long	Subject Matter Expert/Project Support	CONSTANT
4	Lee Rosenberg	SME	CONSTANT
5	Misty Richardson	Clark County MJHMP Project Manager	CCOEM
6	Josie Ross	EM Specialist/ DPM Clark County MJHMP	City of Henderson
7	Ryan Gerchman	Hazard Mitigation Planner	State of Nevada
8	Greg Chesser	Deputy Fire Chief	Boulder City

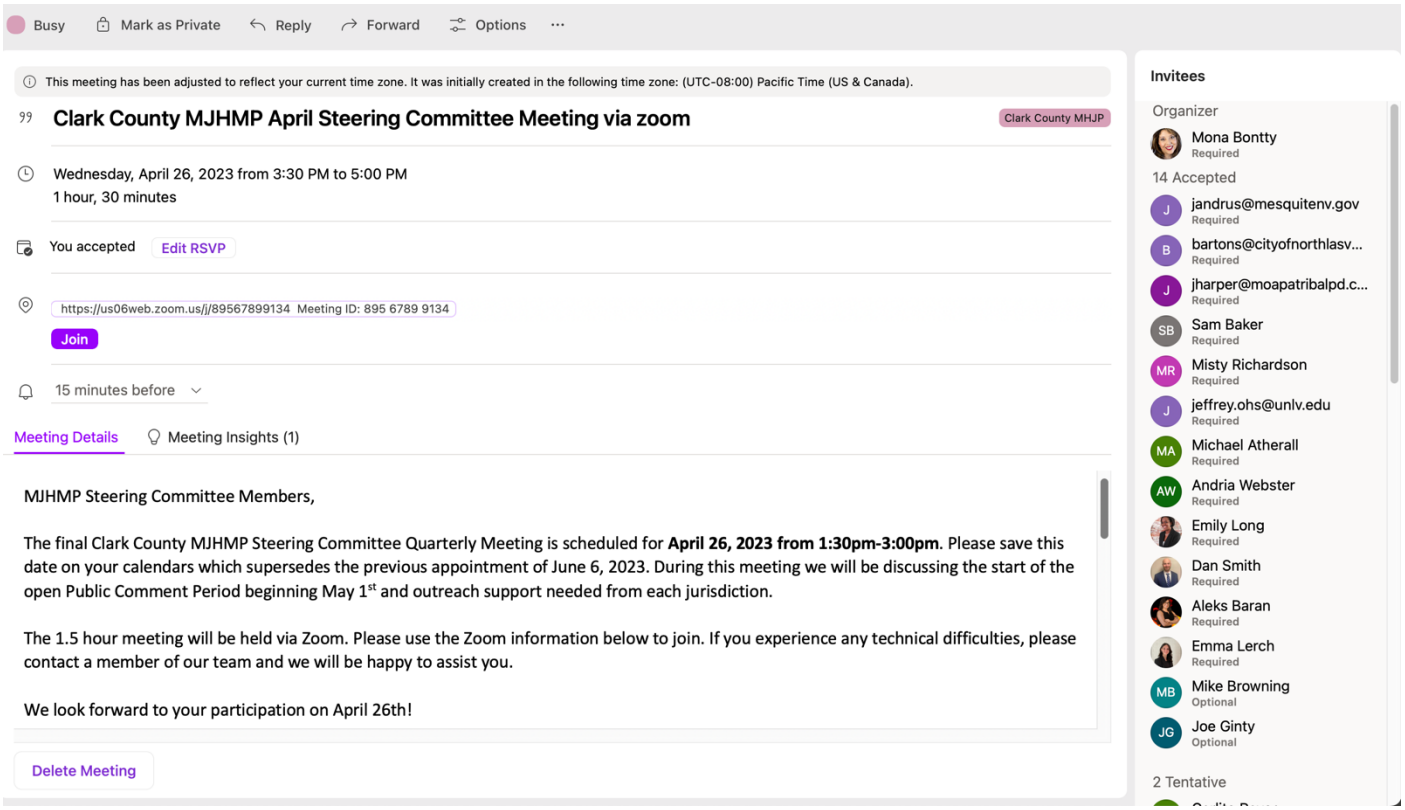
9	Guy DeMarco	City of Las Vegas OEM	City of Las Vegas
10	Spencer Lewis	Emergency Management	City of Mesquite
11	Jeremy Hynds	Emergency Management	City of North Las Vegas
12	Angeline Szymanski	Emergency Management Coordinator	CC Water Reclamation District
13	Skye Dunfield	EM Intern	CC Water Reclamation District
14	Jae Beasley	Director of School Safety	CC School District
15	Harriet Parker	Safety Officer/EM Coordinator	Las Vegas Paiute Tribe
16	Corey Ross	Emergency Management Coordinator	Las Vegas Valley Water District
17	Clint Spencer	Manager	CC Public Works

8. Clark County MJHMP Steering Committee Meeting

Date/Time: April 26, 2023 @ 1:30PM – 3:00PM PST

Location: Zoom (virtual meeting)

Invitation:



Presentation (Cover only):



Meeting Minutes with attendance sheet:

Clark County MJHMP
Steering Committee Meeting #8
Meeting Minutes

Meeting Minutes

Date: April 26, 2023,

Time: 1:30 PM (PST)

Location: Zoom Conference Call

Table 1: Action Items

#	Action Item	Responsible	Due Date
1	Send meeting recording for steering committee members that are not present	CONSTANT	May 1
2	Provide link to the open comment plan draft and the survey for the public	CONSTANT	April 26
3	Complete the CPRI assessment for Las Vegas Paiute Tribe during open comment period	Harriett Parker (Las Vegas Paiute Tribe)	May 22
4	Review Section 5 under mitigation project prioritization to correct any highlighted sections	Steering Committee	May 22
5	Send Mona documentation of social media and website posts made during the open comment period.	Steering Committee	May 22

I. Welcome/Introductions

- Mona Bontty (CONSTANT) welcomed everyone to the Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) April Steering Committee Meeting and thanked everyone for their help developing the hazard mitigation plan (HMP). Mona then provided an overview of the agenda for the meeting and asked everyone to place their name and organization into the Zoom chat or identify themselves if they are a community member.
- Mona asked Misty Richardson (Clark County Office of Emergency Management) to introduce herself and then Mona introduced herself and Emily Long (CONSTANT).
- Mona mentioned that the plan has been posted in the chat in case any meeting members would like to reference it during the meeting.

II. Plan Overview

- Following introductions, Emily welcomed everyone and professed her excitement that the project has come to the point of open comment. She thanked everyone for being present and stated that if there are any questions to please leave them in the chat. Emily stated

that the majority of the meeting will be a refresher from previous steering meetings and that the recording of the meeting is due to the fact that open comment is not only for the hazard mitigation team, but also for the public.

- Emily started in on the slideshow stating that the plan is 850 pages that contains information that will be available to integrate into other plans for the next five years. Emily covered the background of why jurisdictions mitigate and the benefits of mitigation rather than exclusively response while also providing an overview of the three Federal Emergency Management Agency (FEMA) mitigation grants that Clark County will be able to apply to with the plan created by CONSTANT.

- Emily covered the Hazard Mitigation Grant Program, Building Resilient Infrastructure and Communities, and the Flood Mitigation Plan Grant. Emily also mentioned that the plan was built to specifically target hazards put forth by the county and jurisdictions that were pertinent since the last plan update in 2018. Emily emphasizes that a large focus of the plan was to show FEMA that the steering committee was engaged but also that the community was involved.

- Emily stated that all correspondence and interactions were documented to show FEMA that all decisions were not exclusively CONSTANT driven, and that the steering committee was engaged throughout the process.

    - This information will be under Section Two under steering committee.

- Emily provided a timeline of the project for the meeting members and briefly touched on the key events that had transpired, like the kickoff meeting and the one-on-one technical assistance meetings held in December 2022 to January 2023.

III. Plan Sections

- Emily provided the six sections of the plan: Hazard Program Requirements, Introduction, Planning Process and Planning Procedures, Planning Description and Hazard Risk Analysis, Hazard Mitigation Strategy, and Plan Approval and Adoption. Emily went into each section to provide a more detailed description of the contents. She also stated that the plan was built to directly accomplish the requirements put forth by FEMA, to include a new requirement since 2018 so there will hopefully be very minor edits necessary following the FEMA review.

- Emily covered the data collection with specific emphasis on the utilization of the Clark County hazard mitigation survey and the Clark County open comment survey which were utilized and included in the plan to show FEMA that there was a high level of input by community stakeholders.

- From the data collection section Emily went over the documents used to draft the plan with a thank you going out to Sam Baker (Clark County Department of Environment and Sustainability) for her contributions.

- Emily also mentioned that the document was written with many links and graphics to facilitate the readability and long-term usability of the plan.

    - Emily discussed the continued public involvement throughout the plans open comment period, but also into the actionable mitigation process following the plans

approval. Emily stated that the plan should be made available to the public through the County's website and directly to the jurisdictions.

- Emily stated that the plan will continue to be monitored with a process developed between CONSTANT and Clark County so that the processes developed during the Plan's development are fulfilled and improved in the coming years.

- Following the plan maintenance process Emily covered Section Three and Four which included the planning area and hazard analysis and risk assessment (HARA).

    - Emily discussed the hazard risk models which were determined based on data collected from the National Oceanic and Atmospheric Administration (NOAA) database and discussed that the models can be used by the County to determine future vulnerabilities.

    - Emily also reminded the meeting participants that CONSTANT provided information not only on the current risks, but also future risks.

    - The CPRI tables were covered next. Emily went over the support from the County on creating those deliverables and mentioned that if there were any errors that the County or Jurisdictions notice, to please let CONSTANT know so that CONSTANT can modify those prior to the end of the open comment period.

- Section Five, Mitigation Strategy, was covered next, with particular focus on the STAPLE+E process.

    - CONSTANT performed a analysis on 92 possible mitigation projects put forth by Cark County. Emily discussed the process for determining the priority ranking for the projects and let the meeting attendants know that if during the open comment period certain priorities look like they need to be shifted CONSTANT will work with the associated jurisdiction to modify the ranking.

IV. Open Comment Review

- Emily stated that the plan will be available for open comment for 21 days starting May 1st, 2023. Emily emphasized that all the jurisdictions and the County need to review the plan and submit any necessary change to CONSTANT during this period.

- Following all the edits from the jurisdictions, CONSTANT will work with Misty Richardson (Clark County Office of Emergency Management) to finalize any changes prior to submission to the State.

- Emily asked the County and jurisdictions to send all social media and website posts to Mona so that those documents can be incorporated into the Plan prior to submission to the State.

V. Review and Approval Process

- Emily covered the movement of the Plan through the State and on to FEMA for approval.

- Emily discussed the associated timeline with each section of the approval process and covered the incorporation of resolution letters into the final plan. She also discussed that

the goal following approval is for the County to continue to revisit the plan annually and make necessary modifications to keep it current.

VI. Question and Answer Period

- Emily opened the question period with a clarification to Harriett Parker (Las Vegas Paiute Tribe) that if she would like to still submit a CPRI to CONSTANT, she will make sure it is incorporated into the plan prior to submission to the State.
    - Harriett thanked Emily and said that she will submit one to CONSTANT.
- Emily also discussed that following FEMA pending approval status, if the County or Jurisdictions would like CONSTANT's support during city council meetings, CONSTANT would be happy to support in a virtual setting.
    - Following those statements, Emily asked if Misty had any input, which she declined.
- Jeremy Hynds (City of North Las Vegas) asked Emily is cyber was included in the plans, to which Emily stated that it was not due to the specifications put forth by FEMA for the specific grants that the County is applying for, but that cyber is alluded to in the history of hazards section. Jeremy okayed this statement and Emily closed the session by thanking Jeremy thanked CONSTANT for the heavy lift with this project.

VII. Final Comments

- Mona and Emily thanked all of those participating in the meeting for their hard work and diligence during the plan creation process and stated their desire for this plan to increase the resilience and preparedness of the communities it applies to.
- Emily stated that the meeting recording, surveys, and Plan will be available to the County and Jurisdiction following the meeting

Table 2: Participants

	Name	Role	Organization
1	Mona Bontty	Project Manager/Sponsor	CONSTANT
2	Emily Long	Subject Matter Expert/Project Support	CONSTANT
3	Emma Lerch	Intern	CONSTANT
4	Oliver Martin	Intern	CONSTANT
5	Misty Richardson	Assistant Emergency Manager/ Clark County MJHMP Project Manager	CCOEM
6	Joe Ginty	Administrative Assistant	Southern Nevada Health District
7	Jeffrey Ohs	Assistant Emergency Manager	University of Las Vegas
8	Mike Atherall	Analyst	Las Vegas Metropolitan Police Department/Southern Nevada Counter Terrorism Center
9	Dean Mosher	Assistant Manager, Maintenance Management	Clark County, NV Public Works
10	Dave Pritchard	Supervisor, Construction Management Inspection	Clark County, NV Public Works
11	Sam Baker	Sustainability Program Administrator	Clark County, NV Department of Environment and Sustainability

Open Comment Period Vulnerable Populations Outreach

Email to Departments/Agencies that work with the Vulnerable Population

Emily Long — **Friday, May 26, 2023 at 16:51:09 Central Daylight Time**

Subject: Clark County MJHMP Plan Update Open Comment Review Period Extension – June 2, 2023
Date: Tuesday, May 23, 2023 at 7:35:34 PM Central Daylight Time
From: Misty Richardson
To: SS Admin, Randy Reinoso, Michele Fuller-Hallauer, Mary Cannizzaro
CC: Emily Long, Mona Bontty, Dan Smith, Haley Fessenden
Priority: High
Attachments: image001.jpg, image002.jpg, image003.png, image004.png, image005.png, image006.png, image007.png, image008.png, image009.png

Good afternoon,

The Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) Update planning process is coming to a close and we need your help! As a key part of the planning process, Clark County is seeking feedback from stakeholders that represent the County's vulnerable population to incorporate into the plan update. We have received new information regarding the FEMA review process of the MJHMP Update and areas of focus regarding vulnerable populations. FEMA is expecting extensive outreach to vulnerable populations that needs to be documented in the plan draft and specifically noted in the updated FEMA Plan Review tool.

As a County and participating jurisdiction department/agency that works with vulnerable populations, **we want to make you aware of this period and allow you to participate in our Extended Open Comment Review Period. Please review our draft plan (https://tinyurl.com/CCMJHMPPlanDraft) and provide your feedback and comments using our Open Comment Review Survey: https://www.surveymonkey.com/r/2XZ2BL8. Our MJHMP Open Comment Review Extension Period ends on Friday, June 2, 2023**.

If you have any questions about our MJHMP Open Comment Review Period or the MJHMP Planning process, please reply to this email or call me at 702-686-6187.

Thank you again for your support and participation!

Misty Richardson
Assistant Emergency Manager
Clark County Fire Department
Office of Emergency Management & Homeland Security
Phone: 702-455-5713
Mobile: 702-686-6187
Email: richardsonm@clarkcountynv.gov
575 East Flamingo Road, Station 18
Las Vegas, NV 89119

Follow Clark County:

Emily Long **Friday, May 26, 2023 at 16:52:59 Central Daylight Time**

Subject: Clark County MJHMP Plan Update Open Comment Review Period Extension – June 2, 2023
Date: Tuesday, May 23, 2023 at 7:41:27 PM Central Daylight Time
From: Misty Richardson
To: Catrina Grigsby-Thedford, amanda.lakin@nvhousingcoalition.org, christine.hess, kgibson@LasVegasNevada.gov, christisonj@cityofnorthlasvegas.com, Stacy DiNicola, Michele Fuller-Hallauer, mcloutier@lasvegasnevada.gov, Catherine Huang, Shelly Johnson, achavez@catholiccharities.com
CC: Mona Bontty, Emily Long, Dan Smith, Haley Fessenden
Priority: High
Attachments: image001.jpg, image002.jpg, image003.png, image004.png, image005.png, image006.png, image007.png, image008.png, image009.png

Good afternoon,

The Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) Update planning process is coming to a close and we need your help! As a key part of the planning process, Clark County is seeking feedback from stakeholders that represent the County's vulnerable population to incorporate into the plan update. We have received new information regarding the FEMA review process of the MJHMP Update and areas of focus regarding vulnerable populations. FEMA is expecting extensive outreach to vulnerable populations that needs to be documented in the plan draft and specifically noted in the updated FEMA Plan Review tool.

As a County and participating jurisdiction department/agency that works with vulnerable populations, **we want to make you aware of this period and allow you to participate in our Extended Open Comment Review Period. Please review our draft plan (https://tinyurl.com/CCMJHMPPlanDraft) and provide your feedback and comments using our Open Comment Review Survey: https://www.surveymonkey.com/r/2XZ2BL8. Our MJHMP Open Comment Review Extension Period ends on Friday, June 2, 2023**.

If you have any questions about our MJHMP Open Comment Review Period or the MJHMP Planning process, please reply to this email or call me at 702-686-6187.

Thank you again for your support and participation!

Misty Richardson
Assistant Emergency Manager
Clark County Fire Department
Office of Emergency Management & Homeland Security
Phone: 702-455-5713
Mobile: 702-686-6187
Email: richardsonm@clarkcountynv.gov
575 East Flamingo Road, Station 18
Las Vegas, NV 89119

Follow Clark County:

Emily Long **Friday, May 26, 2023 at 16:54:35 Central Daylight Time**

Subject: FW: Clark County MJHMP Plan Update Open Comment Review Period Extension – June 2, 2023
Date: Wednesday, May 24, 2023 at 9:40:57 AM Central Daylight Time
From: Misty Richardson <richardsonm@ClarkCountyNV.gov>
To: Mona Bontty <mona.bontty@constantassociates.com>, Emily Long <emily.long@constantassociates.com>, Dan Smith <Dan.Smith@constantassociates.com>, Haley Fessenden <haley.fessenden@constantassociates.com>
Priority: High
Attachments: image001.jpg, image002.jpg, image003.png, image004.png, image005.png, image006.png, image007.png, image008.png, image009.png

Good morning team, please note the extensive and impressive list of folks that Catherine forwarded the survey to. I hope this demonstrates the outreach effort.

From: Catherine Huang <C3H@ClarkCountyNV.gov>
Sent: Tuesday, May 23, 2023 6:08 PM
To: Adrienne Babbitt <Adrienne.M.Babbitt@hud.gov>; Alisha Barrett <AKC@ClarkCountyNV.gov>; Brenda Barnes <MartinBV@ClarkCountyNV.gov>; Brooke Page <Brooke.Page@csh.org>; cherry <cherry@lssnv.org>; Dagny Stapleton <Dagny.Stapleton@ClarkCountyNV.gov>; Danielle Davis <ddavis@LasVegasNevada.GOV>; De La Paz, Enrique M <Enrique.M.DeLaPaz@hud.gov>; Erik Pappa <epappa@ClarkCountyNV.gov>; Jason Lilly <lillyj@cityofnorthlasvegas.com>; Juawana Grant <juawana.grant@nvhousingcoalition.org>; Karen McDonnell <Karen.McDonnell@ClarkCountyNV.gov>; Kirsten Coulombe <kirsten.coulombe@dhcfp.nv.gov>; Lauren Hornaday <Lauren.Hornaday@ClarkCountyNV.gov>; Lived X Conusltants <SNVLivedX@gmail.com>; Rachelle Tyler-Martin <Rachelle.Tyler-Martin@clarkcountynv.gov>; Randy Reinoso <RKR@ClarkCountyNV.gov>; Review Journal Assistants <assistants@reviewjournal.com>; Sundaylee Cabrera <SundayL@mccarran.com>; Teresa Etcheberry <Teresa.Etcheberry@ClarkCountyNV.gov>; The Unified Project, Inc <contactus@theunifiedproject.org>; Aaron Sheets <aaron@link2hope.org>; Albert Chavez <achavez@catholiccharities.com>; Alexandria Brown <alexandria@snvchips.org>; Alyson Martinez <amartinez@vegasrescue.org>; Angela Quinn <aquinn@fmhwc.org>; Anthony Barnes <Anthony.Barnes@usw.salvationarmy.org>; Anthony Malone <A5M@ClarkCountyNV.gov>; Arash Ghafoori <arash@nphy.org>; Armena Mkhitaryan <armena@lssnv.org>; ahamernik <ahamernik@nevadahand.org>; Brooke Neubauer <brooke@thejustoneproject.org>; Catrina Grigsby-Thedford <catrina@nevadahomelessalliance.org>; Christina Vela <Cvela@stjudesranch.org>; csha <csha@safenest.org>; Ellen Richarson-Adams <Eadams@health.nv.gov>; Elsie.Lewis <Elsie.Lewis@usw.salvationarmy.org>; Frank Gallardo <frank.gallardo@cplc.org>; Frank Reagan <frank.reagan@westcare.com>; friley <friley@HELPSONV.ORG>; Gerson Pedrozo <gpedrozo@helpusa.org>; Greta Jackson <a.jackson@silverstatehealth.org>; Heather Engle <heather@vegasrescue.org>; Jasmine Lee <jlee@theshadetree.org>; Jeff Iverson <Jeff@FreedomHouseLV.com>; JoAnn Tobiassen <emergencyaidbc@gmail.com>; Jocelyn Bluitt-Fisher <jfisher@LasVegasNevada.GOV>; Jon Ponder <jonp@hopeforprisoners.org>; juan.salinas <juan.salinas@usw.salvationarmy.org>; Julie Proctor <juliep@safehousenv.org>; Kathleen Miller <kmlivinggracehome@gmail.com>; Kelly Robson <kellyr@bitfocus.com>; KMoskowitz <KMoskowitz@jfsalv.org>; Kevin Morss <k.morss@thewellcaregroup.com>; Lewis Jordan <ljordan@snvrha.org>; lperez <lperez@theshadetree.org>; Lisa Barnes <Lisa.Barnes@usw.salvationarmy.org>; Lizette Guillen <lguillen@nevadapartners.org>; Marisa Cervantes <marisa@thejustoneproject.org>; Maurice Cloutier <mcloutier@lasvegasnevada.gov>; Merideth Spriggs <merideth@caridadcharity.com>; Nick Lenderman <Nick.lenderman@usw.salvationarmy.org>; Nicole Anderson <nanderson@catholiccharities.com>; Raymond White <RWhite@nationsfinest.org>; Ronelle Shoda <rsho@safenest.org>; Shalimar Cabrera <scabrera@usvetsinc.org>; Steve Schmitt <sschmitt@catholiccharities.com>; Director-fplv <director@fplv.org>; Thomas "Chicago" Randleel

<721thom@gmail.com>; Thomas Roberts <troberts@catholiccharities.com>; tristan <tristan@lssnv.org>; Ashley Brown <Ashley.Brown@ClarkCountyNV.gov>; barb <barb@fplv.org>; Bitfocus System Administration <nevada-admin@bitfocus.com>; Denise Charles <dcharles@stjudesranch.org>; Elizabeth Jarman <Elizabeth.Jarman@va.gov>; Kelly Robson <krobson@HELPSONV.ORG>; kmoore <kmoore@helpsonv.org>; Louis Lacey <llacey@HELPSONV.ORG>; melissa <melissa@nphy.org>; Michele Fuller-Hallauer <MHF@ClarkCountyNV.gov>; Aaron Krolikowski <aaronk@uwsn.org>; Annie Wilson <A9278W@lvmpd.com>; Emily Paulsen <emily.paulsen@anthem.com>; Hassan Chaudhry <hchaudhry@fscompanies.com>; Hayley Jarolimek <Hayley.Jarolimek@cityofhenderson.com>; Jennifer L. Huse <jhuse@health.nv.gov>; Julie Calloway <jcalloway@bcnv.org>; Katherine Marçal <katherine.marcal@unlv.edu>; Kena Adams <indianvoicesnevada@gmail.com>; Kyle O'Connell-Mock <Kyle.Mock@aristocrat.com>; Meg Pike <berglme@nv.ccsd.net>; Phil Washington <pastorpdwash@yahoo.com>; Rebecca Edgeworth <Rebecca.edgeworth@tun.touro.edu>; Rick Damian <damianr@cityofnorthlasvegas.com>; rnolan <rnolan@lasvegasnevada.gov>; Troy Oglesbee <troyoglesbee@yahoo.com>; Vera Moore <vera@trubeginnings.org>; Young Adults in Charge <youngadultsincharge@gmail.com>; carlton.craig <carlton.craig@unlv.edu>; Dawn K. Christensen <Dawn@nevadaresorts.org>; Gigi Simmons <Gigi.Simmons@va.gov>; christisonj@cityofnorthlasvegas.com; Jenny Gratzke <gratzke@snhd.org>; Jocelyn Acevedo <jacevedo@nevadahand.org>; Kelly-Jo Shebeck <kellyjo@nv.ccsd.net>; Kevin Whalen <kevin@nevadahomelessalliance.org>; Mamdoe Dyamwalle <mdyamwalle@health.nv.gov>; Matthew Kovacich <M13238K@LVMPD.COM>; Mayra Gonzalez <mgonzale34@touro.edu>; Michelle Johnston <mjohnston@usvetsinc.org>; Stacy DiNicola <Stacy.DiNicola@cityofhenderson.com>; Stephany Coaley <scoaley@lasvegasnevada.gov>; Tameika Ortiz <TameikaO@uwsn.org>; Abby Quinn <aquinn@helpsonv.org>; Amanda Lakin <amanda.lakin@nvhousingcoalition.org>; Jace Radke <jradke@lasvegasnevada.gov>; Mary Duff <maryd3033@gmail.com>; Maurice Page <pagem@pagestrategicsolutions.com>; YAZMIN Beltran <YAZMIN.BELTRAN@clarkcountynv.gov>; Alicia Hendrix <ahendrix@nvhealthcenters.org>; Angela Phillips <angelap@LASVEGASHABITAT.ORG>; HomeBase Southern Nevada Homeless CoC <snhcocnofa@homebaseccc.org>; bclaridy <bclaridy@helpsonv.org>; Tameca Ulmer <Tameca.Ulmer@ClarkCountyNV.gov>; Arcelia Barajas <abarajas@lasvegasnevada.gov>; Karen Schneider <Karen.Schneider@ClarkCountyNV.gov>; Tara Ulmer <Tara.Ulmer@ClarkCountyNV.gov>; Kathi Thomas-Gibson <kgibson@LasVegasNevada.GOV>
Cc: Misty Richardson <richardsonm@ClarkCountyNV.gov>
Subject: FW: Clark County MJHMP Plan Update Open Comment Review Period Extension – June 2, 2023
Importance: High

Please see below for an important comment period

Catherine Huang Hara, MSW
Clark County Social Service
T: 702.283.7006| F: 702.598.4228
E: c3h@clarkcountynv.gov
Monday-Thursday 7:00am-5:30pm

From: Misty Richardson <richardsonm@ClarkCountyNV.gov>
Sent: Tuesday, May 23, 2023 5:41 PM
Subject: Clark County MJHMP Plan Update Open Comment Review Period Extension – June 2, 2023
Importance: High

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Thank you again for your support and participation!

Misty Richardson
Assistant Emergency Manager
Clark County Fire Department
Office of Emergency Management & Homeland Security
Phone: 702-455-5713
Mobile: 702-686-6187
Email: richardsonm@clarkcountynv.gov
575 East Flamingo Road, Station 18
Las Vegas, NV 89119

Follow Clark County:

The mission of the Office of Emergency Management (OEM) is to facilitate and support the resources that will enable Clark County to mitigate, prepare for, respond to and recover from emergencies. OEM provides a single point of coordination for Clark County public safety projects. This includes emergency management planning, preparation activities such as training and exercises, response support coordination during emergencies and coordination of recovery programs following emergencies. In this capacity, OEM works closely with Clark County public safety organizations to facilitate a coordinated approach to multi-agency activities.

Appendix C: Public Engagement Documentation

Appendix C contains documentation of stakeholder engagement and outreach. It includes survey format and results, webpage and social media account postings, and public notification material.

Dates	Event Activity	Documentation
July 2022	Media Campaign	• Posts on County, Website • Flyer for Community Distribution
Jul 11, 2022 – Sept 1, 2022	Public Engagement Survey and Results	• Survey questions, data analysis, and results report • Posts on County and city/town websites (with select social media posts supporting outreach).
April 26, 2023 – May 1-21, 2023, Extended to June 2, 2023 *NOTE: Ending date varies due to variable initial posting date of participating jurisdictions*	Public and Neighboring Jurisdiction Review Public draft MJHMP posted on County and cities' websites and sent to the following neighboring jurisdictions for review and comment.	• Public Comment Review Survey (including survey report) • Posts on County and city/town websites (with select social media posts supporting outreach). • Email to neighboring jurisdictions and utilities *NOTE: No substantive feedback was received from the public, neighboring jurisdictions, or utility organizations engaged in the review process.*

Open Comment Survey Link

https://www.surveymonkey.com/r/ClarkCountyMJHMP23

Community Public Kickoff Meeting Survey

https://www.surveymonkey.com/r/ClarkCountyMJHMP2023

Project Overview Flyer

Consultant: Distribution Flyer



Clark County, with support from Constant Associates, is updating its Multi-Jurisdictional Hazard Mitigation Plan (MJHMP).

The County MJHMP is vital to reducing the impact of disasters on life and property, and increasing the resiliency of the Clark County community.

This project offers an opportunity to county jurisdictions, agencies, and the public to provide feedback regarding hazards impacting their communities and identification of important mitigative actions. Check your community's website as more information becomes available!

CONSTANT ASSOCIATES

As part of this project, Constant Associates will be conducting:

- Regular Steering Committee Meetings
- Public Engagement Meetings
- Deploying an Online Survey
- Providing a Drafted Plan Update for Public Review

Learn more about hazard mitigation:

- **Clark County Office of Emergency Management**
- **Nevada Division of Emergency Management**
- **FEMA Hazard Mitigation Planning**

Community – Public Outreach Survey, July 2022

Consultant: Email

Community Survey is LIVE: Clark County MJHMP Update

Amanda Ozaki-Laughon <Amanda@constantassociates.com>

Mon 7/11/2022 12:00 PM

To: Amanda Ozaki-Laughon <Amanda@constantassociates.com>
Cc: Misty Richardson <richardsonm@ClarkCountyNV.gov>;josie.ross@cityofhenderson.com <josie.ross@cityofhenderson.com>;lee rosenberg <lee.rosenberg@navigatingpreparedness.com>;Holly Mann <Holly.Mann@constantassociates.com>;Jayson Kratoville <Jayson@constantassociates.com>
Bcc: adolphc@mccarran.com <adolphc@mccarran.com>;Gregory Chesser <gchesser@bcnv.org>;Bradley Iverson <biverson@lasvegasnevada.gov>;billy.samuels@clarkcountynv.gov <billy.samuels@clarkcountynv.gov>;Carlito Rayos <carlito.rayos@clarkcountynv.gov>;boneal@clarkcountynv.gov <boneal@clarkcountynv.gov>;clint.spencer@clarkcountynv.gov <clint.spencer@clarkcountynv.gov>;Carolyn Levering <clevering@lasvegasnevada.gov>;geir.j.gabrielson.mil@army.mil <geir.j.gabrielson.mil@army.mil>;janell.woodward@dem.nv.gov <janell.woodward@dem.nv.gov>;papazian@clarkcountynv.gov <papazian@clarkcountynv.gov>;chris.wardlaw@clarkcountynv.gov <chris.wardlaw@clarkcountynv.gov>;klevorick@clarkcountynv.gov <klevorick@clarkcountynv.gov>;Samantha Baker <Samantha.Baker@ClarkCountyNV.gov>;jmanzo@clarkcountynv.gov <jmanzo@clarkcountynv.gov>;robinson@snhd.org <robinson@snhd.org>;james.andersen@clarkcountynv.gov <james.andersen@clarkcountynv.gov>;rgv@clarkcountynv.gov <rgv@clarkcountynv.gov>;leigh.ann.anders@clarkcountynv.gov <leigh.ann.anders@clarkcountynv.gov>;rgerchman@dem.nv.gov <rgerchman@dem.nv.gov>

Good afternoon,

Thank you for being a vital part of the Clark County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) Update! Over the past month, we have received thorough and thoughtful feedback from the Steering Committee regarding the Clark County MJHMP Community Survey. Your feedback, to the extent possible, has been incorporated into the survey and is ready for distribution to residents in your jurisdiction.

I am happy to announce that the community survey is now live (as of July 11) and will close on **September 1, 2022 at 5:00pm PST.**

https://www.surveymonkey.com/r/ClarkCountyMJHMP2023

Engagement with the public is required, and heavily evaluated, by FEMA for plan approval. At a minimum, each jurisdiction should post a brief announcement and link to the survey to its public access websites and social media accounts. Periodic reposting/sharing of the link should be prioritized throughout July and August. Below are some avenues other jurisdictions are using to share the survey:

- Homeowners Associations
- Farmer's Markets
- Back to School Fairs
- "Open Houses" hosted by law enforcement agencies

Our team will be monitoring social media and websites for each jurisdiction; when the survey is posted, we will take screenshots to add to the substantiation appendix of the plan.

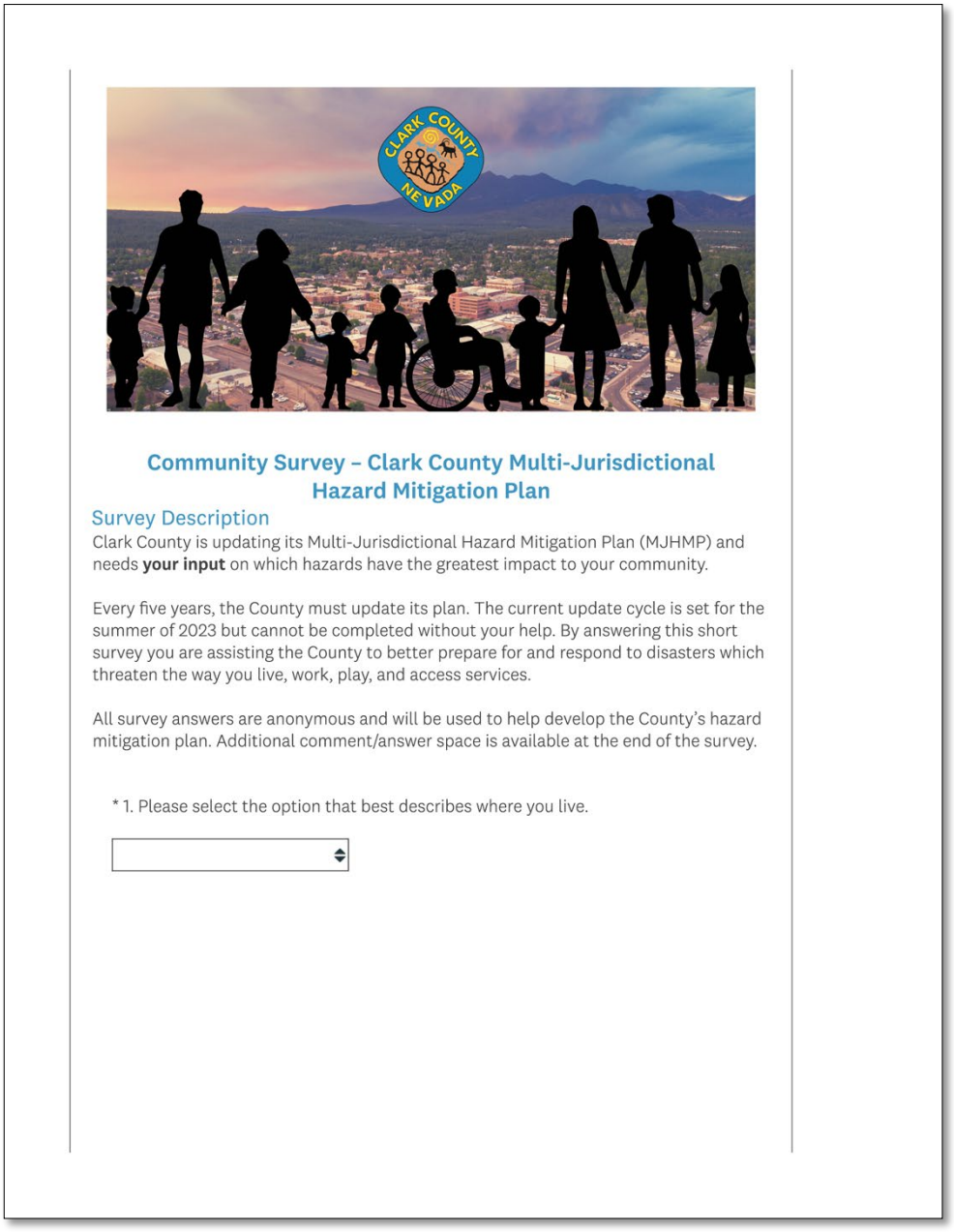
The attached Public Involvement Plan (PIP) includes sample language for website postings and social media content. I have also attached full-size PDF/JPG images of a flyer and social media content that can be used as either a sample or ready-to-post content.

If your jurisdiction is using other "out of the box" approaches to engaging your residents, please let us know! We would love to hear from you and brainstorm further engagement. If you have any questions, feel free to reach out to me via email or using the phone number in my signature.

Community – Public Outreach Survey, July 2022

Survey Link

https://www.surveymonkey.com/r/ClarkCountyMJHMP2023



Community Survey – Clark County Multi-Jurisdictional Hazard Mitigation Plan

Survey Description

Clark County is updating its Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) and needs **your input** on which hazards have the greatest impact to your community.

Every five years, the County must update its plan. The current update cycle is set for the summer of 2023 but cannot be completed without your help. By answering this short survey you are assisting the County to better prepare for and respond to disasters which threaten the way you live, work, play, and access services.

All survey answers are anonymous and will be used to help develop the County's hazard mitigation plan. Additional comment/answer space is available at the end of the survey.

* 1. Please select the option that best describes where you live.

2. Clark County residents and businesses may encounter a variety of hazards and/or disasters. How concerned are you about the following hazards impacting you, your business and Clark County? (Please rate for each hazard)

	Not at all concerned	Somewhat concerned	Very concerned	Extremely concerned	Unsure
Climate Change	◯	◯	◯	◯	◯
Dam Failure	◯	◯	◯	◯	◯
Drought	◯	◯	◯	◯	◯
Earthquake and Seismic Hazards	◯	◯	◯	◯	◯
Flood	◯	◯	◯	◯	◯
Hazardous Materials	◯	◯	◯	◯	◯
Infectious Disease	◯	◯	◯	◯	◯
Infestation	◯	◯	◯	◯	◯
Subsidence and Fissures	◯	◯	◯	◯	◯
Terrorism	◯	◯	◯	◯	◯
Wildfire	◯	◯	◯	◯	◯

Other (e.g., civil disturbance, supply chain delays, housing crisis, extended power outages, extended transportation disruptions, etc.)

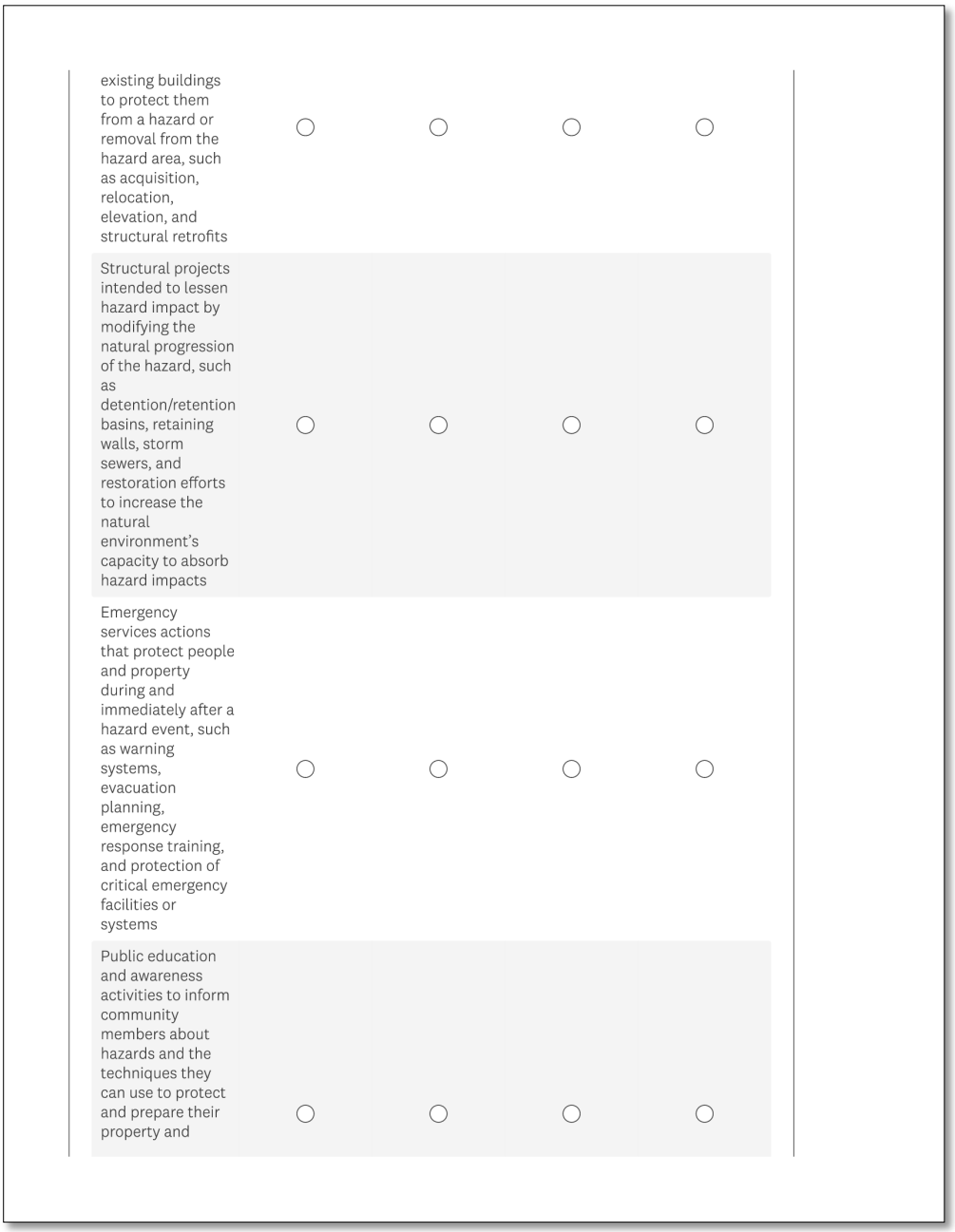
Please specify in the text box below.

3. Which of the following steps has your household taken to prepare for hazardous events? (Check all that apply)

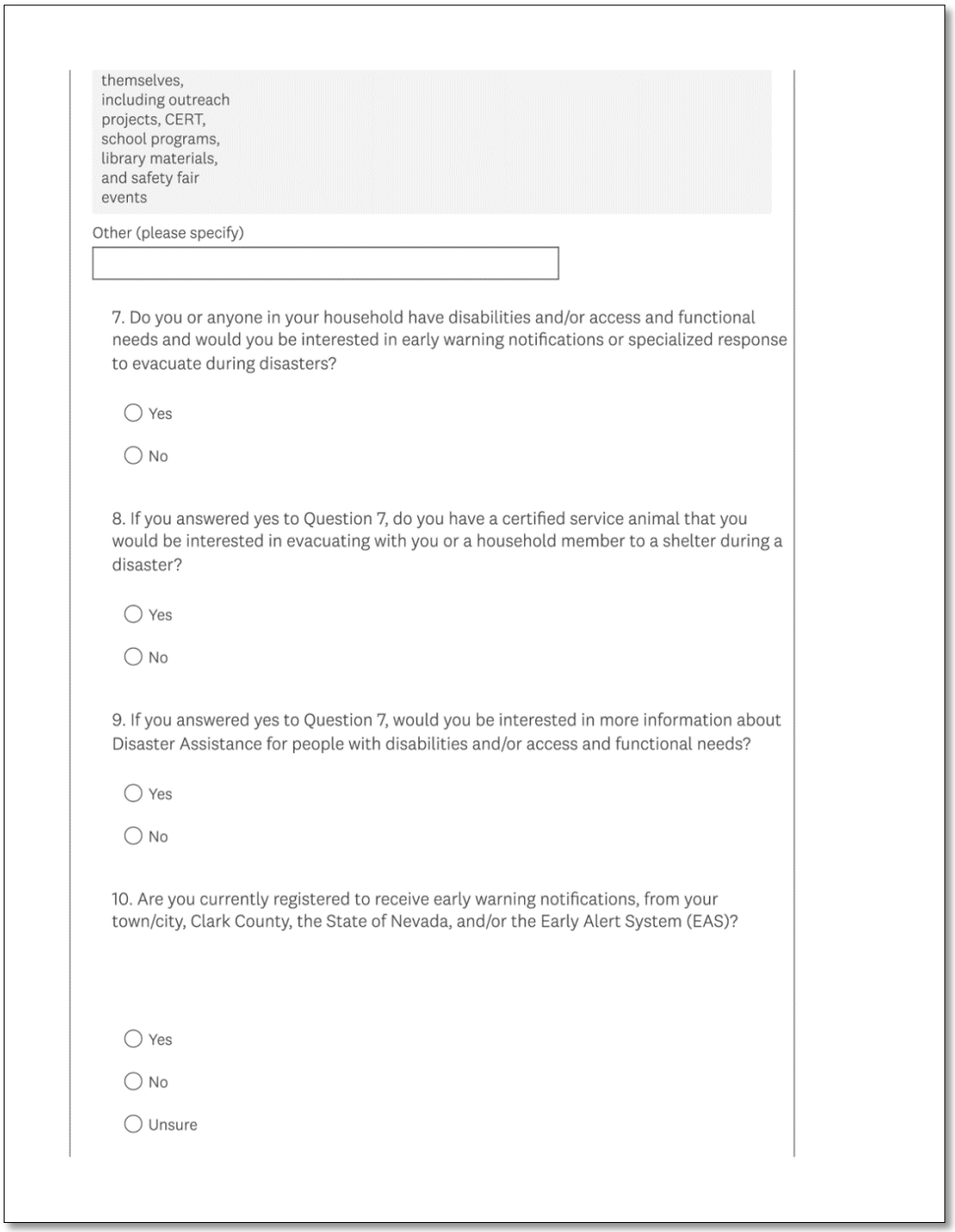
- ☐ Purchased earthquake insurance
- ☐ Taken a Community Emergency Response Team (CERT) classes and/or joined a local CERT team
- ☐ Practiced a home evacuation drill at least once a year
- ☐ Purchased flood insurance
- ☐ Created a family reunification communication plan
- ☐ Prepared a disaster supply kit
- ☐ Developed a home emergency evacuation plan
- ☐ Stored water (one gallon a day/person for 5 days)
- ☐ Identified utility shutoffs at your home and have shut-off tools available
- ☐ Stored medical supplies (first aid kit, prescription medicines, extra glasses) at home, work, and automobile
- ☐ Received First Aid/CPR training
- ☐ Have working portable fire extinguishers in appropriate areas of the home
- ☐ Stored a battery powered radio, flashlights, and extra batteries
- ☐ Stored non-perishable food for 5 days
- ☐ Installed smoke and carbon monoxide detectors on each floor of your house
- ☐ None
- ☐ Other (please specify in the text box)

4. How prepared is your household to cope with a hazard event?

Somewhat Prepared	Adequately Prepared	Very Well Prepared	Not Prepared At All	Unsure
○	○	○	○	○



existing buildings to protect them from a hazard or removal from the hazard area, such as acquisition, relocation, elevation, and structural retrofits	○	○	○	○
Structural projects intended to lessen hazard impact by modifying the natural progression of the hazard, such as detention/retention basins, retaining walls, storm sewers, and restoration efforts to increase the natural environment's capacity to absorb hazard impacts	○	○	○	○
Emergency services actions that protect people and property during and immediately after a hazard event, such as warning systems, evacuation planning, emergency response training, and protection of critical emergency facilities or systems	○	○	○	○
Public education and awareness activities to inform community members about hazards and the techniques they can use to protect and prepare their property and	○	○	○	○



themselves, including outreach projects, CERT, school programs, library materials, and safety fair events

Other (please specify)

7. Do you or anyone in your household have disabilities and/or access and functional needs and would you be interested in early warning notifications or specialized response to evacuate during disasters?

- ◯ Yes
- ◯ No

8. If you answered yes to Question 7, do you have a certified service animal that you would be interested in evacuating with you or a household member to a shelter during a disaster?

- ◯ Yes
- ◯ No

9. If you answered yes to Question 7, would you be interested in more information about Disaster Assistance for people with disabilities and/or access and functional needs?

- ◯ Yes
- ◯ No

10. Are you currently registered to receive early warning notifications, from your town/city, Clark County, the State of Nevada, and/or the Early Alert System (EAS)?

- ◯ Yes
- ◯ No
- ◯ Unsure

11. Do you have any other comments, questions, or concerns?

Media Campaign

County: Website

https://www.clarkcountynv.gov/news_detail_T28_R742.php



County: Flyer (July 2022)



County: Instagram (July 2022)



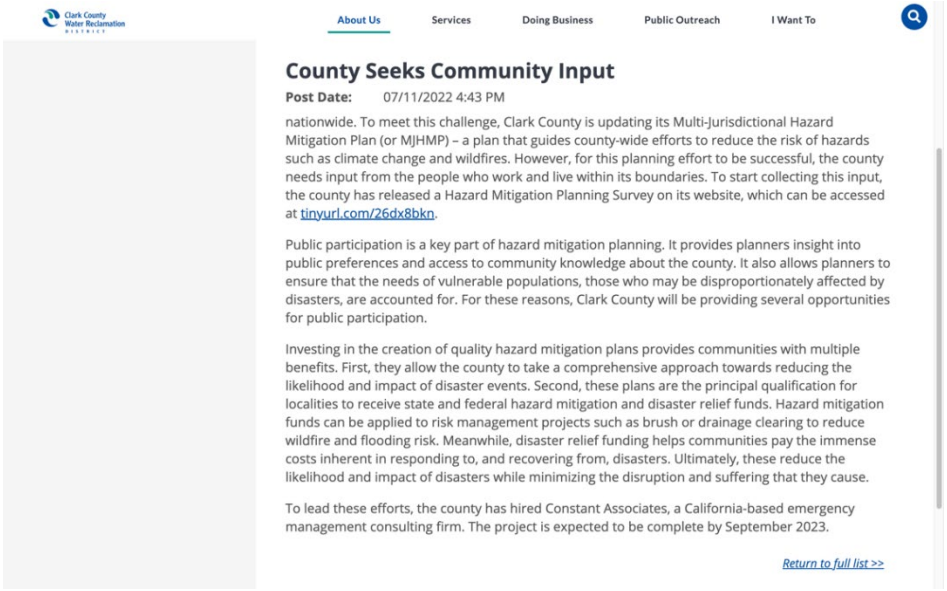




Clark County Water Reclamation District

Clark County Water Reclamation District: Website

https://www.cleanwaterteam.com/Home/Components/News/News/100/ (July 11, 2022)



Clark County Water Reclamation District

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County Seeks Community Input

Post Date: 07/11/2022 4:43 PM

nationwide. To meet this challenge, Clark County is updating its Multi-Jurisdictional Hazard Mitigation Plan (or MJHMP) – a plan that guides county-wide efforts to reduce the risk of hazards such as climate change and wildfires. However, for this planning effort to be successful, the county needs input from the people who work and live within its boundaries. To start collecting this input, the county has released a Hazard Mitigation Planning Survey on its website, which can be accessed at tinyurl.com/26dx8bkn.

Public participation is a key part of hazard mitigation planning. It provides planners insight into public preferences and access to community knowledge about the county. It also allows planners to ensure that the needs of vulnerable populations, those who may be disproportionately affected by disasters, are accounted for. For these reasons, Clark County will be providing several opportunities for public participation.

Investing in the creation of quality hazard mitigation plans provides communities with multiple benefits. First, they allow the county to take a comprehensive approach towards reducing the likelihood and impact of disaster events. Second, these plans are the principal qualification for localities to receive state and federal hazard mitigation and disaster relief funds. Hazard mitigation funds can be applied to risk management projects such as brush or drainage clearing to reduce wildfire and flooding risk. Meanwhile, disaster relief funding helps communities pay the immense costs inherent in responding to, and recovering from, disasters. Ultimately, these reduce the likelihood and impact of disasters while minimizing the disruption and suffering that they cause.

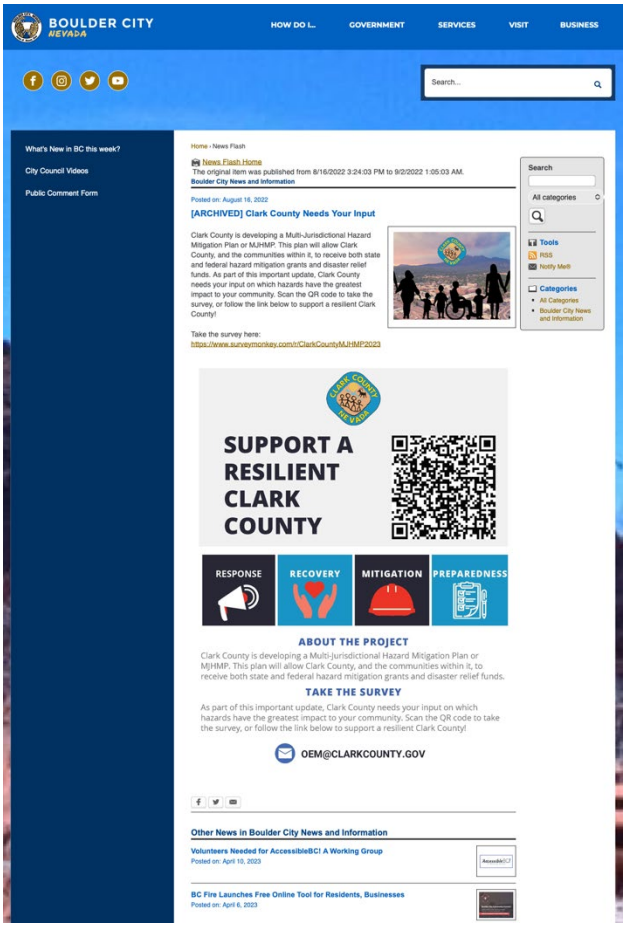
To lead these efforts, the county has hired Constant Associates, a California-based emergency management consulting firm. The project is expected to be complete by September 2023.

Return to full list >>

Boulder City

Boulder City: Website

https://www.bcnv.org/CivicAlerts.aspx?AID=324&ARC=530 (August 16, 2022)



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The original item was published from 8/16/2022 3:24:03 PM to 9/2/2022 1:05:03 AM.

Boulder City News and Information

Posted on: August 16, 2022

[ARCHIVED] Clark County Needs Your Input

Clark County is developing a Multi-Jurisdictional Hazard Mitigation Plan or MJHMP. This plan will allow Clark County, and the communities within it, to receive both state and federal hazard mitigation grants and disaster relief funds. As part of this important update, Clark County needs your input on which hazards have the greatest impact to your community. Scan the QR code to take the survey, or follow the link below to support a resilient Clark County!

Take the survey here:
https://www.surveymonkey.com/r/ClarkCountyMJHMP2023

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ABOUT THE PROJECT

Clark County is developing a Multi-Jurisdictional Hazard Mitigation Plan or MJHMP. This plan will allow Clark County, and the communities within it, to receive both state and federal hazard mitigation grants and disaster relief funds.

TAKE THE SURVEY

As part of this important update, Clark County needs your input on which hazards have the greatest impact to your community. Scan the QR code to take the survey, or follow the link below to support a resilient Clark County!

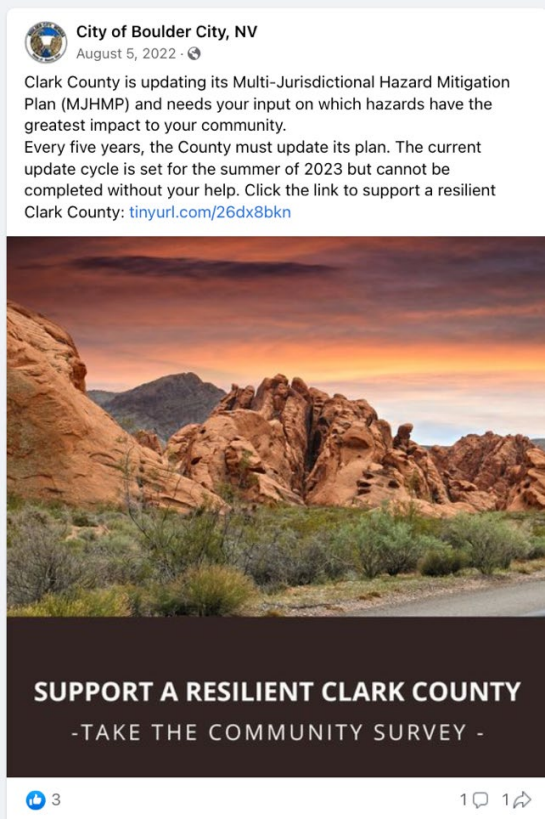
OEM@CLARKCOUNTY.GOV

Other News in Boulder City News and Information

Volunteers Needed for AccessibleBC! A Working Group
Posted on: April 10, 2023

BC Fire Launches Free Online Tool for Residents, Businesses
Posted on: April 6, 2023

Boulder City: Facebook (August 5, 2022)



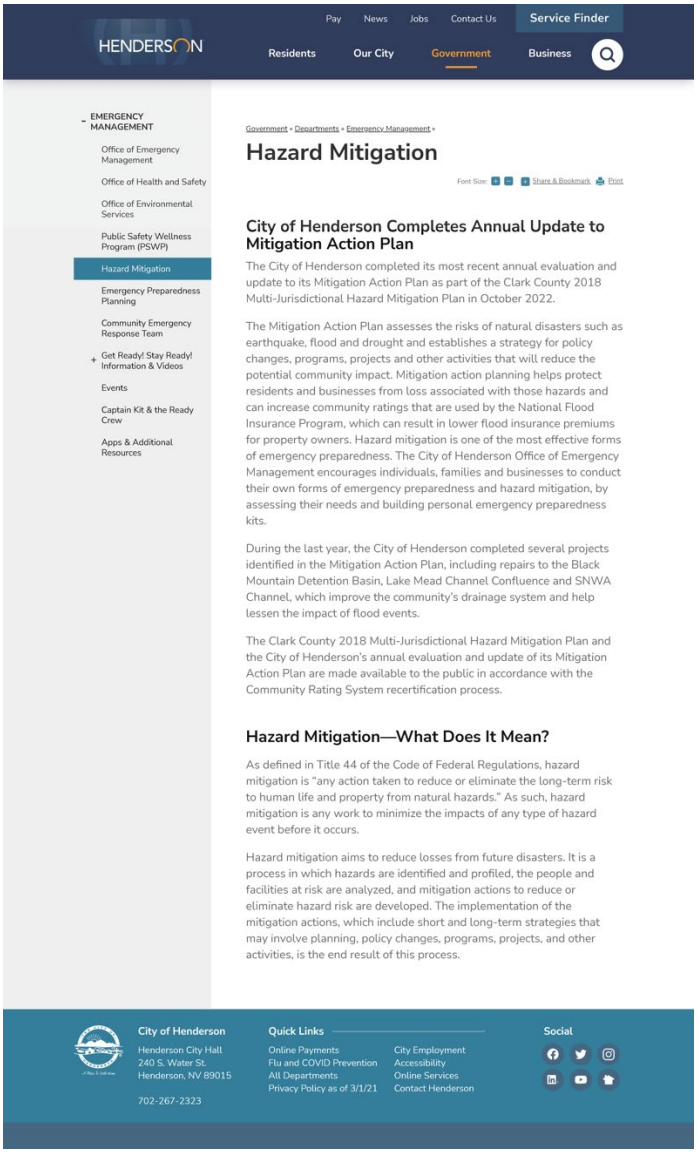
Boulder City: Twitter (August 5, 2022)



Henderson

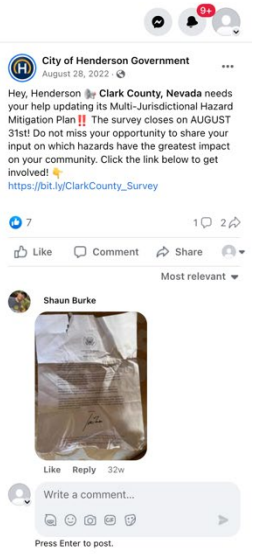
Henderson: Website

https://www.cityofhenderson.com/government/departments/emergency-management/hazard-mitigation



Henderson: Facebook (August 28, 2022)





Henderson: Email – Notification of In-person Events help Community Survey Responses (July 6, 2022)

RE: REMINDER, July 7 | Clark Co. MJHMP Draft Public Survey (FOR RESPONSE)

Josie Ross <Josie.Ross@cityofhenderson.com>
Wed 7/6/2022 2:57 PM
To: Holly Mann <Holly.Mann@constantassociates.com>;Misty Richardson <richardsonm@ClarkCountyNV.gov>
Cc: Amanda Ozaki-Laughon <Amanda@constantassociates.com>

Good Afternoon,

The survey looks great, and will be a useful tool in communicating with our residents.

Henderson EM is going to attend the following public events, where we will have Ipads for residents to take the survey, as well as a large cardboard cutout QR code so that residents can use their phones to access the survey.

- Farmers' Markets at Cornerstone Park and on Water Street Plaza
- Tuesday, July 12th
- Tuesday, August 2nd
- Saturday, August 6th
- Tuesday, August 9th
- Tuesday, August 23rd
- Tuesday, August 30th

- Annual Back to School Safety Fair at the Galleria Mall on July 28
- Fire Station Open House on August 13

We also reached out to a number of HOAs that we work closely with, and they will be emailing their residents the survey link on our behalf. We provided content and background information for them to share with their residents. I expect that we should be able to reach about 6,000 people with the help of the HOAs.

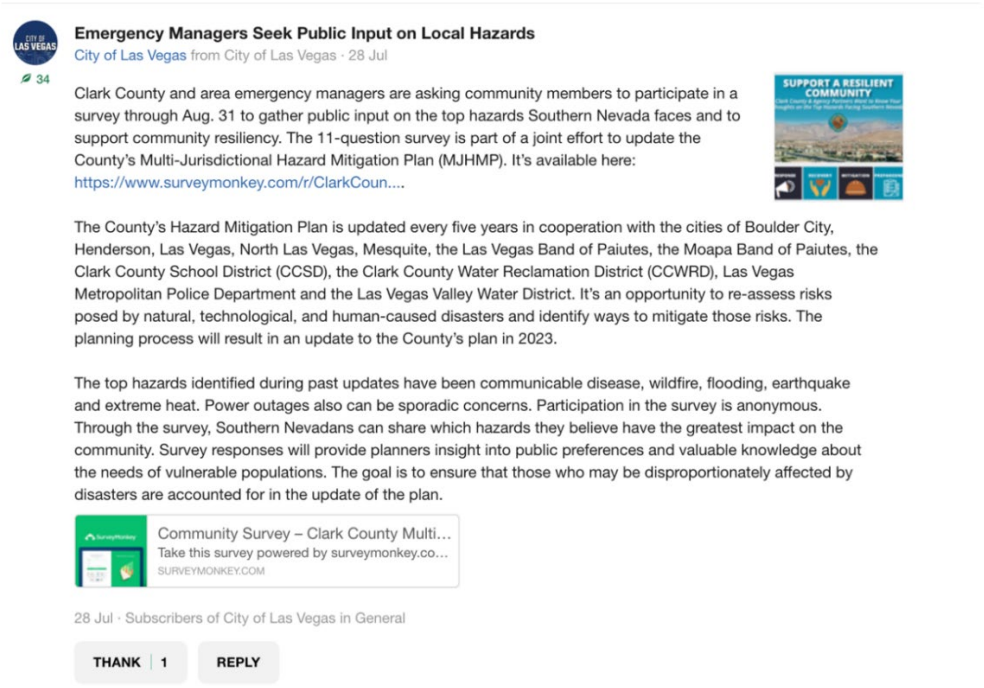
Because we didn't have a huge number of upcoming events, and because we were unable to get on the City Council Meeting agenda, we had to "think outside the box".

Any outdoor forum, like Downtown Summerlin, Tivoli Village, Town Square, a large park, back to school safety fairs, farmer's markets, etc, are great places to set up tables with preparedness information and do some public outreach. In the past, we've worked with our libraries as well, where we set up emergency preparedness outreach booths and connect with the public that way.

Hopefully this will be impactful and helpful.

Las Vegas

Las Vegas: Nextdoor (July 28, 2022)



Emergency Managers Seek Public Input on Local Hazards

City of Las Vegas from City of Las Vegas · 28 Jul

34

Clark County and area emergency managers are asking community members to participate in a survey through Aug. 31 to gather public input on the top hazards Southern Nevada faces and to support community resiliency. The 11-question survey is part of a joint effort to update the County's Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). It's available here: https://www.surveymonkey.com/r/ClarkCoun....

The County's Hazard Mitigation Plan is updated every five years in cooperation with the cities of Boulder City, Henderson, Las Vegas, North Las Vegas, Mesquite, the Las Vegas Band of Paiutes, the Moapa Band of Paiutes, the Clark County School District (CCSD), the Clark County Water Reclamation District (CCWRD), Las Vegas Metropolitan Police Department and the Las Vegas Valley Water District. It's an opportunity to re-assess risks posed by natural, technological, and human-caused disasters and identify ways to mitigate those risks. The planning process will result in an update to the County's plan in 2023.

The top hazards identified during past updates have been communicable disease, wildfire, flooding, earthquake and extreme heat. Power outages also can be sporadic concerns. Participation in the survey is anonymous. Through the survey, Southern Nevadans can share which hazards they believe have the greatest impact on the community. Survey responses will provide planners insight into public preferences and valuable knowledge about the needs of vulnerable populations. The goal is to ensure that those who may be disproportionately affected by disasters are accounted for in the update of the plan.

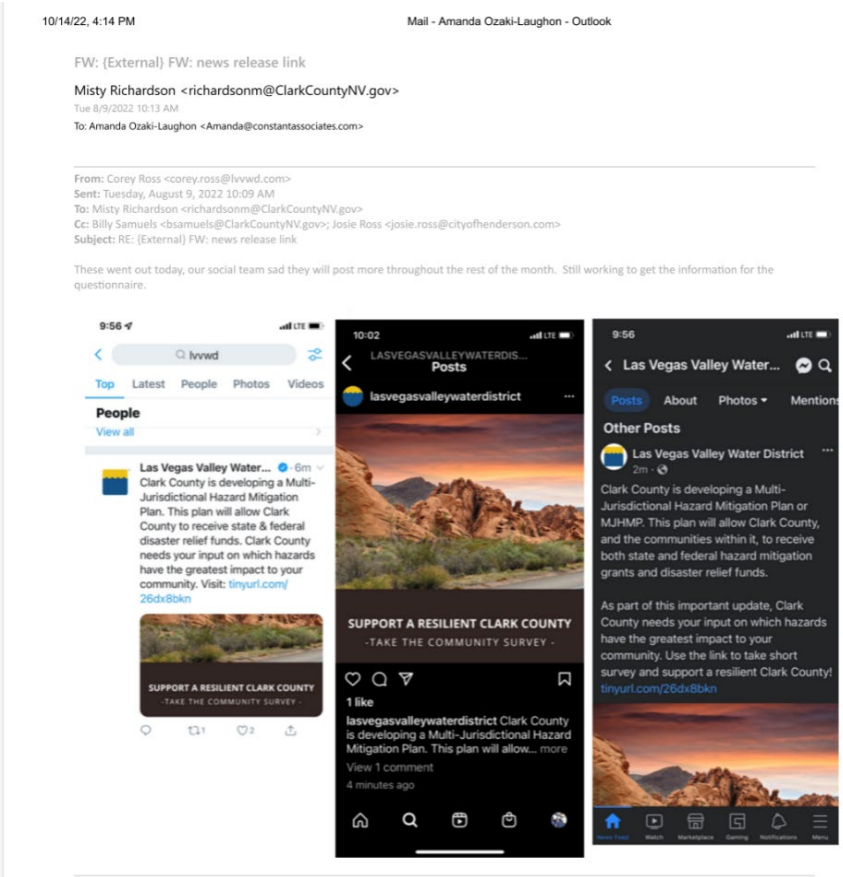
Community Survey – Clark County Multi...
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SURVEYMONKEY.COM

28 Jul · Subscribers of City of Las Vegas in General

THANK | 1 REPLY

Las Vegas Valley Water District

Las Vegas Valley Water: Social Media Posts – Twitter, Instagram, and Facebook (August 9, 2022)



10/14/22, 4:14 PM Mail - Amanda Ozaki-Laughon - Outlook

FW: {External} FW: news release link

Misty Richardson <richardsonm@ClarkCountyNV.gov>
Tue 8/9/2022 10:13 AM
To: Amanda Ozaki-Laughon <Amanda@constantassociates.com>

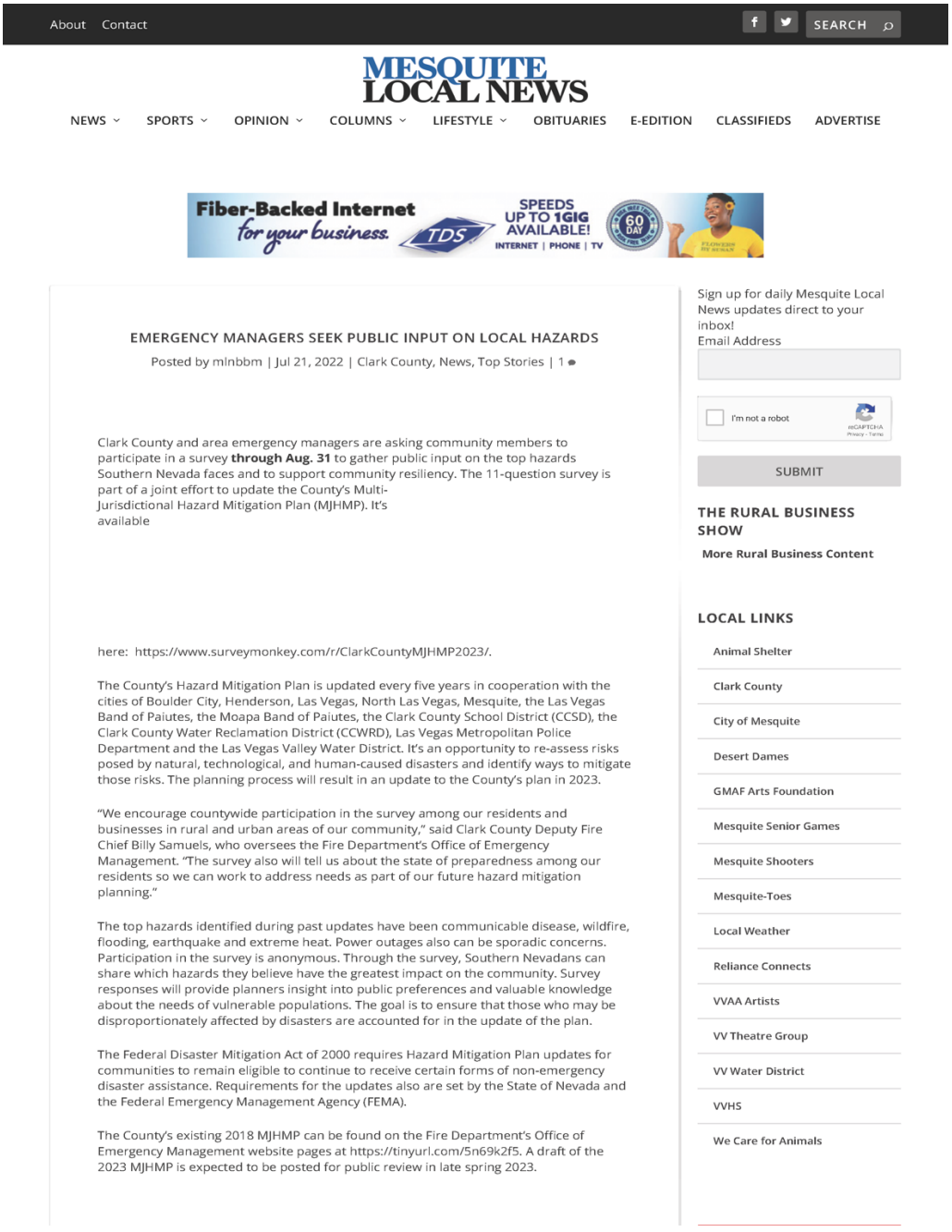
From: Corey Ross <corey.ross@lvvwd.com>
Sent: Tuesday, August 9, 2022 10:09 AM
To: Misty Richardson <richardsonm@ClarkCountyNV.gov>
Cc: Billy Samuels <bsamuels@ClarkCountyNV.gov>; Josie Ross <josie.ross@cityofhenderson.com>
Subject: RE: {External} FW: news release link

These went out today, our social team sad they will post more throughout the rest of the month. Still working to get the information for the questionnaire.

Mesquite: Website

https://mesquitelocalnews.com/2022/07/21/emergency-managers-seek-public-input-on-local-hazards

(July 21, 2022)



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EMERGENCY MANAGERS SEEK PUBLIC INPUT ON LOCAL HAZARDS

Posted by mlnbbm | Jul 21, 2022 | Clark County, News, Top Stories | 1

Clark County and area emergency managers are asking community members to participate in a survey **through Aug. 31** to gather public input on the top hazards Southern Nevada faces and to support community resiliency. The 11-question survey is part of a joint effort to update the County's Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). It's available

here: https://www.surveymonkey.com/r/ClarkCountyMJHMP2023/.

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The Federal Disaster Mitigation Act of 2000 requires Hazard Mitigation Plan updates for communities to remain eligible to continue to receive certain forms of non-emergency disaster assistance. Requirements for the updates also are set by the State of Nevada and the Federal Emergency Management Agency (FEMA).

The County's existing 2018 MJHMP can be found on the Fire Department's Office of Emergency Management website pages at https://tinyurl.com/5n69k2f5. A draft of the 2023 MJHMP is expected to be posted for public review in late spring 2023.

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THE RURAL BUSINESS SHOW

More Rural Business Content

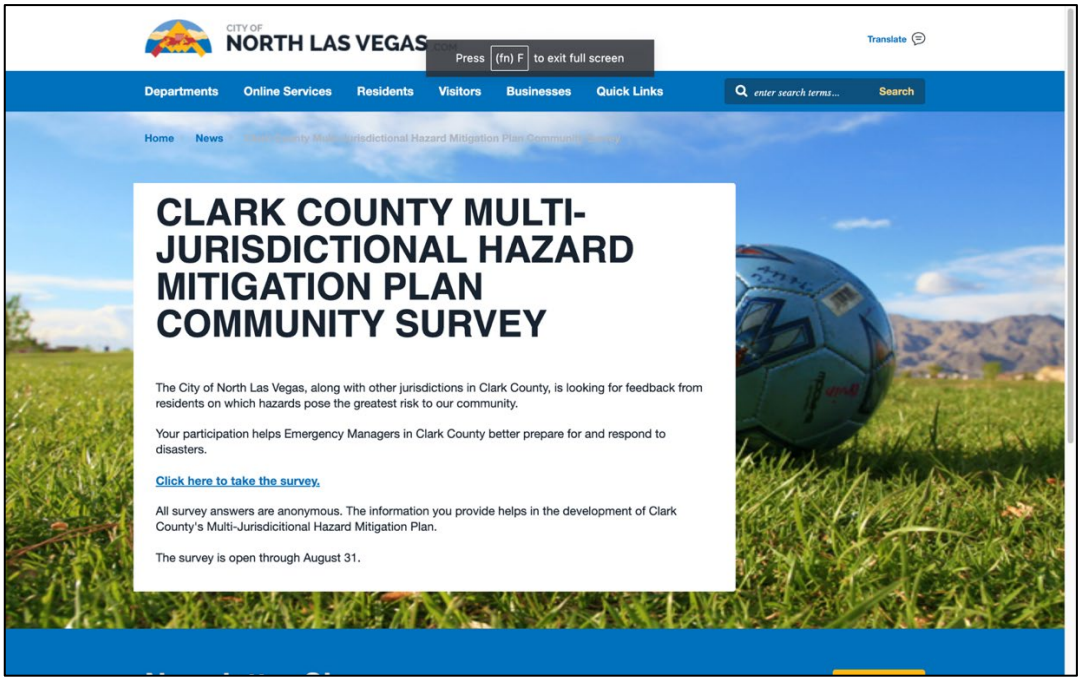
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City of Mesquite
Desert Dames
GMAF Arts Foundation
Mesquite Senior Games
Mesquite Shooters
Mesquite-Toes
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Reliance Connects
VVAA Artists
VV Theatre Group
VV Water District
VVHS
We Care for Animals

North Las Vegas

North Las Vegas: Website

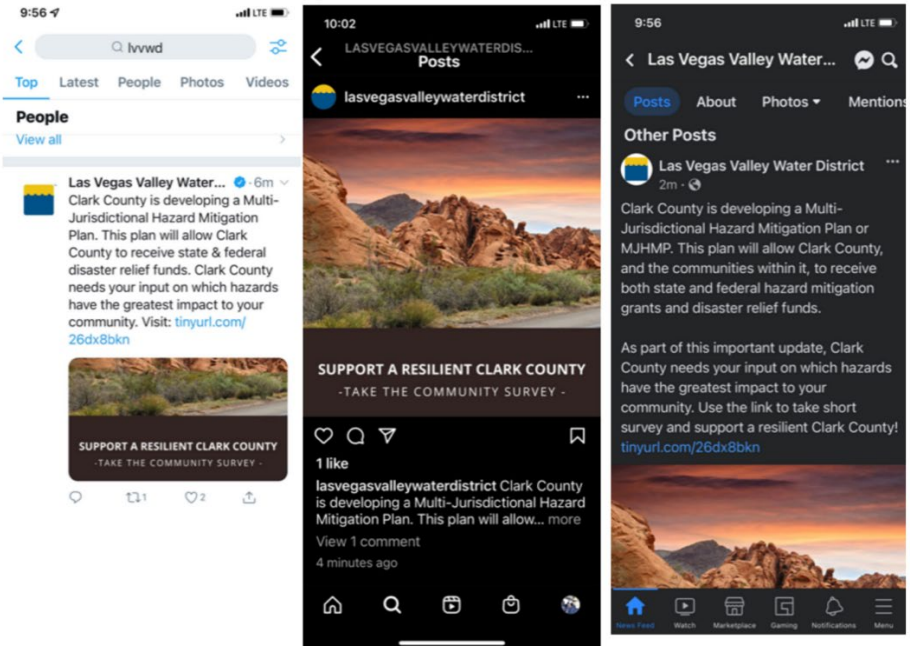
http://old.cityofnorthlasvegas.com/newsdetail_T6_R664.php



City of North Las Vegas: Facebook (August 9, 2022)

To: Misty Richardson <richardsonm@ClarkCountyNV.gov>
Cc: Billy Samuels <bsamuels@ClarkCountyNV.gov>; Josie Ross <josie.ross@cityofhenderson.com>
Subject: RE: {External} FW: news release link

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Tribal Nation: Moapa Band of Paiutes

Moapa Band of Paiute: Email (August 24, 2022)

10/14/22, 4:25 PM Mail - Amanda Ozaki-Laughon - Outlook

RE: [Clark County MJHMP Update] Steering Committee Meeting Documents and Next Steps

Jeff Harper <jharper@moapatribalpd.com>
Wed 8/24/2022 2:40 PM
To: Amanda Ozaki-Laughon <Amanda@constantassociates.com>

So here are the two flyers I sent out and we will be talking about it at coffee with the cops. It will be hand delivered to all houses on the reservation.

Jeff Harper
Acting Chief of Police
Moapa Tribal Police Dept.
Office (702) 865-2828
Cell (702) 281-1197
FAX (702) 865-2865

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Additional Community Outreach

Silver State Times: Newspaper (Online)

https://silverstatetimes.com/stories/630245247-clark-county-multi-jurisdictional-hazard-mitigation-plan-community-survey

Silver State Times

Clark County Multi-Jurisdictional Hazard Mitigation Plan Community Survey

LOCAL GOVERNMENT

ORGANIZATIONS IN THIS STORY

City of North Las Vegas

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By **Press release submission**
Aug 10, 2022

The City of North Las Vegas, along with other jurisdictions in Clark County, is looking for feedback from residents on which hazards pose the greatest risk to our community.

Your participation helps Emergency Managers in Clark County better prepare for and respond to disasters.

Click here to take the survey.

All survey answers are anonymous. The information you provide helps in the development of Clark County's Multi-Jurisdicitional Hazard Mitigation Plan.

The survey is open through August 31.

Original source can be found **here.**

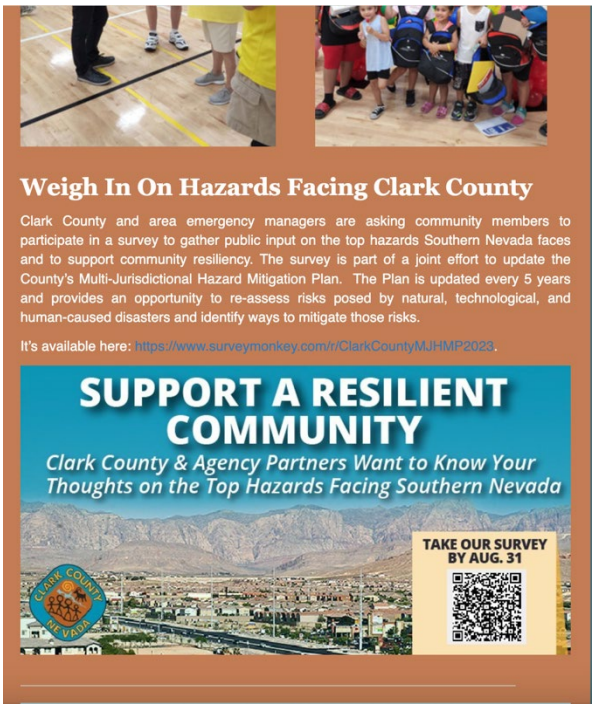
TRENDING



Clark County Commissioner- Electronic Newsletter

https://content.govdelivery.com/accounts/NVCLARK/bulletins/3263884

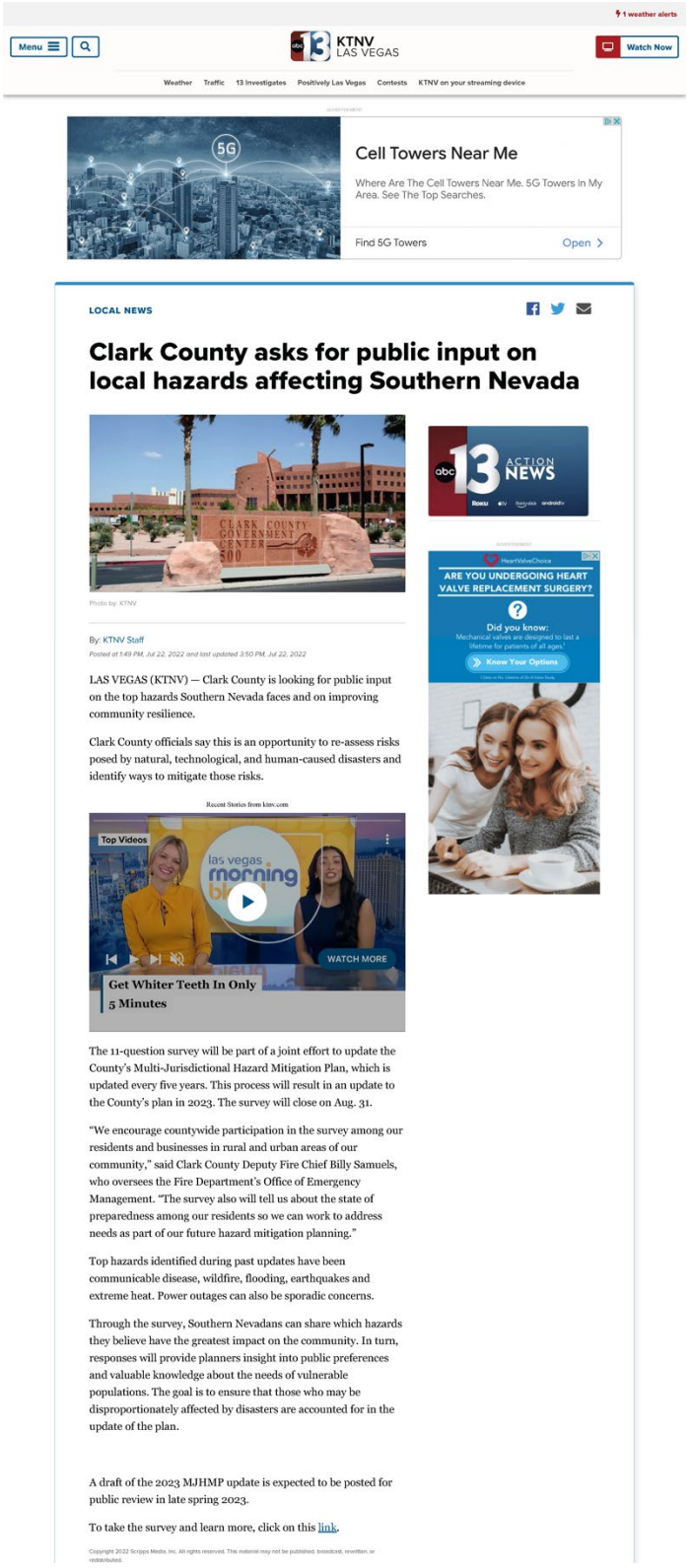
(August 8, 2022)



KTNV Las Vegas (TV)

https://www.ktnv.com/news/clark-county-asks-for-public-input-on-local-hazards-affecting-southern-nevada

(July 22, 2022)



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LOCAL NEWS

Clark County asks for public input on local hazards affecting Southern Nevada

Photo by: KTNV

By: KTNV Staff

Posted at 1:49 PM, Jul 22, 2022 and last updated 3:50 PM, Jul 22, 2022

LAS VEGAS (KTNV) — Clark County is looking for public input on the top hazards Southern Nevada faces and on improving community resilience.

Clark County officials say this is an opportunity to re-assess risks posed by natural, technological, and human-caused disasters and identify ways to mitigate those risks.

Recent Stories from ktnv.com

The 11-question survey will be part of a joint effort to update the County's Multi-Jurisdictional Hazard Mitigation Plan, which is updated every five years. This process will result in an update to the County's plan in 2023. The survey will close on Aug. 31.

"We encourage countywide participation in the survey among our residents and businesses in rural and urban areas of our community," said Clark County Deputy Fire Chief Billy Samuels, who oversees the Fire Department's Office of Emergency Management. "The survey also will tell us about the state of preparedness among our residents so we can work to address needs as part of our future hazard mitigation planning."

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Through the survey, Southern Nevadans can share which hazards they believe have the greatest impact on the community. In turn, responses will provide planners insight into public preferences and valuable knowledge about the needs of vulnerable populations. The goal is to ensure that those who may be disproportionately affected by disasters are accounted for in the update of the plan.

A draft of the 2023 MJHMP update is expected to be posted for public review in late spring 2023.

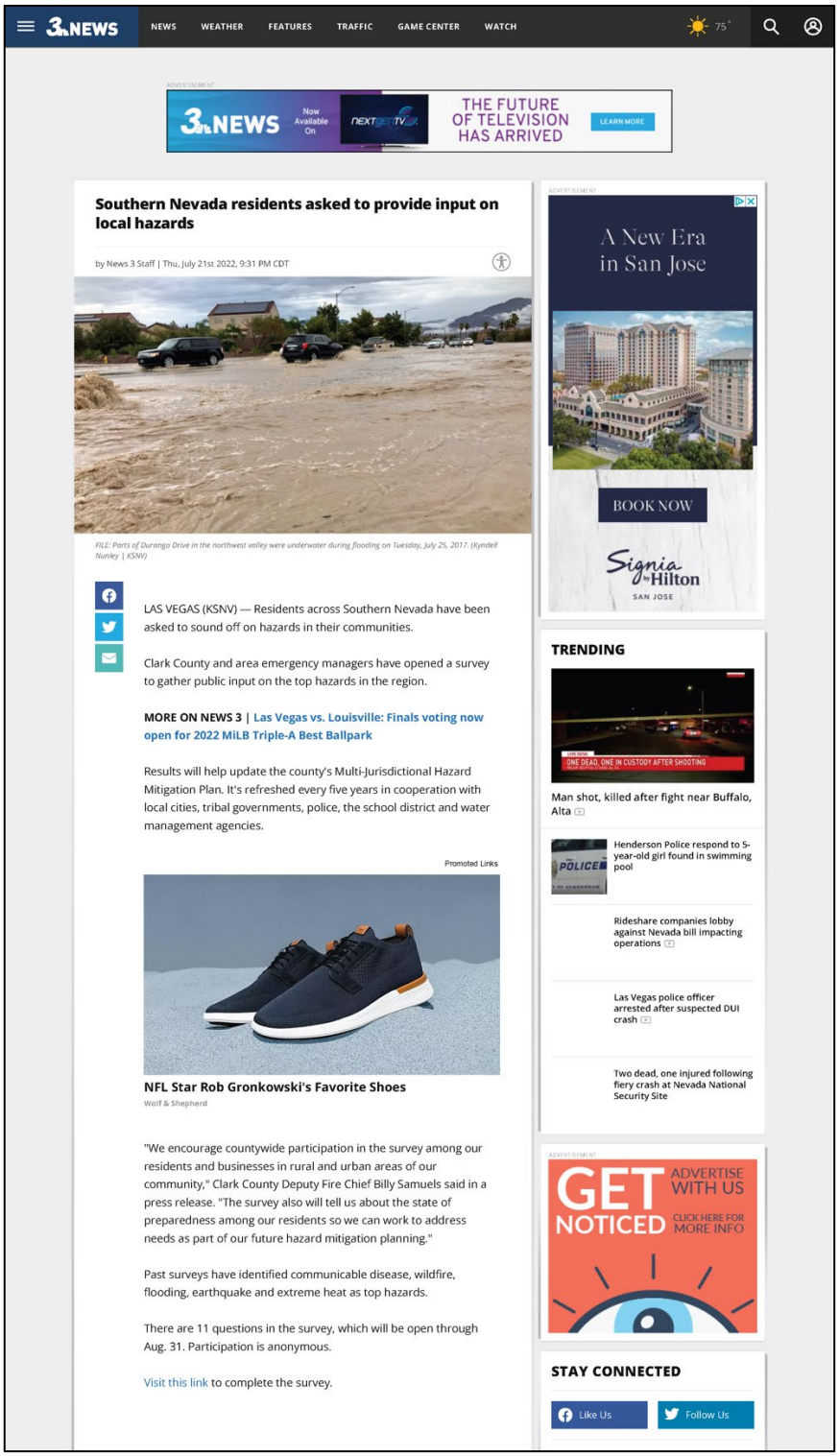
To take the survey and learn more, click on this link.

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News 3 Las Vegas: Online Article

https://news3lv.com/news/local/southern-nevada-residents-asked-to-provide-input-on-local-hazards-las-vegas-henderson-clark-county-ccsd-lvmpd-moapa-band-paiutes-government

(July 21, 2022)



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Southern Nevada residents asked to provide input on local hazards

by News 3 Staff | Thu, July 21st 2022, 9:31 PM CDT

FILE: Parts of Durango Drive in the northwest valley were underwater during flooding on Tuesday, July 25, 2017. (Kyndell Nunley | KSNV)

LAS VEGAS (KSNV) — Residents across Southern Nevada have been asked to sound off on hazards in their communities.

Clark County and area emergency managers have opened a survey to gather public input on the top hazards in the region.

MORE ON NEWS 3 | Las Vegas vs. Louisville: Finals voting now open for 2022 MiLB Triple-A Best Ballpark

Results will help update the county's Multi-Jurisdictional Hazard Mitigation Plan. It's refreshed every five years in cooperation with local cities, tribal governments, police, the school district and water management agencies.

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Wolf & Shepherd

"We encourage countywide participation in the survey among our residents and businesses in rural and urban areas of our community," Clark County Deputy Fire Chief Billy Samuels said in a press release. "The survey also will tell us about the state of preparedness among our residents so we can work to address needs as part of our future hazard mitigation planning."

Past surveys have identified communicable disease, wildfire, flooding, earthquake and extreme heat as top hazards.

There are 11 questions in the survey, which will be open through Aug. 31. Participation is anonymous.

Visit this link to complete the survey.

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Clark County
Multi-Jurisdictional Hazard Mitigation Plan Update
Community Survey Data Analysis

Clark County Multi-Jurisdictional Hazard Mitigation Plan Survey

To inform the update of the Clark County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), the county conducted an online survey measuring resident level of concern for various hazards, and the community's general level of preparedness. The online survey was conducted from July 11, 2022, through September 1, 2022. 803 Clark County residents replied to the survey, with a completion rate of 100%. This means that every person who accessed the survey submitted a completed form. On average, individuals filling out the survey spent approximately five minutes crafting answers.

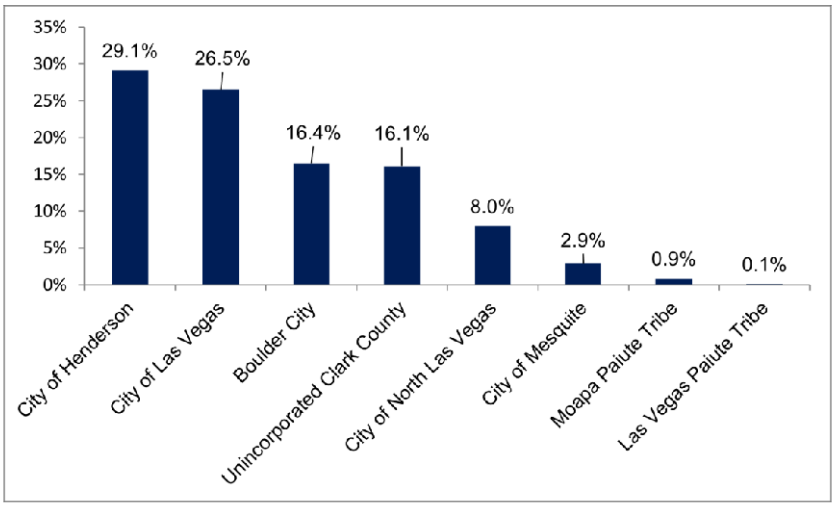
The Clark County MJHMP Community Survey asked 11 questions, both quantitative and qualitative. Each question asked respondents to detail their perspectives on the hazards that present themselves to their community. The hazards listed were based off of the hazard list from the 2018 Clark County MJHMP. Additional hazards added to the updated 2023 plan were not included in the survey.

Below are quantitative breakdowns for each question.

Question 1: Select the option that best describes where you live.

Of the 803 survey respondents, 29% (234 participants) were from the City of Henderson. 27% (213 participants) were residents of Las Vegas, and 16% (132 participants) were residents of Boulder City.

Figure 1

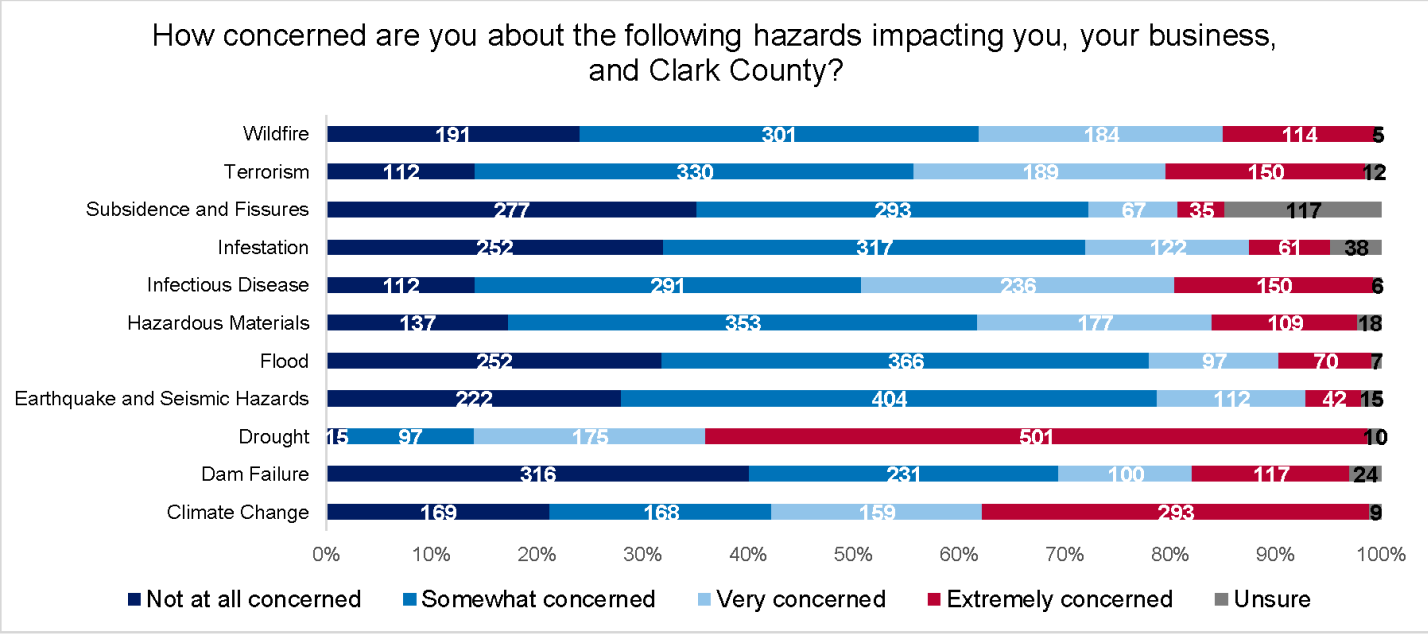


1

Question 2: Clark County residents and businesses may encounter a variety of hazards and/or disasters. How concerned are you about the following hazards impacting you, your business and Clark County? 1 (Not at all concerned), 2 (Somewhat concerned), 3 (Very concerned), or 4 (Extremely concerned)

Overall, respondents recognized drought (62%), climate change (36%), and infectious disease (18%) as hazards of extreme concern. Respondents were the least concerned about dam failure (40%), flood (31%), and earthquake and seismic hazards (27%).

Figure 2

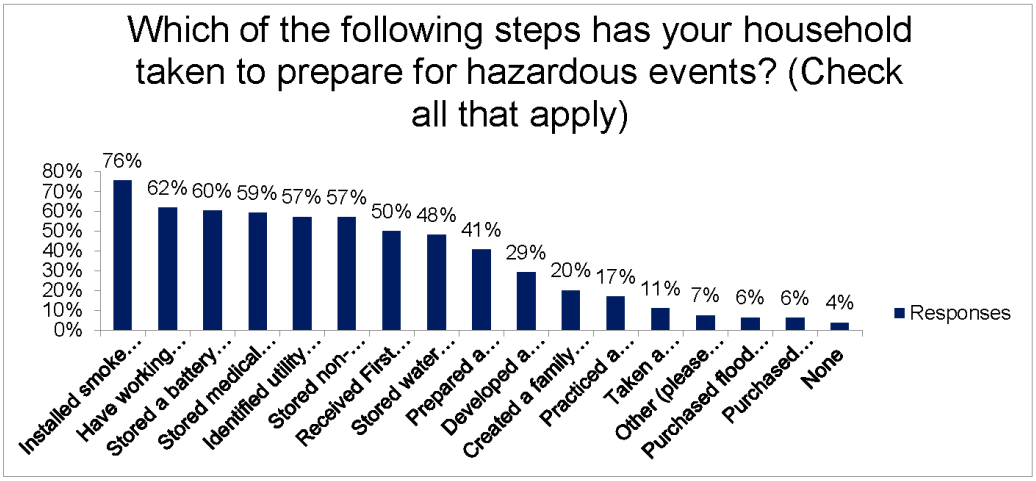


Question 3: Which of the following steps has your household taken to prepare for hazardous events?

Respondents were asked to indicate which actions their households have taken to prepare for hazardous events. These questions allow the county to recognize common strengths in preparedness among household jurisdictions and identify gaps they may need to address and add to response efforts during emergency response.

There were 16 options for respondents to choose from, ranging from steps taken by the household to preparing a disaster supply kit. The full list of categories can be seen in the corresponding table:

Figure 3



Out of the 803 respondents in total to the survey, two skipped this question for a total of 803 responses. The most common steps taken by households in the county included:

- Installed smoke and carbon monoxide detectors on each floor of your house — 605 respondents
- Have working portable fire extinguishers in appropriate areas of the home — 494 respondents
- Stored a battery powered radio, flashlights, and extra batteries — 482 respondents

The least commonly taken actions included:

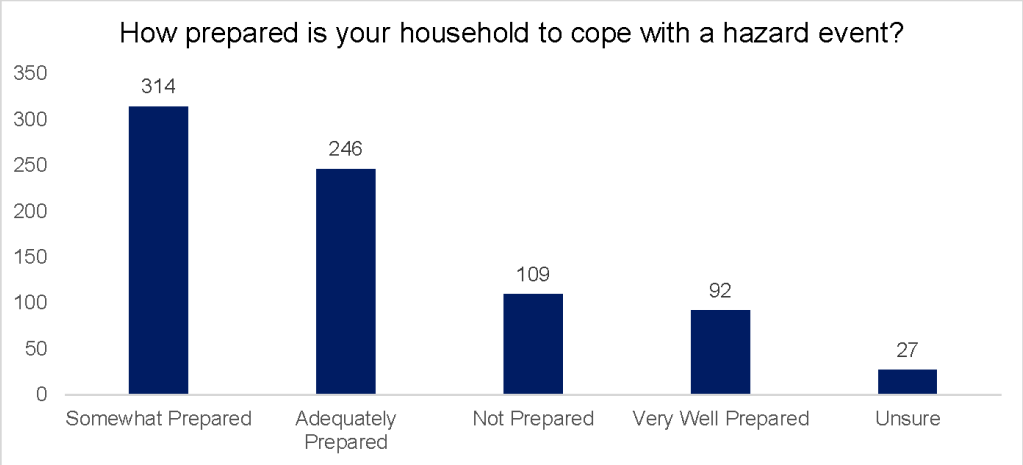
- None — 30 respondents
- Purchased earthquake insurance — 50 respondents
- Purchased flood insurance — 51 respondents

In addition to these actions, 400 respondents indicated that they had attended a first aid/CPR training and 88 indicated they had taken a local Community Emergency Response Team (CERT) class. This indicates that there is a large audience for community preparedness trainings in the county.

Question 4: How prepared is your household to cope with a hazard event?

Respondents were asked to rate their preparedness for their household if confronted with a hazardous event. They were asked to select one answer rating their current preparedness, ranging from very well prepared, adequately prepared, somewhat prepared, or not prepared at all, and unsure. Of the 803 respondents to the survey, 15 skipped this question for a total of 788 responses.

Figure 4

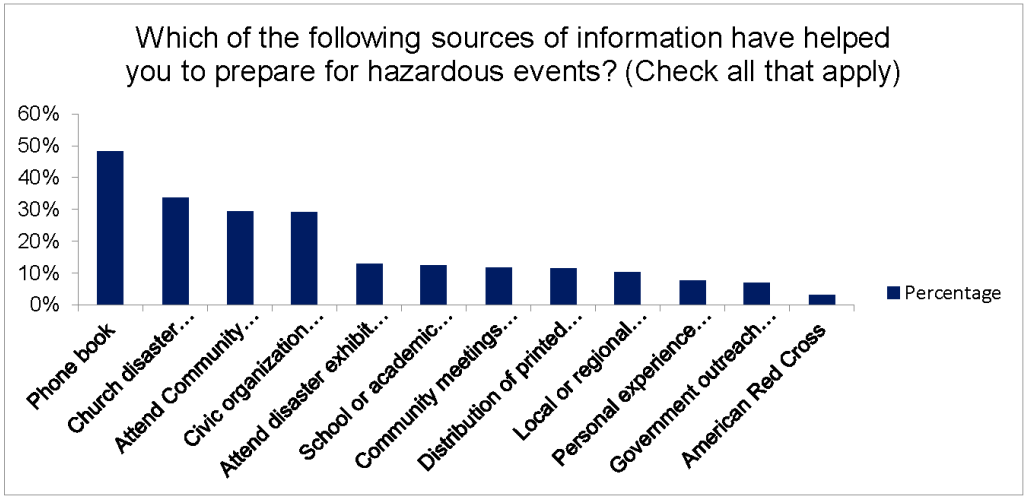


Overall, 314 respondents (40%) stated that they felt somewhat prepared to cope with a hazard event. 246 respondents (31%) stated they were adequately responded, which is the second to last level of preparedness. This may indicate that more training and resources regarding household preparedness may be needed to bring residents to satisfactory levels of preparedness. Only 92 respondents (11%) stated they were very well prepared, and 27 respondents (3%) said they were unsure.

Question 5: Which of the following sources of information have helped you to prepare for hazardous events? (Check all that apply)

This question assists the county and each participating jurisdiction in identifying strengths in community engagement as well as identifying gaps in increasing whole community preparedness and education surrounding hazardous events.

Figure 5



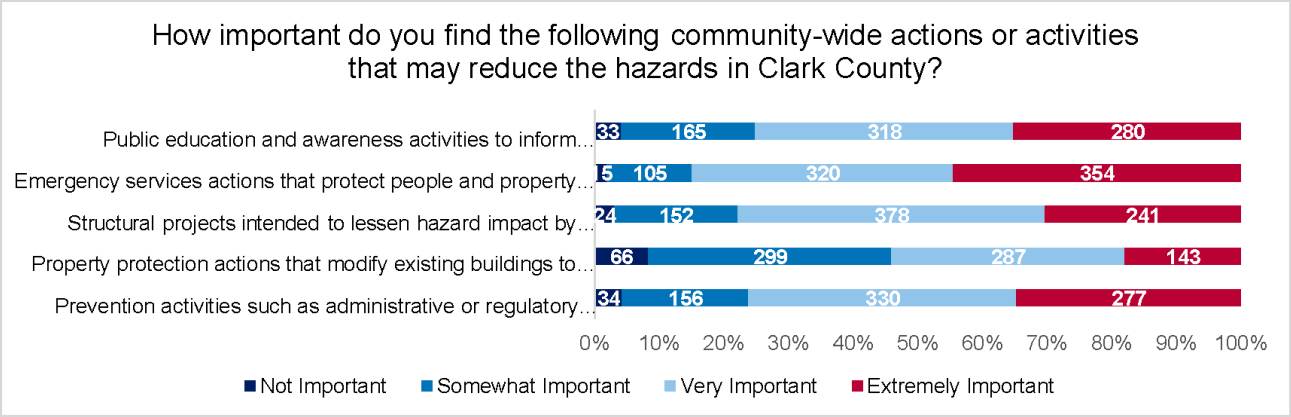
From the 656 respondents that answered this question, 316 respondents (48%) stated that they gathered information to prepare for hazardous events from personal experience with hazardous events. This category was followed by 220 respondents (33%) who stated they received their information from local or regional media sources.

193 respondents (29%) identified government outreach for emergency preparedness such as federal, state, or local websites and social media as their primary source of information for preparation. This was the third most popular selection choice, which indicates there may be increased engagement with county residents from local government sources such as websites and social media.

Question 6: How important do you find the following community-wide actions and activities to increase preparations and reduce the risks of hazards in Clark County?

This question asks respondents to identify the importance of community-wide actions and activities to increase preparedness and reduce the risks of hazards in Clark County. 798 respondents responded to this question.

Figure 6



354 respondents (44%) identified emergency services actions as extremely important. Additionally, 280 respondents (35%) identified public education and awareness activities as extremely important. 277 respondents (34%) identified prevention activities such as administrative or regulatory actions that influence the way land is built or developed as extremely important.

Question 7: Do you or anyone in your household have disabilities and/or access and functional needs and would you be interested in early warning notifications or specialized response to evacuate during disasters?

This question allows the county a top-level look at the needs of their community to recognize areas where access and functional needs may surface during a hazards event response.

Of the 797 respondents to this question, 217 individuals indicated yes, that they do have additional access and functional needs and would be interested in early warning notifications or specialized response to evacuate during disasters.

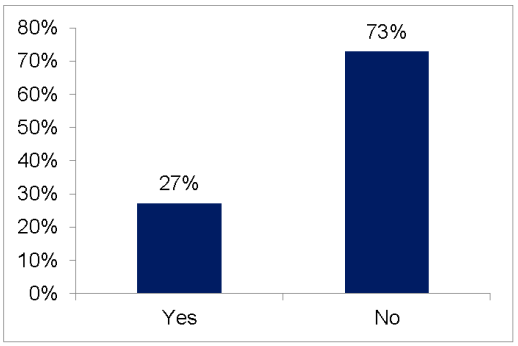


Figure 7

Question 8: If you answered yes to Question 7, do you have a certified service animal that you would be interested in evacuating with you or a household member to a shelter during a disaster?

Of the respondents that answered Question 7, 53 of respondents indicated that they do have a certified service animal that may evacuate with their household to a shelter during a disaster response.

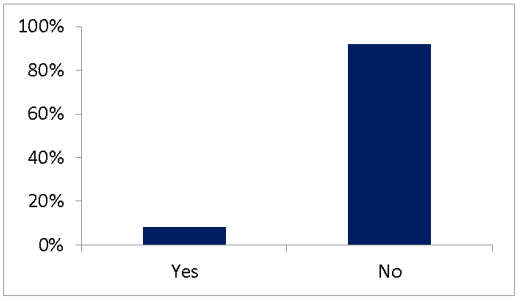


Figure 8

Question 9: If you answered yes to Question 7, would you be interested in more information about Disaster Assistance for people with disabilities and/or access and functional needs?

Of the respondents that answered Question 7, 165 respondents indicated that they would be interested in more information about Disaster Assistance for people with disabilities and/or access and functional needs.

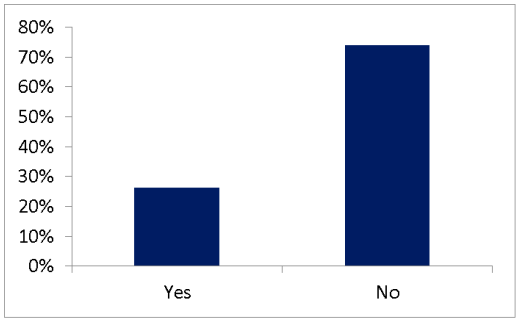


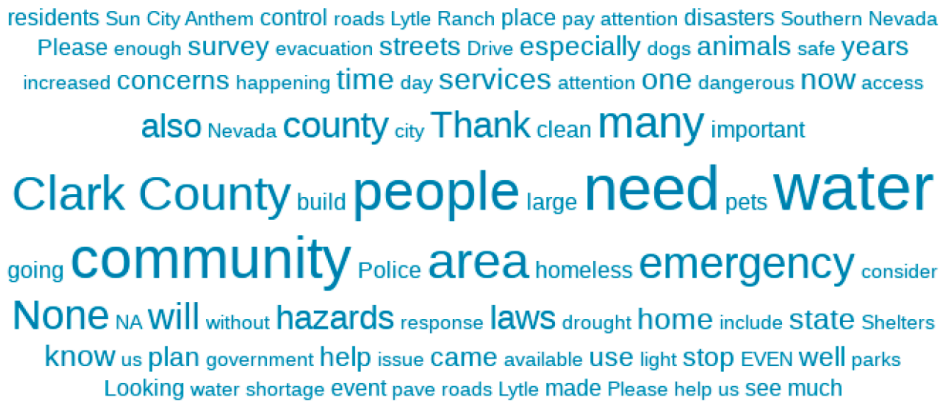
Figure 9

Question 11: Do you have any other comments, questions, or concerns?

The final question of the survey provided a short-answer option for participants to leave any short text form questions, comments, or feedback regarding the MJHMP update effort. The following word cloud captures some common phrases and terms pulled from feedback.

Overall, it's important to note that most open-ended responses were not relevant to the hazard mitigation planning process. However, some respondents pointed to the need for climate hazards to be considered in the plan, increased community outreach to individuals aged older than 65 years, and concerns regarding water scarcity in Southern Nevada.

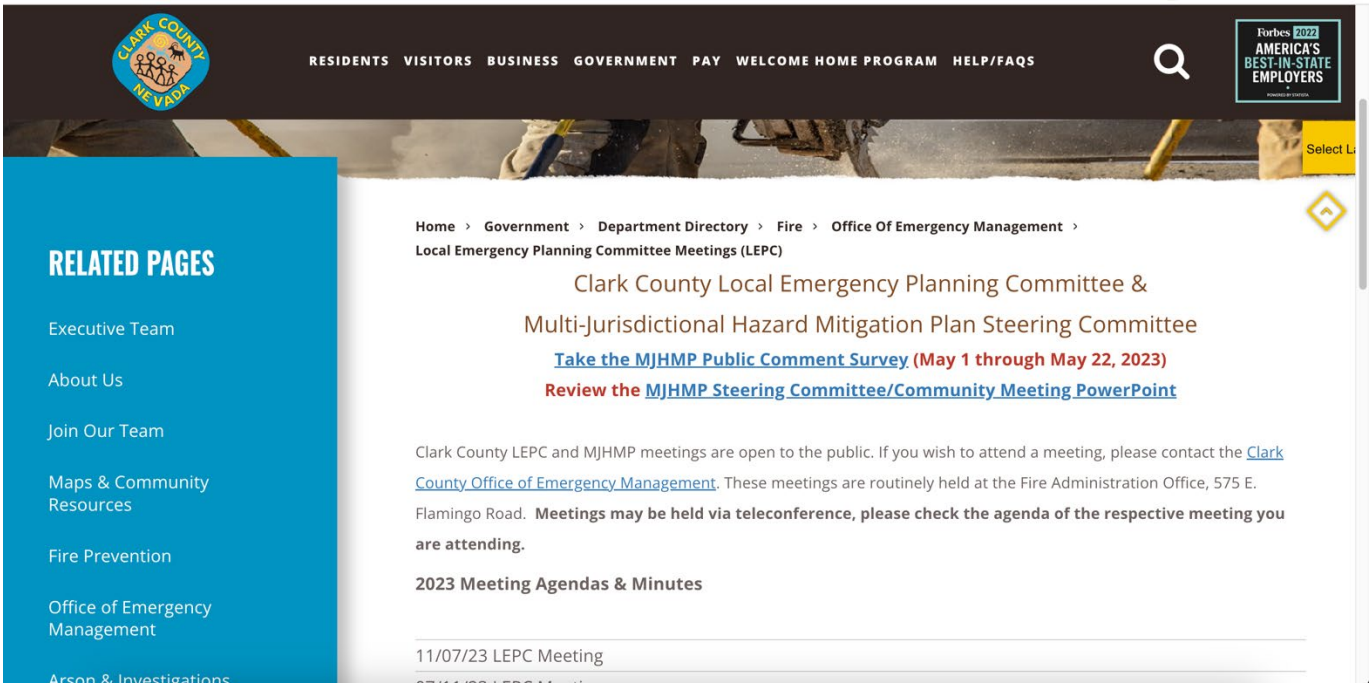
Figure 11

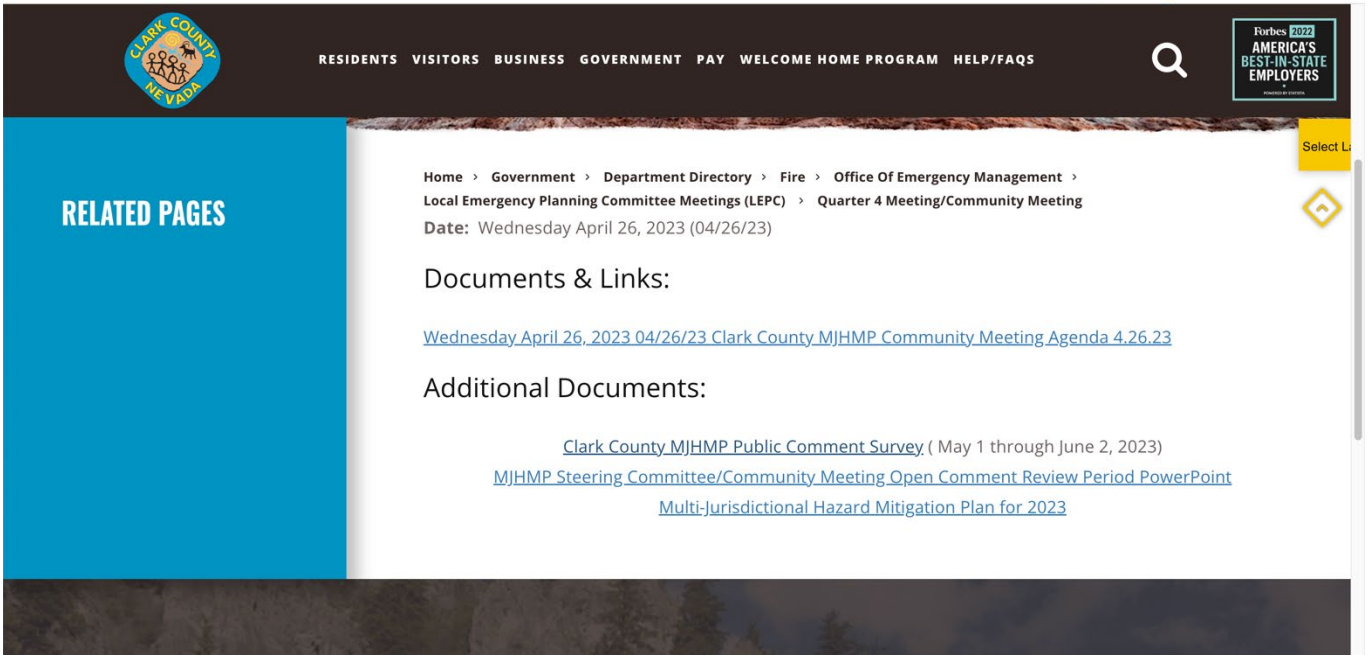


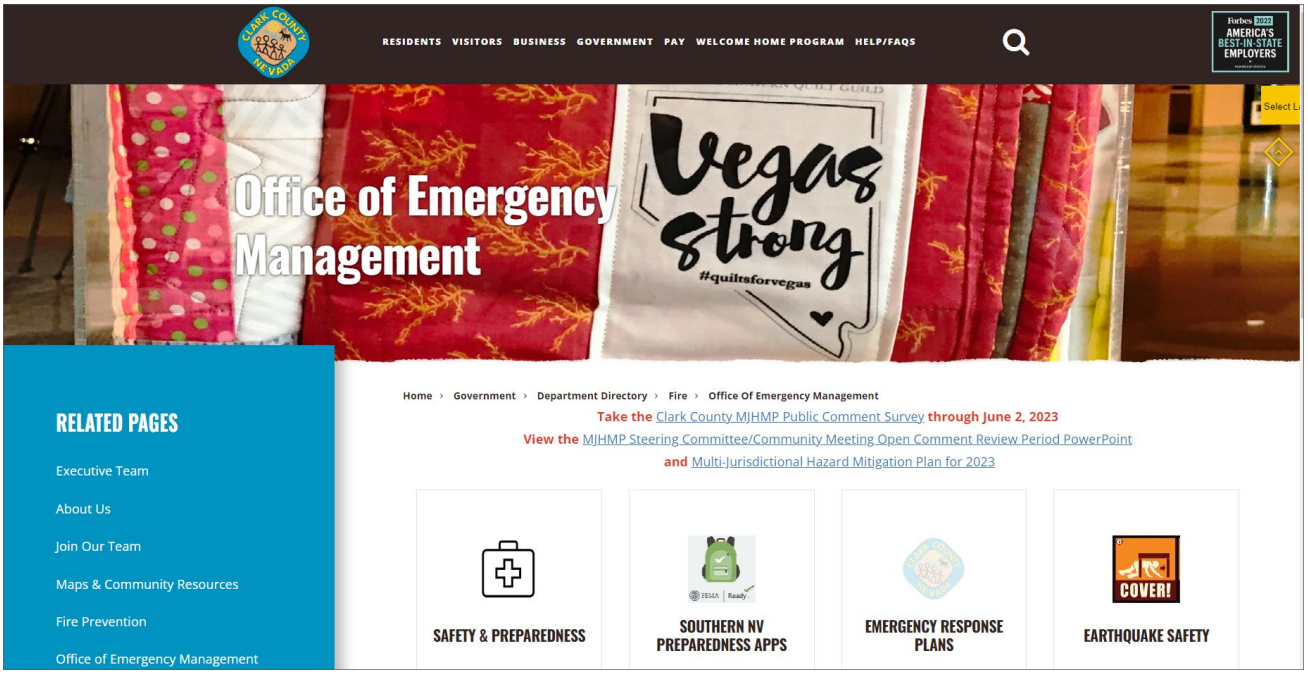
Public Review Period – May 1-21, 2023 (Extended to June 2, 2023)

Public Outreach Survey – Posting on Clark County Website for Review and Feedback

https://www.clarkcountynv.gov/agenda_detail_T43_R3677.php



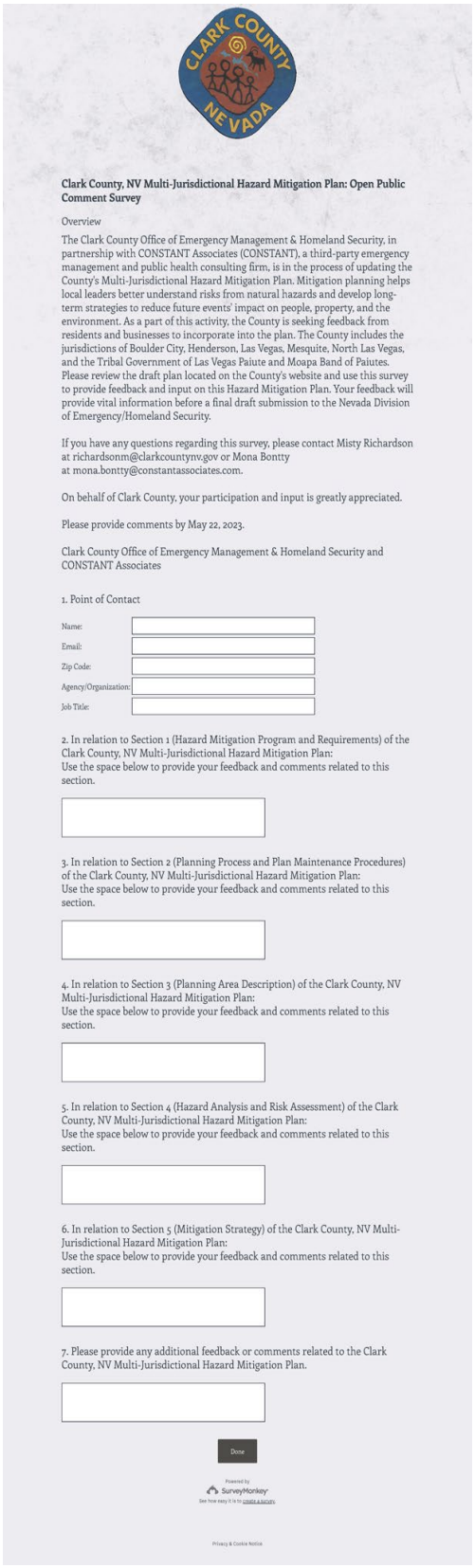




Public Outreach Survey – Survey Monkey

https://www.surveymonkey.com/r/ClarkCountyMJHMP23

(April 2023)



Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan: Open Public Comment Survey

Overview

The Clark County Office of Emergency Management & Homeland Security, in partnership with CONSTANT Associates (CONSTANT), a third-party emergency management and public health consulting firm, is in the process of updating the County's Multi-Jurisdictional Hazard Mitigation Plan. Mitigation planning helps local leaders better understand risks from natural hazards and develop long-term strategies to reduce future events' impact on people, property, and the environment. As a part of this activity, the County is seeking feedback from residents and businesses to incorporate into the plan. The County includes the jurisdictions of Boulder City, Henderson, Las Vegas, Mesquite, North Las Vegas, and the Tribal Government of Las Vegas Paiute and Moapa Band of Paiutes. Please review the draft plan located on the County's website and use this survey to provide feedback and input on this Hazard Mitigation Plan. Your feedback will provide vital information before a final draft submission to the Nevada Division of Emergency/Homeland Security.

If you have any questions regarding this survey, please contact Misty Richardson at richardsonm@clarkcountynv.gov or Mona Bontty at mona.bontty@constantassociates.com.

On behalf of Clark County, your participation and input is greatly appreciated.

Please provide comments by May 22, 2023.

Clark County Office of Emergency Management & Homeland Security and CONSTANT Associates

1. Point of Contact

Name:
Email:
Zip Code:
Agency/Organization:
Job Title:

2. In relation to Section 1 (Hazard Mitigation Program and Requirements) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:
Use the space below to provide your feedback and comments related to this section.

3. In relation to Section 2 (Planning Process and Plan Maintenance Procedures) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:
Use the space below to provide your feedback and comments related to this section.

4. In relation to Section 3 (Planning Area Description) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:
Use the space below to provide your feedback and comments related to this section.

5. In relation to Section 4 (Hazard Analysis and Risk Assessment) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:
Use the space below to provide your feedback and comments related to this section.

6. In relation to Section 5 (Mitigation Strategy) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:
Use the space below to provide your feedback and comments related to this section.

7. Please provide any additional feedback or comments related to the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan.

Done

Powered by SurveyMonkey
See how easy it is to create a survey.

Privacy & Cookie Notice

Consultant: Public Review Period Press Release

[Date]

Public Notice

Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) Update

Public Comment Period

The Cities of Boulder City, Henderson, Las Vegas, North Las Vegas, and Mesquite. Tribal Nations of Las Vegas Paiute and Moapa Band of Paiute are partnering with the Clark County Water Reclamation District, Southern Nevada Health District, and Clark County School District to update the Clark County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). The Plan assesses risks posed by natural and human-caused hazards and develops current mitigating actions for reducing risk to Clark County.

Individuals who live, work, traverse, or frequent Clark County are invited to participate in the public comment period to provide valuable input on the likelihood of disasters occurring and the measures proposed to avoid or reduce short and long-term impacts. The Plan update is part of an ongoing process, required every five years, to evaluate hazards to local communities and set forth a risk reduction framework that is reviewed by the State of Nevada, approved by the Federal Emergency Management Agency (FEMA), and adopted by participating jurisdictions.

Requirements

The Disaster Mitigation Act of 2000 requires all states and local governments to have a Hazard Mitigation Plan to be eligible to apply for certain types of federal hazard mitigation project grant funding. These plans must be implemented on an ongoing basis and updated every five years to ensure they remain current and representative of local risks and locally preferred reduction strategies. Clark County's plan was last completed in 2018 and is available at: 2018_Clark_Co_Multi-Jurisdictional_HMP.pdf (nv.gov)

Open Comment Review Period, May 1-21, 2023

As a key part of the planning process, Clark County is seeking feedback from stakeholders and the public to incorporate into the plan. Each participating jurisdiction in Clark County has its own section within the overall Clark County MJHMP. Public input is a critical part of the process, so community members and residents are highly encouraged to participate, provide comments, and ask questions. A public comment period will be open May 1, 2023, through May 21, 2023.

A draft plan and public comment survey will be posted on the Clark County Website. Public comments and feedback are encouraged and submitted online here:

For More Information

For more information contact Clark County representative, Misty Richardson at richardsonm@clarkcountynv.gov or CONSTANT Representative, Mona Bontty at mona.bontty@constantassociate.com.

[Date]

PRESS RELEASE

Clark County. NV Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) Update Open Comment Period

Press Release

The Clark County Office of Emergency Management & Homeland Security, in partnership with CONSTANT Associates (CONSTANT), a third-party emergency management and public health consulting firm, is in the process of updating the County's Multi-Jurisdictional Hazard Mitigation Plan Update). Mitigation planning helps local leaders better understand risks from natural hazards and develop long-term strategies to reduce future events' impact on people, property, and the environment.

According to FEMA, the planning process itself is an as important as the resulting plan because it encourages communities like Clark County and its participating jurisdictions (Cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, Nevada and the Tribal Communities of Las Vegas Paiute Tribe and Moapa Band of Paiute) to integrate mitigation with day-to-day decision-making regarding land use, floodplain management, site design, code enforcement, and other functions.

As a key part of the project, Clark County is seeking feedback from stakeholders and the public to incorporate into the MJHMP plan update. A public comment period will be open May 1, 2023, through May 21, 2023. Comments may be submitted online at (insert open comment survey link here).

For More Information

For more information contact Clark County representative, Misty Richardson at richardsonm@clarkcountynv.gov or CONSTANT Representative, Mona Bontty at mona.bontty@constantassociate.com.

Consultant: Public Review Period Flyer for Distribution





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As a key part of the project, Clark County is seeking feedback from stakeholders and the public to incorporate into the plan. A draft plan will be posted on the Clark County LEPC Website.

A public comment period will be open May 1, 2023, through May 21, 2023. Comments may be submitted online at https://www.clarkcountynv.gov/agenda_detail_T43_R3677.php.

For More information

For more information about the MJHMP Open Comment Period, contact Clark County representative, Misty Richardson at richardsonm@clarkcountynv.gov or CONSTANT Representative, Mona Bontty at mona.bontty@constantassociates.com.

Consultant: Public Review Period Social Media Flyer for Distribution



County: Offical Press Release (May 18, 2023)

County Commission:
James B. Gibson, Chairman
Justin Jones
Marilyn Kirkpatrick
William McCurdy II
Ross Miller
Michael Naft
Tick Segerblom

Kevin Schiller, County Manager

Office of Communications & Strategy • (702) 455-3546 • FAX (702) 455-3558 • www.ClarkCountyNV.gov

Contact: Stephanie Wheatley
Public Information Officer
Phone: (702) 455-3569
E-mail: Stephanie.Wheatley@ClarkCountyNV.gov

For Immediate Release

Thursday, May 18, 2022

Emergency Managers Seek Final Public Input on Local Hazards

Clark County and area emergency managers are asking community members to participate in a survey **through May 22** to gather final public input on the top hazards Southern Nevada faces and to support community resiliency. The seven-question, anonymous survey is part of a joint effort to update the County's Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). It's available here: https://www.surveymonkey.com/r/2XZ2BL8.

The County's Hazard Mitigation Plan is updated every five years in cooperation with the cities of Boulder City, Henderson, Las Vegas, North Las Vegas, Mesquite, the Las Vegas Band of Paiutes, the Moapa Band of Paiutes, the Clark County School District (CCSD), the Clark County Water Reclamation District (CCWRD), Las Vegas Metropolitan Police Department and the Las Vegas Valley Water District. It's an opportunity to re-assess risks posed by natural, technological, and human-caused disasters and identify ways to mitigate those risks. The draft of the 2023 MJHMP is posted here: https://tinyurl.com/mtjhjsta.

"We hope all residents, in rural and urban areas, take part in this final public survey for our community," said Clark County Deputy Fire Chief Billy Samuels, who oversees the Fire Department's Office of Emergency Management. "The feedback is crucial to better our preparedness when it comes to hazard mitigation planning."

The top hazards identified during past updates have been communicable disease, wildfire, flooding, earthquake and extreme heat. Power outages also can be sporadic concerns. Through the survey, Southern Nevadans can share which hazards they believe have the greatest impact on the community. The goal is to ensure that those who may be disproportionately affected by disasters are accounted for in the updated plan.

The Federal Disaster Mitigation Act of 2000 requires Hazard Mitigation Plan updates for communities to remain eligible to continue to receive certain forms of non-emergency disaster assistance. Requirements for the updates also are set by the State of Nevada and the Federal Emergency Management Agency (FEMA). The County's existing 2018 MJHMP can be found on the Fire Department's Office of Emergency Management website pages at https://tinyurl.com/5n69k2f5.

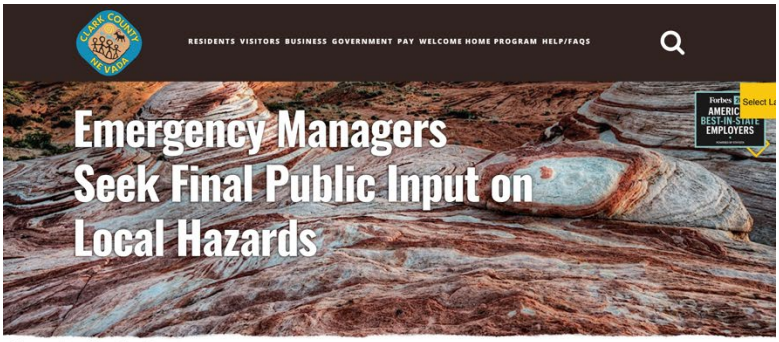
###

Clark County is a dynamic and innovative organization dedicated to providing top-quality service with integrity, respect and accountability. With jurisdiction over the world-famous Las Vegas Strip and covering an area the size of New Jersey, Clark is the nation's 11th-largest county and provides extensive regional services to 2.3 million citizens and 45.6 million visitors a year (2019). Included are the nation's 8th-busiest airport, air quality compliance, social services and the state's largest public hospital, University Medical Center. The County also provides municipal services that are traditionally provided by cities to 1 million residents in the unincorporated area. Those include fire protection, roads and other public works, parks and recreation, and planning and development.

Clark County news releases may be found at www.ClarkCountyNV.gov.
You may also follow the County on more than 40 social media sites, including
Facebook, Twitter, Instagram, LinkedIn, NextDoor, Pinterest and **YouTube.**

County: Website

Link: https://www.clarkcountynv.gov/news_detail_T28_R902.php



Home › News List › News Post

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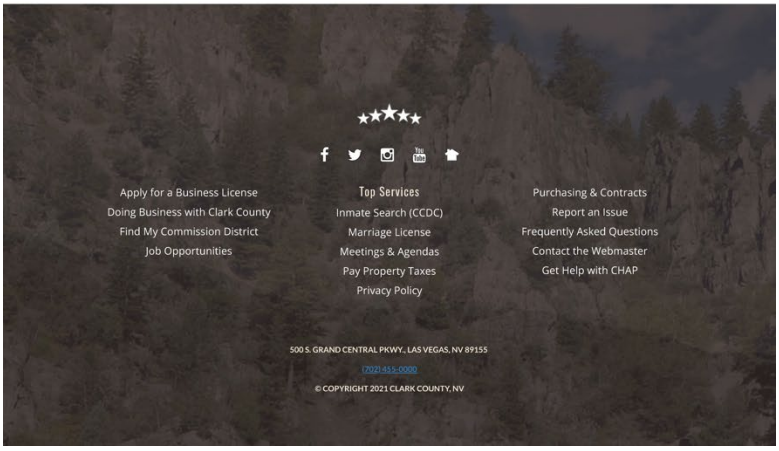
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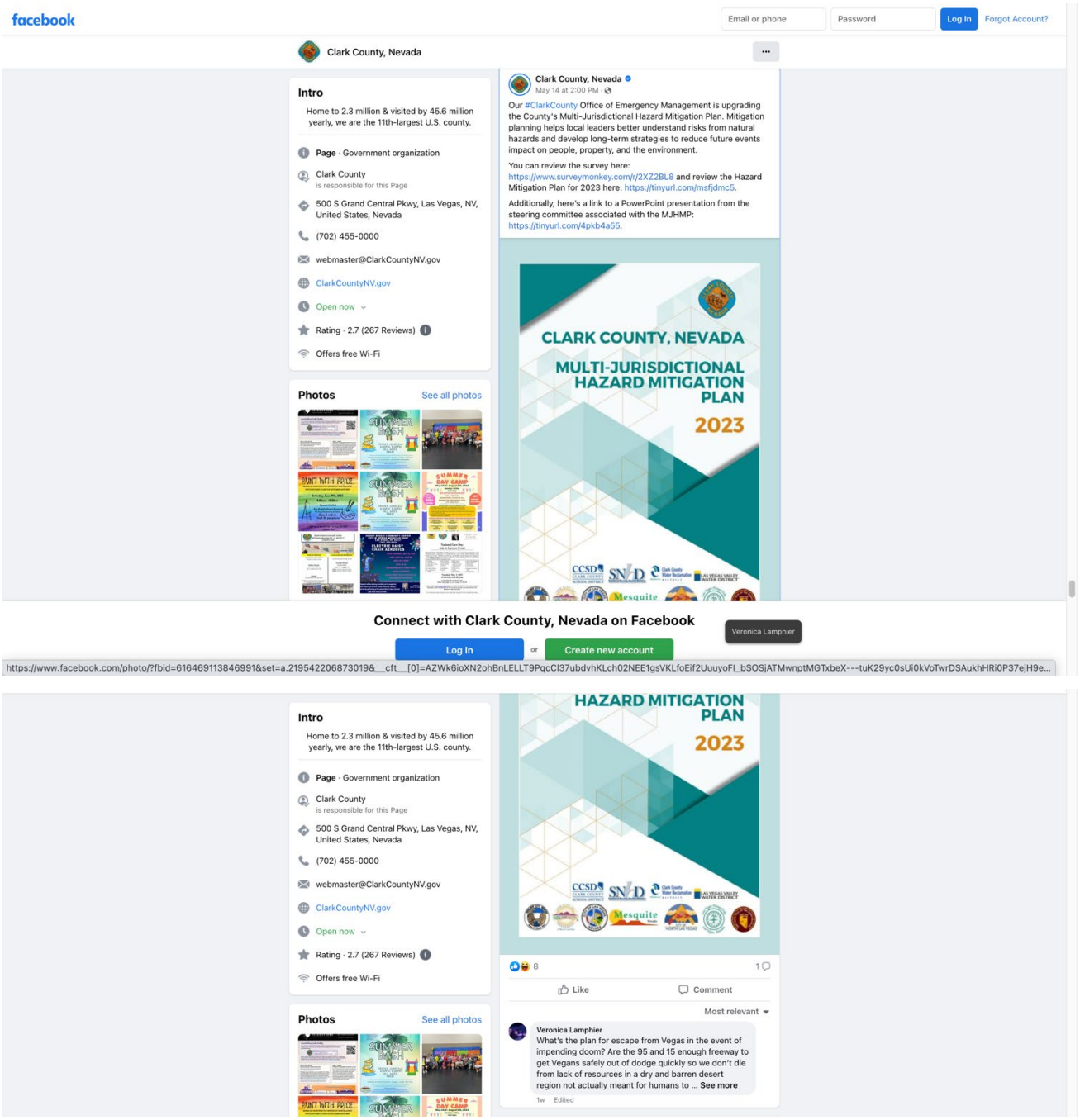
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County: Facebook (May 14, 2023)



County: Twitter:

Link: https://twitter.com/ClarkCountyNV



Twitter - Clark County Commissioner

Link: https://twitter.com/CommishJGibson/status/1656468675359277056?s=20



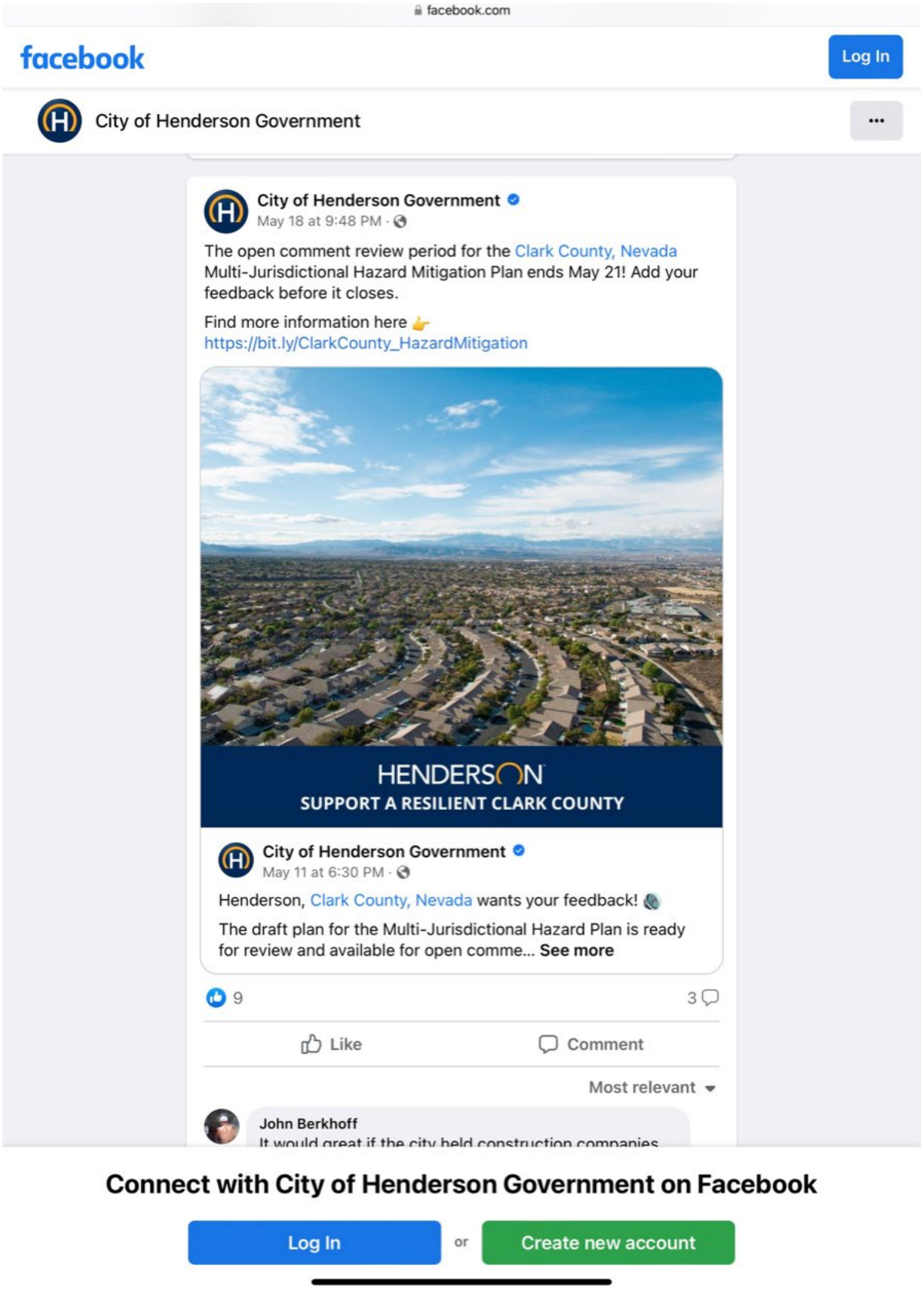
Henderson

Henderson: Website

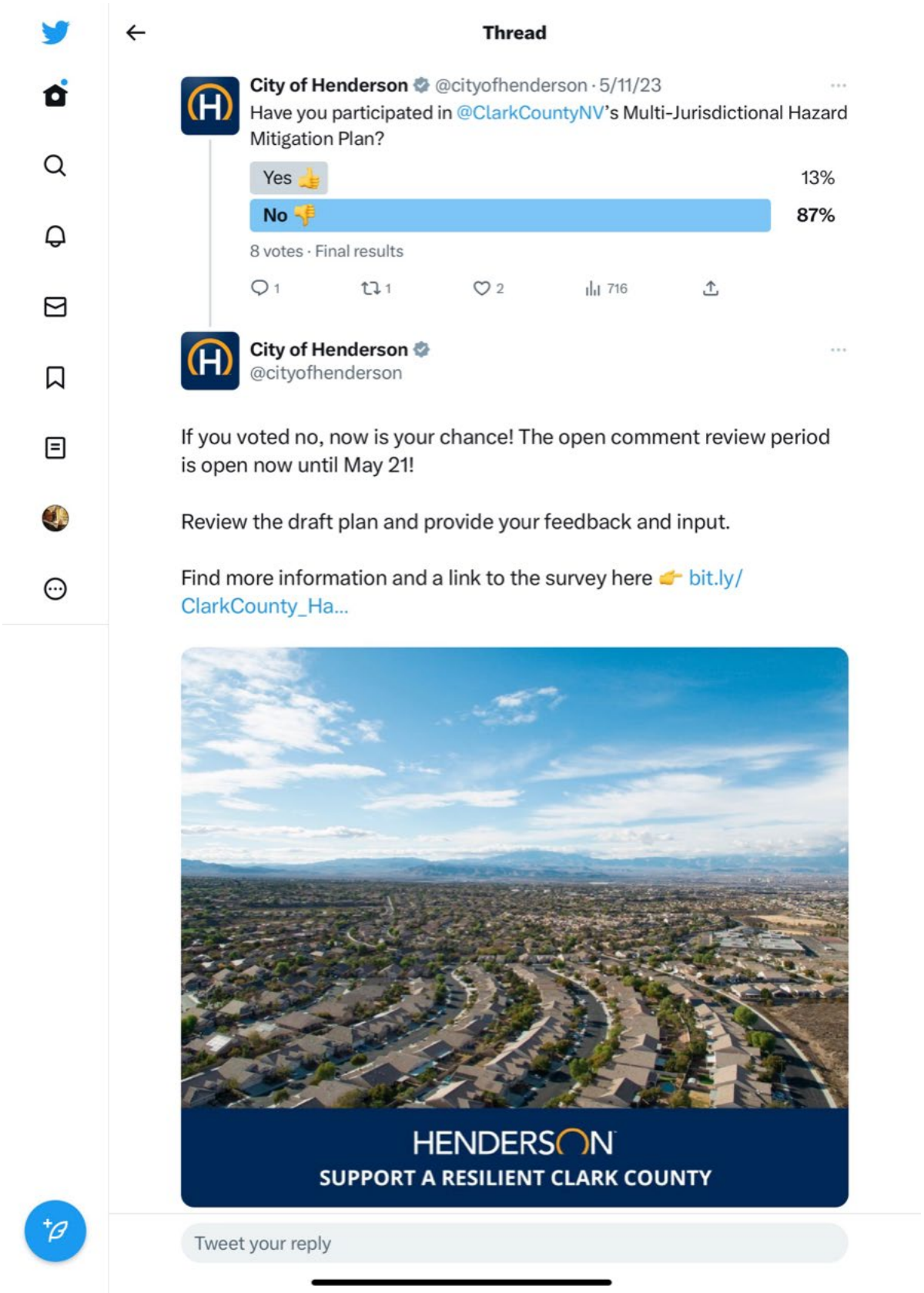
Link: https://www.cityofhenderson.com/government/departments/emergency-management/hazard-mitigation



Henderson: Facebook (May 18, 2023)

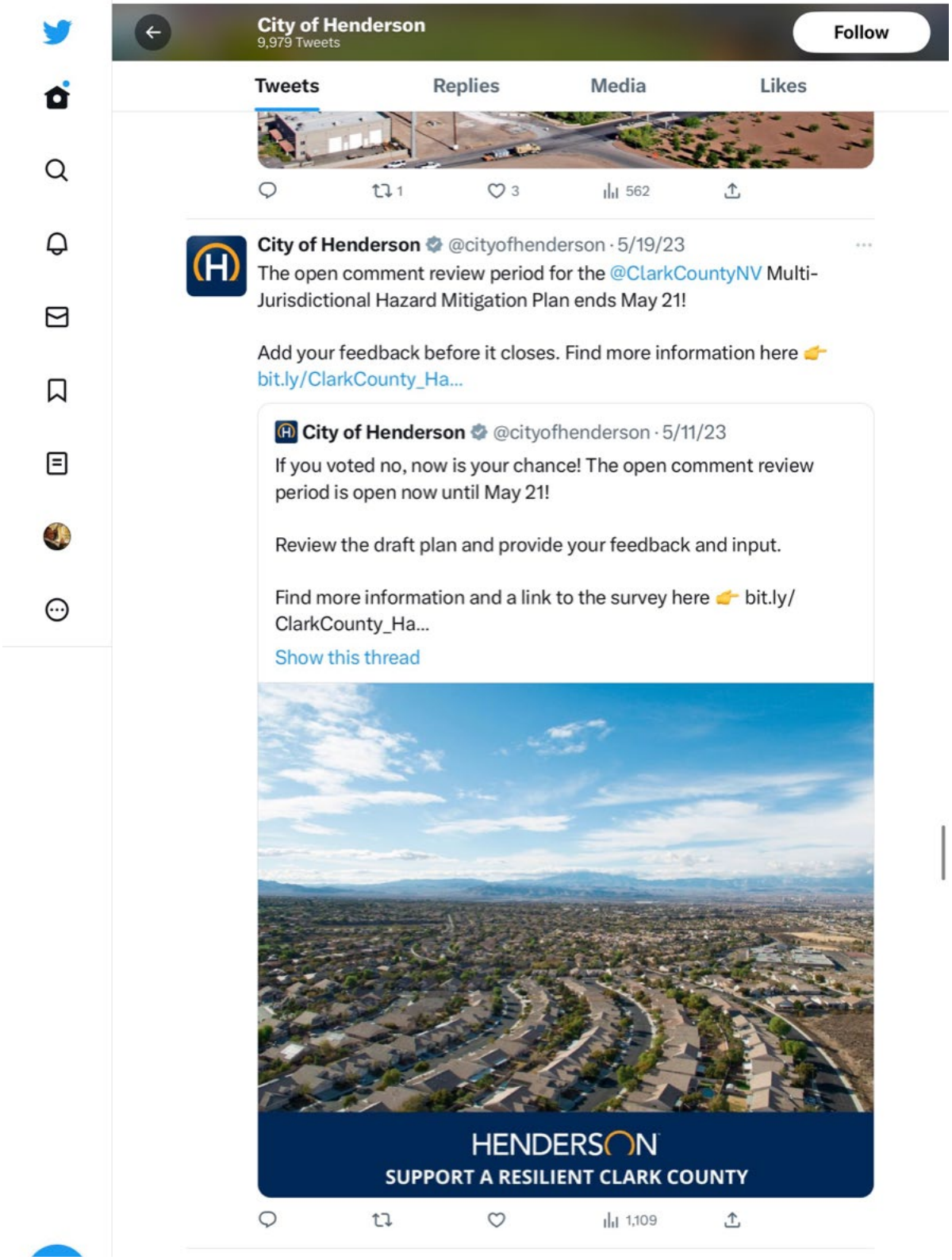


Henderson: Twitter (May 11, 2023)



Henderson: Twitter (May 19, 2023)

Link: https://twitter.com/cityofhenderson/status/1659545528831733761?s=20



Henderson: Vulnerable Population Outreach

Friday, May 26, 2023 at 15:40:41 Central Daylight Time

Subject: RE: e- introduction
Date: Tuesday, May 23, 2023 at 5:01:04 PM Central Daylight Time
From: Hayley Jarolimek
To: Josie Ross
CC: Emily Long, Stacy DiNicola
Attachments: image001.png

Thank you for the introduction, Jamie. I've copied Stacy DiNicola so that she and Emily can connect. Stacy is assigned various activities related to people experiencing homelessness and will be a good resource for Emily.

Stacy's phone number is 267-2031.

I hop you all have a great day.

From: Josie Ross <Josie.Ross@cityofhenderson.com>
Sent: Tuesday, May 23, 2023 1:59 PM
To: Hayley Jarolimek <Hayley.Jarolimek@cityofhenderson.com>
Cc: Emily Long <emily.long@constantassociates.com>
Subject: e- introduction

Good Afternoon,

This is an E-introduction; I feel so lucky to work with both of you.

Hayley works in Community Development, and is much more in tune with the vulnerable populations and homeless outreach aspect of the City. She also has the contacts you're looking for.

Emily is our amazing contractor that is putting together the update to the Clark County Multijurisdictional Hazard Mitigation Plan. She has done a fantastic job. She has a few questions about homeless outreach and vulnerable populations. While that does fall in my "EM bucket", it's in limited scope. I run the cooling shelter coordination and trigger points for those groups, monitor status during flood season and coordinate with PD and Fire, but at a 30,000 foot view. For the initial public comment period in September, we shared the plan on our website and social, advertised in our rec centers, cooling shelters and senior shelters, and worked with our 55+ HOAs to distribute the plan for review. I'll reach out to marketing to see if they can provide documentation for all of that. We also had tables at the Farmer's markets, which draw a large crowd of seniors.

I hope this introduction and background is helpful, and if either of you need anything, please don't hesitate to reach out. Thank you both so much for the work you do.

Josie Ross
Emergency Management Officer

HENDERSON

City of Henderson
Emergency Management

Page 1 of 2

Las Vegas

Las Vegas: Twitter (May 17, 2023)

Link: https://twitter.com/CLVAlerts/status/1658879456495423488?s=20



North Las Vegas

North Las Vegas: Mayor Newsletter

This bulletin was sent to the following groups of people:

Subscribers of Mayor Pamela Goynes-Brown (2082 recipients)



Hello Residents,

May flowers are finally here and I am excited for the warm weather activities the City of North Las Vegas has planned for our residents from youth camps, sports, community barbeques and much more!

Our City departments have been working diligently to prepare for the busy season ahead of us to make it the most memorable season yet! I hope you can join us at one of our many events this month whether it's to play or improve our community.

Yours in service,
Mayor Pamela Goynes-Brown

News From Your Mayor

NLVFD Annual Awards!

The City of North Las Vegas Fire Department recognized first responders for their exceptional efforts during the past year at its annual awards ceremony last month at the North Las Vegas City Hall. Commendations were awarded to North Las Vegas firefighters as well as Clark County firefighters and North Las Vegas police officers and dispatchers who performed life-saving actions during emergencies.

This annual award ceremony is a small way to recognize the huge impact and accomplishments of the City of North Las Vegas first responders within our communities. Thank you to each and every one of you!

Volunteer with the City of North Las Vegas
The City of North Las Vegas is excited to provide the community an easy way to volunteer with the City of North Las Vegas and give back to their community!

The public can register at the new volunteer website - https://www.volunteerniv.com/ - peruse upcoming opportunities and sign up online!

Whether you're looking for an opportunity for yourself, something you can do with your children, completing a student service learning requirement, or want to get your work team out together helping others, we would love your time, skills and knowledge.

To volunteer for this event or check out the list of current opportunities, just click here.



Events and Happenings





North Las Vegas: Facebook

Link: https://www.facebook.com/CityofNorthLasVegas/



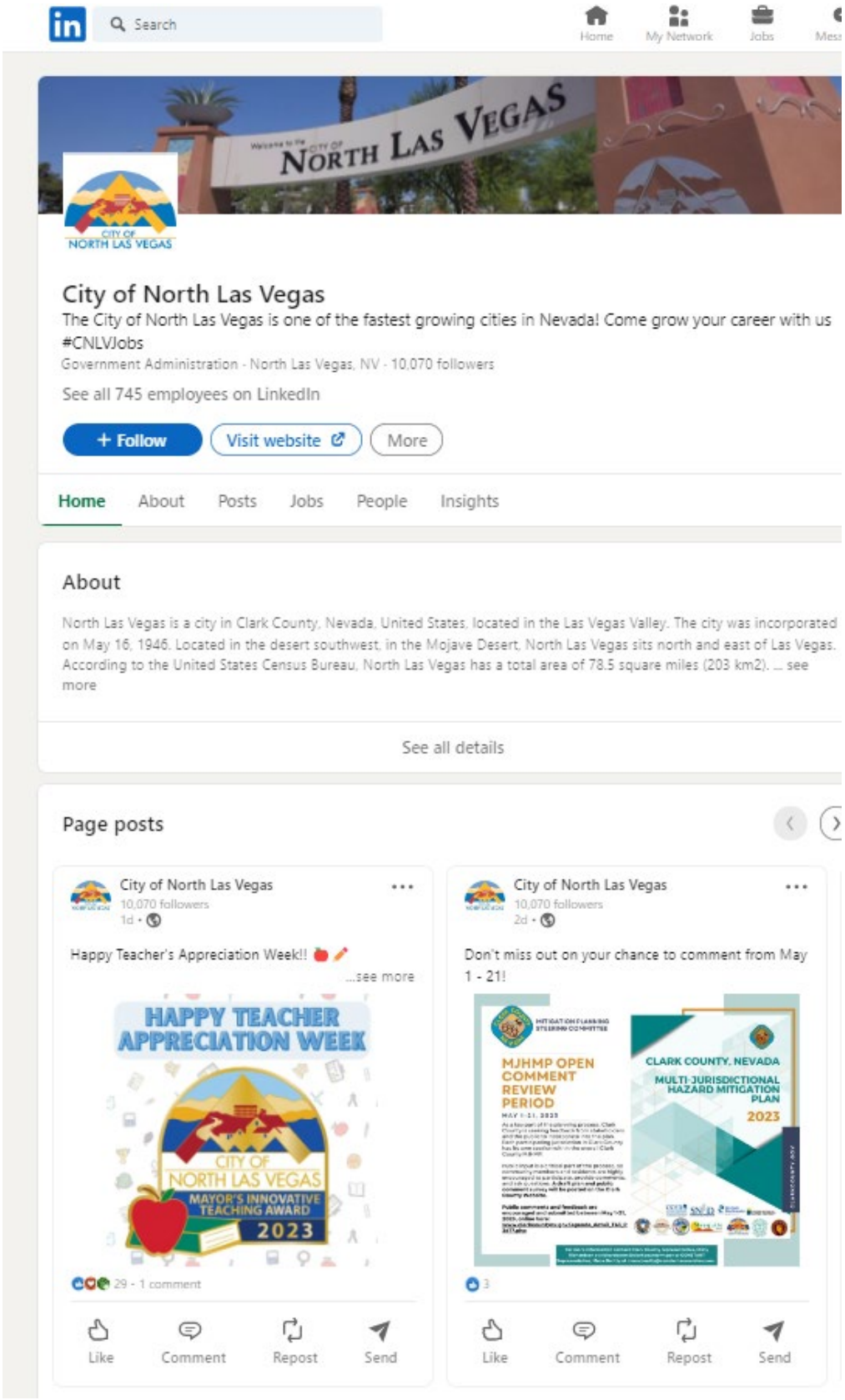
North Las Vegas: Twitter

Link: https://twitter.com/cnlv/with_replies



North Las Vegas: LinkedIn

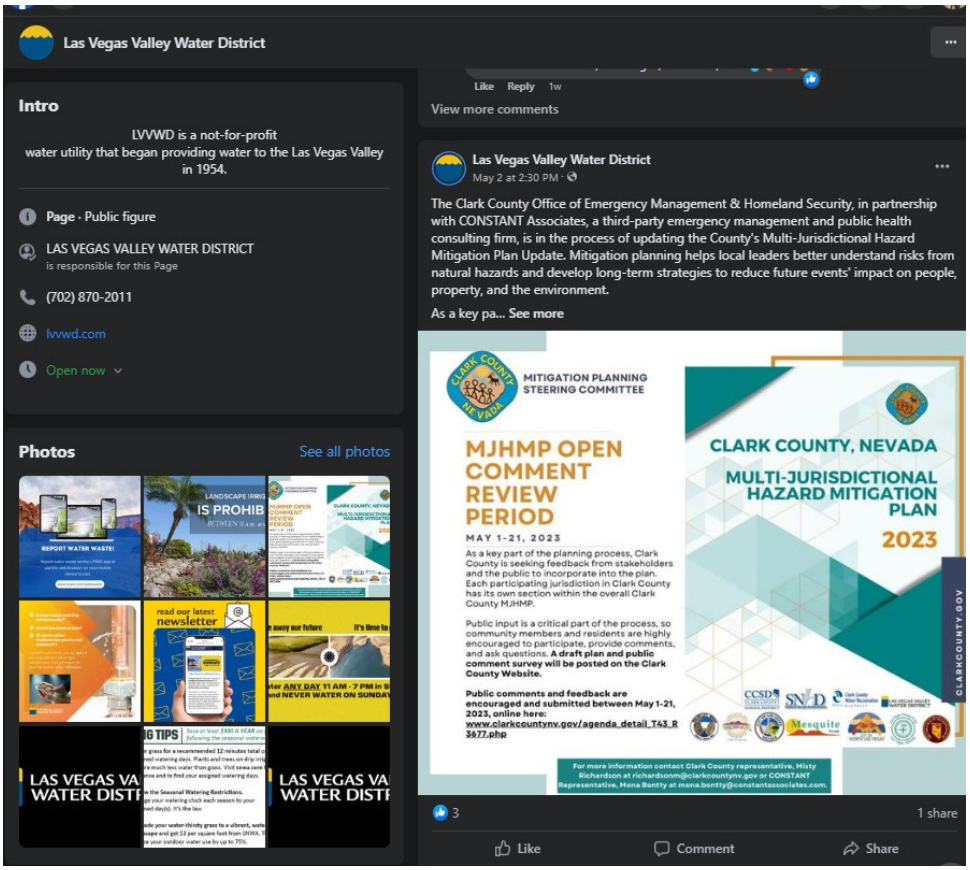
Link: https://www.linkedin.com/company/city-of-north-las-vegas/



Las Vegas Valley Water District

Las Vegas Valley Water District: Facebook

Link: https://www.facebook.com/lvvwd



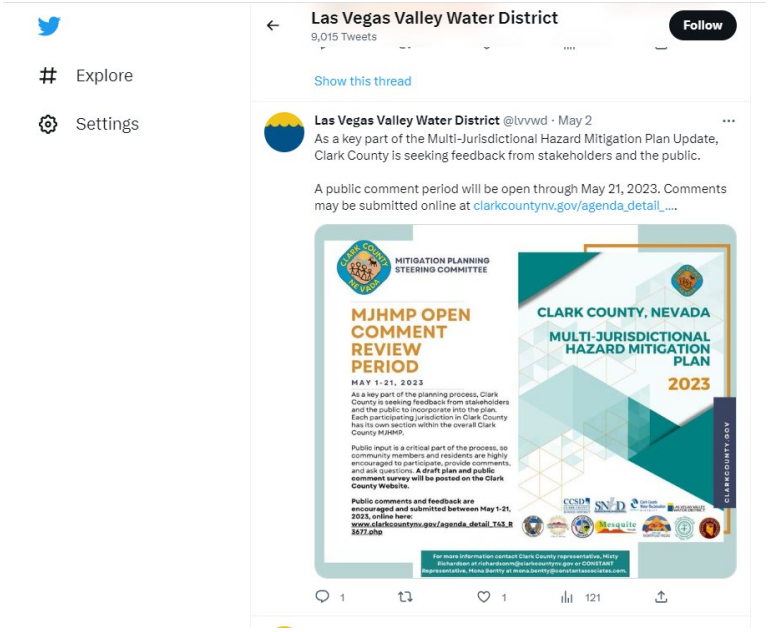
Las Vegas Valley Water District: Instagram

Link: https://www.instagram.com/p/CrwDk34MHPM/



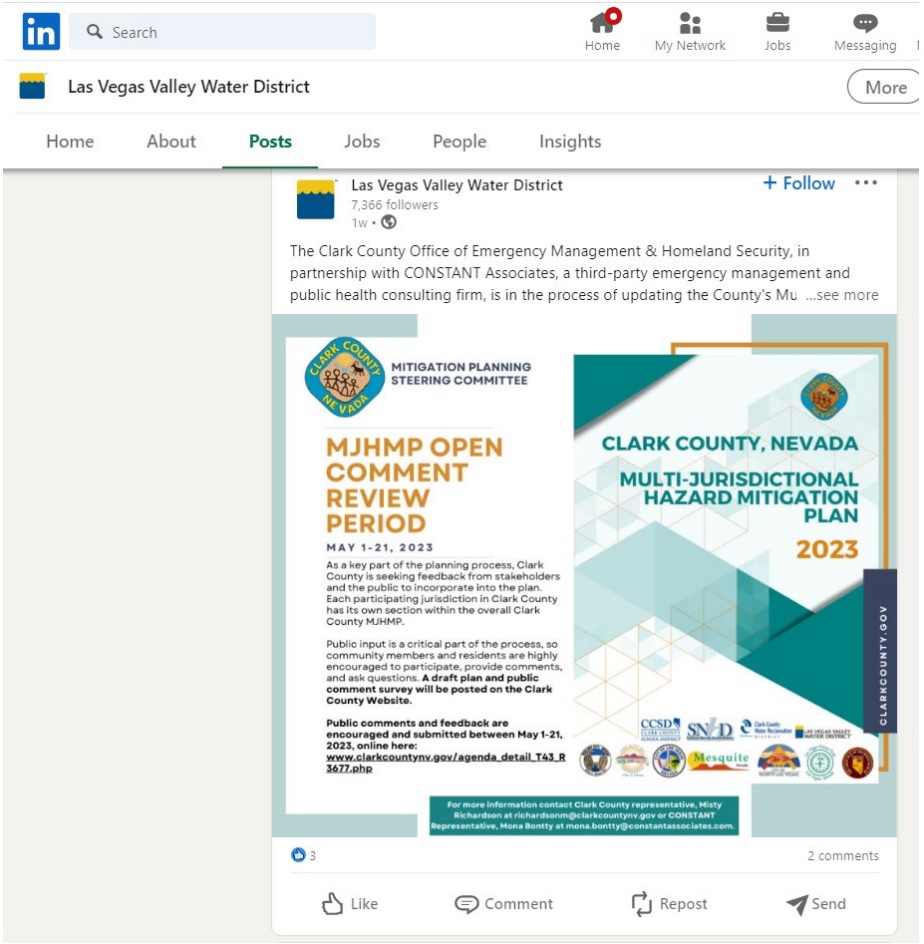
Las Vegas Valley Water District: Twitter

Link: https://twitter.com/lvvwd



Las Vegas Valley Water District: LinkedIn

Link: https://www.linkedin.com/company/lvvwd/posts/?feedView=all



Las Vegas Paiute Tribe - Facility Posting of Physical Flyers Location 1



Las Vegas Paiute Tribe – Facility Posting of Physical Flyers Location 2



Las Vegas Paiute Tribe – Facility Posting of Physical Flyers Location 3



Las Vegas Paiute Tribe - Facility Posting of Physical Flyers Location 4



Open Comment Review Period Survey – Survey Result

Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan: Open Public Comment Survey, May 1-May 22, 2023 EXTENDED UNTIL JUNE 2, 2023

#1

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Friday, May 26, 2023 4:31:09 PM
Last Modified:	Friday, May 26, 2023 4:33:19 PM
Time Spent:	00:02:09
IP Address:	75.137.228.110

Page 1: Overview

Q1

Point of Contact

Name:	**Corey Ross**
Email:	**corey.ross@lvw.com**
Zip Code:	**89153**
Agency/Organization:	**Las Vegas Valley Water District/SWNA**
Job Title:	**Emergency Management Coordinator, EHCS**

Q2

In relation to Section 1 (Hazard Mitigation Program and Requirements) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

Respondent skipped this question

Q3

In relation to Section 2 (Planning Process and Plan Maintenance Procedures) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

5/57; Page 24, MPSC Members, John Hines, Corporate Security Manager
Page 25 Also, update Las Vegas Valley Water District reference on page 25, Please remove the “City of” listed with Corey Ross, Emergency Management Coordinator.

Q4

In relation to Section 3 (Planning Area Description) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

7/57; Page 31, Please list LVVWD under Local Government
9/57; Page 44, Table 12, LVVWD is not listed as Participating Special District.
10/57; Page 47, Used term Clark County Water District, I assume you meant Clark County Water Reclamation District

Q5

In relation to Section 4 (Hazard Analysis and Risk Assessment) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

18/57; Page 118, SWNA supporting the water issues in Clark County and its participating agencies are as follows
19/57; Page 115, Las Vegas Water District should be Las Vegas Valley Water District

Q6

In relation to Section 5 (Mitigation Strategy) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

Respondent skipped this question

Q7

Please provide any additional feedback or comments related to the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan.

Respondent skipped this question

#2

COMPLETE

Collector: Web Link 3 (Web Link)
Started: Friday, May 26, 2023 4:38:56 PM
Last Modified: Friday, May 26, 2023 4:41:11 PM
Time Spent: 00:02:14
IP Address: 75.137.228.110

Page 1: Overview

Q1

Point of Contact

Name:	**Jeremy Hynds**
Email:	**hyndsj@cityofnorthlasvegas.com**
Zip Code:	**89030**
Agency/Organization:	**North Las Vegas Fire Department | Emergency Management**
Job Title:	**Emergency Management Specialist**

Q2

In relation to Section 1 (Hazard Mitigation Program and Requirements) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

Respondent skipped this question

Q3

In relation to Section 2 (Planning Process and Plan Maintenance Procedures) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

My name is in the plan twice, once when I was with Henderson and once at CNLV. I don't think I need to be listed both times CNLV is the only one to keep.

Q4

In relation to Section 3 (Planning Area Description) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

Respondent skipped this question

Q5

In relation to Section 4 (Hazard Analysis and Risk Assessment) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

The CPRI for Wildland Fire for CNLV is marked as high, but that should be low as we do not have much of a wildland fire hazard. Not sure how all of the jurisdictions for that hazard marked the same values. This is not a high category for all jurisdictions. This also goes for infestation....
3. Hazards associated with the projects are not accurate. They are all listed as Subsistence/Fissures. (Page 708 and 811) Please change to appropriate hazards.
4. Please change the severity for Hazardous Materials from 1 to 2 and recalculate the new value. (Page 340 and 797)
5. Can you provide an explanation how the Risk Summary values were calculated and what the percentages mean next to them?

Q6

In relation to Section 5 (Mitigation Strategy) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

We are going to edit our financial capabilities page once we get back some better data.

Q7

Please provide any additional feedback or comments related to the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan.

Respondent skipped this question

#3

COMPLETE

Collector:	Web Link 3 (Web Link)
Started:	Friday, May 26, 2023 4:41:41 PM
Last Modified:	Friday, May 26, 2023 4:43:03 PM
Time Spent:	00:01:22
IP Address:	75.137.228.110

Page 1: Overview

Q1

Point of Contact

Name:	**Josie Ross**
Email:	**josie.ross@cityofhenderson.com**
Zip Code:	**89015**
Agency/Organization:	**City of Henderson Emergency Management**
Job Title:	**Emergency Management Office r**

Q2

In relation to Section 1 (Hazard Mitigation Program and Requirements) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

Respondent skipped this question

Q3

In relation to Section 2 (Planning Process and Plan Maintenance Procedures) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

Respondent skipped this question

Q4

In relation to Section 3 (Planning Area Description) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

Respondent skipped this question

Q5

In relation to Section 4 (Hazard Analysis and Risk Assessment) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

Respondent skipped this question

Q6

In relation to Section 5 (Mitigation Strategy) of the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan:Use the space below to provide your feedback and comments related to this section.

Respondent skipped this question

Q7

Please provide any additional feedback or comments related to the Clark County, NV Multi-Jurisdictional Hazard Mitigation Plan.

Jurisdictional Annex Updates for the City of Henderson:i. Page 731 – Change McCarran International Airport to "Harry Reid International Airport (McCarran) in the planning area section

ii. Page 733 – First sentence where referenced "Boulder City" change to Henderson

iii. Page 735 – Change the building codes that were listed from Boulder City to the City of Henderson

Appendix D: Critical Facilities and Infrastructure

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Boulder City Municipal Airport	Boulder City	Transportation
Henderson Executive Airport	Henderson	Transportation
Jean Airport	Las Vegas	Transportation
Echo Bay Airport	Las Vegas	Transportation
Searchlight Airport	Las Vegas	Transportation
Kidwell Airport	Las Vegas	Transportation
Sky Ranch Airport	Las Vegas	Transportation
Creech Air Force Base	Las Vegas	Transportation
Harry Reid International Airport	Las Vegas	Transportation
Perkins Field Airport	Las Vegas	Transportation
Mesquite Airport	Mesquite	Transportation
Nellis Air Force Base	North Las Vegas	Transportation
North Las Vegas Airport	North Las Vegas	Transportation
Railroad Pass Hotel, Casino & Travel Center	Henderson	Casinos/Resorts/Hotels
Green Valley Ranch Resort, Spa & Casino	Henderson	Casinos/Resorts/Hotels
Sunset Station Hotel & Casino	Henderson	Casinos/Resorts/Hotels
The Village Lake Las Vegas	Henderson	Casinos/Resorts/Hotels
M Resort, Spa & Casino	Henderson	Casinos/Resorts/Hotels
Harrahs Laughlin Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Laughlin River Lodge Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Golden Nugget Laughlin	Las Vegas	Casinos/Resorts/Hotels
Pioneer Hotel & Gambling Hall	Las Vegas	Casinos/Resorts/Hotels
Tropicana Laughlin Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Edgewater Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Aquarius Casino Resort	Las Vegas	Casinos/Resorts/Hotels
Don Laughlin's Riverside Resort	Las Vegas	Casinos/Resorts/Hotels
Primm Valley Resort & Casino	Las Vegas	Casinos/Resorts/Hotels
Whiskey Petes Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Buffalo Bills Resort & Casino	Las Vegas	Casinos/Resorts/Hotels
Terrible's Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
South Point Hotel, Casino & Spa	Las Vegas	Casinos/Resorts/Hotels
Hoover Dam Lodge	Las Vegas	Casinos/Resorts/Hotels
Silverton Casino Lodge	Las Vegas	Casinos/Resorts/Hotels
Mandalay Bay Resort & Casino	Las Vegas	Casinos/Resorts/Hotels
Luxor Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Excalibur Hotel - Casino	Las Vegas	Casinos/Resorts/Hotels
Tropicana Resort & Casino	Las Vegas	Casinos/Resorts/Hotels
Days Inn Wild Wild West Gambling Hall & Hotel	Las Vegas	Casinos/Resorts/Hotels
MGM Grand Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
New York New York Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Orleans Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Park MGM Las Vegas	Las Vegas	Casinos/Resorts/Hotels
Planet Hollywood Casino & Resort	Las Vegas	Casinos/Resorts/Hotels
Paris Las Vegas	Las Vegas	Casinos/Resorts/Hotels
Bellagio Las Vegas	Las Vegas	Casinos/Resorts/Hotels
Sams Town Hotel & Gambling Hall	Las Vegas	Casinos/Resorts/Hotels
Silver Sevens Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Ballys Las Vegas	Las Vegas	Casinos/Resorts/Hotels
The Cromwell Las Vegas	Las Vegas	Casinos/Resorts/Hotels
Caesars Palace	Las Vegas	Casinos/Resorts/Hotels
Gold Coast Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Flamingo Las Vegas	Las Vegas	Casinos/Resorts/Hotels
Rio Suite Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Linq Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Harrahs Las Vegas Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Best Western PLUS Casino Royale	Las Vegas	Casinos/Resorts/Hotels
Mirage Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Venetian Casino Resort	Las Vegas	Casinos/Resorts/Hotels
Treasure Island Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Arizona Charlies Boulder Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Wynn Las Vegas	Las Vegas	Casinos/Resorts/Hotels
Boulder Station	Las Vegas	Casinos/Resorts/Hotels
Westgate Las Vegas Resort & Casino	Las Vegas	Casinos/Resorts/Hotels
Circus Circus Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Palace Station Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Sahara Las Vegas Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Stratosphere Casino, Hotel & Tower	Las Vegas	Casinos/Resorts/Hotels
Red Rock Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Arizona Charlies Decatur Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Suncoast Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
El Cortez Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Golden Nugget Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
The D Casino & Hotel	Las Vegas	Casinos/Resorts/Hotels
Four Queens Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Gold Spike Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Fremont Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Golden Gate Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Binions Gambling Hall & Hotel	Las Vegas	Casinos/Resorts/Hotels
Plaza Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Las Vegas Club Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
California Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Rampart at JW Marriott Las Vegas	Las Vegas	Casinos/Resorts/Hotels
Siegel Slots & Suites	Las Vegas	Casinos/Resorts/Hotels
Santa Fe Station Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Palazzo Resort, Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Virgin Hotels Las Vegas, Curio Collection	Las Vegas	Casinos/Resorts/Hotels
OYO Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Encore Suites at Wynn Las Vegas	Las Vegas	Casinos/Resorts/Hotels

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Tuscany Suites & Casino	Las Vegas	Casinos/Resorts/Hotels
The Westin Las Vegas Hotel, Casino & Spa	Las Vegas	Casinos/Resorts/Hotels
The Retreat on Charleston Peak	Las Vegas	Casinos/Resorts/Hotels
Aria Resort & Casino at City Center	Las Vegas	Casinos/Resorts/Hotels
The Cosmopolitan of Las Vegas	Las Vegas	Casinos/Resorts/Hotels
CityCenter	Las Vegas	Casinos/Resorts/Hotels
Mardi Gras Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Downtown Grand Hotel & Casino	Las Vegas	Casinos/Resorts/Hotels
Main Street Station	Las Vegas	Casinos/Resorts/Hotels
Resorts World Las Vegas	Las Vegas	Casinos/Resorts/Hotels
Casablanca Resort, Casino, Golf & Spa	Mesquite	Casinos/Resorts/Hotels
Virgin River Hotel & Casino	Mesquite	Casinos/Resorts/Hotels
Eureka Casino & Hotel	Mesquite	Casinos/Resorts/Hotels
Fiesta Rancho Casino Hotel	North Las Vegas	Casinos/Resorts/Hotels
Cannery Casino & Hotel	North Las Vegas	Casinos/Resorts/Hotels
Aliante Casino & Hotel	North Las Vegas	Casinos/Resorts/Hotels
Lucky Club Hotel & Casino	North Las Vegas	Casinos/Resorts/Hotels
360 Communications Company of Nev	Las Vegas	Communications
AT&T Mobility	Las Vegas	Communications
ATT Communications Corp	Las Vegas, Henderson	Communications
AIM Broadcasting-Las Vegas LLC	Las Vegas	Communications
Aladdin Gaming LLC (Aladdin Reso	Las Vegas	Communications
AM. Capital Energy	Las Vegas	Communications
American Tower	Las Vegas	Communications
American Tower Corp	Las Vegas	Communications
American Towers	Boulder City, Henderson, Las Vegas, North Las Vegas	Communications
AP Towers	Las Vegas	Communications
APC Towers	Las Vegas	Communications
APC Towers LLC	Las Vegas	Communications
Arizona Nevada Tower Co.	Las Vegas	Communications
Arizona Nevada Tower Corp.	Las Vegas	Communications
AT&T	Las Vegas	Communications
AT&T C.o Black & Veatech	Las Vegas	Communications
AT&T Mobility	Las Vegas	Communications
AT&T Wireless	Las Vegas	Communications
AT&T Wireless Services inc	Las Vegas, North Las Vegas	Communications
AT&T/Black & Veatch	Las Vegas	Communications
AT&T/CC LVCA	Las Vegas	Communications
AZ NV Tower Corp	Las Vegas	Communications
Beasley Broadcasting Project	Las Vegas	Communications
Boulder City	Boulder City, Las Vegas	Communications
Central Telephone	Boulder City, Las Vegas	Communications
Chanel 33 inc	Las Vegas	Communications
Cingular	Henderson, Las Vegas	Communications
City of North Las Vegas	Las Vegas, North Las Vegas	Communications
Clark County	Las Vegas	Communications

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Clark County Las Vegas Metropoli	Las Vegas	Communications
Clearwire	Las Vegas	Communications
Clearwire LLC	Las Vegas	Communications
Clearwire U.S. LLC	Las Vegas	Communications
Clearwire US	Las Vegas	Communications
Clearwire Wireless	Las Vegas	Communications
Clearwire Wireless Broadband	Las Vegas	Communications
Colorado River Comm. Of Nevada	Henderson, Las Vegas	Communications
Commercial Radio & Telephone	Las Vegas	Communications
Cox Communications PCS LP	Henderson, Las Vegas, North Las Vegas, Nellis AFB	Communications
Cricket Communications	Las Vegas	Communications
Crown Castle	Las Vegas	Communications
Crown Communications	Las Vegas	Communications
Diamond Communications	Las Vegas	Communications
Entravision Communications Corp.	Las Vegas	Communications
EXCALIBUR/LL438-01	Las Vegas	Communications
Falcon Telecable	Las Vegas	Communications
Far West Radio inc.	Las Vegas	Communications
Frontier Radio, Inc	Las Vegas	Communications
Global Tower Partners	Las Vegas	Communications
Gore-Overguard Broadcasting Inc	Las Vegas	Communications
Harrah's Las Vegas inc	Las Vegas	Communications
Insite Towers	Las Vegas	Communications
InSite Towers, LLC	Las Vegas	Communications
InterConnect Towers	Las Vegas	Communications
IP Wireless	Las Vegas	Communications
Journal Broadcast Corp.	Las Vegas	Communications
K7QQQ Amateur Radio Repeaters	Las Vegas	Communications
KEMP Broadcasting inc	Las Vegas	Communications
KLAS TV inc (KLAS TV)	Las Vegas	Communications
KLSQ-AM License Corp.	Henderson	Communications
KNEWS Broadcasting	Las Vegas	Communications
L-053/MOD/MONOPOLE REPLCM	Las Vegas	Communications
Las Vegas Radio Company	North Las Vegas	Communications
Las Vegas Valley Water District	Las Vegas	Communications
Las Vegas Water District	North Las Vegas	Communications
LGA	Las Vegas	Communications
LL-494-01RAINB/WRMSPNG	Las Vegas	Communications
Lotus Broadcasting	Las Vegas, North Las Vegas	Communications
LSV TAMARUS/MONOPALM	Las Vegas	Communications
LSV-SUNRISE MANOR-MONOPOL	Las Vegas	Communications
LVVWD	Las Vegas	Communications
M&M Telecom, Inc.	Las Vegas	Communications
Mesquite Police Department	Mesquite	Communications
Metro PCS	Las Vegas	Communications
MONOPOLE W/EQUIPMENT	Las Vegas	Communications

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Mountain Union Telecom LLC	Las Vegas, North Las Vegas	Communications
Muddy Peak Wind I, LLC	Las Vegas	Communications
Nevada Bell	Las Vegas	Communications
Nevada Power	Boulder, City, Las Vegas, North Las Vegas	Communications
New Cingular Wireless	Las Vegas	Communications
Nextel of California inc	Henderson, Las Vegas, North Las Vegas	Communications
NV Energy	Las Vegas	Communications
Ower Resource Management Inc	Las Vegas	Communications
Pacific Bell	Las Vegas	Communications
Pacific Bell Mobile Services	Las Vegas	Communications
Pacific Bell Wireless	Las Vegas, North Las Vegas	Communications
Pinnacle Towers LLC	Boulder City	Communications
Radio Nevada	Henderson	Communications
Rio Hotel and Casino	Las Vegas	Communications
Riveria Operating Corp.	Las Vegas	Communications
S&R Broadcasting inc	Henderson	Communications
SBA Communications Corp	Las Vegas	Communications
SBA Towers Inc.	Las Vegas	Communications
SBC Tower Holdings LLC	Henderson, Las Vegas	Communications
Sierra Nevada Property Managemen	Las Vegas	Communications
Sky Waves West	Las Vegas	Communications
Skywaves West/Clearwire	Las Vegas	Communications
Skywaves West/Clearwire Wireless	Las Vegas	Communications
Southern Calidornia Edison Compa	Boulder City	Communications
Southwest Wireless	Las Vegas	Communications
Southwestco Wireless LP	Henderson, Las Vegas, North Las Vegas	Communications
SpectraSite Communications	Boulder City, Henderson, Las Vegas, North Las Vegas	Communications
Sprint	Las Vegas	Communications
Sprint PCS	Las Vegas	Communications
St. Charles Tower	Las Vegas	Communications
State of Nevada	Las Vegas, North Las Vegas	Communications
Strategic Real Estate Services	Las Vegas	Communications
Summit America inc.	Las Vegas	Communications
Sun State Towers	Las Vegas	Communications
Sun State Towers, LLC	Las Vegas	Communications
Sun Waves Dev. Inc	Las Vegas	Communications
Sunbelt Communications Company	Las Vegas	Communications
SW Gas Corp	Henderson	Communications
Switch	Las Vegas	Communications
T-Mobile	Las Vegas	Communications
Tower Consulting, Inc	Las Vegas	Communications
Turn-key Telecom	Las Vegas	Communications
Union Pacific Rail Road	Las Vegas	Communications
Valley Broadcasting Company	Henderson, Las Vegas	Communications

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Venture Reality holdings, LLC	Las Vegas	Communications
Version Wireless	Las Vegas	Communications
Verizon Wireless	Las Vegas	Communications
VG08357 McLeod Post	Las Vegas	Communications
VG60XCC341	Las Vegas	Communications
Viacom Communications Services i	North Las Vegas	Communications
24-Hour Fitness Kid Club	Henderson, Las Vegas, North Las Vegas	Child Care
9th Bridge School	Las Vegas	Child Care
A Step Beyond	Las Vegas	Child Care
A to Z Childcare & Learning Ctr	Las Vegas	Child Care
ABC Etc / Little Learners	Henderson	Child Care
ABC Preschool and Day Care Center	Las Vegas	Child Care
Acelero Learning Clark County	Henderson, Las Vegas	Child Care
All About Kids Day Care	Las Vegas	Child Care
All Saints Day School	Las Vegas	Child Care
Angel Child Care	Henderson	Child Care
Angels Christian Academy	Las Vegas	Child Care
Angels Daycare	Las Vegas	Child Care
Aprende Academy Preschool	Henderson, Las Vegas	Child Care
Babyland Infant Center & Preschool	Las Vegas	Child Care
Babylove and Care Infant Center	Las Vegas	Child Care
Beautiful Savior Lutheran Preschool	Las Vegas	Child Care
Bitty Buddies	Henderson	Child Care
Bobbie Suarez Family Care	Henderson	Child Care
Bright Beginnings Preschool	Las Vegas	Child Care
Bright Horizons	Henderson, Las Vegas	Child Care
Bring'em Young Academy	North Las Vegas	Child Care
Building Blocks Child Care	Las Vegas	Child Care
Busy Bees Learning Tree	North Las Vegas	Child Care
BYCC Academy	Las Vegas	Child Care
Calvary Chapel Preschool Spring Valley	Las Vegas	Child Care
Calvary Christian Learning Academy	Las Vegas	Child Care
Candil Hall Early Childhood Education	Las Vegas	Child Care
Carlin Family Care	North Las Vegas	Child Care
Carmen's Daycare	Las Vegas	Child Care
Cascos Family Daycare	Las Vegas	Child Care
Celida Padilla	Las Vegas	Child Care
Chabad – Torah Tods Preschool	Las Vegas	Child Care
Challenger School	Las Vegas	Child Care
Charlene Rath	Las Vegas	Child Care
Child Haven	Las Vegas	Child Care
Children's Learning Adventure	Henderson, Las Vegas, North Las Vegas	Child Care
Childtime Learning Center	Henderson	Child Care
Christ Kids Child Center	Las Vegas	Child Care
Christ the Servant Lutheran School	Henderson	Child Care

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Christian Center Day Care	Boulder City	Child Care
Christian Childcare	North Las Vegas	Child Care
Christian Montessori Academy	Las Vegas	Child Care
Community Church Christian Child Care & Preschool	Henderson	Child Care
Congregation Ner Tamid Early Childhood Education Center	Henderson	Child Care
Cornerstone Christian Tykes Preschool	Las Vegas	Child Care
Coronado Prep	Henderson	Child Care
Creative Kids Learning Center	Henderson, Las Vegas, North Las Vegas	Child Care
Creative Little Hands	Henderson	Child Care
Crossroads Christian Academy	Las Vegas	Child Care
CSN ECE Lab Program	Las Vegas, North Las Vegas	Child Care
D.J.'s West	Henderson	Child Care
De Torres Childcare	Las Vegas	Child Care
Debbie Clark	Las Vegas	Child Care
Delia's Kidz Care	Las Vegas	Child Care
Diana's Lil Darlings	North Las Vegas	Child Care
Discovering Preschool	Las Vegas	Child Care
Discovery Academy	Las Vegas	Child Care
Don's Kid Kastle	Las Vegas	Child Care
Duck Duck Goose Daycare	Las Vegas	Child Care
Emotions of Life Daycare Camp	Las Vegas	Child Care
EOS Fitness	Henderson, Las Vegas, North Las Vegas	Child Care
Esther's Day Care	Las Vegas	Child Care
Eva's Child Care	Las Vegas	Child Care
Fairman Family Assistance Programs	North Las Vegas	Child Care
First Good Shepherd Lutheran Preschool	Las Vegas	Child Care
First Memories in Home Day Care	Las Vegas	Child Care
First Step Kids Care	Las Vegas	Child Care
First Step Kindergarten Prep	Henderson	Child Care
Fitness Aliance LLC dba EOC Fitness	Las Vegas	Child Care
Five Little Monkey's	North Las Vegas	Child Care
Foothills Montessori School	Henderson	Child Care
Galina's Child Care	Las Vegas	Child Care
Gardner Family Daycare	Las Vegas	Child Care
Gloria Lopez Child Care	Las Vegas	Child Care
Gloria's Day Care	Henderson	Child Care
Gold Standard Child Care and Preschool LLC	Las Vegas	Child Care
Goldfish	Las Vegas	Child Care
Good Samaritan Christian Academy	Las Vegas	Child Care
Grammy's House Child Care & Preschool	Henderson	Child Care
Greater Las Vegas Academy	Henderson	Child Care
Green Valley Christian Preschool	Henderson	Child Care
Green Valley Lutheran Preschool	Henderson	Child Care
Green Valley United Methodist Church Christian	Henderson	Child Care

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Preschool		
Gunguis Child Care	Las Vegas	Child Care
Hand in Hand Preschool & Child Development Center	Las Vegas	Child Care
Happy Days Montessori Academy	Las Vegas	Child Care
Helen Meyer Community Center	Las Vegas	Child Care
Henderson Christian Academy	Henderson	Child Care
Henderson International School	Henderson	Child Care
Hill and Dale Child Development Center	Las Vegas	Child Care
His Hand Extended	Henderson	Child Care
Hollywood Park & Recreation	Las Vegas	Child Care
Homestyle Day Care	North Las Vegas	Child Care
Hope Christian Preschool	Las Vegas	Child Care
Imagination Station Early Learning Center	Las Vegas	Child Care
Immaculate Gliponeo Family Care Home	Las Vegas	Child Care
In the Beginning DBA Faith Lutheran Preschool	Las Vegas	Child Care
Infinity Learning Center	Las Vegas	Child Care
International Christian Academy Preschool	Las Vegas	Child Care
Jamie's Child Care	North Las Vegas	Child Care
Jeevani Rasika Fernando	Las Vegas	Child Care
Jewish Community Center of Southern NV	Las Vegas	Child Care
Joan E. Squire	Las Vegas	Child Care
Julie Campbell In-Home Daycare	Las Vegas	Child Care
Junior Junction Preschool	Henderson	Child Care
Just Like Home Family Daycare	Las Vegas	Child Care
K.I.D.S. Academy - Kids Introduced to Developmental Skills	Henderson	Child Care
Kathleen McDaniel	Las Vegas	Child Care
Keeping Youth Educated, Inc	Las Vegas	Child Care
Keys Kids	Las Vegas	Child Care
Kiddie Academy of Henderson	Henderson	Child Care
Kids Are Us Academy	Las Vegas	Child Care
Kids Campus Learning Center	Las Vegas, North Las Vegas	Child Care
Kids Castle Learning Day Care Center	Las Vegas	Child Care
Kid's Choice	Las Vegas	Child Care
Kid's Co-Op	North Las Vegas	Child Care
Kids Cove Preschool and Child Care	Las Vegas	Child Care
Kids First	Las Vegas	Child Care
Kids Garden llc	Las Vegas	Child Care
Kid's Happy Days Child Care	Las Vegas	Child Care
Kids Korner Learn & Play Center	Las Vegas	Child Care
Kids Learning Path	Las Vegas	Child Care
Kids Quest	Henderson, Las Vegas, North Las Vegas	Child Care
Kids R Kids	Henderson, Las Vegas	Child Care
Kid's Turf Academy II, LLC	Las Vegas	Child Care
Kids Tyme	Las Vegas	Child Care
Kidsville Learn and Play Center	Las Vegas	Child Care

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
KidTown Las Vegas	Las Vegas	Child Care
Kidz Kidz Kidz Preschool	Henderson, Las Vegas, North Las Vegas	Child Care
Kidzhous Corp.dba The Children's Garden	Henderson	Child Care
Kim's Daycare	Las Vegas	Child Care
Kinder Cottage Learning Center	Las Vegas	Child Care
Kinder Prep Academy	Las Vegas	Child Care
Kindercare Learning Centers	Henderson, Las Vegas	Child Care
Klassy Kids Academy	Las Vegas	Child Care
Kristine Purcell	Las Vegas	Child Care
Kristine Stewart	Las Vegas	Child Care
KRN4KDS	Las Vegas	Child Care
Kumi's Daycare	Las Vegas	Child Care
Kusum's Cuties	Las Vegas	Child Care
Kyle Lairmore	Las Vegas	Child Care
Le Petite Academy	Henderson, Las Vegas, North Las Vegas	Child Care
Lake Mead Christian Academy	Henderson	Child Care
Las Vegas Athletic Club	Las Vegas, North Las Vegas	Child Care
Las Vegas Chinese School	Las Vegas	Child Care
Las Vegas Day School	Las Vegas	Child Care
Leap Into Learning	Las Vegas	Child Care
Life Time Athletic	Henderson, Las Vegas	Child Care
Lighthouse Academy	Henderson	Child Care
Like Mother's Arms Child Care	North Las Vegas	Child Care
Lisa Shaw Child Care	Las Vegas	Child Care
Little Angel's Child Care	North Las Vegas	Child Care
Little Buddies School-House	Henderson	Child Care
Little Genius	Henderson	Child Care
Little Grubbies	Las Vegas	Child Care
Little Hearts Child Care	Las Vegas	Child Care
Little Lambs of God	Las Vegas	Child Care
Little Lambs Preschool Ministry in BC	Boulder City	Child Care
Little People In Home	Las Vegas	Child Care
Little Round Up Preschool & Day Care Center	Las Vegas	Child Care
Littlefoot Family Daycare	Las Vegas	Child Care
Lone Mountain Creative Learning Center	Las Vegas	Child Care
Lupe's Day Care	Henderson	Child Care
LV Learning Spot	Las Vegas	Child Care
LVVWD - School's Out Program	Las Vegas	Child Care
Lyncola's Family Child Care	Las Vegas	Child Care
Maria's Home Daycare	Las Vegas	Child Care
Marsha's Mini School-Coyote Kids	Henderson	Child Care
Mary's Lil Day Care	Las Vegas	Child Care
Mater Pre-K Academy	Las Vegas	Child Care
McCarran International Child Development Center	Las Vegas	Child Care
Merryhill Preschool	Henderson, Las Vegas	Child Care

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Mesquite Lutheran Child Care Center	Mesquite	Child Care
Midbar Kodesh Temple Early Childhood Center	Henderson	Child Care
Mimi's Home Daycare	Las Vegas	Child Care
Mirabelli Community Center	Las Vegas	Child Care
Miss Annie's Group Care	Las Vegas	Child Care
Miss Jan's Family Child Care	Las Vegas	Child Care
Miss Lori's Preschool	Las Vegas	Child Care
Miss Marsha's Mini School	Henderson	Child Care
Miss. Cole's Childcare, Inc	Boulder City	Child Care
Mittie In Home Family Care	Las Vegas	Child Care
Montessori House of Children	Las Vegas	Child Care
Montessori Visions Academy	Las Vegas	Child Care
Mountain Heights Montessori	Las Vegas	Child Care
Mountain View Christian Preschool	Las Vegas	Child Care
Mountain View Lutheran Preschool	Las Vegas	Child Care
Mrs. Pam's Family Child Care	North Las Vegas	Child Care
Ms. Gayle's Little School	Las Vegas	Child Care
My Little Margies	Las Vegas	Child Care
Nae Naes Apple Seeds	Las Vegas	Child Care
NCA Learning Center	Las Vegas	Child Care
New Horizons Academy Preschool	Las Vegas	Child Care
New Song Christian Academy	Henderson	Child Care
Noah's Little Ark LLC	North Las Vegas	Child Care
Northshore Learning Tree	Las Vegas	Child Care
Oaklane Preschool Academy	Boulder City	Child Care
Our Lady of Las Vegas Church	Las Vegas	Child Care
Paradise Park Recreation Center	Las Vegas	Child Care
Peace Garden	Las Vegas	Child Care
Peak-A-Boo Family Daycare	Las Vegas	Child Care
Peggy's Childcare	Las Vegas	Child Care
Pentecostal Temple Child Development Center	Las Vegas	Child Care
Playing is Learning	Las Vegas	Child Care
Playschool At Tiffany's	Henderson	Child Care
Pooh Korner West	Las Vegas	Child Care
Rising Star Preschool and Childcare	Las Vegas	Child Care
Robert E. Bob Price Recreation Center	Las Vegas	Child Care
Roots and Wings Daycare	Las Vegas	Child Care
Sekuritie Child Care	Las Vegas	Child Care
Seton Academy West	Las Vegas	Child Care
Seton Academy, Inc.	Las Vegas	Child Care
Shadow Hills Preschool	Las Vegas	Child Care
Smart Start Preschool	Las Vegas	Child Care
Soma's Day Care	Las Vegas	Child Care
Sophia's Playhouse LLC	Las Vegas	Child Care
Southern Highlands Preparatory School	Las Vegas	Child Care
Spring Valley Montessori	Las Vegas	Child Care
Springstone Lakes Montessori School	Las Vegas	Child Care

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Springstone Montessori School	Las Vegas	Child Care
St. Anne Catholic School	Las Vegas	Child Care
St. Gabriel Littlest Angels Catholic Preschool	Las Vegas	Child Care
St. Viator Catholic School	Las Vegas	Child Care
Star Academy Child Care, LLC	Henderson	Child Care
Starlight	Las Vegas	Child Care
Step By Step Family Child Care	Las Vegas	Child Care
Stepping Stones Children's Academy	North Las Vegas	Child Care
Stupak Community Center Preschool	Las Vegas	Child Care
Sumithra Child Care	Las Vegas	Child Care
Sunrise Children's Foundation	Las Vegas	Child Care
Sunrise Children’s Foundation Early Head Start	Boulder City, Henderson, Las Vegas, North Las Vegas	Child Care
Sunrise Montessori Academy	Las Vegas	Child Care
Sunrise Montessori House of Children	Las Vegas	Child Care
Sunset Montessori Community	Las Vegas	Child Care
Sunshine Academy Preschool	Mesquite	Child Care
Sunshine Child Care	Las Vegas	Child Care
Sunshine Daycare	Las Vegas	Child Care
Talent Bilingual Learning, LLC	Las Vegas	Child Care
Tante Dana's Daycare	Las Vegas	Child Care
Taylor's Tots	Las Vegas	Child Care
Teacher's Apple Preschool	Las Vegas	Child Care
Temple Beth Sholom Preschool	Las Vegas	Child Care
The Alexander Dawson School Early Childhood Education Center	Las Vegas	Child Care
The Dr. Miriam and Sheldon G. Adelson Educational Institute	Las Vegas	Child Care
The Goddard School	Henderson	Child Care
The Hills Preschool	Las Vegas	Child Care
The Little Bare's In The Field	Las Vegas	Child Care
The Little Homestead Learning Center	Las Vegas	Child Care
The Magic of Learning	Henderson	Child Care
The Meadows Beginning School	Las Vegas	Child Care
The Preschool at Seven Hills	Henderson	Child Care
The Shenker Academy	Las Vegas	Child Care
The Venetian Child Development Center	Las Vegas	Child Care
Tinker Town Learn & Play Center Smoke Ranch	Las Vegas	Child Care
Tinker Toy Day Care	Las Vegas	Child Care
Tiny TLC Child Care	Las Vegas	Child Care
Tiny Toes Child Care	Las Vegas	Child Care
Tiny Tots	Las Vegas	Child Care
TLC4Kidz	Las Vegas	Child Care
University United Methodist Child Development Center	Las Vegas	Child Care
UNLV / CSUN	Las Vegas	Child Care
Variety Early Learning Center	Las Vegas	Child Care
VIP Kids LLC	Las Vegas	Child Care

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Watch Me Grow	North Las Vegas	Child Care
Water of Life Lutheran School	Las Vegas	Child Care
William's Family Day Care	North Las Vegas	Child Care
Word of Life Christian Academy	Las Vegas	Child Care
Yeshiva Day School	Las Vegas	Child Care
YMCA - Centennial Hills	Las Vegas	Child Care
YMCA - Durango Hills	Las Vegas	Child Care
YMCA - Skyview	North Las Vegas	Child Care
Boulder City - City Hall	Boulder City	City Hall
Henderson - City Hall	Henderson	City Hall
Las Vegas - City Hall	Las Vegas	City Hall
Mesquite - City Hall	Mesquite	City Hall
North Las Vegas - City Hall	North Las Vegas	City Hall
Nevada State College	Henderson	University
Black Mountain Recreation Center	Henderson	Government Offices
'Bob' Price Community Center	Las Vegas	Government Offices
Boulder City Recreation Center	Boulder City	Government Offices
Boulder City Youth Center	Boulder City	Government Offices
Bunkerville Community Center	Las Vegas	Government Offices
Cambridge Community, Recreation & Resource Center	Las Vegas	Government Offices
CC Fairgrounds Activity Center	Las Vegas	Government Offices
Centennial Hills Community Center	Las Vegas	Government Offices
Cimarron Rose Community Center	Las Vegas	Government Offices
Cora Coleman Senior Center	Las Vegas	Government Offices
Desert Breeze Community & Resource Center	Las Vegas	Government Offices
Doolittle Community & Senior Center	Las Vegas	Government Offices
Downtown Park Recreation Center	Henderson	Government Offices
Dr. William U. Pearson Recreation Center	Las Vegas	Government Offices
Durango Hills Community Center	Las Vegas	Government Offices
Early Childhood Development Center	Las Vegas	Government Offices
East LV Community, Sr & Lorenzi Adaptive Center	Las Vegas	Government Offices
Goodsprings Community Center	Las Vegas	Government Offices
Helen Meyer Community Center	Las Vegas	Government Offices
Henderson Multigenerational Center	Henderson	Government Offices
Heritage Park Senior Center	Henderson	Government Offices
Hollywood Recreation Center	Las Vegas	Government Offices
Howard Leiburn Senior Center	Las Vegas	Government Offices
Indian Springs Community Center	Las Vegas	Government Offices
Kidwell Community Center	Las Vegas	Government Offices
Las Vegas Senior Center & Dula Gym	Las Vegas	Government Offices
Mesquite Recreation Center	Mesquite	Government Offices
Mesquite Senior Center	Mesquite	Government Offices
Mirabelli Community Center	Las Vegas	Government Offices
Moapa Community & Recreation Center	Las Vegas	Government Offices
Moapa Valley Community Center	Las Vegas	Government Offices
Moapa Valley Senior Center	Las Vegas	Government Offices

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Name	**Jurisdiction**	**Facility Type**
Mountain Crest Community Center	Las Vegas	Government Offices
Mt. Charleston Recreation Center	Las Vegas	Government Offices
Neighborhood Recreation Center	North Las Vegas	Government Offices
Paradise Recreation Center	Las Vegas	Government Offices
Parkdale Community & Senior Center	Las Vegas	Government Offices
Sandy Valley Community & Senior Center	Las Vegas	Government Offices
Searchlight Community Center	Las Vegas	Government Offices
Searchlight Senior Center	Las Vegas	Government Offices
Searchlight Teen Center	Las Vegas	Government Offices
Searchlight Youth Center	Las Vegas	Government Offices
Silver Mesa Recreation Center	North Las Vegas	Government Offices
Silver Springs Recreation Center	Henderson	Government Offices
SkyView Multi-Generational Center	North Las Vegas	Government Offices
Spirit Mountain Center	Las Vegas	Government Offices
Stupak Community Center	Las Vegas	Government Offices
Sunrise Community Center	Las Vegas	Government Offices
Sunset Administration Center	Las Vegas	Government Offices
Valley View Recreation Center	Henderson	Government Offices
Veterans Memorial Leisure Center	Las Vegas	Government Offices
Walnut Recreation Center	Las Vegas	Government Offices
West Flamingo Senior Center	Las Vegas	Government Offices
Whitney Community & Senior Center	Las Vegas	Government Offices
Whitney Ranch Recreation Center	Henderson	Government Offices
Winchester Community & Cultural Center	Las Vegas	Government Offices
College of Southern Nevada	Henderson, Las Vegas, Mesquite, North Las Vegas	Community College
Cashman Center	Las Vegas	Government Offices
Las Vegas Convention Center	Las Vegas	Government Offices
Mandalay Bay Convention Center	Las Vegas	Government Offices
Sands Expo & Convention Center	Las Vegas	Government Offices
Casa Grande Transitional Housing Center	Las Vegas	Correctional Facility
Florence McClure Women's Correctional Center	North Las Vegas	Correctional Facility
High Desert State Prison	Las Vegas	Correctional Facility
Jean Conservation Camp	Las Vegas	Correctional Facility
Southern Desert Correctional Center	Las Vegas	Correctional Facility
Spring Mountain Youth Camp	Las Vegas	Correctional Facility
Stein Forensic Unit	Las Vegas	Correctional Facility
Summit View Youth Correctional Center	North Las Vegas	Correctional Facility
Three Lakes Valley Conservation Camp	Las Vegas	Correctional Facility
Animal Control	Las Vegas	Government Offices
Assessor Northwest Office	Las Vegas	Government Offices
Building Department	Las Vegas	Government Offices
Coroner - Medical Examiner	Las Vegas	Government Offices
Department of Air Quality	Las Vegas	Government Offices
Detention Center	Las Vegas	Government Offices
Eastside Neighborhood Center - Juvenile Probation	Las Vegas	Government Offices

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Name	**Jurisdiction**	**Facility Type**
Election Department	North Las Vegas	Government Offices
Family Courts and Services Center	Las Vegas	Government Offices
Family Services - Central Neighborhood Center	Las Vegas	Government Offices
Family Services - East Neighborhood Center	Las Vegas	Government Offices
Family Services - Martin Luther King Center	North Las Vegas	Government Offices
Family Services - South Neighborhood Center	Henderson	Government Offices
Fire Department Administative Offices	Las Vegas	Government Offices
Government Center	Las Vegas	Government Offices
Henderson Office - Juvenile Probabation	Henderson	Government Offices
Juvenile Detention Center	Las Vegas	Government Offices
Laughlin Regional Government Center	Las Vegas	Government Offices
Northwest Juvenile Probation Center	North Las Vegas	Government Offices
Park Police	Las Vegas	Government Offices
Parks and Recreation Administration	Las Vegas	Government Offices
Public Administrator	Las Vegas	Government Offices
Public Defenders Office	Las Vegas	Government Offices
Public Guardian	Las Vegas	Government Offices
Public Response Office	Las Vegas	Government Offices
Regional Justice Center	Las Vegas	Government Offices
Social Service Cambridge Annex Office	Las Vegas	Government Offices
Social Service Community Resource Center	North Las Vegas	Government Offices
Social Service Fertitta	Las Vegas	Government Offices
Social Service Henderson	Henderson	Government Offices
Social Service Pinto Office	Las Vegas	Government Offices
Southwest Juvenile Probation Center	Las Vegas	Government Offices
Spring Mountan Youth Camp	Las Vegas	Government Offices
Stewart Juvenile Probation Center	Las Vegas	Government Offices
Addeliar Guy	North Las Vegas	Schools
Aggie Roberts	Henderson	Schools
Aldeane Comito Ries	Las Vegas	Schools
Andrew Mitchell	Boulder City	Schools
Ann Lynch	Las Vegas	Schools
Arturo Cambeiro	Las Vegas	Schools
Berkeley L. Bunker	Las Vegas	Schools
Bertha Ronzone	Las Vegas	Schools
Betsy Rhodes	Las Vegas	Schools
Bill Y. Tomiyasu	Las Vegas	Schools
Billy and Rosemary Vassiliadis	Las Vegas	Schools
Blue Diamond	Las Vegas	Schools
C. C. Ronnow	Las Vegas	Schools
C. H. Decker	Las Vegas	Schools
C. P. Squires	North Las Vegas	Schools
C. T. Sewell	Henderson	Schools
C. V. T. Gilbert	North Las Vegas	Schools
Carolyn S. Reedom	Las Vegas	Schools
Charles and Phyllis Frias	Las Vegas	Schools
Charlotte and Jerry Keller	Las Vegas	Schools

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Name	**Jurisdiction**	**Facility Type**
Charlotte Hill	Las Vegas	Schools
Clarence A. Piggott Academy of International Studies	Las Vegas	Schools
Claude H. and Stella M. Parson	Las Vegas	Schools
Clyde C. Cox	Las Vegas	Schools
Crestwood	Las Vegas	Schools
Cynthia Cunningham	Las Vegas	Schools
Cyril Wengert	Las Vegas	Schools
D. L. Dusty Dickens	North Las Vegas	Schools
Daniel Goldfarb	Las Vegas	Schools
David M. Cox	Henderson	Schools
Dean LaMar Allen	Las Vegas	Schools
Dean Petersen	Las Vegas	Schools
Dennis Ortwein	Las Vegas	Schools
Don and Dee Snyder	Las Vegas	Schools
Don E. Hayden	North Las Vegas	Schools
Doris French	Las Vegas	Schools
Doris Hancock	Las Vegas	Schools
Doris M. Reed	Las Vegas	Schools
Dorothy Eisenberg	Las Vegas	Schools
Dr. Beverly S. Mathis	Las Vegas	Schools
Dr. C. Owen Roundy	Las Vegas	Schools
Dr. Claude G. Perkins	North Las Vegas	Schools
D'vorre and Hal Ober	Las Vegas	Schools
E. W. Griffith	Las Vegas	Schools
Earl B. Lundy	Las Vegas	Schools
Earl N. Jenkins	Las Vegas	Schools
Edith Garehime	Las Vegas	Schools
Edna F. Hinman	Henderson	Schools
Edythe and Lloyd Katz	Las Vegas	Schools
Eileen B. Brookman	Las Vegas	Schools
Eileen Conners	Las Vegas	Schools
Elaine Wynn	Las Vegas	Schools
Elbert Edwards	Las Vegas	Schools
Elise L. Wolff	Henderson	Schools
Elizabeth Wilhelm	North Las Vegas	Schools
Ernest J. May	Las Vegas	Schools
Estes M. McDoniel	Henderson	Schools
Ethel W. Staton	Las Vegas	Schools
Eva G. Simmons	North Las Vegas	Schools
Eva Wolfe	North Las Vegas	Schools
Evelyn Stuckey	Las Vegas	Schools
Fay Galloway	Henderson	Schools
Fay Herron	North Las Vegas	Schools
Frank Kim	Las Vegas	Schools
Frank Lamping	Henderson	Schools
Fredric W. Watson	North Las Vegas	Schools

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Gene Ward	Las Vegas	Schools
George E. Harris	Las Vegas	Schools
Glen C. Taylor	Henderson	Schools
Goodsprings	Las Vegas	Schools
Gordon McCaw	Henderson	Schools
Grant Bowler	Las Vegas	Schools
Gwendolyn Woolley	Las Vegas	Schools
H. P. Fitzgerald	North Las Vegas	Schools
Hal Smith	Las Vegas	Schools
Halle Hewetson	Las Vegas	Schools
Hannah Marie Brown	Henderson	Schools
Harley Harmon	Las Vegas	Schools
Harriet Treem	Henderson	Schools
Harry Reid	Las Vegas	Schools
Harvey N. Dondero	Las Vegas	Schools
Helen Anderson Toland International Academy	Las Vegas	Schools
Helen Herr	Las Vegas	Schools
Helen Jydstrup	Las Vegas	Schools
Helen Marie Smith	Las Vegas	Schools
Henry and Evelyn Bozarth	Las Vegas	Schools
Herbert A. Derfelt	Las Vegas	Schools
Howard E. Heckethorn	Las Vegas	Schools
Howard E. Hollingsworth	Las Vegas	Schools
Howard Wasden	Las Vegas	Schools
Ira J. Earl	Las Vegas	Schools
J. E. Manch	Las Vegas	Schools
J. M. Ullom	Las Vegas	Schools
J. Marlan Walker International	Henderson	Schools
J. T. McWilliams	Las Vegas	Schools
Jack Dailey	Las Vegas	Schools
James B. McMillan	Las Vegas	Schools
James Bilbray	Las Vegas	Schools
James E. and A. Rae Smalley	Henderson	Schools
James Gibson	Henderson	Schools
Jan Jones Blackhurst	Las Vegas	Schools
Jay W. Jeffers	Las Vegas	Schools
Jesse D. Scott	North Las Vegas	Schools
Jim Thorpe	Henderson	Schools
Jo Mackey iLead Academy for the Digital Sciences	North Las Vegas	Schools
John A. Dooley	Henderson	Schools
John C. Bass	Las Vegas	Schools
John F. Mendoza	Las Vegas	Schools
John R. Beatty	Las Vegas	Schools
John R. Hummel	Las Vegas	Schools
John S. Park	Las Vegas	Schools
John Tartan	North Las Vegas	Schools
John Vanderburg	Henderson	Schools

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Name	**Jurisdiction**	**Facility Type**
John W. Bonner	Las Vegas	Schools
Joseph E. Thiriot	Las Vegas	Schools
Joseph L. Bowler, Sr.	Las Vegas	Schools
Joseph M. Neal	Las Vegas	Schools
Josh Stevens	Henderson	Schools
Judi D. Steele	Las Vegas	Schools
Judy and John L. Goolsby	Las Vegas	Schools
Kathy L. Batterman	Las Vegas	Schools
Kay Carl	Las Vegas	Schools
Keith C. and Karen W. Hayes	Las Vegas	Schools
Kenneth Divich	Las Vegas	Schools
Kermit R. Booker, Sr.	Las Vegas	Schools
Kirk L. Adams	Las Vegas	Schools
Kitty McDonough Ward	Las Vegas	Schools
Laura Dearing	Las Vegas	Schools
Lee Antonello	North Las Vegas	Schools
Lewis E. Rowe	Las Vegas	Schools
Liliam Lujan Hickey	Las Vegas	Schools
Lincoln	North Las Vegas	Schools
Linda Rankin Givens	Las Vegas	Schools
Lois Craig	North Las Vegas	Schools
Lomie G. Heard	Las Vegas	Schools
Lorna J. Kesterson	Henderson	Schools
Louis Wiener, Jr.	Las Vegas	Schools
Lucile Bruner	North Las Vegas	Schools
Lucille S. Rogers	Las Vegas	Schools
M. J. Christensen	Las Vegas	Schools
Mabel Hoggard	Las Vegas	Schools
Manuel J. Cortez	Las Vegas	Schools
Marc A. Kahre	Las Vegas	Schools
Marion B. Earl	Las Vegas	Schools
Marion Cahlan	North Las Vegas	Schools
Mark L. Fine	Las Vegas	Schools
Marshall C. Darnell	Las Vegas	Schools
Martha P. King	Boulder City	Schools
Martin Luther King, Jr.	Las Vegas	Schools
Mary and Zel Lowman	Las Vegas	Schools
Matt Kelly	Las Vegas	Schools
Mervin R. Iverson	Las Vegas	Schools
Mountain View	Las Vegas	Schools
Myrtle Tate	Las Vegas	Schools
Nate Mack	Henderson	Schools
Neil C. Twitchell	Henderson	Schools
O. K. Adcock	Las Vegas	Schools
Ollie Detwiler	Las Vegas	Schools
Oran K. Gragson	Las Vegas	Schools
Paradise	Las Vegas	Schools

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Pat A. Diskin	Las Vegas	Schools
Patricia A. Bendorf	Las Vegas	Schools
Paul E. Culley	Las Vegas	Schools
Quannah McCall	North Las Vegas	Schools
R. E. Tobler	Las Vegas	Schools
R. Guild Gray	Las Vegas	Schools
Raul P. Elizondo	North Las Vegas	Schools
Red Rock	Las Vegas	Schools
Rex Bell	Las Vegas	Schools
Reynaldo Martinez	North Las Vegas	Schools
Richard C. Priest	North Las Vegas	Schools
Richard H. Bryan	Las Vegas	Schools
Richard J. Rundle	Las Vegas	Schools
Robert and Sandy Ellis	Henderson	Schools
Robert E. Lake	Las Vegas	Schools
Robert L. Forbuss	Las Vegas	Schools
Robert L. Taylor	Henderson	Schools
Robert Lunt	Las Vegas	Schools
Roberta Curry Cartwright	Las Vegas	Schools
Roger D. Gehring Academy of Science and Technology	Las Vegas	Schools
Roger M. Bryan	Las Vegas	Schools
Rose Warren	Las Vegas	Schools
Ruben P. Diaz	Las Vegas	Schools
Ruby Duncan	North Las Vegas	Schools
Ruby S. Thomas	Las Vegas	Schools
Ruthe Deskin	Las Vegas	Schools
Sandra B. Abston	Las Vegas	Schools
Sandra Lee Thompson	Las Vegas	Schools
Sandy Searles Miller	Las Vegas	Schools
Sandy Valley Elementary School	Las Vegas	Schools
Selma F. Bartlett	Henderson	Schools
Sheila Tarr Academy of International Studies	Las Vegas	Schools
Shelley Berkley	Las Vegas	Schools
Shirley A. Barber	Las Vegas	Schools
Shirley and Bill Wallin	Henderson	Schools
Sister Robert Joseph Bailey	Las Vegas	Schools
Stanford	Las Vegas	Schools
Steve and Linda Cozine	North Las Vegas	Schools
Steve Schorr	Las Vegas	Schools
Sue H. Morrow	Henderson	Schools
Sunrise Acres	Las Vegas	Schools
Theron H. and Naomi D. Goynes	North Las Vegas	Schools
Thomas J. O'Roarke	Las Vegas	Schools
Tom Williams	North Las Vegas	Schools
Tony Alamo	Las Vegas	Schools
Twin Lakes	Las Vegas	Schools

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Tyrone Thompson	Las Vegas	Schools
Ulis Newton	Henderson	Schools
Ute Perkins	Las Vegas	Schools
Vail Pittman	Las Vegas	Schools
Vegas Verdes	Las Vegas	Schools
Vincent L. Triggs	North Las Vegas	Schools
Virgin Valley	Mesquite	Schools
Walter Bracken	Las Vegas	Schools
Walter Jacobson	Las Vegas	Schools
Walter V. Long	Las Vegas	Schools
Wayne N. Tanaka	Las Vegas	Schools
Wendell P. Williams	Las Vegas	Schools
Whitney	Las Vegas	Schools
Will Beckley	Las Vegas	Schools
William and Mary Scherkenbach	Las Vegas	Schools
William E. Ferron	Las Vegas	Schools
William E. Snyder	Las Vegas	Schools
William G. Bennett	Las Vegas	Schools
William K. Moore	Las Vegas	Schools
William Lummis	Las Vegas	Schools
William V. Wright	Las Vegas	Schools
Wing and Lilly Fong	Las Vegas	Schools
STATION 1 - CLV	Las Vegas	Fire Stations
STATION 1 - BC	Boulder City	Fire Stations
STATION 2 - CLV	Las Vegas	Fire Stations
STATION 3 - CLV	Las Vegas	Fire Stations
STATION 4 - CLV	Las Vegas	Fire Stations
STATION 5 - CLV	Las Vegas	Fire Stations
STATION 6 - CLV	Las Vegas	Fire Stations
STATION 7 - CLV	Las Vegas	Fire Stations
STATION 9 - CLV	Las Vegas	Fire Stations
STATION 10 - CLV	Las Vegas	Fire Stations
STATION 11 - CC	Las Vegas	Fire Stations
STATION 13 - CC	Las Vegas	Fire Stations
STATION 14 - CC	Las Vegas	Fire Stations
STATION 15 - CC	Las Vegas	Fire Stations
STATION 61 - CC	Las Vegas	Fire Stations
STATION 17 - CC	Las Vegas	Fire Stations
STATION 18 - CC	Las Vegas	Fire Stations
STATION 19 - CC	Las Vegas	Fire Stations
STATION 20 - CC	Las Vegas	Fire Stations
STATION 21 - CC	Las Vegas	Fire Stations
STATION 22 - CC	Las Vegas	Fire Stations
STATION 24 - CC	Las Vegas	Fire Stations
STATION 25 - CC	Las Vegas	Fire Stations
STATION 27 - CC	Las Vegas	Fire Stations
STATION 31 - CC	Las Vegas	Fire Stations

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
STATION 41 - CLV	Las Vegas	Fire Stations
STATION 42 - CLV	Las Vegas	Fire Stations
STATION 43 - CLV	Las Vegas	Fire Stations
STATION 44 - CLV	Las Vegas	Fire Stations
STATION 45 - CLV	Las Vegas	Fire Stations
STATION 51 - NLV	North Las Vegas	Fire Stations
STATION 52 - NLV	North Las Vegas	Fire Stations
STATION 50 - NLV	North Las Vegas	Fire Stations
STATION 54 - NLV	North Las Vegas	Fire Stations
STATION 55 - NLV	North Las Vegas	Fire Stations
STATION 65 - CC	Las Vegas	Fire Stations
STATION 72 - CC	Las Vegas	Fire Stations
STATION 77 - CC	Las Vegas	Fire Stations
STATION 80 - CC	Las Vegas	Fire Stations
STATION 91 - HEN	Henderson	Fire Stations
STATION 82 - CC	Las Vegas	Fire Stations
STATION 92 - HEN	Henderson	Fire Stations
STATION 93 - HEN	Henderson	Fire Stations
STATION 84 - CC	Las Vegas	Fire Stations
STATION 85 - CC	Las Vegas	Fire Stations
STATION 96 - HEN	Henderson	Fire Stations
STATION 87 - CC	Las Vegas	Fire Stations
STATION 94 - HEN	Henderson	Fire Stations
STATION 95 - HEN	Henderson	Fire Stations
STATION 97 - HEN	Henderson	Fire Stations
STATION 98 - HEN	Henderson	Fire Stations
STATION 99 - HEN	Henderson	Fire Stations
STATION 38 - CC	Las Vegas	Fire Stations
STATION 12 - CC	Las Vegas	Fire Stations
STATION 28 - CC	Las Vegas	Fire Stations
STATION 79 - CC	Las Vegas	Fire Stations
STATION 78 - CC	Las Vegas	Fire Stations
STATION 56 - NLV	North Las Vegas	Fire Stations
STATION 71 - CC	Las Vegas	Fire Stations
STATION 73 - CC	Las Vegas	Fire Stations
STATION 74 - CC	Las Vegas	Fire Stations
STATION 1 - MES	Mesquite	Fire Stations
STATION 75 - CC	Las Vegas	Fire Stations
STATION 76 - CC	Las Vegas	Fire Stations
STATION 83 - CC	Las Vegas	Fire Stations
STATION 8 - CLV	Las Vegas	Fire Stations
STATION 2 - MES	Mesquite	Fire Stations
STATION 34 - CC	Las Vegas	Fire Stations
STATION 26 - CC	Las Vegas	Fire Stations
STATION 47 - CLV	Las Vegas	Fire Stations
STATION 57 - NLV	North Las Vegas	Fire Stations
STATION 29 - CC	Las Vegas	Fire Stations

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
STATION 48 - CLV	Las Vegas	Fire Stations
STATION 102 - CLV	Las Vegas	Fire Stations
STATION 53 - NLV	North Las Vegas	Fire Stations
STATION 33 - CC	Las Vegas	Fire Stations
STATION 32 - CC	Las Vegas	Fire Stations
STATION 66 - CC	Las Vegas	Fire Stations
STATION 23 - CC	Las Vegas	Fire Stations
STATION 103 - CLV	Las Vegas	Fire Stations
STATION 107 - CLV	Las Vegas	Fire Stations
STATION 106 - CLV	Las Vegas	Fire Stations
STATION 3 - MES	Mesquite	Fire Stations
STATION 108 - CLV	Las Vegas	Fire Stations
STATION 853 - CC	Las Vegas	Fire Stations
STATION 16 - CC	Las Vegas	Fire Stations
STATION 856 - CC	Las Vegas	Fire Stations
STATION 70 - CC	Las Vegas	Fire Stations
STATION 91 - HEN	Henderson	Fire Stations
STATION 88 - CC	Las Vegas	Fire Stations
STATION 30 - CC	Las Vegas	Fire Stations
STATION 85- HEN	Henderson	Fire Stations
Aaron Way Detention Basin	Boulder City	Water/Sewer
Abbott Wash Detention Basin	Mesquite	Water/Sewer
Abbott Wash Detention Basin	Mesquite	Water/Sewer
Angel Park Detention Basin	Las Vegas	Water/Sewer
Ann Road Detention Basin	Las Vegas	Water/Sewer
Ann Road Detention Basin Upgrade	Las Vegas	Water/Sewer
Anthem Debris Basin #1	Las Vegas	Water/Sewer
Apex	Las Vegas	Water/Sewer
Baseball Field Detention Basin	Boulder City	Water/Sewer
Beltway Detention Basin	North Las Vegas	Water/Sewer
Bike Path Sediment Basin	Boulder City	Water/Sewer
Birdspring Detention Basin	Las Vegas	Water/Sewer
Black Mountain Detention Basin	Las Vegas	Water/Sewer
Blue Diamond Debris Basin	Las Vegas	Water/Sewer
Bootleg Canyon Detetnion Basin	Boulder City	Water/Sewer
Box Canyon Detention Basin	Las Vegas	Water/Sewer
Bruner Detention Basin	Las Vegas	Water/Sewer
Cactus Detention Basin	Las Vegas	Water/Sewer
Carey-Lake Mead Detention Basin	North Las Vegas	Water/Sewer
Central Duck Creek Detention Basin	Las Vegas	Water/Sewer
Central Duck Creek Detention Basin Upgrade	Las Vegas	Water/Sewer
Cheyenne Peaking Basin	North Las Vegas	Water/Sewer
Cheyenne Peaking Basin Upgrade	North Las Vegas	Water/Sewer
Confluence Detention Basin	Las Vegas	Water/Sewer
Confluence Detention Basin Upgrade	Nellis AFB	Water/Sewer
Coyote Springs North Detention Basin	Las Vegas	Water/Sewer
Coyote Springs South Detention Basin	Las Vegas	Water/Sewer

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Debris Basin	Las Vegas	Water/Sewer
Desert Inn Detention Basin	Las Vegas	Water/Sewer
Desert Inn Detention Basin Upgrade	Las Vegas	Water/Sewer
Desert Willow Golf Course Detention Basin	Henderson	Water/Sewer
Detention Basin #5	Las Vegas	Water/Sewer
Duck Creek Larson Detention Basin	Las Vegas	Water/Sewer
Duck Creek Railroad Detention Basin	Las Vegas	Water/Sewer
Duck Creek Railroad Detention Basin Upgrade	Las Vegas	Water/Sewer
Dunes Detention Basin	Nellis AFB	Water/Sewer
East C-1 Detention Basin	Las Vegas	Water/Sewer
Eastern Washes - Gubler	Las Vegas	Water/Sewer
Elkhorn Springs Detention Basin	Las Vegas	Water/Sewer
Equestrian Detention Basin	Henderson	Water/Sewer
F1 Debris Basin	Las Vegas	Water/Sewer
F2 Debris Basin	Las Vegas	Water/Sewer
F3 Detention Basin	Las Vegas	Water/Sewer
F4 Debris Basin	Las Vegas	Water/Sewer
Fairgrounds - Lyman	Las Vegas	Water/Sewer
Fairgrounds - Whipple	Las Vegas	Water/Sewer
Flamingo Detention Basin	Las Vegas	Water/Sewer
Fort Apache Detention Basin	Las Vegas	Water/Sewer
Gann Avenue Storm Drain	Las Vegas	Water/Sewer
Goodsprings/Coyote St Channel	Las Vegas	Water/Sewer
Goodsprings/Coyote St Channel	Las Vegas	Water/Sewer
Gowan North Detention Basin	Las Vegas	Water/Sewer
Gowan South Detention Basin	Las Vegas	Water/Sewer
Gowan South Detention Basin Upgrade	Las Vegas	Water/Sewer
Grand Park Detention Basin	Las Vegas	Water/Sewer
Headworks Detention Basin	Henderson	Water/Sewer
Hiko Springs Detention Basin Upgrade	Las Vegas	Water/Sewer
Hiko Springs Wash	Las Vegas	Water/Sewer
Hiko Springs Wash Detention Basin	Las Vegas	Water/Sewer
Indian Springs Detention Basin	Las Vegas	Water/Sewer
Internal Drainage Detention Basin	Mesquite	Water/Sewer
Jess Waite Wash Sediment Basin	Las Vegas	Water/Sewer
Jess Waite Wash Sediment Basin Upgrade	Las Vegas	Water/Sewer
Jim Mcgaughey Detention Basin	Las Vegas	Water/Sewer
Jim Wilson Detention Basin	Mesquite	Water/Sewer
Jim Wilson Detention Basin	Mesquite	Water/Sewer
Katzenbach Sediment Basin	Boulder City	Water/Sewer
Kb Detention Basin	Las Vegas	Water/Sewer
Kyle Canyon Detention Basin	Las Vegas	Water/Sewer
Kyle Canyon Detention Basin Upgrade	Las Vegas	Water/Sewer
Kyle Canyon Sediment Basin	Las Vegas	Water/Sewer
Lake Mountain Sediment Basin	Boulder City	Water/Sewer
Lake Ontario Sediment Basin	Boulder City	Water/Sewer
Lakes Detention Basin	Las Vegas	Water/Sewer

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Lakes Detention Basin Upgrade	Las Vegas	Water/Sewer
Laughlin/Edison Debris Basin	Las Vegas	Water/Sewer
Laughlin/Edison Detention Basin	Las Vegas	Water/Sewer
Leavitt Wash Detention Basin	Mesquite	Water/Sewer
Leavitt Wash Detention Basin	Mesquite	Water/Sewer
Lone Mountain Detention Basin	Las Vegas	Water/Sewer
Lone Mountain-Beltway Detention Basin	Las Vegas	Water/Sewer
Lower Blue Diamond Detention Basin	Las Vegas	Water/Sewer
Lower Duck Creek Detention Basin	Las Vegas	Water/Sewer
Lower Flamingo Detention Basin	Las Vegas	Water/Sewer
Lower Las Vegas Detention Basin	North Las Vegas	Water/Sewer
Mccarran Detention Basin	Las Vegas	Water/Sewer
Mccarran Detention Basin Upgrade	Las Vegas	Water/Sewer
Mccullough Detention Basin	Henderson	Water/Sewer
Meadows Detention Basin	Las Vegas	Water/Sewer
Meadows Detention Basin Upgrade	Las Vegas	Water/Sewer
Mission Hills Detention Basin	Henderson	Water/Sewer
Moccasin Outfall Detention Basin #1	Las Vegas	Water/Sewer
Moccasin Outfall Detention Basin #2	Las Vegas	Water/Sewer
Mountain View Industrial Branch 2	Las Vegas	Water/Sewer
Mountain View Industrial South System 1	North Las Vegas	Water/Sewer
Mountain View Industrial System 1	North Las Vegas	Water/Sewer
Ndot Sediment Basin	Henderson	Water/Sewer
Ndot Sediment Basin	Henderson	Water/Sewer
North Apex System 1	Las Vegas	Water/Sewer
North Environmental Enhancement Area	Las Vegas	Water/Sewer
North Las Vegas Detention Basin	North Las Vegas	Water/Sewer
North Las Vegas Detention Basin Upgrade	North Las Vegas	Water/Sewer
North Northeast C-1 Sediment Basin	Henderson	Water/Sewer
North Railroad Detention Basin	Boulder City	Water/Sewer
Northeast C-1 Detention Basin	Henderson	Water/Sewer
Oakey Detention Basin	Las Vegas	Water/Sewer
Orchard Detention Basin	Las Vegas	Water/Sewer
Pabco North Peaking Basin	Henderson	Water/Sewer
Pabco South Peaking Basin	Henderson	Water/Sewer
Pacifica Way Sediment Basin	Boulder City	Water/Sewer
Paradise Detention Basin	Las Vegas	Water/Sewer
Park Highlands West Detention Basin	North Las Vegas	Water/Sewer
Pioneer Detention Basin	Henderson	Water/Sewer
Pittman Anthem Detention Basin	Las Vegas	Water/Sewer
Pittman Crescent Debris Basin	Las Vegas	Water/Sewer
Pittman East Detention Basin	Henderson	Water/Sewer
Pittman Horizon Ridge Detention Basin	Henderson	Water/Sewer
Pittman North Detention Basin	Henderson	Water/Sewer
Pittman Ocean Grove Debris Basin	Las Vegas	Water/Sewer
Pittman Park Peaking Basin	Henderson	Water/Sewer
Pittman Pont National Debris Basin	Henderson	Water/Sewer

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Name	**Jurisdiction**	**Facility Type**
Pittman Railroad East Sediment Basin	Henderson	Water/Sewer
Pittman Wash Debris Basin	Henderson	Water/Sewer
Pittman Wash Southeast Debris Basin	Henderson	Water/Sewer
Pulsipher Wash Detention Basin	Mesquite	Water/Sewer
Pulsipher Wash Detention Basin	Mesquite	Water/Sewer
R4 Detention Basin	Las Vegas	Water/Sewer
Rainbow Detention Basin	Las Vegas	Water/Sewer
Rancho Road Detention Basin	Las Vegas	Water/Sewer
Range Wash - Railroad East Branch 1	North Las Vegas	Water/Sewer
Range Wash - Speedway Channel	North Las Vegas	Water/Sewer
Range Wash - Speedway Channel Branch 1	North Las Vegas	Water/Sewer
Red Rock Detention Basin	Las Vegas	Water/Sewer
Silverado Ranch Detention Basin	Las Vegas	Water/Sewer
South Environmental Enhancement Area	Las Vegas	Water/Sewer
South Northeast C-1 Sediment Basin	Henderson	Water/Sewer
Southeast Pittman Detention Basin	Henderson	Water/Sewer
Southwest Pittman Detention Basin	Henderson	Water/Sewer
Speedway #2 Detention Basin	North Las Vegas	Water/Sewer
Speedway #3 Detention Basin	North Las Vegas	Water/Sewer
Speedway #3 Detention Basin Upgrade	North Las Vegas	Water/Sewer
Speedway North Detention Basin	North Las Vegas	Water/Sewer
Trailhead Detention Basin	Boulder City	Water/Sewer
Tropicana Detention Basin	Las Vegas	Water/Sewer
Tropicana North Branch Detention Basin	Las Vegas	Water/Sewer
Tropicana Wash-Harry Reid Airport Peaking Basin	Las Vegas	Water/Sewer
Upper Blue Diamond Detention Basin	Las Vegas	Water/Sewer
Upper Duck Creek Detention Basin	Las Vegas	Water/Sewer
Upper Las Vegas Wash Detention Basin	Las Vegas	Water/Sewer
Upper Las Vegas Wash Detention Basin Upgrade	Las Vegas	Water/Sewer
Van Buskirk A Detention Basin	Las Vegas	Water/Sewer
Van Buskirk C Detention Basin	Las Vegas	Water/Sewer
Vandenberg Detention Basin	North Las Vegas	Water/Sewer
Vandenberg North Detention Basin	North Las Vegas	Water/Sewer
Village 26 Detention Basin	Las Vegas	Water/Sewer
Wagon Trail Detention Basin	Las Vegas	Water/Sewer
West Airport Cc North	Boulder City	Water/Sewer
West Airport Cc South	Boulder City	Water/Sewer
West Airport Dd	Boulder City	Water/Sewer
Western Washes Channel System - Cottonwood	Las Vegas	Water/Sewer
Western Washes Channel System - Duesing	Las Vegas	Water/Sewer
Western Washes Channel System - Ingram	Las Vegas	Water/Sewer
Western Washes Channel System - Overton Wash	Las Vegas	Water/Sewer
Western Washes Channel System - West Wash 1	Las Vegas	Water/Sewer
Western Washes Channel System - Wieber	Las Vegas	Water/Sewer
Western Washes Channel System - Wittwer	Las Vegas	Water/Sewer
Western Washes Detention Basin	Mesquite	Water/Sewer
Western Washes Detention Basin	Mesquite	Water/Sewer

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Name	**Jurisdiction**	**Facility Type**
Windmill Wash Detention Basin	Las Vegas	Water/Sewer
Windmill Wash Detention Basin Upgrade	Las Vegas	Water/Sewer
Yucca Debris Basin	Boulder City	Water/Sewer
Anderson Dairy, Inc	Las Vegas	Hazardous Materials
Blue Beacon of Las Vegas	North Las Vegas	Hazardous Materials
Chlorine Storage Building - LVVWD	Las Vegas	Hazardous Materials
City of Las Vegas Water Pollution Control Facility	Las Vegas	Hazardous Materials
CM Reprographics	Las Vegas	Hazardous Materials
Consolidated Noble, Inc	Las Vegas	Hazardous Materials
Copperstate Emulsions, Inc - Las Vegas	Las Vegas	Hazardous Materials
Desert Gold Food Co Inc	Las Vegas	Hazardous Materials
Elstner Estates Well Site - City of North Las Vegas	Las Vegas	Hazardous Materials
EQ Industrial Services, Inc	Las Vegas	Hazardous Materials
Ergon Asphalt & Emulsions, Inc	Las Vegas	Hazardous Materials
Good Humor-Breyers Ice Cream	Henderson	Hazardous Materials
Gowan Pump Station - Las Vegas Valley Water District	Las Vegas	Hazardous Materials
Gowan Wells - City of North Las Vegas	Las Vegas	Hazardous Materials
Henderson Cold Storage	Henderson	Hazardous Materials
Kerr-McGee Chemical Corporation LLC (Apex Facility)	North Las Vegas	Hazardous Materials
Kerr-McGee Chemical Corporation LLC (Henderson)	Las Vegas	Hazardous Materials
Kerr-McGee Chemical Corporation LLC (Henderson)	Las Vegas	Hazardous Materials
Leavitt Well Site - City of North Las Vegas	North Las Vegas	Hazardous Materials
LVVWD	Las Vegas	Hazardous Materials
Maintenance Operations Building - City of North Las Vegas	North Las Vegas	Hazardous Materials
Mercury LDO	Las Vegas	Hazardous Materials
Mohave Generating Station	Las Vegas	Hazardous Materials
Municipal Swimming Pool - Boulder City	Boulder City	Hazardous Materials
Nevada Chemical Company	Las Vegas	Hazardous Materials
Nevada Power Company	Las Vegas	Hazardous Materials
Ocean Spray Cranberries, Inc	Henderson	Hazardous Materials
Phyllis & John Crockett	Las Vegas	Hazardous Materials
Pioneer Americas Co Inc	Las Vegas	Hazardous Materials
Pool Chlor of Nevada, Inc	Las Vegas	Hazardous Materials
Reddy Ice - Las Vegas	Las Vegas	Hazardous Materials
Robinson Well Site - City of North Las Vegas	Las Vegas	Hazardous Materials
Ronzone Reservoir - Las Vegas Valley Water District	Las Vegas	Hazardous Materials
Saguaro Power Company	Las Vegas	Hazardous Materials
Silver Mesa Well Site - City of North Las Vegas	North Las Vegas	Hazardous Materials
Southwest Pumping Station - LVVWD	Las Vegas	Hazardous Materials
Splash Pool Chemicals, Inc	Las Vegas	Hazardous Materials
Sun Valley Well Site - City of North Las Vegas	North Las Vegas	Hazardous Materials
Sweetheart Cup Company, Inc - North Las Vegas	North Las Vegas	Hazardous Materials

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Thatcher Nevada LLC-Henderson	Henderson	Hazardous Materials
Titanium Metals Corporation (TIMET)	Henderson	Hazardous Materials
US Food Service - Las Vegas	North Las Vegas	Hazardous Materials
Van Waters & Rogers, Inc	Las Vegas	Hazardous Materials
Waste Water Treatment Plant - Boulder City	Boulder City	Hazardous Materials
West Charleston Pumping Station - LVVWD	Las Vegas	Hazardous Materials
West Cheyenne Well Site - City of North Las Vegas	North Las Vegas	Hazardous Materials
KLAS Television Heliport	Las Vegas	Transportation
Advanced Medical Center Heliport	Las Vegas	Transportation
Boulder City Hospital Heliport	Boulder City	Transportation
Circus Circus Heliport	Las Vegas	Transportation
Desert Springs Hospital Medical Center Heliport	Las Vegas	Transportation
Eldorado Substation Heliport	Boulder City	Transportation
Gilbert Development Corp Heliport	North Las Vegas	Transportation
Gunship Helicopters, Range, and Tanks	Las Vegas	Transportation
Henderson Hospital Heliport	Henderson	Transportation
KPVM Television Heliport	Las Vegas	Transportation
Mercy Flight Servies Heliport	Las Vegas	Transportation
Mesa View Regional Hospital Heliport	Mesquite	Transportation
MountainView Hospital Heliport	Las Vegas	Transportation
Sky Ranch Heliport	Las Vegas	Transportation
Spring Valley Hospital Heliport	Las Vegas	Transportation
St Rose Dominican Hospital Heliport - North Las Vegas	North Las Vegas	Transportation
St Rose Dominican Hospital Heliport - San Martin Campus	Las Vegas	Transportation
St Rose Dominican Hospital Heliport - Sienna Campus	Henderson	Transportation
Summerlin Hospital Medical Center Heliport	Las Vegas	Transportation
Sunrise Medical Center Heliport	Las Vegas	Transportation
Valley Hospital Medical Center Heliport	Las Vegas	Transportation
Allure Condos	Las Vegas	Casinos/Resorts/Hotels
Boca Raton Las Vegas	Las Vegas	Casinos/Resorts/Hotels
Country Club Towers	Las Vegas	Casinos/Resorts/Hotels
Juhl Las Vegas Lofts	Las Vegas	Casinos/Resorts/Hotels
Mark I	Las Vegas	Casinos/Resorts/Hotels
Metropolis	Las Vegas	Casinos/Resorts/Hotels
Newport Lofts	Las Vegas	Casinos/Resorts/Hotels
One Las Vegas	Las Vegas	Casinos/Resorts/Hotels
One Queensridge Place	Las Vegas	Casinos/Resorts/Hotels
Palms Place	Las Vegas	Casinos/Resorts/Hotels
Panorama Towers	Las Vegas	Casinos/Resorts/Hotels
Park Towers	Las Vegas	Casinos/Resorts/Hotels
Regency Towers	Las Vegas	Casinos/Resorts/Hotels
Sky Las Vegas	Las Vegas	Casinos/Resorts/Hotels
Soho Lofts	Las Vegas	Casinos/Resorts/Hotels
The Martin	Las Vegas	Casinos/Resorts/Hotels

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
The Ogden Condos	Las Vegas	Casinos/Resorts/Hotels
The Platinum Hotel	Las Vegas	Casinos/Resorts/Hotels
The Signature at MGM Grand	Las Vegas	Casinos/Resorts/Hotels
Trump International Hotel Las Vegas	Las Vegas	Casinos/Resorts/Hotels
Turnberry Place	Las Vegas	Casinos/Resorts/Hotels
Turnberry Towers	Las Vegas	Casinos/Resorts/Hotels
Veer Towers	Las Vegas	Casinos/Resorts/Hotels
Advanced Technologies Academy	Las Vegas	Schools
Arbor View	Las Vegas	Schools
Basic Academy of International Studies	Henderson	Schools
Bonanza	Las Vegas	Schools
Boulder City High School	Boulder City	Schools
Canyon Springs	North Las Vegas	Schools
Centennial	Las Vegas	Schools
Chaparral	Las Vegas	Schools
Cheyenne	North Las Vegas	Schools
Cimarron-Memorial	Las Vegas	Schools
Coronado	Henderson	Schools
Del Sol Academy of the Performing Arts	Las Vegas	Schools
Desert Oasis	Las Vegas	Schools
Desert Pines	Las Vegas	Schools
Desert Rose High School	North Las Vegas	Schools
Durango	Las Vegas	Schools
East Career and Technical Academy	Las Vegas	Schools
Ed W. Clark	Las Vegas	Schools
Eldorado	Las Vegas	Schools
Foothill	Henderson	Schools
Global Community High School	Las Vegas	Schools
Green Valley	Henderson	Schools
Indian Springs High School	Las Vegas	Schools
Las Vegas	Las Vegas	Schools
Las Vegas Academy of the Arts	Las Vegas	Schools
Laughlin High School	Las Vegas	Schools
Legacy	North Las Vegas	Schools
Liberty	Henderson	Schools
Mission High School	Las Vegas	Schools
Moapa Valley High School	Las Vegas	Schools
Mojave	North Las Vegas	Schools
Northwest Career and Technical Academy	Las Vegas	Schools
Palo Verde	Las Vegas	Schools
Preparatory Institute, School for Academic Excellence at Charles I. West	Las Vegas	Schools
Rancho	North Las Vegas	Schools
Shadow Ridge	Las Vegas	Schools
Sierra Vista	Las Vegas	Schools
Silverado	Las Vegas	Schools
Southeast Career and Technical Academy	Las Vegas	Schools

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Southwest Career and Technical Academy	Las Vegas	Schools
Spring Valley	Las Vegas	Schools
Sunrise Mountain	Las Vegas	Schools
Valley	Las Vegas	Schools
Virgin Valley High School	Mesquite	Schools
West Career and Technical Academy	Las Vegas	Schools
Western	Las Vegas	Schools
Boulder City Hospital	Boulder City	Hospitals
Centennial Hills Hospital Medical Center	Las Vegas	Hospitals
Desert Springs Hospital Medical Center	Las Vegas	Hospitals
Dignity Health - St Rose Dominican	Las Vegas	Hospitals
Dignity Health - St Rose Dominican Hospital	North Las Vegas	Hospitals
Dignity Health - St Rose Dominican Hospital	Las Vegas	Hospitals
Dignity Health - St Rose Dominican Hospital	Las Vegas	Hospitals
Henderson Hospital	Henderson	Hospitals
Kindred Hospital Las Vegas - Flamingo	Las Vegas	Hospitals
Kindred Hospital Las Vegas - Sahara	Las Vegas	Hospitals
Mesa View Regional Hospital	Mesquite	Hospitals
Mike O'Callaghan Military Medical Center	Nellis AFB	Hospitals
Mountain View Hospital	Las Vegas	Hospitals
North Vista Hospital	North Las Vegas	Hospitals
Southern Hills Hospital & Medical Center	Las Vegas	Hospitals
Spring Valley Hospital Medical Center	Las Vegas	Hospitals
St Rose Dominican Hospital Rose de Lima Campus	Henderson	Hospitals
St Rose Dominican Hospital San Martin Campus	Las Vegas	Hospitals
St Rose Dominican Hospital Siena Campus	Henderson	Hospitals
Summerlin Hospital Medical Center	Las Vegas	Hospitals
Sunrise Children's Hospital	Las Vegas	Hospitals
Sunrise Hospital - Women's Pavillion	Las Vegas	Hospitals
Sunrise Hospital & Medical Center	Las Vegas	Hospitals
UMC Children's Hospital	Las Vegas	Hospitals
University Medical Center of Southern Nevada	Las Vegas	Hospitals
VA Southern Nevada	North Las Vegas	Hospitals
Valley Hospital Medical Center	Las Vegas	Hospitals
Artisan Hotel	Las Vegas	Casinos/Resorts/Hotels
Best Western Plus	Henderson	Casinos/Resorts/Hotels
Best Western Plus Henderson	Henderson	Casinos/Resorts/Hotels
Doubletree Club Las Vegas	Las Vegas	Casinos/Resorts/Hotels
El Cortez Cabana Suites	Las Vegas	Casinos/Resorts/Hotels
Element Las Vegas Summerlin	Las Vegas	Casinos/Resorts/Hotels
Embassy Suites Airport	Las Vegas	Casinos/Resorts/Hotels
Embassy Suites Convention Center	Las Vegas	Casinos/Resorts/Hotels
Emerald Suites - Cameron	Las Vegas	Casinos/Resorts/Hotels
Emerald Suites - Las Vegas Blvd	Las Vegas	Casinos/Resorts/Hotels
Emerald Suites Convention Center	Las Vegas	Casinos/Resorts/Hotels
Fairfield Inn & Suites by Marriott	Las Vegas	Casinos/Resorts/Hotels

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Fairfield Inn & Suites by Marriott	Las Vegas	Casinos/Resorts/Hotels
Four Points by Sheraton	Las Vegas	Casinos/Resorts/Hotels
Hampton Inn & Suites at McCarran Airport	Las Vegas	Casinos/Resorts/Hotels
Hampton Inn & Suites Convention Center	Las Vegas	Casinos/Resorts/Hotels
Hampton Inn & Suites Henderson	Henderson	Casinos/Resorts/Hotels
Hampton Inn & Suites Las Vegas South	Henderson	Casinos/Resorts/Hotels
Hampton Inn & Suites Redrock	Las Vegas	Casinos/Resorts/Hotels
Hampton Inn Las Vegas North Speedway	North Las Vegas	Casinos/Resorts/Hotels
Hampton Inn Summerlin	Las Vegas	Casinos/Resorts/Hotels
Hampton Inn Tropicana	Las Vegas	Casinos/Resorts/Hotels
Hawthorn Inn & Suites by Wyndham	Henderson	Casinos/Resorts/Hotels
Hilton Garden Inn Henderson	Henderson	Casinos/Resorts/Hotels
Hilton Garden Inn Las Vegas Strip South	Las Vegas	Casinos/Resorts/Hotels
Homewood Suites Henderson	Henderson	Casinos/Resorts/Hotels
Homewood Suites Las Vegas Airport	Las Vegas	Casinos/Resorts/Hotels
Hyatt Place Las Vegas	Las Vegas	Casinos/Resorts/Hotels
La Quinta Inn & Suites Airport - Convention Center	Las Vegas	Casinos/Resorts/Hotels
La Quinta Inn & Suites McCarran Airport South	Las Vegas	Casinos/Resorts/Hotels
La Quinta Inn & Suites Northwest Tech Center	Las Vegas	Casinos/Resorts/Hotels
La Quinta Inn & Suites Red Rock - Summerlin	Las Vegas	Casinos/Resorts/Hotels
La Quinta Inn Las Vegas Nellis	Las Vegas	Casinos/Resorts/Hotels
La Quinta Inn Las Vegas Tropicana	Las Vegas	Casinos/Resorts/Hotels
Marriott Courtyard Henderson - Green Valley	Henderson	Casinos/Resorts/Hotels
Marriott Courtyard Las Vegas South	Las Vegas	Casinos/Resorts/Hotels
Marriott Courtyard LV Convention Center	Las Vegas	Casinos/Resorts/Hotels
Marriott Fairfield Inn & Suites Las Vegas South	Las Vegas	Casinos/Resorts/Hotels
Marriott Fairfield Inn LV Airport & Conv Center	Las Vegas	Casinos/Resorts/Hotels
Marriott LV Convention Center	Las Vegas	Casinos/Resorts/Hotels
Marriott Residence Inn Airport	Las Vegas	Casinos/Resorts/Hotels
Marriott Residence Inn Convention Center	Las Vegas	Casinos/Resorts/Hotels
Marriott Residence Inn Henderson Green Valley	Henderson	Casinos/Resorts/Hotels
Marriott Residence Inn Hughes Center	Las Vegas	Casinos/Resorts/Hotels
Marriott Residence Inn South	Las Vegas	Casinos/Resorts/Hotels
Marriott Springhill Suites Henderson Green Valley	Henderson	Casinos/Resorts/Hotels
Marriott Towneplace Suites Henderson Green Valley	Henderson	Casinos/Resorts/Hotels
Motel 6 Las Vegas Motor Speedway	North Las Vegas	Casinos/Resorts/Hotels
Renaissance Las Vegas Hotel	Las Vegas	Casinos/Resorts/Hotels
Rodeway Inn & Suites	Las Vegas	Casinos/Resorts/Hotels
Serene Vegas Resort	Las Vegas	Casinos/Resorts/Hotels
Siena Suites Hotel	Las Vegas	Casinos/Resorts/Hotels
Sonesta Select Las Vegas	Las Vegas	Casinos/Resorts/Hotels
Sonesta Simply Suites	Las Vegas	Casinos/Resorts/Hotels
Springhill Suites by Marriott LV Convention Center	Las Vegas	Casinos/Resorts/Hotels
SpringHill Suites by Marriott North Speedway	North Las Vegas	Casinos/Resorts/Hotels
Staybridge Suites	Las Vegas	Casinos/Resorts/Hotels
Aria Convention & Meeting Facilites	Las Vegas	Casinos/Resorts/Hotels

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Ballys Meeting Facilities	Las Vegas	Casinos/Resorts/Hotels
Bellagio Meeting Facilities	Las Vegas	Casinos/Resorts/Hotels
Caesars Palace Meeting Facilities	Las Vegas	Casinos/Resorts/Hotels
JW Marriott Meeting Facilities	Las Vegas	Casinos/Resorts/Hotels
MGM Grand Meeting Facilities	Las Vegas	Casinos/Resorts/Hotels
Mirage Meeting Facilities	Las Vegas	Casinos/Resorts/Hotels
Paris Meeting Facilities	Las Vegas	Casinos/Resorts/Hotels
Rio Meeting Facilities	Las Vegas	Casinos/Resorts/Hotels
South Point Meeting Facilities	Las Vegas	Casinos/Resorts/Hotels
Venetian & Palazzo Meeting Facilities	Las Vegas	Casinos/Resorts/Hotels
Westgate Meeting Facilities	Las Vegas	Casinos/Resorts/Hotels
Wynn Meeting Facilities	Las Vegas	Casinos/Resorts/Hotels
Hoover Dam	Las Vegas	Water/Sewer
City of Las Vegas Detention Center	Las Vegas	Correctional Facilities
Clark County Detention Center	Las Vegas	Correctional Facilities
Clark County Juvenile Detention Center	Las Vegas	Correctional Facilities
Henderson Detention Center	Henderson	Correctional Facilities
Mesquite Detention Center	Mesquite	Correctional Facilities
North Las Vegas Detention Center	North Las Vegas	Correctional Facilities
Boulder City Justice Court	Boulder City	Court House
Bunkerville Justice Court	Las Vegas	Court House
Goodsprings Justice Court	Las Vegas	Court House
Henderson Justice Court	Henderson	Court House
Mesquite Justice Court	Mesquite	Court House
Moapa Justice Court	Las Vegas	Court House
Moapa Valley Justice Court	Las Vegas	Court House
North Las Vegas Justice Court	North Las Vegas	Court House
Searchlight Justice Court	Las Vegas	Court House
Apex Landfill Generation Plant	Las Vegas	Natural Gas
Airport Bureau - LVMPD	Las Vegas	Police
Bolden Area Command- LVMPD	Las Vegas	Police
Boulder City Police Station - BC	Boulder City	Police
Clark County Dentention Center - LVMPD	Las Vegas	Police
Convention Center Area Command - LVMPD	Las Vegas	Police
Downtown Area Command - LVMPD	Las Vegas	Police
East Police Station - HEND	Henderson	Police
Enterprise Area Command - LVMPD	Las Vegas	Police
Headquarters - LVMPD	Las Vegas	Police
Henderson Detention Center - HEND	Henderson	Police
Indian Springs Substation- LVMPD	Las Vegas	Police
Jean Substation- LVMPD	Las Vegas	Police
Laughlin Substation- LVMPD	Las Vegas	Police
Mesquite Police Department - MES	Mesquite	Police
Mesquite Substation- LVMPD	Mesquite	Police
Mt Charleston Substation- LVMPD	Las Vegas	Police
North Police Station - HEND	Henderson	Police
Northeast Area Command - LVMPD	Las Vegas	Police

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Northwest Area Command - LVMPD	Las Vegas	Police
Northwest Area Command - NLV	North Las Vegas	Police
Overton Substation- LVMPD	Las Vegas	Police
Police Headquarters - NLV	North Las Vegas	Police
Searchlight Substation- LVMPD	Las Vegas	Police
South Area Command - NLV	North Las Vegas	Police
South Central Area Command - LVMPD	Las Vegas	Police
Southeast Area Command - LVMPD	Las Vegas	Police
Southern Command - NHP	Las Vegas	Police
West Police Station - HEND	Henderson	Police
Anthony Saville	Las Vegas	Schools
B. Mahlon Brown Academy of International Studies	Henderson	Schools
Barbara and Hank Greenspun	Henderson	Schools
Barry and June Gunderson	Las Vegas	Schools
Bob Miller	Henderson	Schools
Brian and Teri Cram	North Las Vegas	Schools
C. W. Woodbury	Las Vegas	Schools
Carroll M. Johnston	North Las Vegas	Schools
Charles Arthur Hughes	Mesquite	Schools
Charles Silvestri	Las Vegas	Schools
Clifford J. Lawrence	Las Vegas	Schools
Clifford O. (Pete) Findlay	North Las Vegas	Schools
Del E. Webb	Henderson	Schools
Dell H. Robison	Las Vegas	Schools
Dr. William H. Bob Bailey	Las Vegas	Schools
Duane D. Keller	Las Vegas	Schools
Ed Von Tobel	Las Vegas	Schools
Edmundo Eddie Escobedo, Sr.	Las Vegas	Schools
Elton M. and Madelaine E. Garrett	Boulder City	Schools
Ernest A. Becker, Sr.	Las Vegas	Schools
Francis H. Cortney	Las Vegas	Schools
Frank F. Garside	Las Vegas	Schools
Grant Sawyer	Las Vegas	Schools
Helen C. Cannon	Las Vegas	Schools
Hyde Park	Las Vegas	Schools
Irwin A. and Susan Molasky	Las Vegas	Schools
J. D. Smith	North Las Vegas	Schools
J. Harold Brinley	Las Vegas	Schools
Jack and Terry Mannion	Henderson	Schools
Jack Lund Schofield	Las Vegas	Schools
James Cashman	Las Vegas	Schools
Jerome D. Mack	Las Vegas	Schools
Jim Bridger	North Las Vegas	Schools
John C. Fremont Professional Development Middle School	Las Vegas	Schools
Justice Myron E. Leavitt	Las Vegas	Schools
K. O. Knudson Academy of the Arts	Las Vegas	Schools

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Kathleen and Tim Harney	Las Vegas	Schools
Kenny C. Guinn	Las Vegas	Schools
Lawrence and Heidi Canarelli	Las Vegas	Schools
Lied STEM Academy	Las Vegas	Schools
Lois and Jerry Tarkanian	Las Vegas	Schools
Lyal Burkholder	Henderson	Schools
Mario C. and JoAnne Monaco	Las Vegas	Schools
Marvin M. Sedway	North Las Vegas	Schools
Mike O'Callaghan Middle School i3 Learn Academy	Las Vegas	Schools
Ralph Cadwallader	Las Vegas	Schools
Robert O. Gibson Leadership Academy	Las Vegas	Schools
Roy W. Martin	Las Vegas	Schools
Sig Rogich	Las Vegas	Schools
Theron L. Swainston	North Las Vegas	Schools
Thurman White Academy of the Performing Arts	Henderson	Schools
Victoria Fertitta	Las Vegas	Schools
W. Mack Lyon	Las Vegas	Schools
Walter Johnson Junior High School Academy of International Studies	Las Vegas	Schools
Wilbur and Theresa Faiss	Las Vegas	Schools
William E. Orr	Las Vegas	Schools
Nellis AFB	Nellis AFB	Government Offices
Northern Readiness Center	North Las Vegas	Government Offices
Las Vegas Readiness Center	Las Vegas	Government Offices
LORAN	Las Vegas	Government Offices
Creech AFB	Las Vegas	Government Offices
AREA15	Las Vegas	Government Offices
Atomic Testing Museum	Las Vegas	Government Offices
Barrick Museum	Las Vegas	Government Offices
BC / Hoover Dam Museum	Boulder City	Government Offices
Cannon Aviation Museum	Las Vegas	Government Offices
CC Museum	Henderson	Government Offices
Discovery Museum	Las Vegas	Government Offices
Erotic Heritage Museum	Las Vegas	Government Offices
Haunted Museum	Las Vegas	Government Offices
Lost City Museum	Las Vegas	Government Offices
LV Natural History Museum	Las Vegas	Government Offices
MES Fine Arts Center	Mesquite	Government Offices
Mob Museum	Las Vegas	Government Offices
Neon Museum	Las Vegas	Government Offices
NV Railroad Museum	Boulder City	Government Offices
NV State Museum	Las Vegas	Government Offices
NV Welcome Center	Mesquite	Government Offices
Old LV Mormon Fort	Las Vegas	Government Offices
Searchlight Museum	Las Vegas	Government Offices
Smith Center	Las Vegas	Government Offices
Springs Preserve	Las Vegas	Government Offices

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Virgin Valley Museum	Mesquite	Government Offices
Fort Mojave Reservation	Las Vegas	Native Reservation
Las Vegas Indian Colony	Las Vegas	Native Reservation
Moapa River Indian Reservation	Las Vegas	Native Reservation
Apex Generating System	Las Vegas	Natural Gas
Chuck Lenzie Generating Station	Las Vegas	Natural Gas
Desert Star Energy Center	Boulder City	Natural Gas
Edward Clark Generating Station	Las Vegas	Natural Gas
Harry Allen Generating Station	Las Vegas	Natural Gas
Silverhawk Generating Station	Las Vegas	Natural Gas
Saguaro Power Plant	Las Vegas	Natural Gas
Sun Peak Generating Station	Las Vegas	Natural Gas
Walter M. Higgins Generating Station	Las Vegas	Natural Gas
Regional Flood Control District	Las Vegas	Government Offices
Regional Transportation Commission of Southern Nevada	Las Vegas	Government Offices
Southern Nevada Health District	Las Vegas	Government Offices
ABC Park	Boulder City	Government Offices
Acacia Park Demonstration Garden	Henderson	Government Offices
Alexander Villas Park	Las Vegas	Government Offices
All American Park	Las Vegas	Government Offices
Allegro Park	Henderson	Government Offices
Aloha Shores Park	Las Vegas	Government Offices
Amador Vista Park	Henderson	Government Offices
Angel Park	Las Vegas	Government Offices
AnSan Sister City Park	Las Vegas	Government Offices
Anthem Hills	Henderson	Government Offices
Arroyo Grande Sports Complex	Henderson	Government Offices
Avellino Park	Henderson	Government Offices
Aviary Park	North Las Vegas	Government Offices
Baker Park	Las Vegas	Government Offices
Bark Park At Heritage Square	Henderson	Government Offices
Barkin Basin	Las Vegas	Government Offices
Basic High School Ball Fields	Henderson	Government Offices
Bettye Wilson Soccer Complex	Las Vegas	Government Offices
Bicentennial Park	Boulder City	Government Offices
Bill Briare Family Park	Las Vegas	Government Offices
Bird Viewing Preserve	Henderson	Government Offices
Blue Diamond Park	Las Vegas	Government Offices
Bob Baskin Park	Las Vegas	Government Offices
Bootleg Canyon Trail Park	Boulder City	Government Offices
Boris Terrace Park	North Las Vegas	Government Offices
Bradley Bridle Park	Las Vegas	Government Offices
Broadbent Memorial Park	Boulder City	Government Offices
Brooks Tot Lot	North Las Vegas	Government Offices
Bruce Trent Park	Las Vegas	Government Offices
Buckskin Park	Las Vegas	Government Offices

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Name	**Jurisdiction**	**Facility Type**
Buckskin/Cliff Shadows Park	Las Vegas	Government Offices
Burkholder Baseball Field Park	Henderson	Government Offices
C T Sewell School Park	Henderson	Government Offices
Cactus Wren Park	Henderson	Government Offices
Cameron Community Park	Las Vegas	Government Offices
Camp Lee Canyon	Las Vegas	Government Offices
Camp Potosi Park	Las Vegas	Government Offices
Cannon MS Park	Las Vegas	Government Offices
Cashman MS Park	Las Vegas	Government Offices
CC Amphitheater Park	Las Vegas	Government Offices
CC Fairgrounds Park	Las Vegas	Government Offices
CC Museum Park	Henderson	Government Offices
CC Shooting Complex	Las Vegas	Government Offices
Centennial / Rome Community Park	North Las Vegas	Government Offices
Centennial Hills Park	Las Vegas	Government Offices
Centennial Hills Phase III Park	Las Vegas	Government Offices
Cesar E Chavez MS Park	Las Vegas	Government Offices
Charleston Heights Park	Las Vegas	Government Offices
Charleston Neighborhood Preservation Park	Las Vegas	Government Offices
Charlie Frias Park	Las Vegas	Government Offices
Cheyenne Ridge Park	North Las Vegas	Government Offices
Cheyenne Sports Complex	North Las Vegas	Government Offices
Children's Memorial Park	Las Vegas	Government Offices
Cimarron Rose Park	Las Vegas	Government Offices
Cinnamon Ridge Park	Henderson	Government Offices
City View Park & Golf Course	North Las Vegas	Government Offices
Clarence Ray Memorial Park	Las Vegas	Government Offices
Coleman Park	Las Vegas	Government Offices
College Park	North Las Vegas	Government Offices
Community Park	Las Vegas	Government Offices
Cornerstone Park	Henderson	Government Offices
Cortney MS Park	Las Vegas	Government Offices
Cragin Park	Las Vegas	Government Offices
Craig Ranch Regional Park	North Las Vegas	Government Offices
CRHG Bridge	Las Vegas	Government Offices
CRHG Equestrian Trailhead	Las Vegas	Government Offices
CRHG North Reach Trailhead	Las Vegas	Government Offices
CRHG Pyramid Canyon Day Use	Las Vegas	Government Offices
CRHG South Reach Trailhead	Las Vegas	Government Offices
Davis Park	Las Vegas	Government Offices
Decatur & Deer Springs	Las Vegas	Government Offices
Deer Springs Park	North Las Vegas	Government Offices
Del Prado Park	Boulder City	Government Offices
Desert Bloom Park	Las Vegas	Government Offices
Desert Breeze Park	Las Vegas	Government Offices
Desert Horizons	North Las Vegas	Government Offices
Desert Inn Park	Las Vegas	Government Offices

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Name	**Jurisdiction**	**Facility Type**
Desert Rose Park	Mesquite	Government Offices
Discovery Park	Henderson	Government Offices
District F Park	Las Vegas	Government Offices
Doc Johnson Rose Garden Park	Las Vegas	Government Offices
Doc Romeo Park	Las Vegas	Government Offices
Dog Fanciers Park	Las Vegas	Government Offices
Doolittle Park	Las Vegas	Government Offices
Dos Escuelas Park	Henderson	Government Offices
Douglas A Selby Park & Trailhead	Las Vegas	Government Offices
Downtown Park Rec Ctr & Bmi Pool	Henderson	Government Offices
Dr William U Pearson Park	Las Vegas	Government Offices
Duck Creek Park	Las Vegas	Government Offices
Durango Hills Park	Las Vegas	Government Offices
Echo Trail Park	Las Vegas	Government Offices
Ed Fountain Park	Las Vegas	Government Offices
Eldorado Park	North Las Vegas	Government Offices
Equestrian Park	Henderson	Government Offices
Equestrian Park South /Trailhead	Henderson	Government Offices
Escalante Park North	Boulder City	Government Offices
Escalante Park South	Boulder City	Government Offices
Esselmont Park	Henderson	Government Offices
Estelle Neal Park	Las Vegas	Government Offices
Ethel Pearson Park	Las Vegas	Government Offices
Exploration Peak Park	Las Vegas	Government Offices
Firefighters Memorial Park	Las Vegas	Government Offices
Fitzgerald Tot Lot Park	Las Vegas	Government Offices
Flores Park	North Las Vegas	Government Offices
Floyd Lamb Park at Tule Springs	Las Vegas	Government Offices
Foxridge Park	Henderson	Government Offices
Frank Crowe Memorial Park	Boulder City	Government Offices
Freedom Park	Las Vegas	Government Offices
Galloway School Park	Henderson	Government Offices
Gardens Park	Las Vegas	Government Offices
Garehime Heights Park	Las Vegas	Government Offices
Gary Dexter Park	Las Vegas	Government Offices
Gilcrease Brothers Park	Las Vegas	Government Offices
Gilmore/Cliff Shadows	Las Vegas	Government Offices
Goett Family Park	Las Vegas	Government Offices
Gold Crest Park	North Las Vegas	Government Offices
Goodsprings Park	Las Vegas	Government Offices
Grant Bowler Park	Las Vegas	Government Offices
Grapevine Springs Park	Las Vegas	Government Offices
Green Valley Park	Henderson	Government Offices
Guinn MS Park	Las Vegas	Government Offices
Gypsum Ridge North	Las Vegas	Government Offices
Gypsum Ridge South	Las Vegas	Government Offices
Hadland Park	Las Vegas	Government Offices

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Hafen Trailhead Park	Mesquite	Government Offices
Harmony Park	Las Vegas	Government Offices
Harney MS Park	Las Vegas	Government Offices
Hartke Park	North Las Vegas	Government Offices
Hartke Pool	North Las Vegas	Government Offices
Hayley Hendricks Park	Henderson	Government Offices
Hebert Memorial Park	North Las Vegas	Government Offices
Heers Park	Las Vegas	Government Offices
Hemenway Valley Park	Boulder City	Government Offices
Henderson Bird Viewing Preserve	Henderson	Government Offices
Henderson Pavilion Multigen Center	Henderson	Government Offices
Heritage Park	Las Vegas	Government Offices
Hidden Falls Park/Amargosa Trailhead	Henderson	Government Offices
Hidden Palms Park	Las Vegas	Government Offices
Hillside Arboretum Park	Mesquite	Government Offices
Hollywood Park	Las Vegas	Government Offices
Horizon Crest Park	Henderson	Government Offices
Horsemans Park	Las Vegas	Government Offices
Howard W Cannon Aviation Museum	Las Vegas	Government Offices
Hunter Sports Park	Mesquite	Government Offices
Huntridge Circle Park	Las Vegas	Government Offices
Indian Hills Park	Las Vegas	Government Offices
Indian Springs Park	Las Vegas	Government Offices
Inzalaco Park	Las Vegas	Government Offices
James Gay III Park	Las Vegas	Government Offices
James K. Seastrand Park	North Las Vegas	Government Offices
James Pulsipher Park	Mesquite	Government Offices
James Regional Soccer Complex	Las Vegas	Government Offices
Jensen Trailside Park	Mesquite	Government Offices
Jimmy Pettyjohn Park	Las Vegas	Government Offices
Joe Kneip Park	North Las Vegas	Government Offices
Joe Shoong Park	Las Vegas	Government Offices
Justice Myron E Leavitt Family Park	Las Vegas	Government Offices
Kellogg/Zaher Sports Complex	Las Vegas	Government Offices
Kidwell Center Park	Las Vegas	Government Offices
Kiel Ranch	North Las Vegas	Government Offices
Lakeview Park	Boulder City	Government Offices
Laughlin Pool	Las Vegas	Government Offices
Laurelwood Park	Las Vegas	Government Offices
Lewis Family Park	Las Vegas	Government Offices
Library Park	Mesquite	Government Offices
Lone Mountain Equestrian Park	Las Vegas	Government Offices
Lone Mountain Park	Las Vegas	Government Offices
Lorenzi Park	Las Vegas	Government Offices
Lubertha Johnson Park	Las Vegas	Government Offices
Madeira Canyon Park	Henderson	Government Offices
Magdelena Vegas Mtn Park	Las Vegas	Government Offices

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Majestic Park	Las Vegas	Government Offices
Marilyn Redd Park	Mesquite	Government Offices
Martin Luther King Park	Las Vegas	Government Offices
Mary Dutton Park	Las Vegas	Government Offices
Maslow Park	Las Vegas	Government Offices
McCarran Marketplace Park	Las Vegas	Government Offices
Mccaw School Park	Henderson	Government Offices
McCool Regional Park	North Las Vegas	Government Offices
Mesa Park	Las Vegas	Government Offices
Mesquite Sports and Event Complex	Mesquite	Government Offices
Mike Morgan Family Park	Las Vegas	Government Offices
Mirabelli Park	Las Vegas	Government Offices
Mission Hills Park	Henderson	Government Offices
Moapa Valley Center Park	Las Vegas	Government Offices
Moapa Valley Senior Center Park	Las Vegas	Government Offices
Moapa Valley Sports Park	Las Vegas	Government Offices
Molasky Family Park	Las Vegas	Government Offices
Monte Vista Park	North Las Vegas	Government Offices
Morrell Park	Henderson	Government Offices
Mountain Crest Park	Las Vegas	Government Offices
Mountain Lake Park	Henderson	Government Offices
Mountain Ridge Park	Las Vegas	Government Offices
Mountain View ES Park	Las Vegas	Government Offices
Mountain View Park	Henderson, Las Vegas	Government Offices
Mountains Edge Park	Las Vegas	Government Offices
Mt Charleston ES Park	Las Vegas	Government Offices
Myrna Torme Williams Campus Park	Las Vegas	Government Offices
Nathaniel Jones Park	Las Vegas	Government Offices
Nature Discovery Park	North Las Vegas	Government Offices
Neighborhood Recreation Center	North Las Vegas	Government Offices
Nellis Meadows Park	Las Vegas	Government Offices
Neon Boneyard Park	Las Vegas	Government Offices
Nevada Trails Park	Las Vegas	Government Offices
Oak Leaf Park	Las Vegas	Government Offices
Oasis Park	Boulder City	Government Offices
Ocallaghan Park	Henderson	Government Offices
Old Mill Park	Mesquite	Government Offices
Old Spanish Trail Park	Las Vegas	Government Offices
Olympia Sports Park	Las Vegas	Government Offices
Orr MS Park	Las Vegas	Government Offices
Overton Park	Las Vegas	Government Offices
Overton Pool	Las Vegas	Government Offices
Paiute Park	Las Vegas	Government Offices
Paradise Park	Las Vegas	Government Offices
Paradise Vista Park	Las Vegas	Government Offices
Parkdale Park	Las Vegas	Government Offices
Paseo Verde	Henderson	Government Offices

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Paseo Verde/Amargosa Trailhead	Henderson	Government Offices
Paseo Vista Park	Henderson	Government Offices
Patriot Community Park	Las Vegas	Government Offices
Paul Meyer Park	Las Vegas	Government Offices
Peace Park	Las Vegas	Government Offices
Pebble Park	Las Vegas	Government Offices
Pecos Legacy Park	Henderson	Government Offices
Petitti Park	North Las Vegas	Government Offices
Petitti Pool	North Las Vegas	Government Offices
Pioneer Complex Pk	Mesquite	Government Offices
Pioneer Park	Las Vegas	Government Offices
Police Memorial Park	Las Vegas	Government Offices
Polly Gonzalez Memorial Park	Las Vegas	Government Offices
Potosi Park	Las Vegas	Government Offices
Prosperity Park	Las Vegas	Government Offices
Puccini Park	Henderson	Government Offices
Rafael Rivera Park	Las Vegas	Government Offices
Railroad Pass Trailhead	Henderson	Government Offices
Rainbow Family Park	Las Vegas	Government Offices
Ravenwood Park	Las Vegas	Government Offices
Recreation Center Park	Mesquite	Government Offices
Recreation Facilities Center Park	Boulder City	Government Offices
Recreation Synthetic Field	Mesquite	Government Offices
Red Ridge Park	Las Vegas	Government Offices
Redd Hills Park	Mesquite	Government Offices
Reflections Center Park	Boulder City	Government Offices
Reunion Trails Park/Amargosa Trailhead	Henderson	Government Offices
Richard Tam Park	North Las Vegas	Government Offices
Ridgebrook Park	Las Vegas	Government Offices
River Mountain Hiking Trail	Boulder City	Government Offices
River Mountain Park	Henderson	Government Offices
Roadrunner Park	Henderson	Government Offices
Robert E Price	Las Vegas	Government Offices
Robert E Price Park	Las Vegas	Government Offices
Rodeo Park	Henderson	Government Offices
Ron Lewis Town Park	Las Vegas	Government Offices
Rotary Park	Las Vegas	Government Offices
Rotary Tot Lot	North Las Vegas	Government Offices
Russell Road Recreation Complex	Henderson	Government Offices
Sagemont Park	Las Vegas	Government Offices
Saguaro Park	Henderson	Government Offices
Sandstone Ridge Park	North Las Vegas	Government Offices
Searchlight Community Center Park	Las Vegas	Government Offices
Searchlight Rex Bell Jr Trail Park	Las Vegas	Government Offices
Searchlight Senior Center Park	Las Vegas	Government Offices
Searchlight Teen Center Park	Las Vegas	Government Offices
Searchlight Town Park	Las Vegas	Government Offices

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Searchlight Youth Center Park	Las Vegas	Government Offices
Shaded Canyon Trailhead	Henderson	Government Offices
Shadow Rock Park	Las Vegas	Government Offices
Siegfried & Roy Park	Las Vegas	Government Offices
Siena Heights/Armargosa Trailhead	Henderson	Government Offices
Silver Mesa Recreation Center & Activity Pool	North Las Vegas	Government Offices
Silver Springs Park	Henderson	Government Offices
Silverado Ranch Park	Las Vegas	Government Offices
Silverbowl (Air-Field)	Las Vegas	Government Offices
Silverbowl Park	Las Vegas	Government Offices
Silverbowl Park-ball flds	Las Vegas	Government Offices
Silvestri MS Park	Las Vegas	Government Offices
Sky Ridge Park	Las Vegas	Government Offices
Solista Park	Henderson	Government Offices
Somerset Hills Park	Las Vegas	Government Offices
Sonata Park	Henderson	Government Offices
Southern Highlands Dog Park	Las Vegas	Government Offices
Southwest Ridge Park & Trailhead	Las Vegas	Government Offices
Spotted Leaf Park	Las Vegas	Government Offices
Spring Valley Community Park	Las Vegas	Government Offices
Stephanie Lynn Craig Park	Henderson	Government Offices
Stewart Place Park	Las Vegas	Government Offices
Stonewater Park	Las Vegas	Government Offices
Sundial Park	Boulder City	Government Offices
Sunny Springs Park	Las Vegas	Government Offices
Sunridge Park	Henderson	Government Offices
Sunrise Park	Las Vegas	Government Offices
Sunset Park	Las Vegas	Government Offices
Symphony Park	Las Vegas	Government Offices
Terrazza Park	Henderson	Government Offices
Teton Trails Park	Las Vegas	Government Offices
Teton Trails Park Phase II	Las Vegas	Government Offices
The Club at Sunrise	Las Vegas	Government Offices
Theron H. Goynes Park	North Las Vegas	Government Offices
Thomas Leavitt Park	Las Vegas	Government Offices
Thunderbird Park	Las Vegas	Government Offices
Thunderbird Sports Complex	Las Vegas	Government Offices
Tom Williams Park	North Las Vegas	Government Offices
Tonopah Park	North Las Vegas	Government Offices
Trail Canyon Park	Henderson	Government Offices
Tuscany Park	Henderson	Government Offices
Valley View Park	North Las Vegas	Government Offices
Veterans Memorial Ball Fields	Las Vegas	Government Offices
Veterans Memorial Park	Boulder City	Government Offices
Village Green Park	Las Vegas	Government Offices
Vivaldi Park	Henderson	Government Offices
Von Tobel MS Park	Las Vegas	Government Offices

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Walker Park & Pool	North Las Vegas	Government Offices
Walnut Park	Las Vegas	Government Offices
Wayne Bunker Family Park	Las Vegas	Government Offices
Wells Park Pool	Henderson	Government Offices
West Charleston Lions/Essex Park	Las Vegas	Government Offices
West Flamingo Park	Las Vegas	Government Offices
Western Trails Equestrian Park	Las Vegas	Government Offices
Western Trails Park	Las Vegas	Government Offices
Weston Hills Park	Henderson	Government Offices
Wetlands	Las Vegas	Government Offices
Wetlands Park	Las Vegas	Government Offices
Wetlands Preservation Nature Center	Las Vegas	Government Offices
Whalen Park & Bravo Field	Boulder City	Government Offices
White School Park	Henderson	Government Offices
Whitney Mesa Nature Preserve	Henderson	Government Offices
Whitney Mesa Recreation Area	Henderson	Government Offices
Whitney Park	Las Vegas	Government Offices
Wilbur & Theresa Faiss Park	Las Vegas	Government Offices
Wilbur Square	Boulder City	Government Offices
Wildwood Park	Las Vegas	Government Offices
Willows Park	Las Vegas	Government Offices
Winchester Park	Las Vegas	Government Offices
Winding Trails Park	Las Vegas	Government Offices
Windsor Park	North Las Vegas	Government Offices
Winterwood Park	Las Vegas	Government Offices
Woodbury Park	Mesquite	Government Offices
Woofter Family Park	Las Vegas	Government Offices
Xeroscape Park	Boulder City	Government Offices
NA	Boulder City, Henderson, Las Vegas, Mesquite, North Las Vegas	Places of Worship
9th Bridge School	Las Vegas	Schools
Alexander Dawson School at Rainbow Mtn.	Las Vegas	Schools
American Heritage Academy	Henderson	Schools
Amplus - Durango	Las Vegas	Schools
Anderson Academy of Math & Science	Las Vegas	Schools
Applied Scholastics Academy	Las Vegas	Schools
Ateres Bnos Ita	Las Vegas	Schools
Beacon Academy of Nevada - Flamingo	Las Vegas	Schools
Bishop Gorman High School	Las Vegas	Schools
Black Mountain Academy	Henderson	Schools
Brilliant Child Christian Academy	Las Vegas	Schools
Calvary Chapel Christian School	Las Vegas	Schools
Calvary Chapel GV Christian Academy	Las Vegas	Schools
Candil Hall Academy	Las Vegas	Schools
Challenger School	Las Vegas	Schools
Christian Montessori Academy	Las Vegas	Schools

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Coral Academy of Science - Centennial Hills	Las Vegas	Schools
Coral Academy of Science - Egate	Henderson, Las Vegas, Nellis AFB	Schools
Cornerstone Christian Academy	Las Vegas	Schools
Cristo Rey St. Viator	North Las Vegas	Schools
Democracy Prep	Las Vegas	Schools
Desert Torah Academy	Las Vegas	Schools
Discovery Charter School - Hillpointe	Las Vegas	Schools
Discovery Charter School - Sandhill	Las Vegas	Schools
Doral Academy	Las Vegas	Schools
Equipo Academy School	Las Vegas	Schools
Faith Community Lutheran Academy	Las Vegas	Schools
Faith Lutheran Middle & High School	Las Vegas	Schools
Foothills Montessori School	Henderson	Schools
Founders Academy	Las Vegas	Schools
Freedom Classical Academy	North Las Vegas	Schools
Futuro Academy	Las Vegas	Schools
Good Samaritan Christian Academy	Las Vegas	Schools
Grace Christian Academy	Boulder City	Schools
Greater Las Vegas Academy	Henderson	Schools
Green Valley Christian School	Henderson	Schools
Green Valley Lutheran Kindergarten	Henderson	Schools
Green Valley United Methodist Church	Henderson	Schools
Henderson International School	Henderson	Schools
Imagine School at Mountain View	Las Vegas	Schools
Innovation Academy	Las Vegas	Schools
International Christian Academy	Las Vegas	Schools
J.O.Y Academy of Southern Nevada	Las Vegas	Schools
Jouney Education	Las Vegas	Schools
Kids Campus Learning Center	Las Vegas, North Las Vegas	Schools
Kids R Kids Quality Learning Center #2	Las Vegas	Schools
Lake Mead Christian Academy	Henderson	Schools
Lamb of God Lutheran School	Las Vegas	Schools
Las Vegas Day School	Las Vegas	Schools
Leadership Academy of Nevada	Las Vegas	Schools
Legacy Traditional School - Cadence	Henderson	Schools
Legacy Traditional School - N Valley	North Las Vegas	Schools
Legacy Traditional School - SW	Las Vegas	Schools
Liberty Baptist Academy	Las Vegas	Schools
LVVWD Care & Education Center	Las Vegas	Schools
Mater Academy of Nevada - Bonanza	Las Vegas	Schools
Mater Academy of Nevada - Mountain Vista	Las Vegas	Schools
Merryhill School Spanish Trail	Las Vegas	Schools
Merryhill School Summerlin	Las Vegas	Schools
Mesivta of Las Vegas	Las Vegas	Schools
Mesquite Christian Academy	Mesquite	Schools
Mojave Springs School	Las Vegas	Schools

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Montessori Visions Academy	Las Vegas	Schools
Mountain Heights Montessori	Las Vegas	Schools
Mountain View Christian School	Las Vegas	Schools
Mountain View Lutheran School	Las Vegas	Schools
Nasri Academy for Gifted Children	Las Vegas	Schools
NCA Learning Center & Baby University	Las Vegas	Schools
Nevada Prep	Las Vegas	Schools
Nevada Rise	Las Vegas	Schools
Nevada State High School - Downtown	Las Vegas	Schools
Nevada State High School - Henderson	Henderson	Schools
Nevada State High School - NW3	Las Vegas	Schools
Nevada State High School - Summerlin	Las Vegas	Schools
Nevada State High School - Sunrise	Las Vegas	Schools
Nevada State High School - SW3	Las Vegas	Schools
Nevada Virtual Academy - Sandhill	Las Vegas	Schools
New Horizons Academy	Las Vegas	Schools
New Song Christian Academy	Henderson	Schools
Omar Haikal Islamic Academy	Las Vegas	Schools
Our Lady of Las Vegas Catholic School	Las Vegas	Schools
Pinecrest Academy of Nevada - Cadence	Henderson	Schools
Pinecrest Academy of Nevada - Horizon	Henderson	Schools
Pinecrest Academy of Nevada - Inspirada	Henderson	Schools
Pinecrest Academy of Nevada - Sloan Canyon	Las Vegas	Schools
Pinecrest Academy of Nevada - St Rose	Henderson	Schools
Quest Academy - NW	Las Vegas	Schools
Redeemer Lutheran Elementary School	Las Vegas	Schools
Seton Academy	Las Vegas	Schools
Seton Academy West	Las Vegas	Schools
Shenker Academy	Las Vegas	Schools
Signature Preparatory	Henderson	Schools
Silver Sands Montessori	Henderson	Schools
Sinousa Virtual High School (Online)	Las Vegas	Schools
Somerset Academy - Aliante	North Las Vegas	Schools
Somerset Academy - Lone Mountain	Las Vegas	Schools
Somerset Academy - Losee	North Las Vegas	Schools
Somerset Academy - N Las Vegas	North Las Vegas	Schools
Somerset Academy - Sky Pointe	Las Vegas	Schools
Somerset Academy - Skye Canyon	Las Vegas	Schools
Somerset Academy - Stephanie	Henderson	Schools
Southern Highlands Preparatory School	Las Vegas	Schools
Sports Leadership and Management Academy	Henderson	Schools
Spring Valley Christian Academy	Las Vegas	Schools
Spring Valley Montessori School	Las Vegas	Schools
Springstone Lakes Montessori School	Las Vegas	Schools
St. Anne Catholic School	Las Vegas	Schools
St. Anthony of Padua	Henderson	Schools
St. Christopher Catholic School	North Las Vegas	Schools

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
St. Elizabeth Ann Seton Catholic School	Las Vegas	Schools
St. Francis de Sales Catholic School	Las Vegas	Schools
St. Viator Catholic School	Las Vegas	Schools
Strong Generation Christian Academy	Henderson	Schools
Sunset Montessori Community	Las Vegas	Schools
Temple Beth Sholom	Las Vegas	Schools
The Adelson Education Campus	Las Vegas	Schools
The Meadows School	Las Vegas	Schools
Trinity International Schools	Las Vegas	Schools
University Baptist Academy	North Las Vegas	Schools
Vegas Valley Adventist Academy	Las Vegas	Schools
Water of Life Lutheran School	Las Vegas	Schools
West Charleston Enrichment Academy	Las Vegas	Schools
Word of Life Christian Academy	Las Vegas	Schools
Yeshiva Day School of Las Vegas	Henderson	Schools
Sunset Maintenance Facility	Las Vegas	Transportation
Integrated Bus Maintenance Facility	North Las Vegas	Transportation
Desert Research Institute	Las Vegas	Government Offices
Alexis Park Resort	Las Vegas	Casinos/Resorts/Hotels
Delano Las Vegas	Las Vegas	Casinos/Resorts/Hotels
Desert Rose Resort	Las Vegas	Casinos/Resorts/Hotels
Four Seasons Hotel	Las Vegas	Casinos/Resorts/Hotels
The Westin Lake Las Vegas Resort & Spa	Henderson	Casinos/Resorts/Hotels
Vdara Hotel & Spa at City Center	Las Vegas	Casinos/Resorts/Hotels
Waldorf Astoria	Las Vegas	Casinos/Resorts/Hotels
Helen J. Stewart	Las Vegas	Schools
Miley Achievement Center Secondary School	Las Vegas	Schools
John F. Miller	Las Vegas	Schools
Variety ES	Las Vegas	Schools
NA	Boulder City, Henderson, Las Vegas, Mesquite, Nellis AFB, North Las Vegas	Water/Sewer
Apex Solar Facility	North Las Vegas	Solar
Boulder Solar Facility	Boulder City	Solar
Copper Mountain Solar	Boulder City	Solar
Eagle Shadow Mountain Solar	Las Vegas	Solar
Moapa Southern Paiute Solar Project	Las Vegas	Solar
Mountain View Solar	North Las Vegas	Solar
Nellis AFB Solar Array	Nellis AFB	Solar
Playa Solar	Las Vegas	Solar
Searchlight Solar	Las Vegas	Solar
Spectrum Solar Facility	Las Vegas	Solar
Techren Solar Project	Boulder City	Solar
Townsite Solar	Boulder City	Solar
Helios Solar One	Boulder City	Solar
Advanced Laparoscopic & General Surgery of Nevada	Henderson, Las Vegas, North Las Vegas	Hospitals

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Aegis Living Las Vegas	Las Vegas	Hospitals
Alta Rose Surgery Center	Las Vegas	Hospitals
AMG Specialty Hospital	Las Vegas	Hospitals
Atria Seville	Las Vegas	Hospitals
Avamere at Cheyenne	Las Vegas	Hospitals
BeeHive Homes of Henderson	Henderson	Hospitals
BeeHive Homes of Las Vegas	Las Vegas	Hospitals
Bella Estate Care Home	Las Vegas	Hospitals
Bilingual Center for Behavioral Health	Las Vegas	Hospitals
Carefree Senior Living at the Willows	Las Vegas	Hospitals
Center for Addiction Medicine	Las Vegas	Hospitals
Center for Behavioral Health	Las Vegas, North Las Vegas	Hospitals
College Park Rehabilitation Center	North Las Vegas	Hospitals
Complex Care Hospital at Tenaya	Las Vegas	Hospitals
Couture Medical: Las Vegas Plastic Surgery	Las Vegas	Hospitals
Delmar Gardens of Green Valley	Henderson	Hospitals
Desert Hope Addiction Treatment Center	Las Vegas	Hospitals
Desert Parkway Behavioral Healthcare Hospital	Las Vegas	Hospitals
Desert View Senior Living	Las Vegas	Hospitals
Desert West Surgery	Las Vegas	Hospitals
Desert Willow Treatment Center	Las Vegas	Hospitals
El Jen Healthcare and Rehabilitation	Las Vegas	Hospitals
Encompass Health Rehabilitation Hospital	Las Vegas	Hospitals
Gaye Haven Intermediate Care Facility	Las Vegas	Hospitals
Harmon Medical and Rehabilitation Hospital	Las Vegas	Hospitals
Highland Manor of Mesquite	Mesquite	Hospitals
Horizon Health and Rehabilitation Center	Las Vegas	Hospitals
Horizon Specialty Hospital	Las Vegas	Hospitals
Horizon Specialty Hospital of Henderson	Henderson	Hospitals
Institute of Orthopaedic Surgery	Las Vegas	Hospitals
Lake Mead Health and Rehabilitation Center	Henderson	Hospitals
Las Vegas Post Acute and Rehab Center	Las Vegas	Hospitals
Las Vegas Recovery Center	Las Vegas	Hospitals
Las Vegas Regional Surgery Center	Las Vegas	Hospitals
Las Vegas Surgery Center	Las Vegas	Hospitals
Las Ventanas at Summerlin	Las Vegas	Hospitals
Legacy House of Centennial Hills	Las Vegas	Hospitals
Legacy House of Southern Hills	Las Vegas	Hospitals
Life Care Center of Las Vegas	Las Vegas	Hospitals
Life Care Center of South Las Vegas	Las Vegas	Hospitals
Marquis Centennial Hills	Las Vegas	Hospitals
Marquis Plaza Regency Post Acute Rehab	Las Vegas	Hospitals
Marvel Manor Assisted Living	Las Vegas	Hospitals
Mimi's Care Home	Las Vegas	Hospitals
Mission Pines Nursing and Rehabilitation Center	North Las Vegas	Hospitals
Mission Treatment Center of Las Vegas	Las Vegas	Hospitals
miVIP Las Vegas Regional Surgery Center	Las Vegas	Hospitals

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Mountain View Care Center at Boulder City	Boulder City	Hospitals
Neuro Restorative Nevada	Las Vegas	Hospitals
NeuroRestorative	Las Vegas	Hospitals
Nevada State Veterans Home - Boulder City	Boulder City	Hospitals
North Las Vegas Care Center	North Las Vegas	Hospitals
Oakey Assisted Living	Las Vegas	Hospitals
Oakmont of Las Vegas	Las Vegas	Hospitals
Oakmont of The Lakes	Las Vegas	Hospitals
Pacifica Senior Living Green Valley	Henderson	Hospitals
Pacifica Senior Living San Martin	Las Vegas	Hospitals
Pacifica Senior Living Spring Valley	Las Vegas	Hospitals
Pediatric Gastroenterology	Las Vegas	Hospitals
Rawson-Neal Psychiatric Hospital	Las Vegas	Hospitals
Royal Springs Healthcare and Rehab	Las Vegas	Hospitals
Sahara Surgery Center	Las Vegas	Hospitals
Sana Behavioral Hospital	Las Vegas	Hospitals
Shepherd Eye Center	Henderson, Las Vegas	Hospitals
Silver Hills Health Care Center	Las Vegas	Hospitals
Silver Sky Assisted Living	Las Vegas	Hospitals
Smoke Ranch Surgery Center	Las Vegas	Hospitals
Southern Nevada Medical and Rehabilitation Center	Las Vegas	Hospitals
Specialty Surgery Center	Las Vegas	Hospitals
Spring Mountain Sahara	Las Vegas	Hospitals
Spring Mountain Treatment Center	Las Vegas	Hospitals
St. Joseph's Transitional Rehabilitation Center	Las Vegas	Hospitals
Tender Loving Care Senior Residence	Las Vegas	Hospitals
The Heights of Summerlin	Las Vegas	Hospitals
The Lakes Senior Living	Las Vegas	Hospitals
The Wentworth of Las Vegas	Las Vegas	Hospitals
TLC Care Center	Henderson	Hospitals
Torrey Pines Rehabilitation Hospital	Las Vegas	Hospitals
Trellis Centennial	Las Vegas	Hospitals
Villa Court Assisted Living & Memory Care	Las Vegas	Hospitals
Vogue Recovery Center - Nevada	Las Vegas	Hospitals
Cashman Field	Las Vegas	Stadiums
Allegiant Stadium	Las Vegas	Stadiums
Sam Boyd Stadium	Las Vegas	Stadiums
Thomas & Mack Center	Las Vegas	Stadiums
Las Vegas Ballpark	Las Vegas	Stadiums
Las Vegas Motor Speedway	Las Vegas	Stadiums
T-Mobile Arena	Las Vegas	Stadiums
Bluegreen Club 36	Las Vegas	Casinos/Resorts/Hotels
Cancun Resort Villas	Las Vegas	Casinos/Resorts/Hotels
Carriage House Deluxe Suites Hotel	Las Vegas	Casinos/Resorts/Hotels
Club de Soleil	Las Vegas	Casinos/Resorts/Hotels
Club Wyndham Desert Blue	Las Vegas	Casinos/Resorts/Hotels

Critical Facilities for: Clark County, NV; the Cities of Boulder City, NV, Henderson, NV, Las Vegas, NV, Mesquite, NV, North Las Vegas, NV; and the Tribal Government of Las Vegas Paiute Tribe, and Moapa Band of Paiutes		
Name	**Jurisdiction**	**Facility Type**
Desert Paradise Resort	Las Vegas	Casinos/Resorts/Hotels
Grandview at Las Vegas	Las Vegas	Casinos/Resorts/Hotels
Hilton Grand Vacations Club at the Flamingo	Las Vegas	Casinos/Resorts/Hotels
Hilton Grand Vacations Club Elara	Las Vegas	Casinos/Resorts/Hotels
Hilton Grand Vacations Club on the LV Strip	Las Vegas	Casinos/Resorts/Hotels
Hilton Grand Vacations Suites - LV Conv Center	Las Vegas	Casinos/Resorts/Hotels
Holiday Inn Club Vacations	Las Vegas	Casinos/Resorts/Hotels
Jockey Club	Las Vegas	Casinos/Resorts/Hotels
Marriotts Grand Chateau	Las Vegas	Casinos/Resorts/Hotels
Polo Towers	Las Vegas	Casinos/Resorts/Hotels
Royal Resort	Las Vegas	Casinos/Resorts/Hotels
Tahiti Vacation Club	Las Vegas	Casinos/Resorts/Hotels
Tahiti Village Vacation Club	Las Vegas	Casinos/Resorts/Hotels
The Cliffs at Peace Canyon	Las Vegas	Casinos/Resorts/Hotels
Westgate Flamingo Bay Resort	Las Vegas	Casinos/Resorts/Hotels
World Mark I, The Club	Las Vegas	Casinos/Resorts/Hotels
World Mark II, The Club	Las Vegas	Casinos/Resorts/Hotels
World Mark III The Club	Las Vegas	Casinos/Resorts/Hotels
Wyndham Grand Desert	Las Vegas	Casinos/Resorts/Hotels
University of Nevada, Las Vegas	Las Vegas	University
Sam Boyd Stadium, UNLV	Las Vegas	University
NA	Henderson, Las Vegas, Nellis AFB, North Las Vegas	Water/Sewer
Las Vegas Paiute Tribe Administration Building	Las Vegas Paiute Tribe	Government Offices
Las Vegas Paiute Tribe Law Enforcement	Las Vegas Paiute Tribe	Police
Las Vegas Paiute Tribe Child Development Center	Las Vegas Paiute Tribe	Child Care
Las Vegas Paiute Tribe Health & Human Services	Las Vegas Paiute Tribe	Hospital/Medical Clinic
Las Vegas Paiute Tribe Maintenance Facility	Las Vegas Paiute Tribe	Maintenance
Las Vegas Paiute Tribe Accounting Department	Las Vegas Paiute Tribe	Government Offices
Snow Mountain Power Station (Las Vegas Paiute Tribe)	Las Vegas Paiute Tribe	Power Station
Snow Mountain Water Well	Las Vegas Paiute Tribe	Water/Sewer
Snow Mountain Water Pumphouse	Las Vegas Paiute Tribe	Water/Serwer

Appendix E: FEMA Presidential Declaration Maps

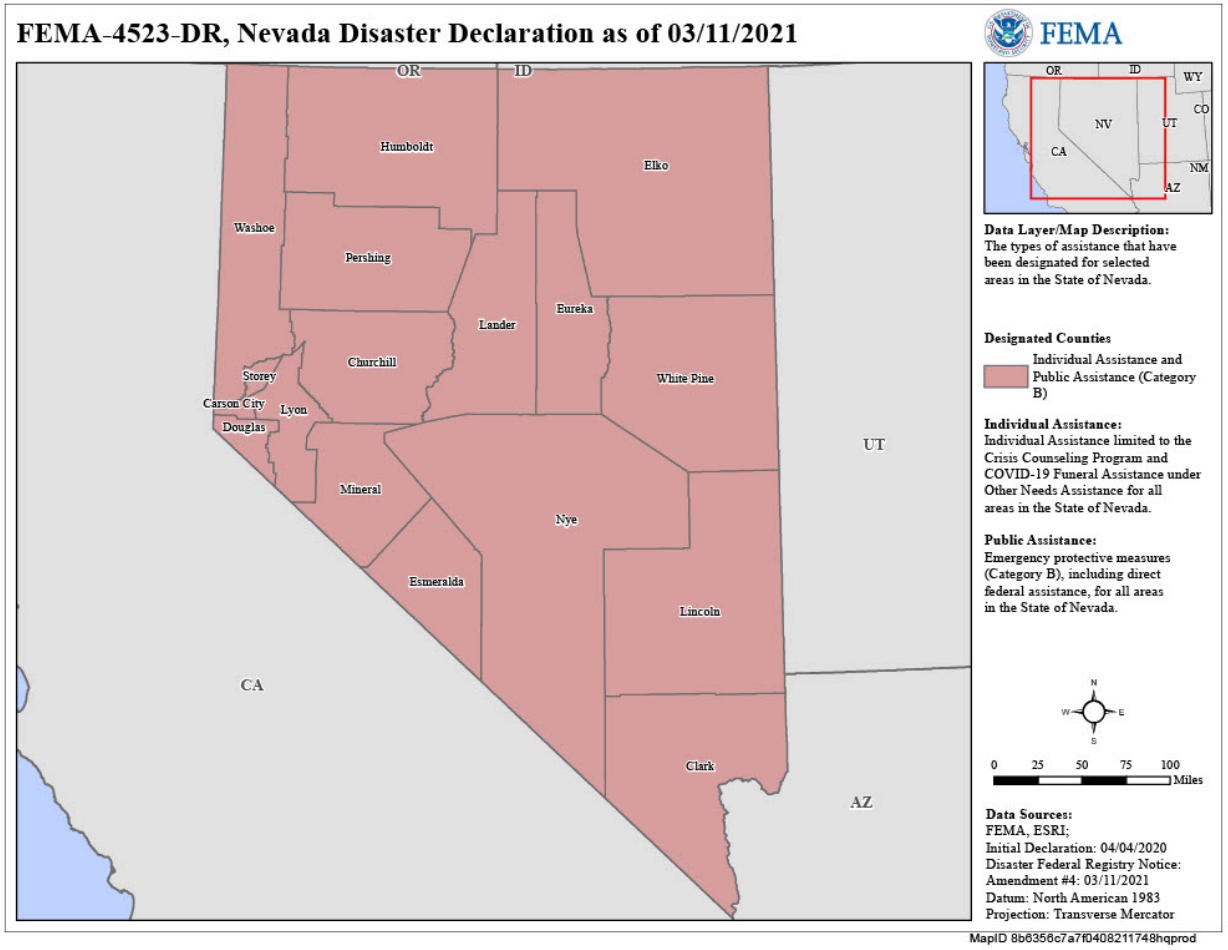
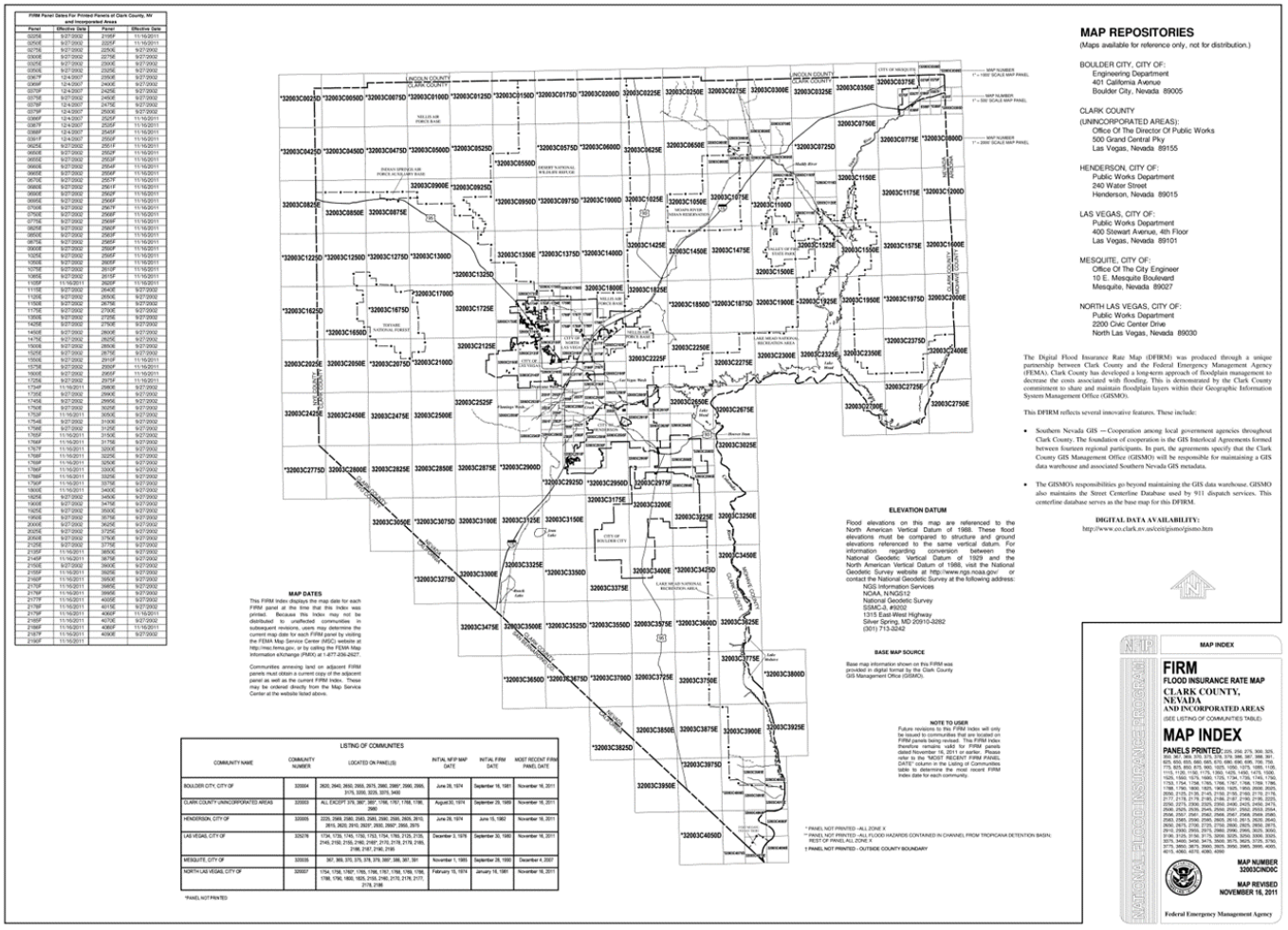


Figure 124: Presidential Disaster Declaration, COVID-19 (Map Source: FEMA)

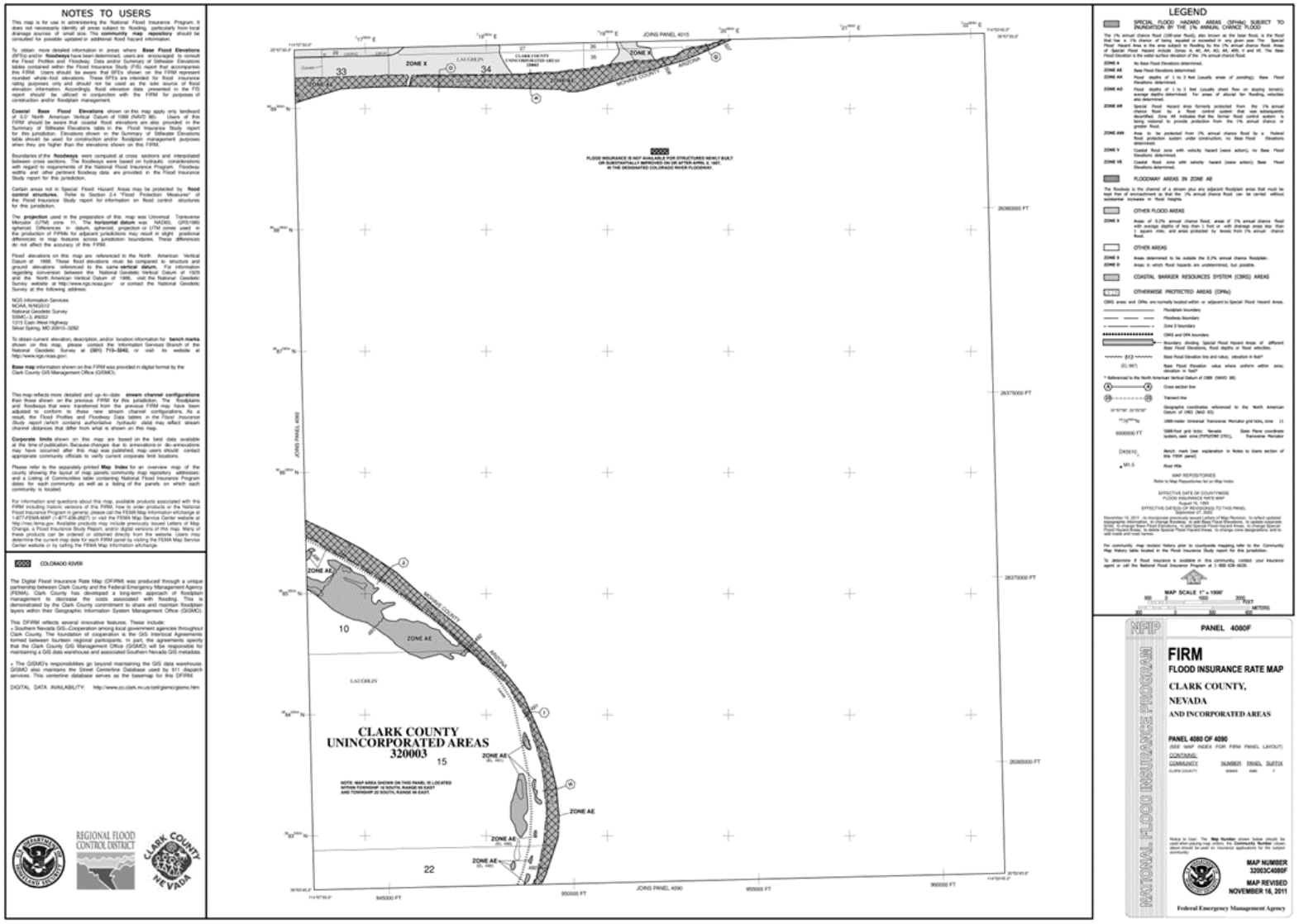
Appendix F: FEMA FIRMs Maps

FEMA DFIRM Maps, Clark County, NV, and Participating Jurisdictions (32003C)

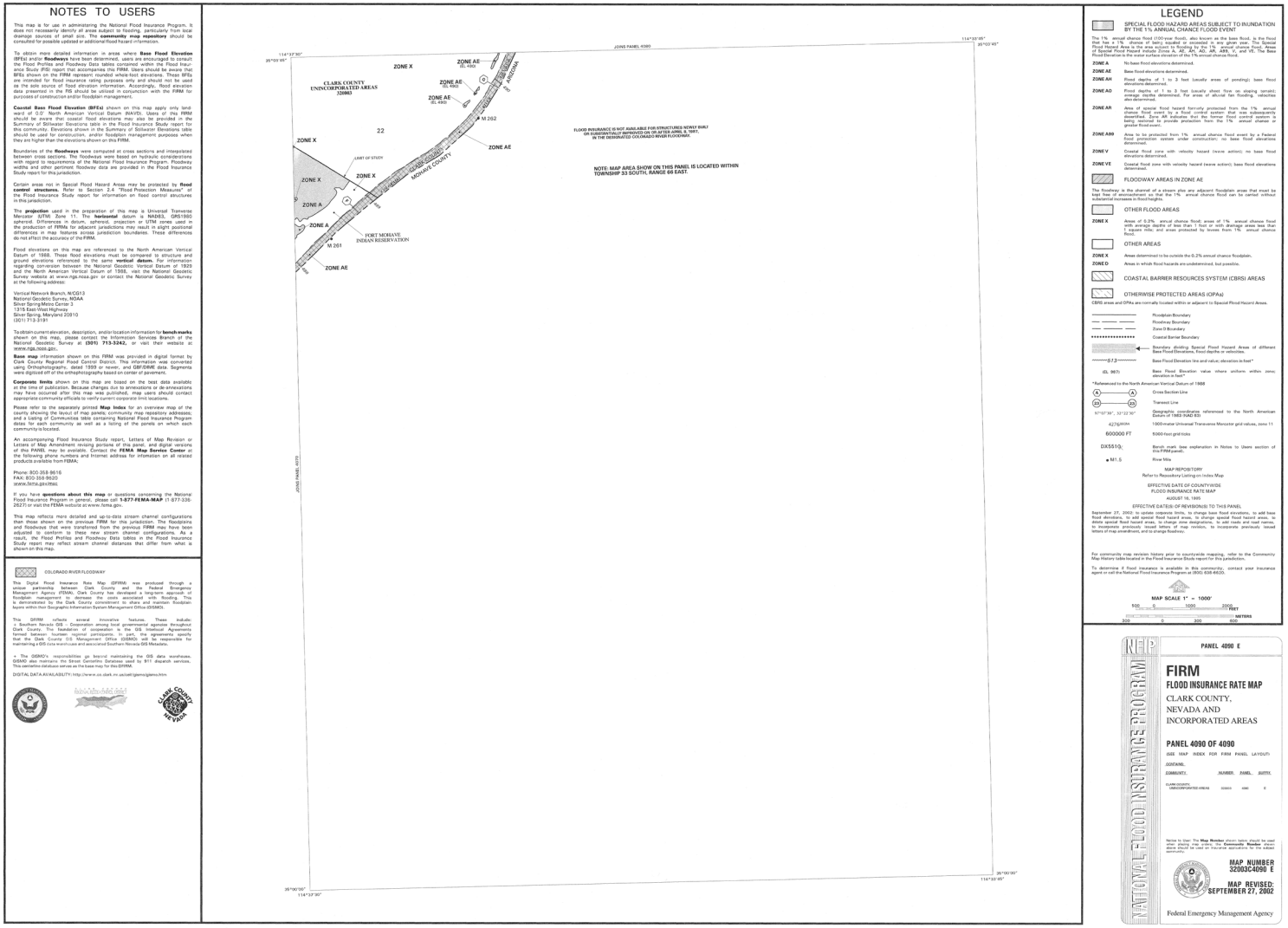
The Map Sources for all maps is from the FEMA maps services center


MAP REPOSITORIES
(Maps available for reference only, not for distribution.)
BOULDER CITY, CITY OF:
Engineering Department
401 California Avenue
Boulder City, Nevada 89005
CLARK COUNTY
(UNINCORPORATED AREAS):
Office Of The Director Of Public Works
500 Grand Central Pky
Las Vegas, Nevada 89155
HENDERSON, CITY OF:
Public Works Department
240 Water Street
Henderson, Nevada 89015
LAS VEGAS, CITY OF:
Public Works Department
400 Stewart Avenue, 4th Floor
Las Vegas, Nevada 89101
MESQUITE, CITY OF:
Office Of The City Engineer
10 E. Mesquite Boulevard
Mesquite, Nevada 89027
NORTH LAS VEGAS, CITY OF:
Public Works Department
2200 Civic Center Drive
North Las Vegas, Nevada 89030
The Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).
This DFIRM reflects several innovative features. These include:
Southern Nevada GIS — Cooperation among local government agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS metadata.
The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the base map for this DFIRM.
DIGITAL DATA AVAILABILITY:
http://www.co.clark.nv.us/esri/gismo/gismo.htm
ELEVATION DATUM
Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:
NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282
(301) 713-3242
BASE MAP SOURCE
Base map information shown on this FIRM was provided in digital format by the Clark County GIS Management Office (GISMO).
NOTE TO USER
Future revisions to this FIRM Index will only be issued to communities that are located on FIRM panels being revised. This FIRM Index therefore remains valid for FIRM panels dated November 16, 2011 or earlier. Please refer to the "MOST RECENT FIRM PANEL DATE" column in the Listing of Communities table to determine the most recent FIRM Index date for each community.
* PANEL NOT PRINTED - ALL ZONE X
** PANEL NOT PRINTED - ALL FLOOD HAZARDS CONTAINED IN CHANNEL FROM TROPICANA DETENTION BASIN; REST OF PANEL ALL ZONE X
† PANEL NOT PRINTED - OUTSIDE COUNTY BOUNDARY
MAP DATES
This FIRM Index displays the map date for each FIRM panel at the time that this Index was printed. Because this Index may not be distributed to unaffected communities in subsequent revisions, users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center (MSC) website at http://msc.fema.gov, or by calling the FEMA Map Information eXchange (FMIX) at 1-877-336-2627.
Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the website listed above.
LISTING OF COMMUNITIES
COMMUNITY NAME
COMMUNITY NUMBER
LOCATED ON PANEL(S)
INITIAL NFIP MAP DATE
INITIAL FIRM DATE
MOST RECENT FIRM PANEL DATE
BOULDER CITY, CITY OF
320004
2620, 2640, 2650, 2655, 2675, 2680, 2690*, 2695, 2705, 3255, 3260, 3270, 3280, 3290, 3470, 3480
June 28, 1974
September 16, 1981
November 16, 2011
CLARK COUNTY (UNINCORPORATED AREAS)
320003
ALL EXCEPT 375, 2887, 2891*, 2895, 2705, 2707, 2708, 2709, 2710, 2711, 2712, 2713, 2714, 2715, 2716, 2717, 2718, 2719, 2720, 2721, 2722, 2723, 2724, 2725, 2726, 2727, 2728, 2729, 2730, 2731, 2732, 2733, 2734, 2735, 2736, 2737, 2738, 2739, 2740, 2741, 2742, 2743, 2744, 2745, 2746,

Map Source: FEMA



Map Source: FEMA



NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevation (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0° North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

This **projection** used in the preparation of this map is Universal Transverse Mercator (UTM) Zone 11. The **horizontal** datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Vertical Network Branch, NCG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242,** or visit their website at www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format by Clark County Regional Flood Control District. This information was converted using Orthophotography, dated 1999 or newer, and GBF/DIME data. Segments were digitized off of the orthophotography based on center of pavement.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

An accompanying Flood Insurance Study report, Letters of Map Revision or Letters of Map Amendment revising portions of this panel, and digital versions of this PANEL may be available. Contact the **FEMA Map Service Center** at the following phone numbers and Internet address for information on all related products available from FEMA:

Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/msc

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at www.fema.gov.

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report may reflect stream channel distances that differ from what is shown on this map.

COLORADO RIVER FLOODWAY

This Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This DFIRM reflects the "Best Available Data" for Clark County. The floodplain layers within their Geographic Information System Management Office (GISMO).

This DFIRM reflects several innovative features. These include: a Southern Nevada GIS - Cooperation among local governmental agencies throughout Clark County. The foundation of cooperation is the GIS Intelocual Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County Regional Flood Control District (CCRFCD) is responsible for maintaining a GIS core enumclaw and associated Southern Nevada GIS Members.

+ The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the base map for this DFIRM.

DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cell/gismo/gismo.htm

JOINS PANEL 4080

CLARK COUNTY UNINCORPORATED AREAS 320003

ZONE X
ZONE AE (EL 490)
ZONE AE (EL 490)
ZONE AE (EL 490)
M 262
22
ZONE AE
ZONE X
ZONE X
ZONE A
ZONE A
M 261
ZONE AE
LIMIT OF STUDY
MOHAVE COUNTY
FORT MOHAVE INDIAN RESERVATION
ARIZONA
JOINS PANEL 4070

FLOOD INSURANCE IS NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER APRIL 15, 1987, IN THE DESIGNATED COLORADO RIVER FLOODWAY.

NOTE: MAP AREA SHOW ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 33 SOUTH, RANGE 68 EAST.

114°37'30" 35°05'00" 114°32'05" 35°03'45" 35°00'00" 114°32'30"

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A — No base flood elevations determined.
ZONE AE — Base flood elevations determined.
ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR — Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99 — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain Boundary
Floodway Boundary
Zone D Boundary
Coastal Barrier Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A — A — Cross Section Line
23 — 23 — Transect Line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000mN — 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT — 5000-foot grid ticks
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to change Special Flood Hazard Areas, to change zone designations, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendments, and to change floodway.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

PANEL 4090 E

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 4090 OF 4090

SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINING:

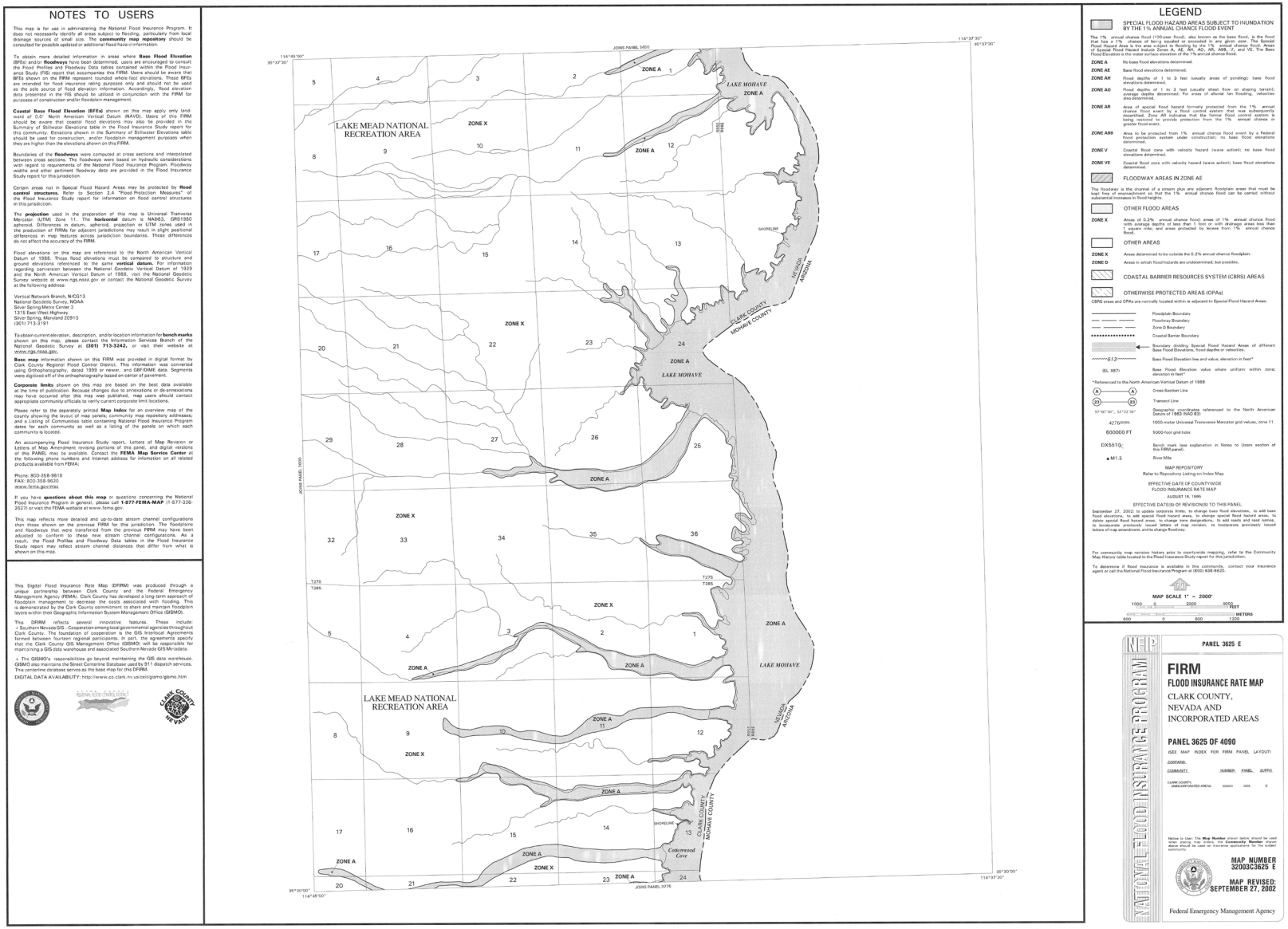
COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	4090	E

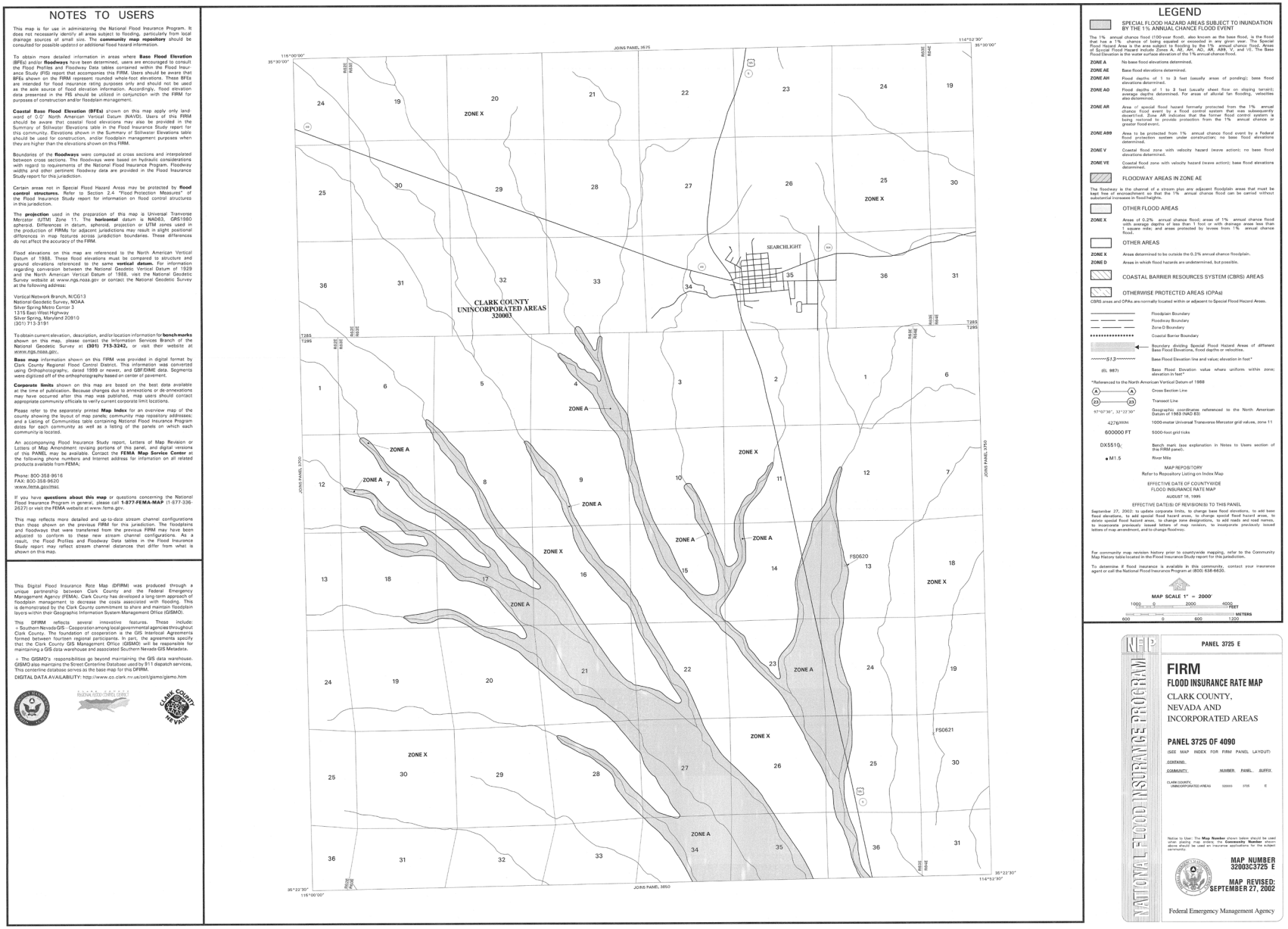
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C4090 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency


NOTES TO USERS
This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.
To obtain more detailed information in areas where Base Flood Elevation (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.
Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Stillwater elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.
Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.
Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.
The projection used in the preparation of this map is Universal Tranverse Mercator (UTM) Zone 11. The horizontal datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.
Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:
Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191
To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit their website at www.ngs.noaa.gov.
Base map information shown on this FIRM was provided in digital format by Clark County Regional Flood Control District. This information was converted using Orthophotography, dated 1999 or newer, and GBF/DIME data. Segments were digitized off of the orthophotography based on center of pavement.
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FAX: 800-358-9620
www.fema.gov/msc
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- Southern Nevada GIS - Cooperation among local governmental agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS Metadata.
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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cot/gismo/gismo.htm
JOINS PANEL 3650
JOINS PANEL 3600
JOINS PANEL 3775
LAKE MEAD NATIONAL RECREATION AREA
LAKE MOHAVE
ZONE A
ZONE X
SHORELINE
NEVADA
ARIZONA
CLARK COUNTY
MOHAVE COUNTY
Catamount Cove
T27S
T28S
114°37'30"
35°37'30"
114°45'00"
35°30'00"
LEGEND
SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT
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ZONE VE — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.
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The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
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M1.5 — River Mile
MAP REPOSITORY
Refer to Repository Listing on Index Map
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995
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MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS
PANEL 3625 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 3625 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS 320003 3625 E
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 32003C3625 E
MAP REVISED: SEPTEMBER 27, 2002
Federal Emergency Management Agency
NATIONAL FLOOD INSURANCE PROGRAM


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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/ceit/gismo/gismo.htm
REGIONAL FLOOD CONTROL DISTRICT
CLARK COUNTY NEVADA
JOINS PANEL 3575
JOINS PANEL 3700
JOINS PANEL 3750
JOINS PANEL 3850
115°00'00"
35°30'00"
114°52'30"
35°22'30"
CLARK COUNTY
UNINCORPORATED AREAS
320003
SEARCHLIGHT
ZONE X
ZONE A
FS0620
FS0621
LEGEND
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M1.5 River Mile
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PANEL 3725 OF 4090
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CLARK COUNTY, UNINCORPORATED AREAS 320003 3725 E
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Silver Spring, Maryland 20910
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To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242,** or visit their website at www.ngs.noaa.gov.

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Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/msc

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at www.fema.gov.

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This DFIRM reflects several innovative features. These include:
+ Southern Nevada GIS – Cooperation among local governmental agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS Metadata.

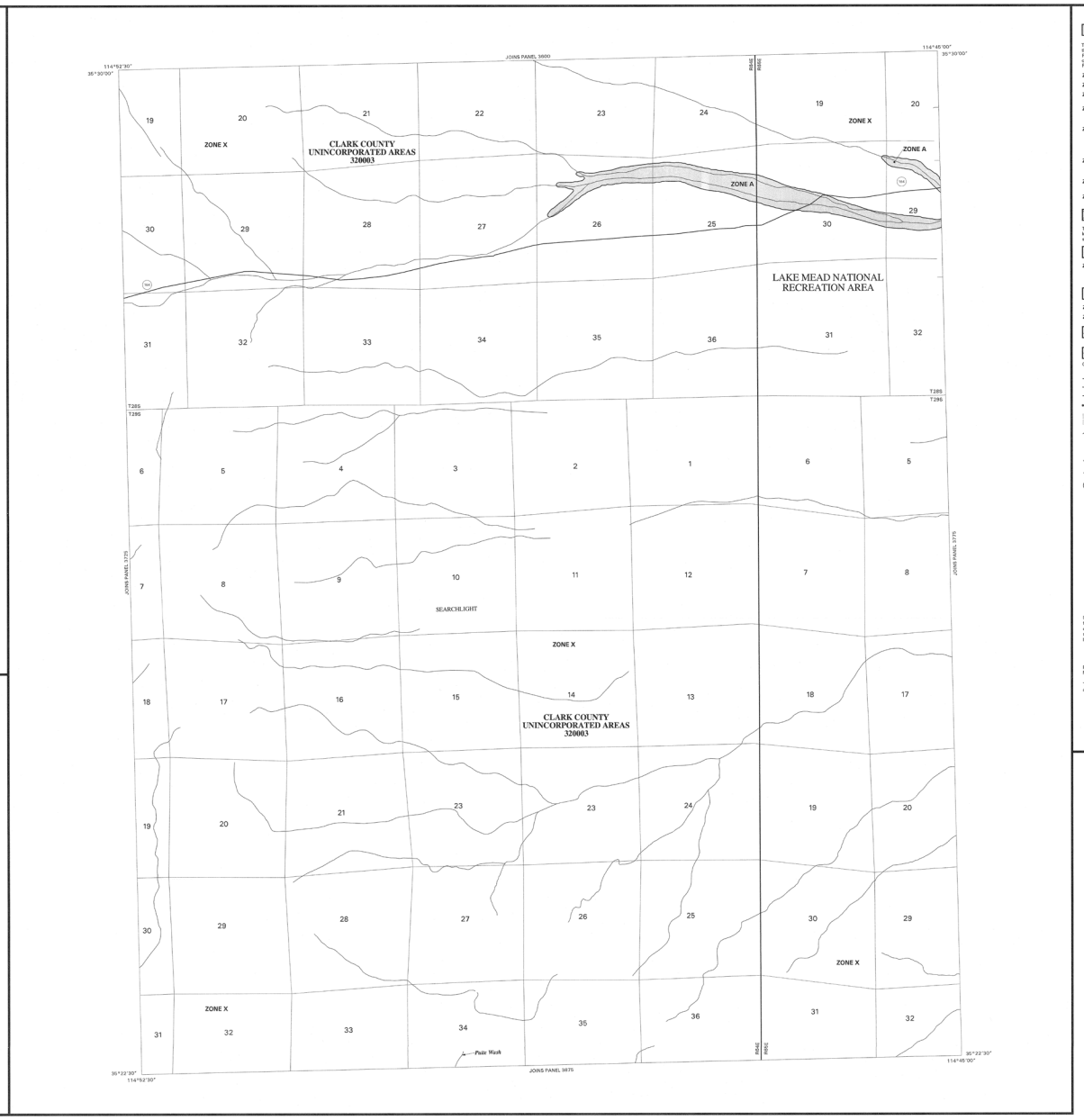
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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cell/gismo/gismo.htm









LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain Boundary
Floodway Boundary
Zone D Boundary
Coastal Barrier Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513 Base Flood Elevation line and value; elevation in feet*
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*Referenced to the North American Vertical Datum of 1988

Cross Section Line
Transect Line
97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000M 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT 5000-foot grid ticks
DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3750 E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY,
NEVADA AND
INCORPORATED AREAS

PANEL 3750 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	3750	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C3750 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency

NOTES TO USERS

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To obtain more detailed information in areas where **Base Flood Elevation** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0° North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map is Universal Transverse Mercator (UTM) Zone 11. The **horizontal** datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
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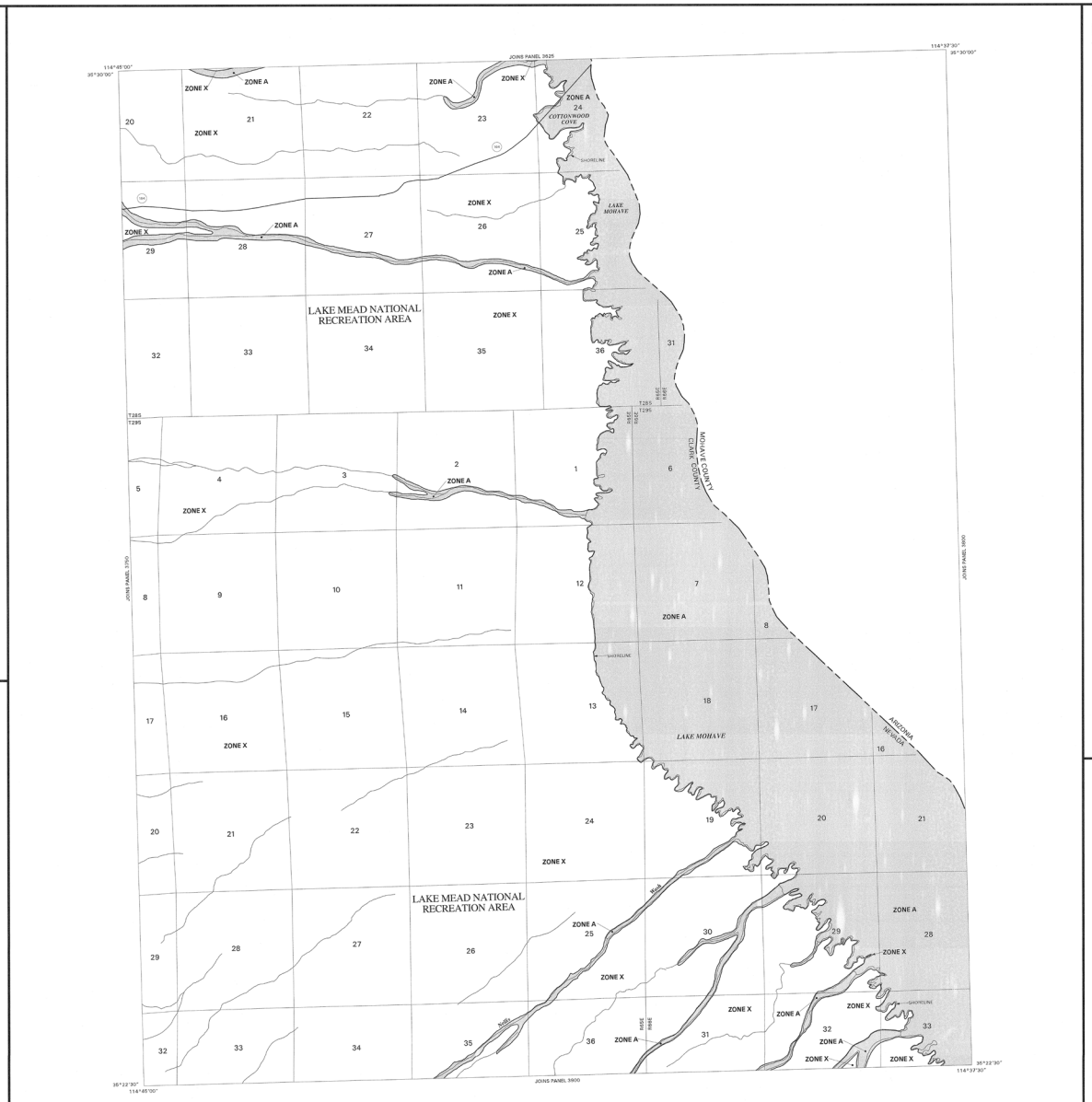
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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cet/gismo/gismo.htm



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ZONE A No base flood elevations determined.

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ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

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Coastal Barrier Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
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A — A Cross Section Line
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PANEL 3775 E

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 3775 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

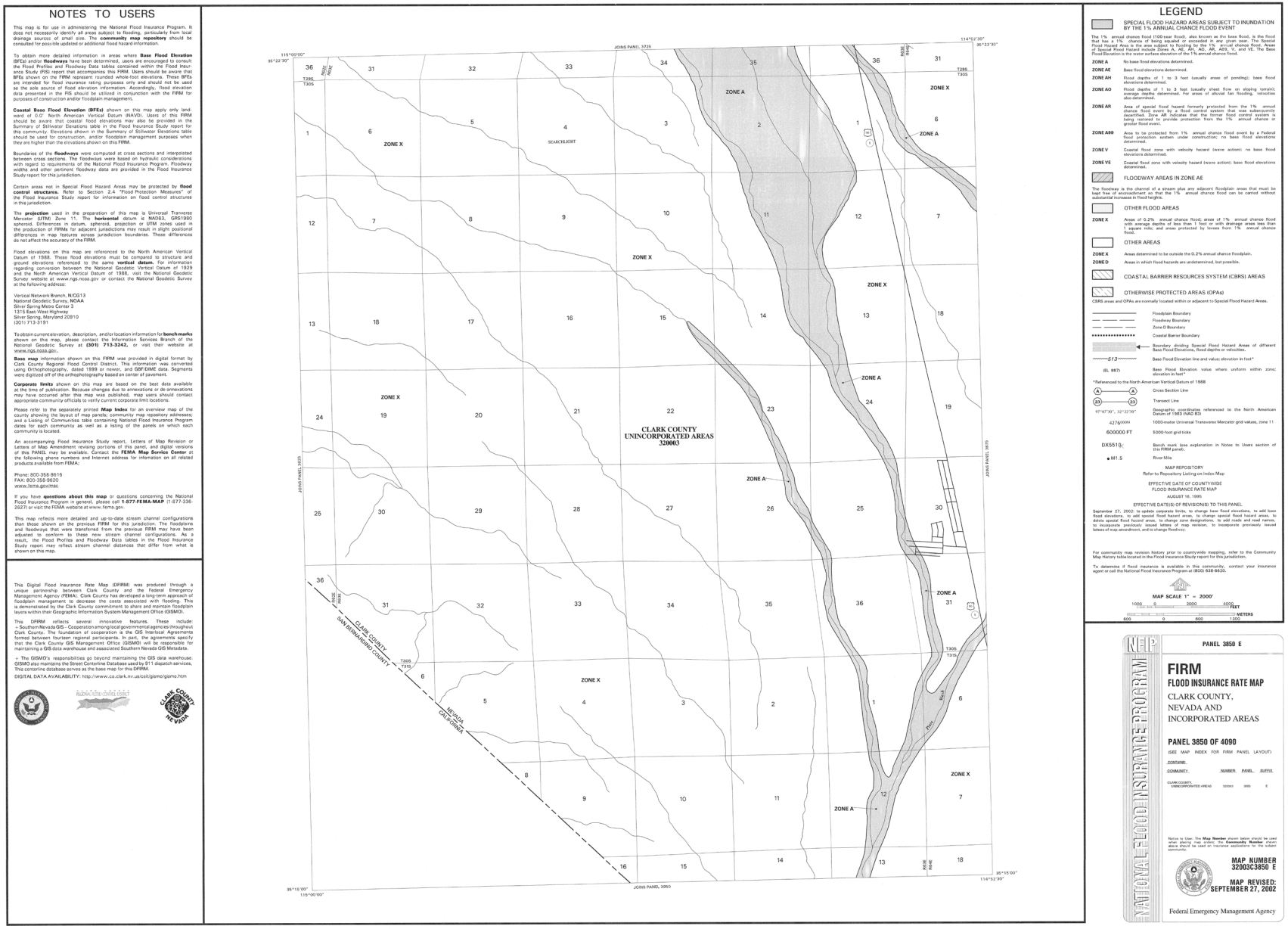
COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	3775	E

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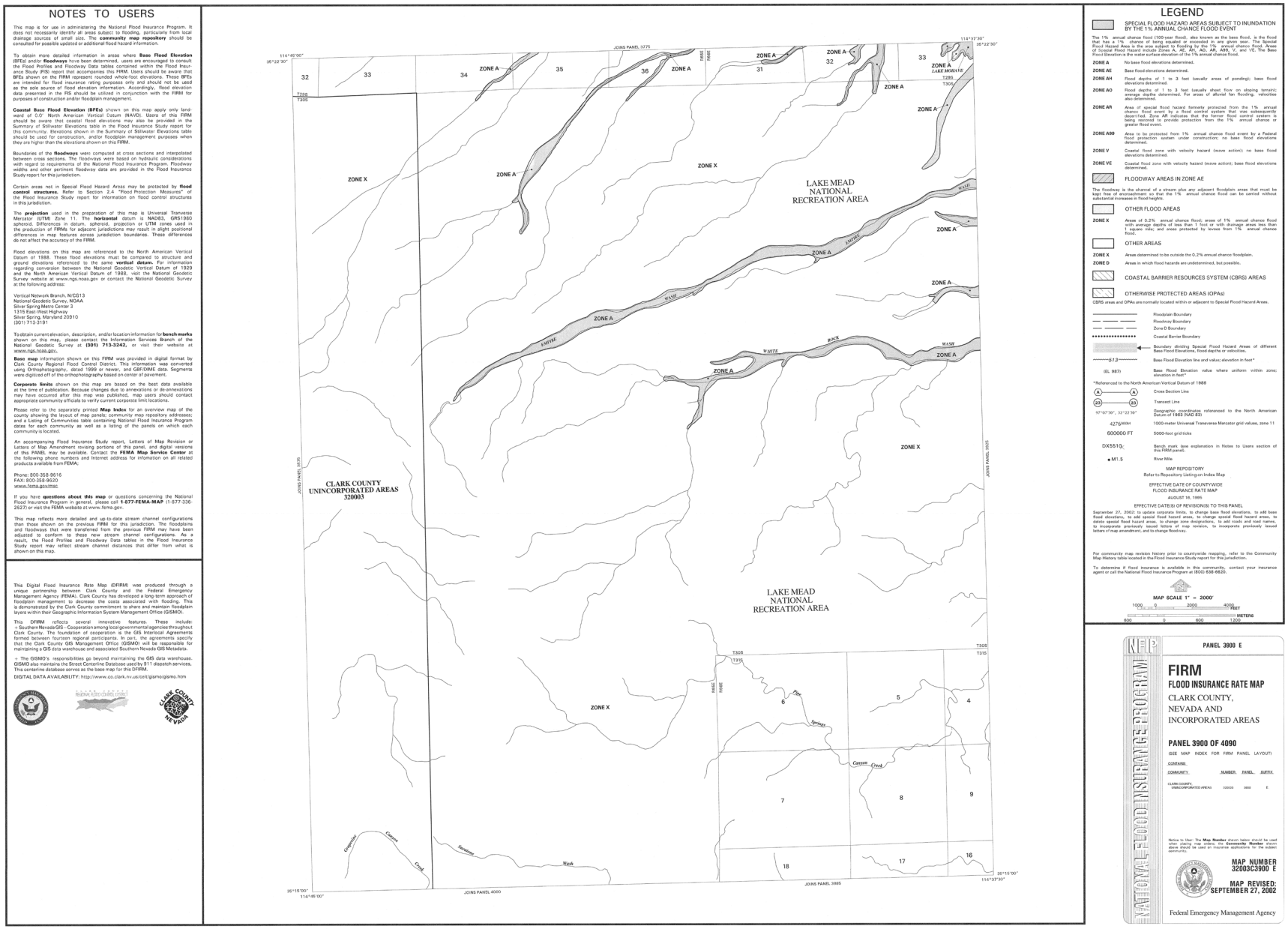
MAP NUMBER 32003C3775 E

MAP REVISED: SEPTEMBER 27, 2002

Federal Emergency Management Agency


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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/coit/gismo/gismo.htm
JOINS PANEL 3725
JOINS PANEL 3925
JOINS PANEL 3975
JOINS PANEL 3950
115°00'00"
35°22'30"
114°52'30"
35°15'00"
ZONE A
ZONE X
SEARCHLIGHT
CLARK COUNTY
UNINCORPORATED AREAS
320003
CLARK COUNTY
SAN BERNARDINO COUNTY
NEVADA
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Piute Road
LEGEND
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A — A — Cross Section Line
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Refer to Repository Listing on Index Map
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NATIONAL FLOOD INSURANCE PROGRAM
PANEL 3850 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 3850 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY — NUMBER — PANEL — SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS — 320003 — 3850 — E
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32003C3850 E
MAP REVISED:
SEPTEMBER 27, 2002
Federal Emergency Management Agency


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Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.
Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.
Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.
The projection used in the preparation of this map is Universal Transverse Mercator (UTM) Zone 11. The horizontal datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.
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National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191
To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit their website at www.ngs.noaa.gov.
Base map information shown on this FIRM was provided in digital format by Clark County Regional Flood Control District. This information was converted using Orthophotography, dated 1999 or newer, and GBF/DIME data. Segments were digitized off of the orthophotography based on center of pavement.
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An accompanying Flood Insurance Study report, Letters of Map Revision or Letters of Map Amendment revising portions of this panel, and digital versions of this PANEL may be available. Contact the FEMA Map Service Center at the following phone numbers and Internet address for information on all related products available from FEMA:
Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/msc
If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at www.fema.gov.
This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report may reflect stream channel distances that differ from what is shown on this map.
This Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).
This DFIRM reflects several innovative features. These include:
- Southern Nevada GIS – Cooperation among local governmental agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS Metadata.
- The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the base map for this DFIRM.
DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/ceit/gismo/gismo.htm
JOINS PANEL 3750
JOINS PANEL 3900
JOINS PANEL 3850
JOINS PANEL 3975
LAKE MEAD NATIONAL RECREATION AREA
SEARCHLIGHT
Wash
Pipe
ZONE X
ZONE A
CLARK COUNTY UNINCORPORATED AREA 320003
FS0622
FS0623
FS0624
FS0625
FS0626
T29S
T30S
T30S
T31S
R64E
R65E
114°45'00"
114°52'30"
35°22'30"
35°15'00"
LEGEND
SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.
ZONE A — No base flood elevations determined.
ZONE AE — Base flood elevations determined.
ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR — Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99 — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.
FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
Floodplain Boundary
Floodway Boundary
Zone D Boundary
Coastal Barrier Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
~~~513~~~ Base Flood Elevation line and value; elevation in feet*
(EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*
*Referenced to the North American Vertical Datum of 1988
Cross Section Line
Transect Line
97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000mN 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT 5000-foot grid ticks
DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 River Mile
MAP REPOSITORY
Refer to Repository Listing on Index Map
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.
For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.
MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
300 0 600 1200 METERS
PANEL 3875 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 3875 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS 320003 3875 E
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 32003C3875 E
MAP REVISED: SEPTEMBER 27, 2002
Federal Emergency Management Agency
NATIONAL FLOOD INSURANCE PROGRAM
~~~


NOTES TO USERS
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FAX: 800-358-9620
www.fema.gov/mac
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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/ceit/gismo/gismo.htm
CLARK COUNTY NEVADA
JOINS PANEL 3775
JOINS PANEL 3975
JOINS PANEL 3985
JOINS PANEL 4000
ZONE A
ZONE X
LAKE MEAD NATIONAL RECREATION AREA
CLARK COUNTY UNINCORPORATED AREAS 320003
LAKE MOHAVE
Las Vegas Wash
Flamingo Wash
White Rock Wash
Gibbs Spring
Canyon Creek
Gamebird Canyon Creek
Speedway Wash
LEGEND
SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT
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OTHER AREAS
ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
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Floodplain Boundary
Floodway Boundary
Zone D Boundary
Coastal Barrier Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*
*Referenced to the North American Vertical Datum of 1988
A — A — Cross Section Line
23 — 23 — Transect Line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000mN — 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT — 5000-foot grid ticks
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile
MAP REPOSITORY
Refer to Repository Listing on Index Map
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.
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MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS
PANEL 3900 E
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 3900 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY — NUMBER — PANEL — SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS — 320003 — 3900 — E
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 32003C3900 E
MAP REVISED: SEPTEMBER 27, 2002
Federal Emergency Management Agency


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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cceli/gismo/gismo.htm
JOINS PANEL 3800
JOINS PANEL 3900
JOINS PANEL 4005
114°37'30"
114°30'00"
35°22'30"
35°15'00"
ZONE A
ZONE X
ZONE AE
MOHAVE COUNTY
CLARK COUNTY
CLARK COUNTY
SHORELINE
EMPIRE WASH
LAKE MOHAVE
WHITE ROCK WASH
ARIZONA
NEVADA
LAKE MEAD NATIONAL REACREATION AREA
T30S
T31S
NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 30 SOUTH, RANGE 66 EAST AND TOWNSHIP 31 SOUTH, RANGE 66 EAST.
LEGEND
SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT
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Floodway Boundary
Zone D Boundary
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Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513 — Base Flood Elevation line and value; elevation in feet*
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*Referenced to the North American Vertical Datum of 1988
A — A — Cross Section Line
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4276000m — 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT — 5000-foot grid ticks
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile
MAP REPOSITORY
Refer to Repository Listing on Index Map
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to delete roads and road names, to change map numbers, to incorporate previously issued letters of map amendment, and to change floodways.
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1000 0 2000 4000 FEET
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PANEL 3925 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 3925 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY — NUMBER — PANEL — SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS — 320003 — 3925 — E
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 32003C3925 E
MAP REVISED: SEPTEMBER 27, 2002
Federal Emergency Management Agency
NATIONAL FLOOD INSURANCE PROGRAM

NOTES TO USERS

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www.fema.goximsc

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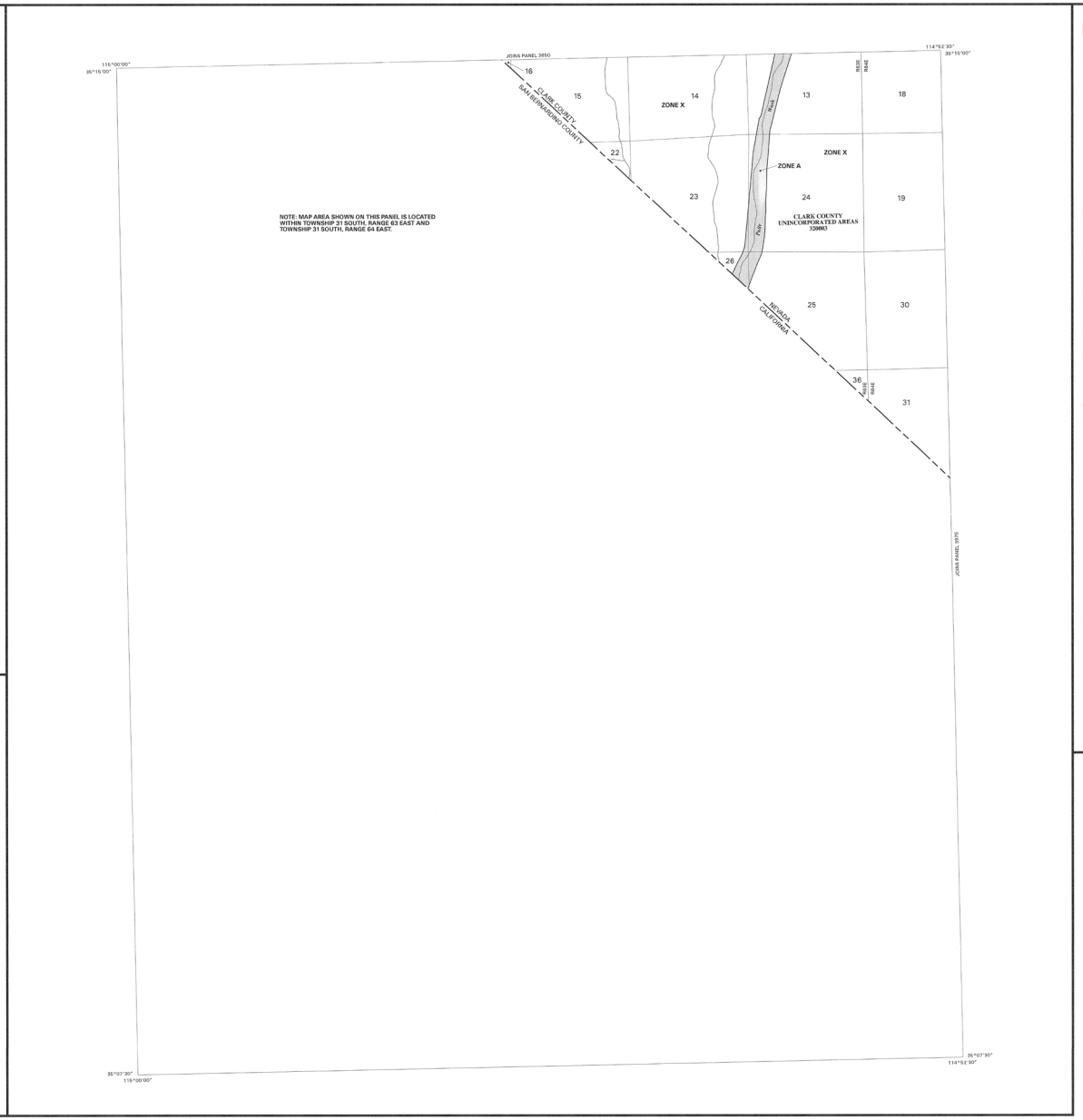
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+ Southern Nevada GIS - Cooperation among local governmental agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS Metadata.

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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cot/gismo/gismo.htm



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, AR/A, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain Boundary
Floodway Boundary
Zone D Boundary
Coastal Barrier Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513 Base Flood Elevation line and value; elevation in feet*
(EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

(A) (A) Cross Section Line
(23) (23) Transect Line
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4276000M 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT 5000-foot grid ticks
DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel).
M1.5 River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

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MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3950 E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 3950 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	3950	E

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MAP NUMBER
32003C3950 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency

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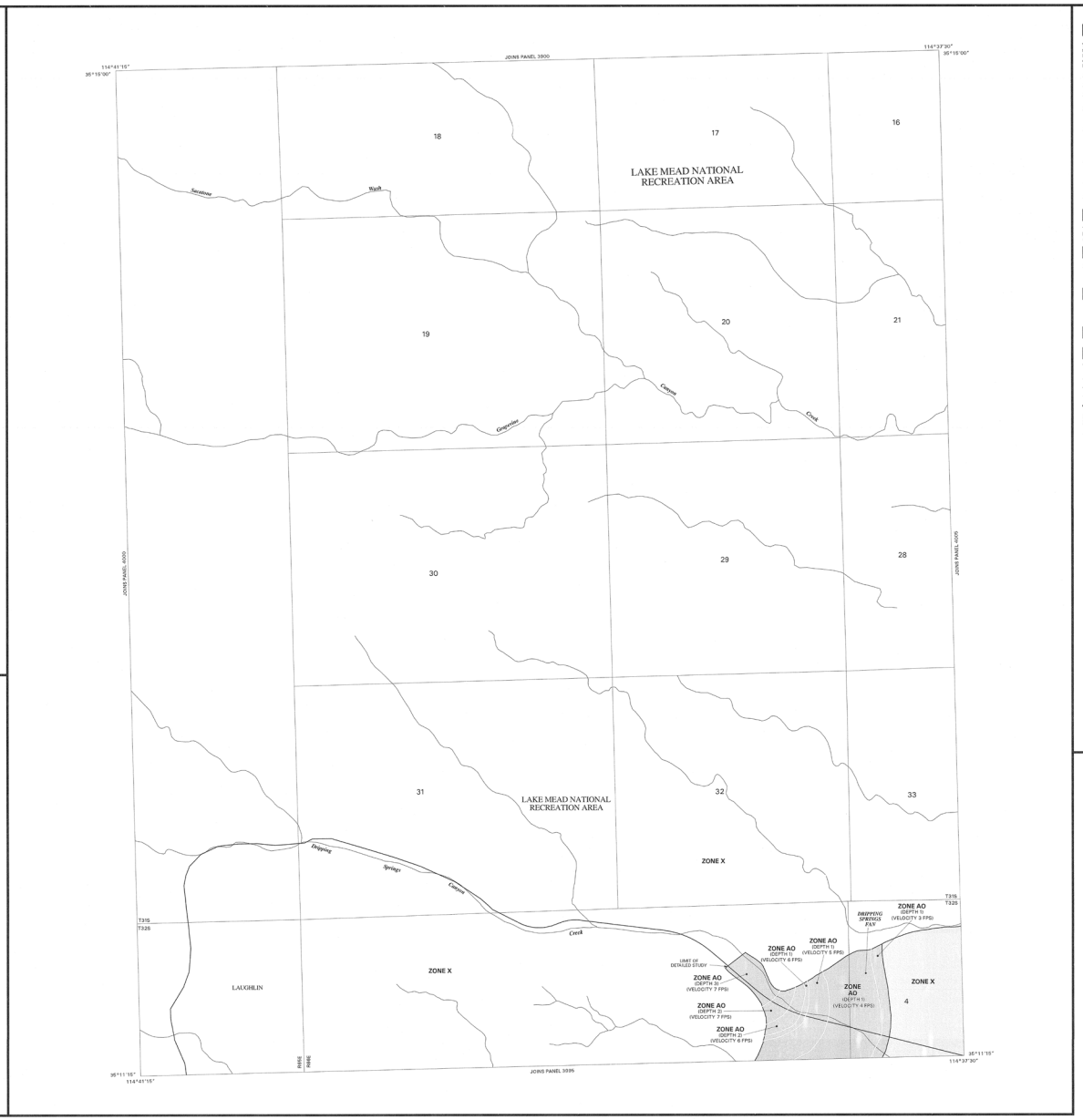
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500 0 1000 2000 FEET
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PANEL 3985 E

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 3985 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

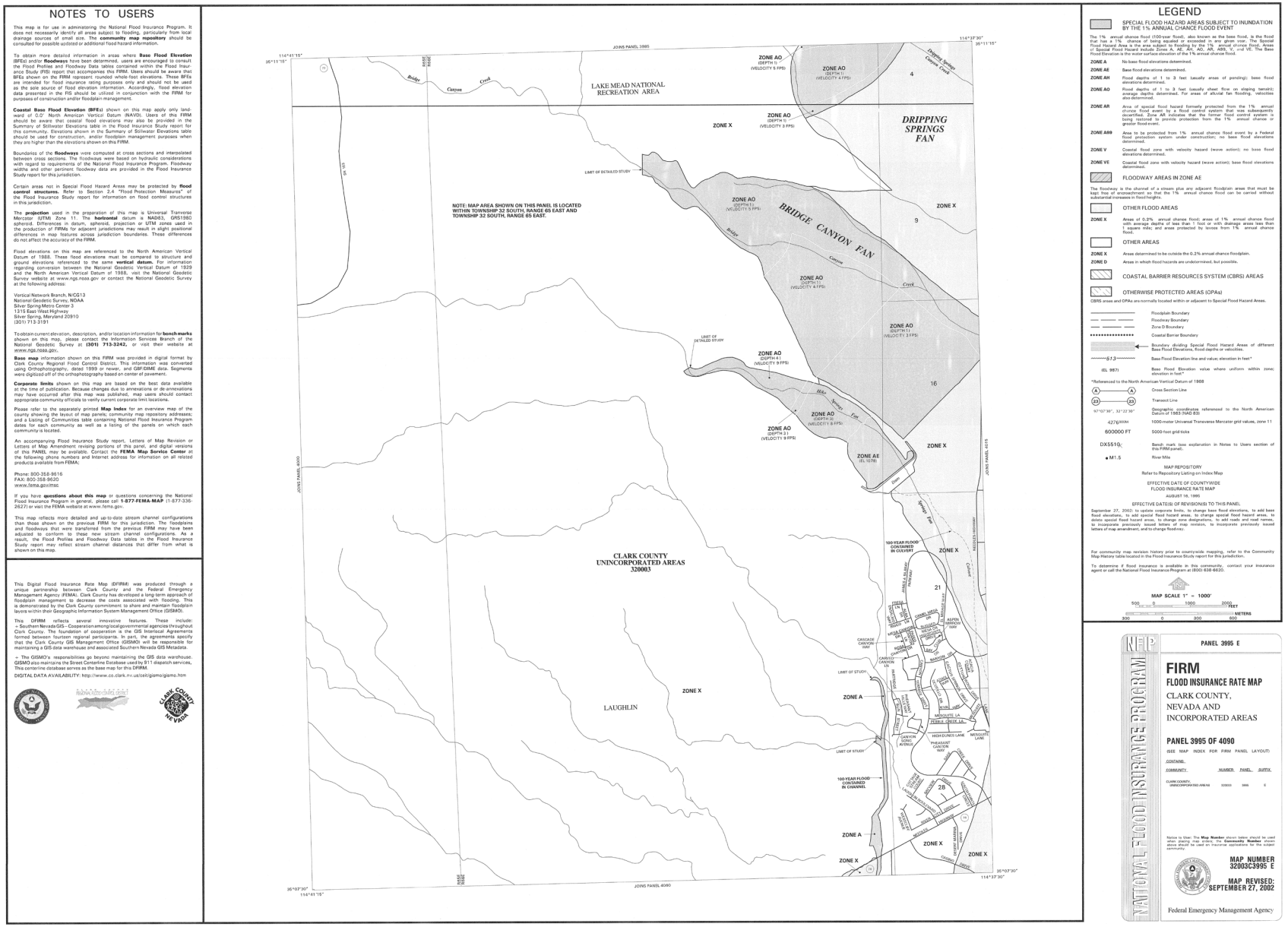
COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	3985	E

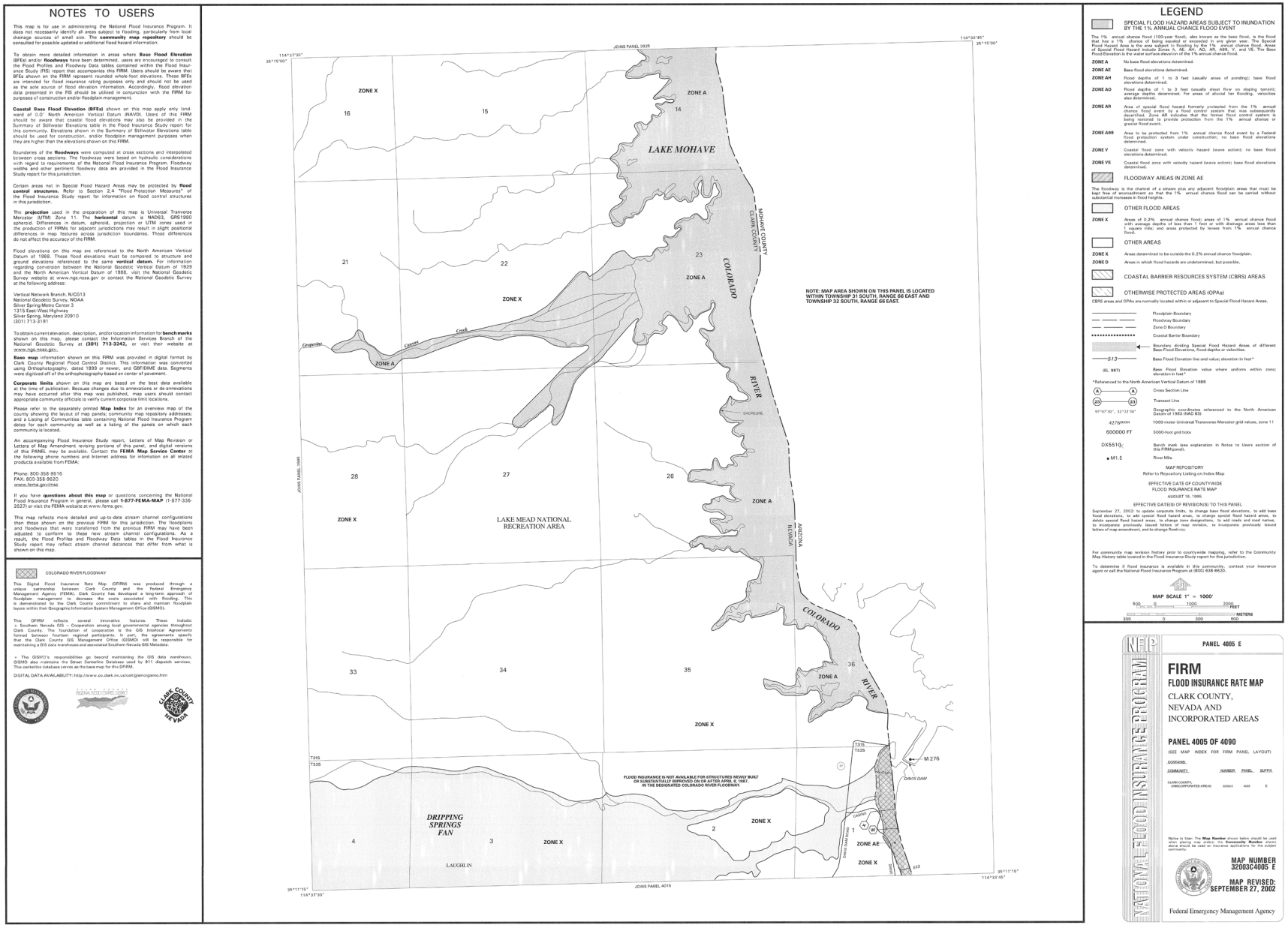
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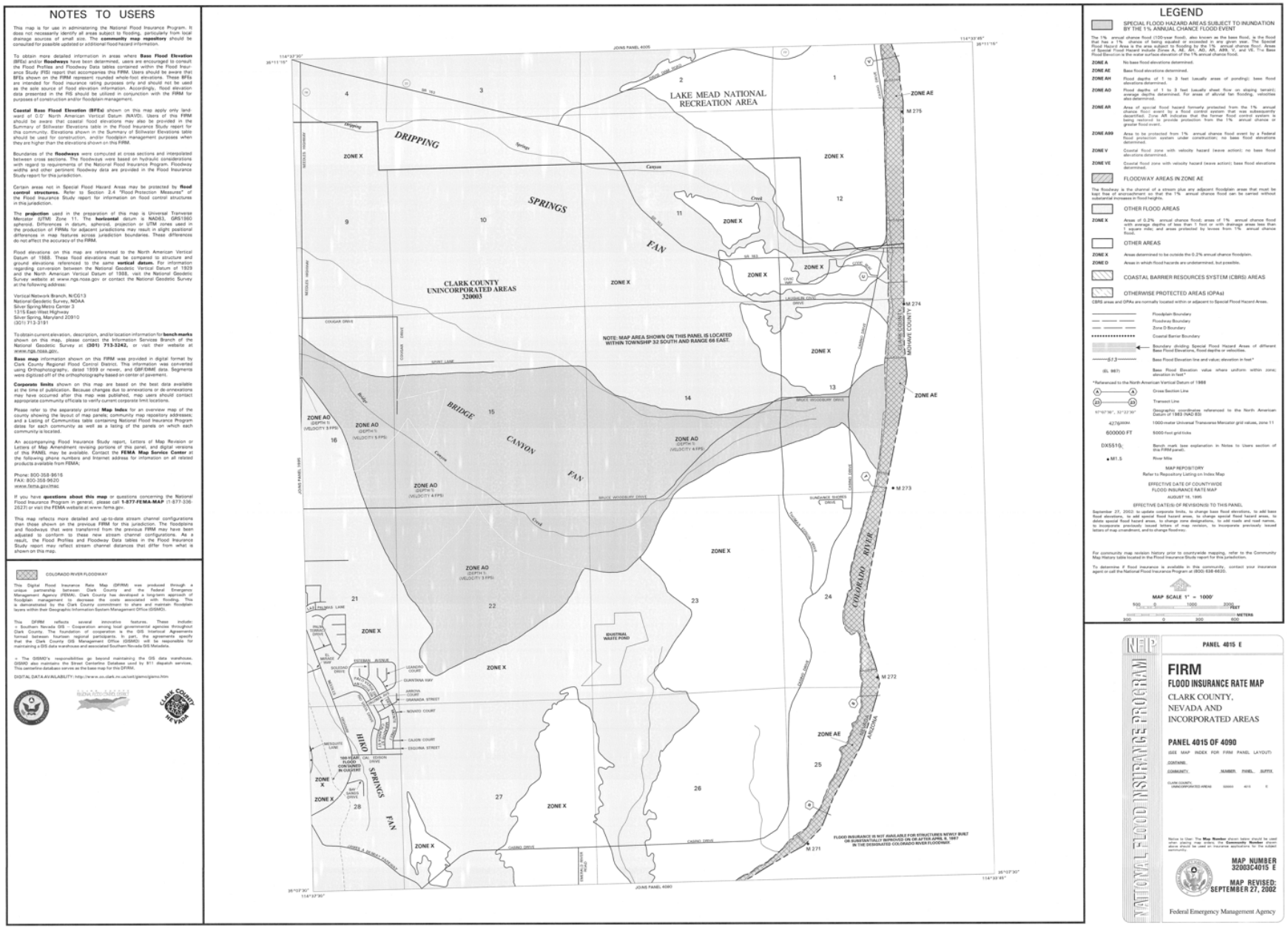
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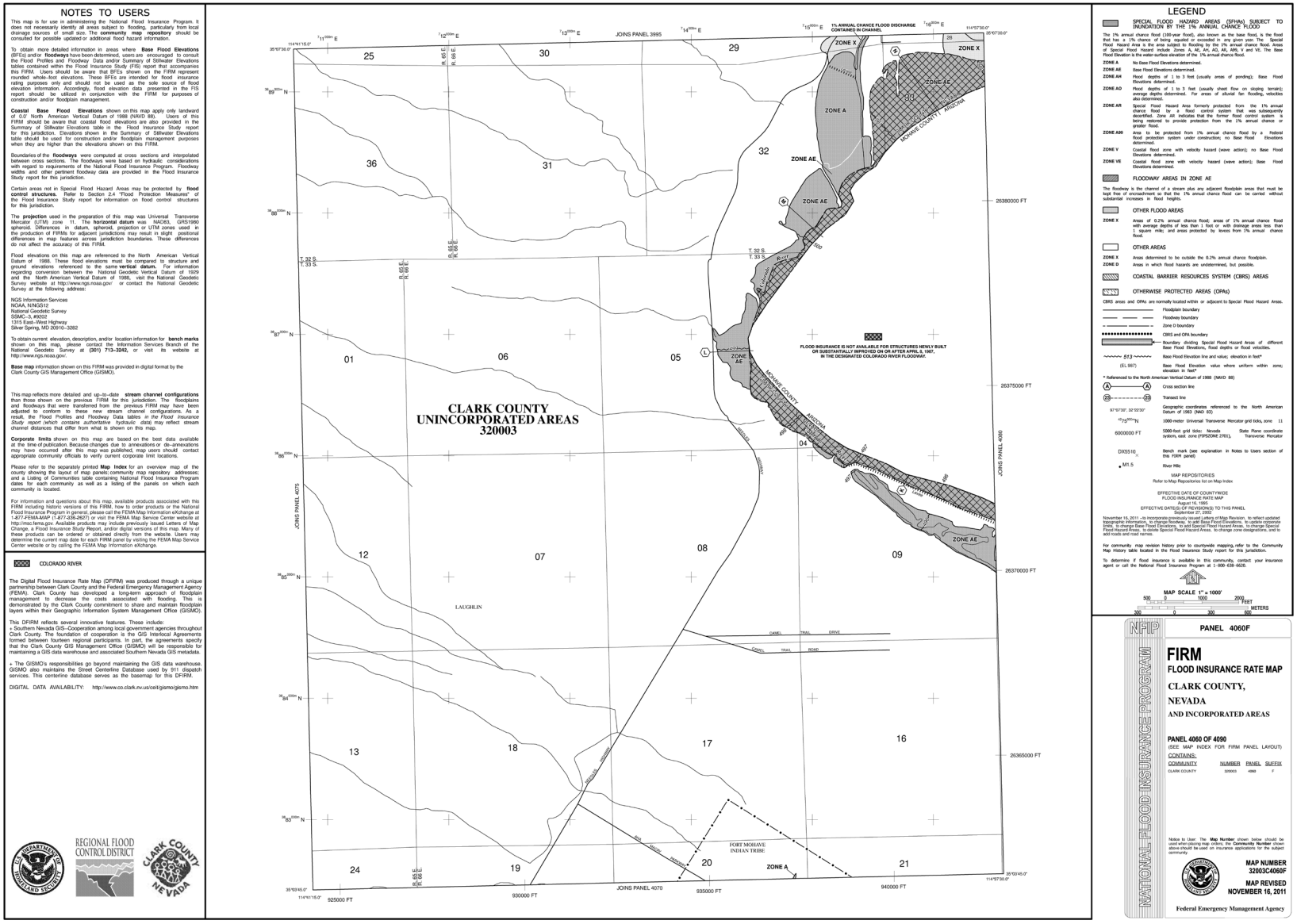
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CLARK COUNTY NEVADA
LAKE MEAD NATIONAL RECREATION AREA
DRIPPING SPRINGS FAN
BRIDGE CANYON FAN
LAUGHLIN
CLARK COUNTY UNINCORPORATED AREAS 320003
NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 32 SOUTH, RANGE 65 EAST AND TOWNSHIP 32 SOUTH, RANGE 65 EAST.
ZONE AO (DEPTH 5 (VELOCITY 5 FPS))
ZONE AO (DEPTH 1 (VELOCITY 4 FPS))
ZONE AO (DEPTH 3 (VELOCITY 3 FPS))
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ZONE AO (DEPTH 3 (VELOCITY 6 FPS))
ZONE AE (EL 1078)
ZONE X
ZONE A
100-YEAR FLOOD CONTAINED IN CHANNEL
LIMIT OF DETAILED STUDY
LIMIT OF STUDY
JOINS PANEL 4080
JOINS PANEL 4075
JOINS PANEL 3985
JOINS PANEL 4090
114°41'15"
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LEGEND
SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.
ZONE A — No base flood elevations determined.
ZONE AE — Base flood elevations determined.
ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR — Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99 — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.
FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
Floodplain Boundary
Floodway Boundary
Zone D Boundary
Coastal Barrier Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 957) — Base Flood Elevation value where uniform within zone; elevation in feet*
*Referenced to the North American Vertical Datum of 1988
Cross Section Line
Transect Line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000M — 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT — 5000-foot grid ticks
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile
MAP REPOSITORY
Refer to Repository Listing on Index Map
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.
For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.
MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS
PANEL 3995 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 3995 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY — NUMBER — PANEL — SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS — 320003 — 3995 — E
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 32003C3995 E
MAP REVISED: SEPTEMBER 27, 2002
Federal Emergency Management Agency
NATIONAL FLOOD INSURANCE PROGRAM


NOTES TO USERS
This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.
To obtain more detailed information in areas where Base Flood Elevation (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.
Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0° North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.
Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.
Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.
The projection used in the preparation of this map is Universal Tranverse Mercator (UTM) Zone 11. The horizontal datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.
Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:
Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191
To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit their website at www.ngs.noaa.gov.
Base map information shown on this FIRM was provided in digital format by Clark County Regional Flood Control District. This information was converted using Orthophotography, dated 1999 or newer, and GBF/DIME data. Segments were digitized off of the orthophotography based on center of pavement.
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.
Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.
An accompanying Flood Insurance Study report, Letters of Map Revision or Letters of Map Amendment revising portions of this panel, and digital versions of this PANEL may be available. Contact the FEMA Map Service Center at the following phone numbers and Internet address for information on all related products available from FEMA:
Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/msc
If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at www.fema.gov.
This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report may reflect stream channel distances that differ from what is shown on this map.
COLORADO RIVER FLOODWAY
This Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).
This DFIRM reflects several innovative features. These include: • Southern Nevada GIS – Cooperation among local governmental agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS Metadata.
• The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the base map for this DFIRM.
DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cooit/gismo/gismo.htm
FEDERAL EMERGENCY MANAGEMENT AGENCY
CLARK COUNTY NEVADA
JOINS PANEL 3935
JOINS PANEL 4015
JOINS PANEL 3985
114°37'30"
35°16'00"
114°32'45"
35°15'00"
35°11'15"
114°33'05"
ZONE X
ZONE A
LAKE MOHAVE
MOHAVE COUNTY
CLARK COUNTY
COLORADO
RIVER
SHORELINE
Grapevine
Canyon
Wash
LAKE MEAD NATIONAL RECREATION AREA
ARIZONA
NEVADA
NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 31 SOUTH, RANGE 66 EAST AND TOWNSHIP 32 SOUTH, RANGE 66 EAST.
FLOOD INSURANCE IS NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER APRIL 9, 1987, IN THE DESIGNATED COLORADO RIVER FLOODWAY.
DAVIS DAM
M 276
DRIPPING SPRINGS FAN
LAUGHLIN
CASINO
DAVIS DAM ROAD
LEVEE
T31S
T32S
LEGEND
SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.
ZONE A No base flood elevations determined.
ZONE AE Base flood elevations determined.
ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.
FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D Areas in which flood hazards are undetermined, but possible.
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
Floodplain Boundary
Floodway Boundary
Zone D Boundary
Coastal Barrier Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513 Base Flood Elevation line and value; elevation in feet*
(EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*
*Referenced to the North American Vertical Datum of 1988
A Cross Section Line
23 Transect Line
97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000M 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT 5000-foot grid ticks
DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 River Mile
MAP REPOSITORY
Refer to Repository Listing on Index Map
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change flood-way.
For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.
MAP SCALE 1" = 1000'
900 0 1000 2000 FEET
300 0 300 600 METERS
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 4005 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 4005 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS 320003 4005 E
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 32003C4005 E
MAP REVISED: SEPTEMBER 27, 2002
Federal Emergency Management Agency


NOTES TO USERS
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To obtain more detailed information in areas where Base Flood Elevation (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.
Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.
Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.
Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.
The projection used in the preparation of this map is Universal Tranverse Mercator (UTM) Zone 11. The horizontal datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.
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Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191
To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit their website at www.ngs.noaa.gov.
Base map information shown on this FIRM was provided in digital format by Clark County Regional Flood Control District. This information was converted using Orthophotography, dated 1999 or newer, and GBF/DIME data. Segments were digitized off of the orthophotography based on center of pavement.
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.
Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.
An accompanying Flood Insurance Study report, Letters of Map Revision or Letters of Map Amendment revising portions of this panel, and digital versions of this PANEL may be available. Contact the FEMA Map Service Center at the following phone numbers and Internet address for information on all related products available from FEMA:
Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/mtac
If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at www.fema.gov.
This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report may reflect stream channel distances that differ from what is shown on this map.
COLORADO RIVER FLOODWAY
This Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).
This DFIRM reflects several innovative features. These include:
• Southern Nevada GIS – Cooperation among local governmental agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS Metadata.
• The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the base map for this DFIRM.
DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cet/gismo/gismo.htm
LAKE MEAD NATIONAL RECREATION AREA
DRIPPING SPRINGS FAN
CLARK COUNTY UNINCORPORATED AREAS 320003
BRIDGE CANYON FAN
NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 32 SOUTH AND RANGE 68 EAST.
COLORADO RIVER
HIKO SPRINGS FAN
INDUSTRIAL WASTE POND
FLOOD INSURANCE IS NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER APRIL 15, 1987 IN THE DESIGNATED COLORADO RIVER FLOODWAY.
JOINS PANEL 4005
JOINS PANEL 4080
JOINS PANEL 1995
ZONE X
ZONE AE
ZONE AO (DEPTH 1) (VELOCITY 3 FPS)
ZONE AO (DEPTH 1) (VELOCITY 4 FPS)
ZONE AO (DEPTH 1) (VELOCITY 5 FPS)
M 275
M 274
M 273
M 272
M 271
LEGEND
SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.
ZONE A — No base flood elevations determined.
ZONE AE — Base flood elevations determined.
ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR — Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99 — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.
FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
Floodplain Boundary
Floodway Boundary
Zone D Boundary
Coastal Barrier Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513 Base Flood Elevation line and value; elevation in feet*
(EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*
*Referenced to the North American Vertical Datum of 1988
Cross Section Line
Transect Line
97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000M 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT 5000-foot grid ticks
DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 River Mile
MAP REPOSITORY
Refer to Repository Listing on Index Map
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002 - to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.
For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.
MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS
PANEL 4015 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 4015 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS 320003 4015 E
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 32003C4015 E
MAP REVISED: SEPTEMBER 27, 2002
Federal Emergency Management Agency
NATIONAL FLOOD INSURANCE PROGRAM


NOTES TO USERS
This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.
To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.
Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.
Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.
Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.
The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.
Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:
NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910–3282
To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713–3242, or visit its website at http://www.ngs.noaa.gov/.
Base map information shown on this FIRM was provided in digital format by the Clark County GIS Management Office (GISMO).
This map reflects more detailed and up–to–date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de–annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.
Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.
For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.
COLORADO RIVER
The Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).
This DFIRM reflects several innovative features. Those include:
+ Southern Nevada GIS–Cooperation among local government agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS metadata.
+ The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the basemap for this DFIRM.
DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cell/gismo/gismo.htm
REGIONAL FLOOD CONTROL DISTRICT
CLARK COUNTY NEVADA
JOINS PANEL 3995
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CHANNEL
ZONE X
ZONE AE
ZONE A
MOHAVE COUNTY ARIZONA
FLOOD INSURANCE IS NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER APRIL 5, 1987, IN THE DESIGNATED COLORADO RIVER FLOODWAY.
CLARK COUNTY
UNINCORPORATED AREAS
320003
LAUGHLIN
FORT MOHAVE INDIAN TRIBE
JOINS PANEL 4075
JOINS PANEL 4080
JOINS PANEL 4079
26380000 FT
26375000 FT
26370000 FT
26365000 FT
925000 FT
930000 FT
935000 FT
940000 FT
LEGEND
SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
ZONE A — No Base Flood Elevations determined.
ZONE AE — Base Flood Elevations determined.
ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
Floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*
* Referenced to the North American Vertical Datum of 1988 (NAVD 88)
A — A — Cross section line
23 — 23 — Transect line
97°07'30", 32°52'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4275000mN — 1000-meter Universal Transverse Mercator grid ticks, zone 11
6000000 FT — 5000-foot grid ticks: Nevada State Plane coordinate system, east zone (FIPSZONE 2701), Transverse Mercator
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile
MAP REPOSITORIES
Refer to Map Repositories list on Map Index
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
August 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002
November 16, 2011 –to incorporate the effects of Letter of Map Revision, to reflect updated topographic information, to change floodway, to add Base Flood Elevations, to update corporate limits, to change Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to change zone designations, and to add roads and road names.
For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.
MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 4060F
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 4060 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY — NUMBER — PANEL — SUFFIX
CLARK COUNTY — 320003 — 4060 — F
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 32003C4060F
MAP REVISED NOVEMBER 16, 2011
Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevation** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0° North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map is Universal Transverse Mercator (UTM) Zone 11. The **horizontal** datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1316 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242,** or visit their website at www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format by Clark County Regional Flood Control District. This information was converted using Orthophotography, dated 1999 or newer, and GBF/DIME data. Segments were digitized off of the orthophotography based on center of pavement.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

An accompanying Flood Insurance Study report, Letters of Map Revision or Letters of Map Amendment revising portions of this panel, and digital versions of this PANEL may be available. Contact the **FEMA Map Service Center** at the following phone numbers and Internet address for information on all related products available from FEMA:

Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/msc

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at www.fema.gov.

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report may reflect stream channel distances that differ from what is shown on this map.

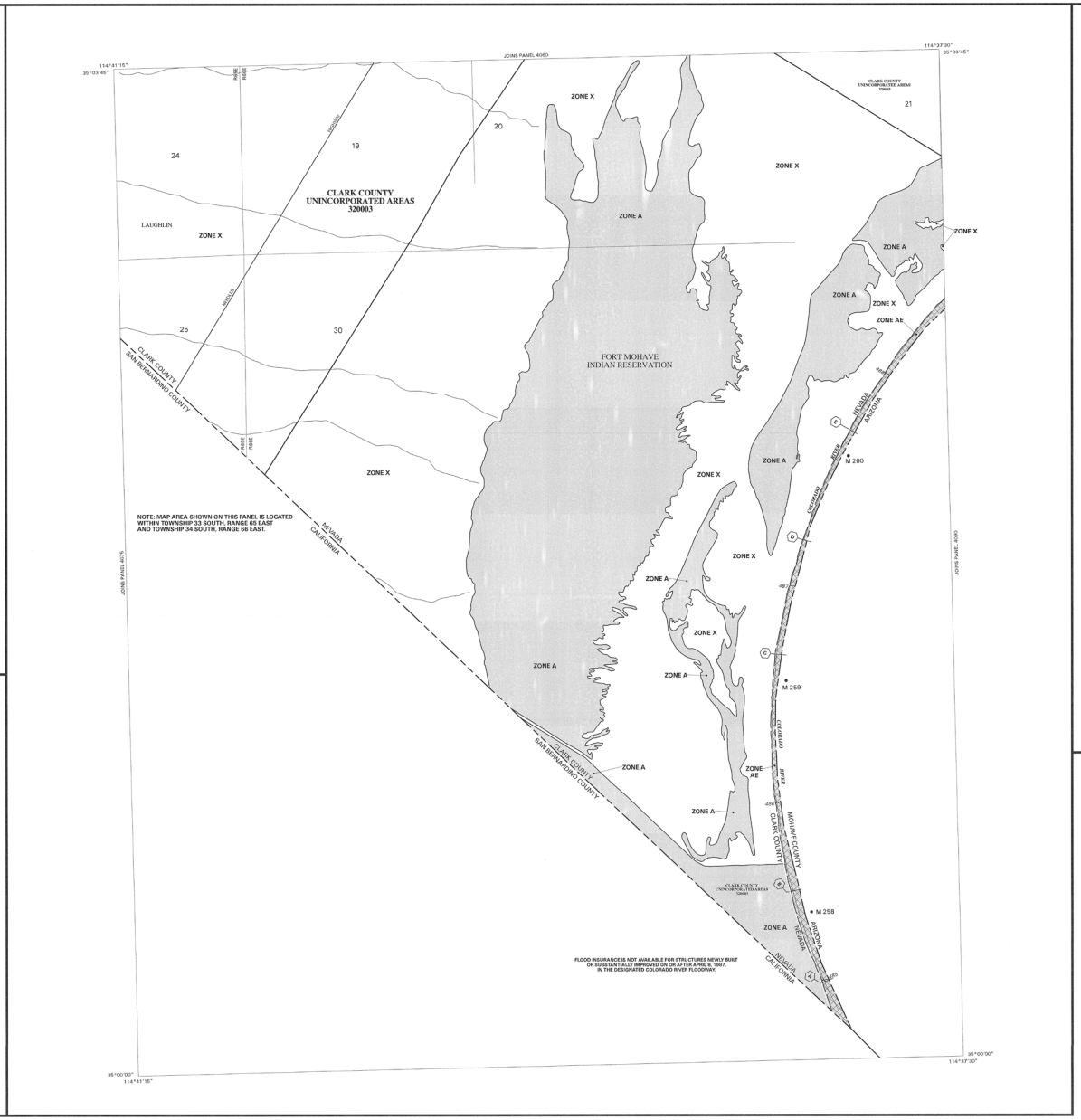
COLORADO RIVER FLOODWAY

This Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).

This DFIRM reflects several innovative features. These include:
+ Southern Nevada GIS – Cooperation among local governmental agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS Metadata.

+ The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the base map for this DFIRM.

DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/soit/gismo/gismo.htm



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain Boundary
Floodway Boundary
Zone D Boundary
Coastal Barrier Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513 Base Flood Elevation line and value; elevation in feet*
(EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

Cross Section Line
Transect Line
97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000M 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT 5000-foot grid ticks
DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

PANEL 4070 E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 4070 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	4070	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C4070 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole–foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC–3, #9202
1315 East–West Highway
Silver Spring, MD 20910–3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713–3242,** or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was provided in digital format by the Clark County GIS Management Office (GISMO).

This map reflects more detailed and up–to–date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables *in the Flood Insurance Study report (which contains authoritative hydraulic data)* may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de–annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1–877–FEMA–MAP (1–877–336–2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

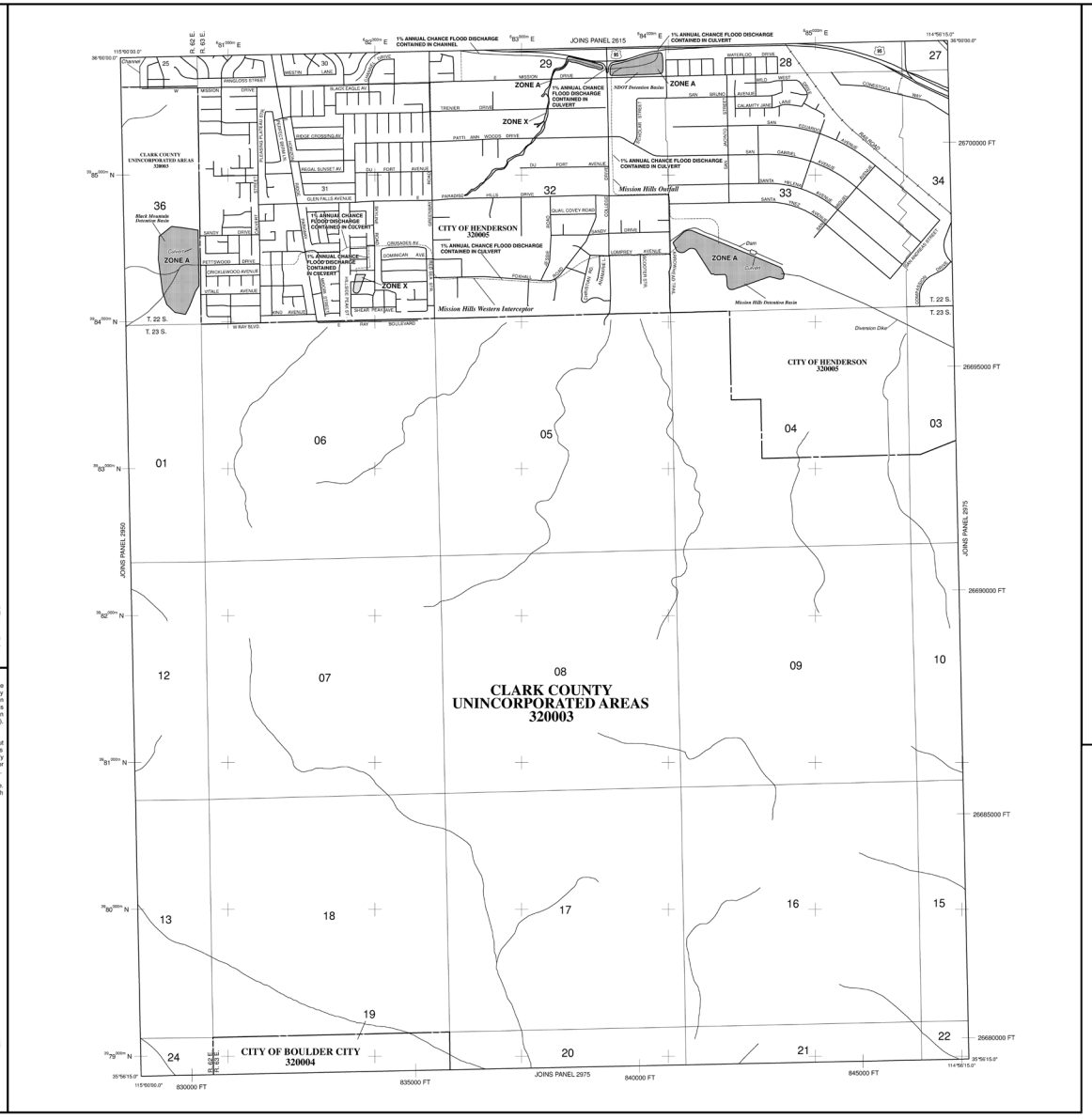
The Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).

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+ Southern Nevada GIS–Cooperation among local government agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS metadata.

+ The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the basemap for this DFIRM.

DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/coit/gismo/gismo.htm



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- **ZONE A** No Base Flood Elevations determined.
- **ZONE AE** Base Flood Elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- A — A — Cross section line
- 23 — 23 — Transect line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4279000mN — 1000-meter Universal Transverse Mercator grid ticks, zone 11
- 6000000 FT — 5000-foot grid ticks: Nevada State Plane coordinate system, east zone (FIPSZONE 2701), Transverse Mercator
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
August 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2006

November 16, 2011 - to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to change zone designations, to add roads and road names, to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, and to change floodway.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

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MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2955F

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 2955 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY	320003	2955	F
BOULDER CITY, CITY OF	320004	2955	F
HENDERSON, CITY OF	320005	2955	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C2955F

MAP REVISED
NOVEMBER 16, 2011

Federal Emergency Management Agency

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Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

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Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC–3, #9202
1315 East–West Highway
Silver Spring, MD 20910–3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713–3242,** or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was provided in digital format by the Clark County GIS Management Office (GISMO).

This map reflects more detailed and up–to–date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables *in the Flood Insurance Study report (which contains authoritative hydraulic data)* may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de–annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1–877–FEMA–MAP (1–877–336–2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

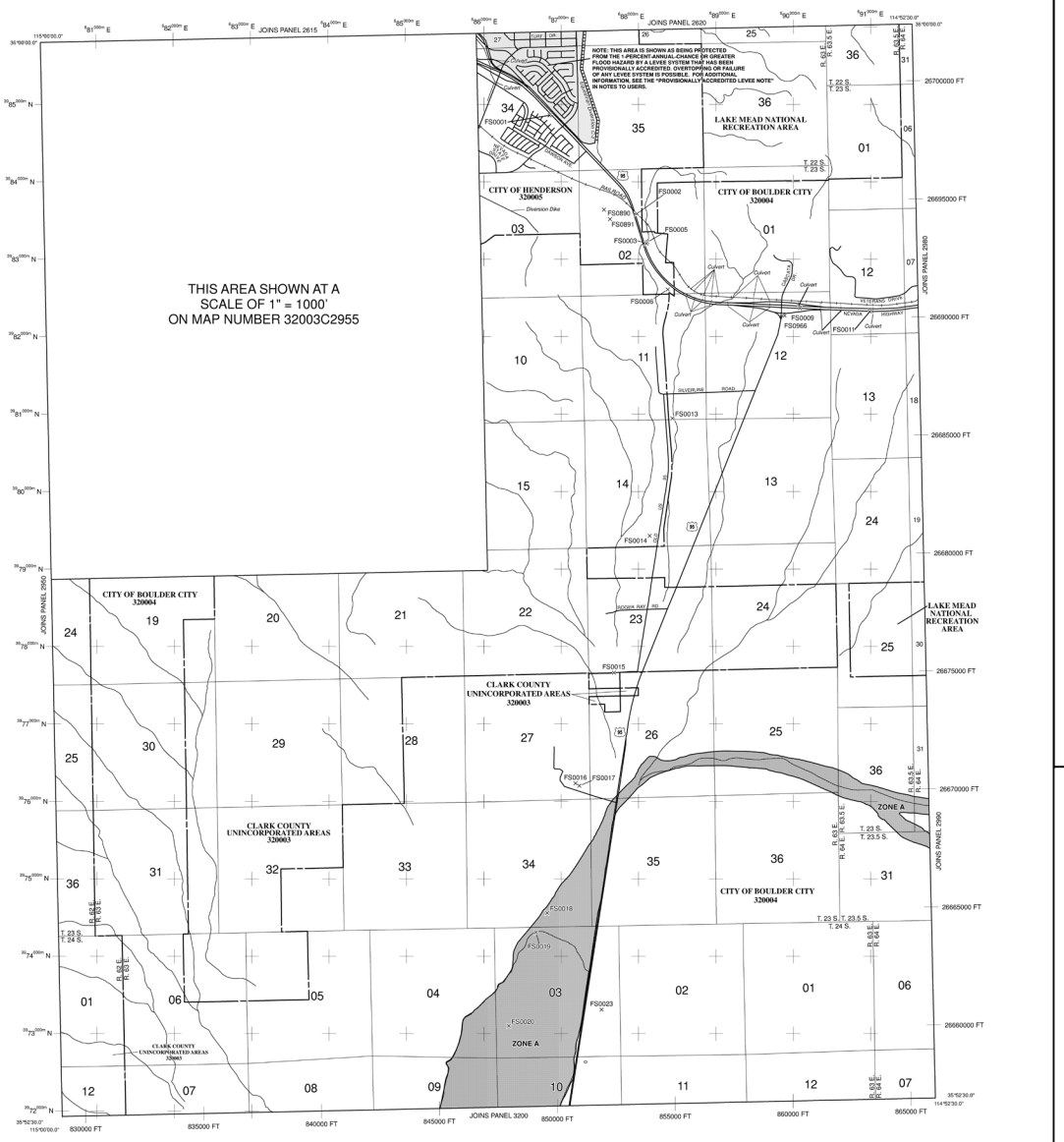
Provisionally Accredited Levee Notes to Users: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1–percent–annual–chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To maintain accreditation, the levee owner or community is required to submit the data and documentation necessary to comply with Section 65.10 of the NFIP regulations by December 16, 2010. If the community or owner does not provide the necessary data and documentation or if the data and documentation provided indicate the levee system does not comply with Section 65.10 requirements, FEMA will revise the flood hazard and risk information for this area to reflect de–accreditation of the levee system. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at http://www.fema.gov/business/nfip/index.shtm.

The Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long–term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).

This DFIRM reflects several innovative features. These include:
+ Southern Nevada GIS–Cooperation among local government agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS metadata.

+ The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the basemap for this DFIRM.

DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/ceil/gismo/gismo.htm



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- **ZONE A** — No Base Flood Elevations determined.
- **ZONE AE** — Base Flood Elevations determined.
- **ZONE AH** — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** — Area to be protected from 1% annual chance flood by a federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** — Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- A — Cross section line
- 23 — Transect line
- 97°07'30", 33°07'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4375000 mN — 1000-meter Universal Transverse Mercator grid ticks, zone 11
- 6000000 FT — 5000-foot grid ticks: Nevada State Plane coordinate system, east zone (FIPSZONE 2701), Transverse Mercator
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
August 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
November 16, 2011

November 16, 2011 - to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, to change floodway, to add Base Flood Elevations, to update corporate limits, to change Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to change zone designations, and to add roads and road names.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1–800–638–6620.

MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2975F

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 2975 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

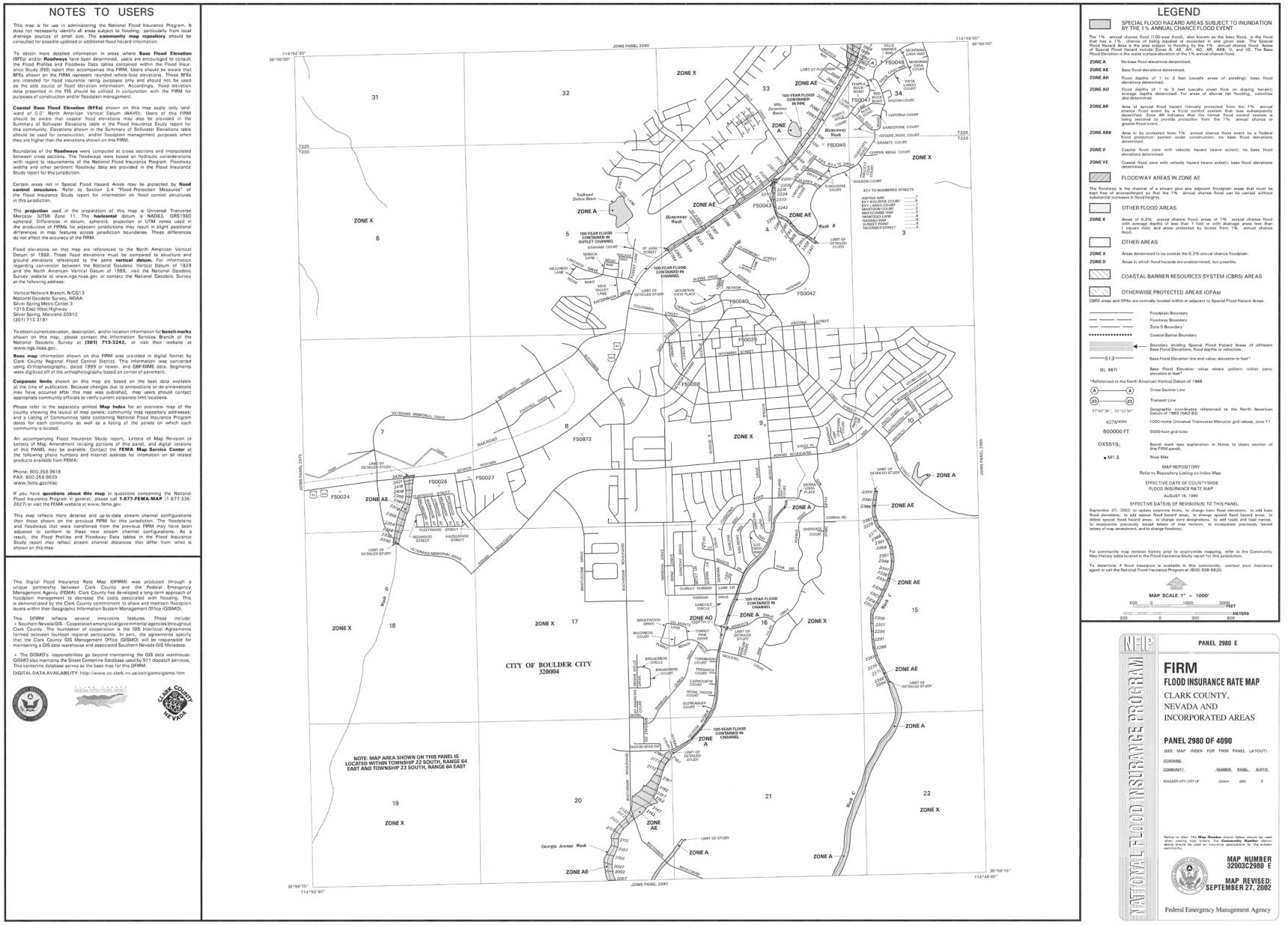
COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY	320003	2975	F
BOULDER CITY, CITY OF	320004	2975	F
HENDERSON, CITY OF	320005	2975	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 32003C2975F

MAP REVISED NOVEMBER 16, 2011

Federal Emergency Management Agency


NOTES TO USERS
This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.
To obtain more detailed information in areas where Base Flood Elevation (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.
Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.
Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.
Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.
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Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191
To obtain current elevation, description, and/or location information for bench-marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit their website at www.ngs.noaa.gov.
Base map information shown on this FIRM was provided in digital format by Clark County Regional Flood Control District. This information was converted using Orthophotography, dated 1999 or newer, and GBF/DIME data. Segments were digitized off of the orthophotography based on center of pavement.
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Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/msc
If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at www.fema.gov.
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This Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).
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+ The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the base map for this DFIRM.
DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cet/gismo/gismo.htm
JOINS PANEL 2640
JOINS PANEL 2975
JOINS PANEL 2980
JOINS PANEL 2990
CITY OF BOULDER CITY 320004
NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 22 SOUTH, RANGE 64 EAST AND TOWNSHIP 23 SOUTH, RANGE 64 EAST
LEGEND
SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.
ZONE A No base flood elevations determined.
ZONE AE Base flood elevations determined.
ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.
FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D Areas in which flood hazards are undetermined, but possible.
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
Floodplain Boundary
Floodway Boundary
Zone D Boundary
Coastal Barrier Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513 Base Flood Elevation line and value; elevation in feet*
(EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*
*Referenced to the North American Vertical Datum of 1988
A Cross Section Line
23 Transect Line
97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000M 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT 5000-foot grid ticks
DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel).
M1.5 River Mile
MAP REPOSITORY
Refer to Repository Listing on Index Map
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.
For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.
MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
200 0 300 600 METERS
PANEL 2980 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 2980 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
BOULDER CITY, CITY OF 320004 2980 E
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 32003C2980 E
MAP REVISED: SEPTEMBER 27, 2002
Federal Emergency Management Agency
NATIONAL FLOOD INSURANCE PROGRAM

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevation** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

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Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

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The **projection** used in the preparation of this map is Universal Tranverse Mercator (UTM) Zone 11. The **horizontal** datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

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National Geodetic Survey, NOAA
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Silver Spring, Maryland 20910
(301) 713-3191

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Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/msc

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at www.fema.gov.

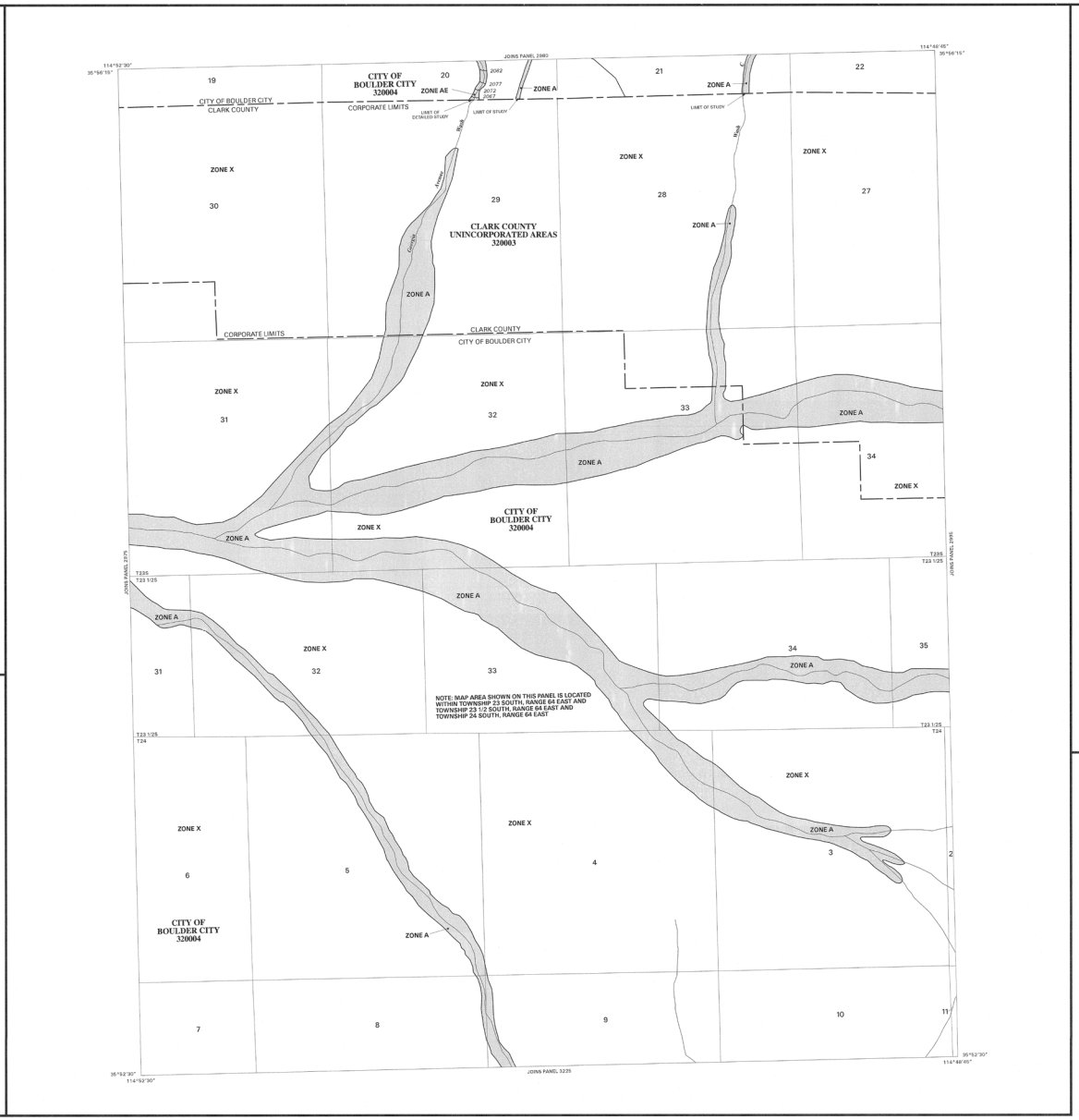
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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cet/gismo/gismo.htm



LEGEND

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ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

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ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

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OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

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- Floodway Boundary
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- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
- 513 Base Flood Elevation line and value; elevation in feet*
- (EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- (A)—(A) Cross Section Line
- (23)—(23) Transect Line
- 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000M 1000-meter Universal Transverse Mercator grid values, zone 11
- 600000 FT 5000-foot grid ticks
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

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MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2990 E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 2990 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

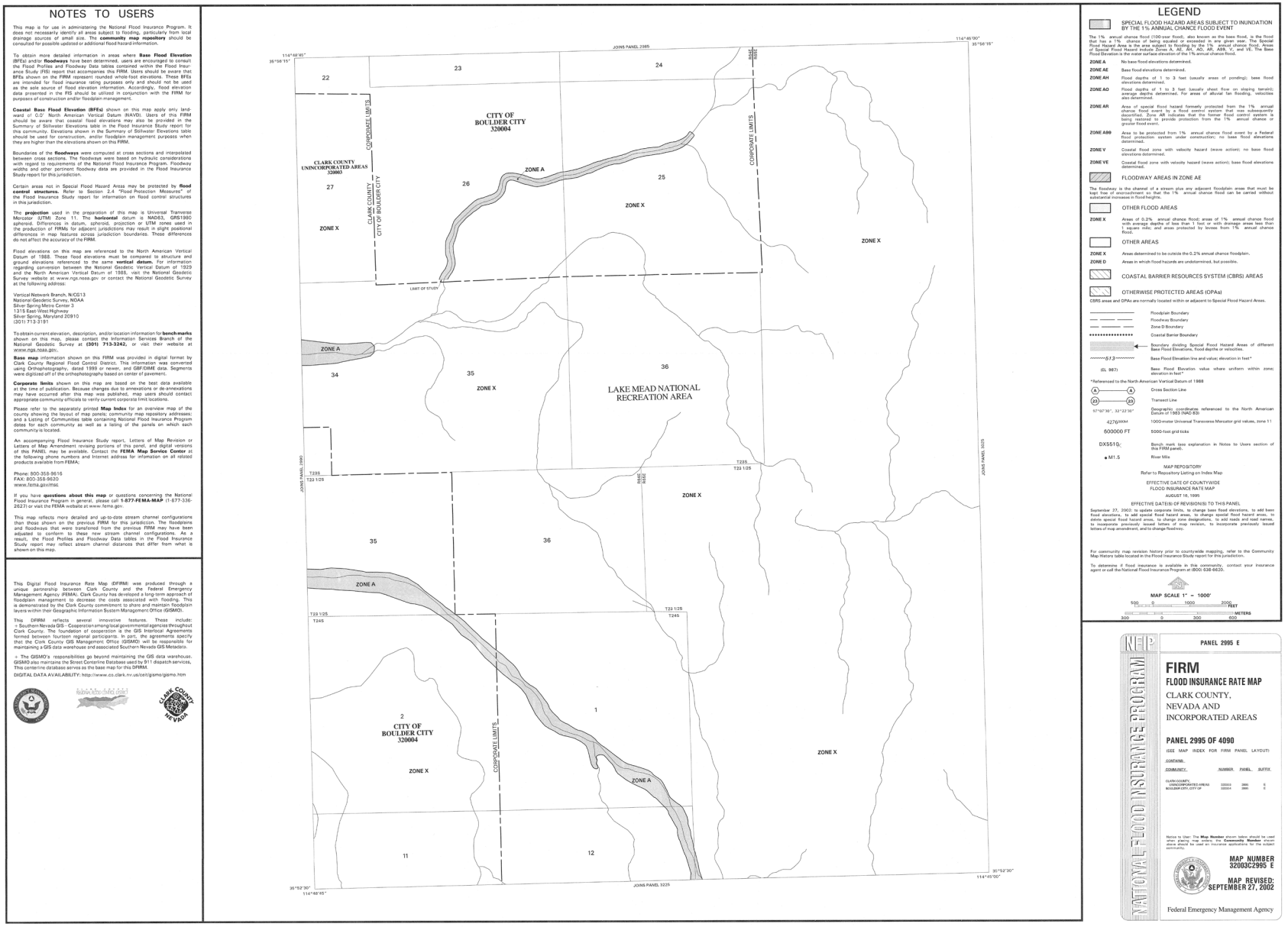
COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY UNINCORPORATED AREAS	320003	2990	E
BOULDER CITY, CITY OF	320004	2990	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 32003C2990 E

MAP REVISED: SEPTEMBER 27, 2002

Federal Emergency Management Agency


NOTES TO USERS
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Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.
Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.
The projection used in the preparation of this map is Universal Transverse Mercator (UTM) Zone 11. The horizontal datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.
Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:
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National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191
To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit their website at www.ngs.noaa.gov.
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www.fema.gov/msc
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This Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).
This DFIRM reflects several innovative features. Those include:
- Southern Nevada GIS - Cooperation among local governmental agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS Metadata.
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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cell/gismo/gismo.htm
CITY OF BOULDER CITY 320004
CLARK COUNTY UNINCORPORATED AREAS 320003
CORPORATE LIMITS
CLARK COUNTY
CITY OF BOULDER CITY
LIMIT OF STUDY
ZONE A
ZONE X
LAKE MEAD NATIONAL RECREATION AREA
JOINS PANEL 2985
JOINS PANEL 3225
JOINS PANEL 3025
R64E R65E
T23S T23 1/2S
T24S
22
23
24
25
26
27
34
35
36
1
2
11
12
114°48'45"
35°56'15"
114°45'00"
35°52'30"
LEGEND
SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.
ZONE A — No base flood elevations determined.
ZONE AE — Base flood elevations determined.
ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR — Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99 — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.
FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
Floodplain Boundary
Floodway Boundary
Zone D Boundary
Coastal Barrier Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*
*Referenced to the North American Vertical Datum of 1988
A — A — Cross Section Line
23 — 23 — Transect Line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000mN — 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT — 5000-foot grid ticks
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile
MAP REPOSITORY
Refer to Repository Listing on Index Map
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.
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MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS
NFIP
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 2995 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 2995 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY — NUMBER — PANEL — SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS — 320003 — 2995 — E
BOULDER CITY, CITY OF — 320004 — 2995 — E
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MAP NUMBER 32003C2995 E
MAP REVISED: SEPTEMBER 27, 2002
Federal Emergency Management Agency

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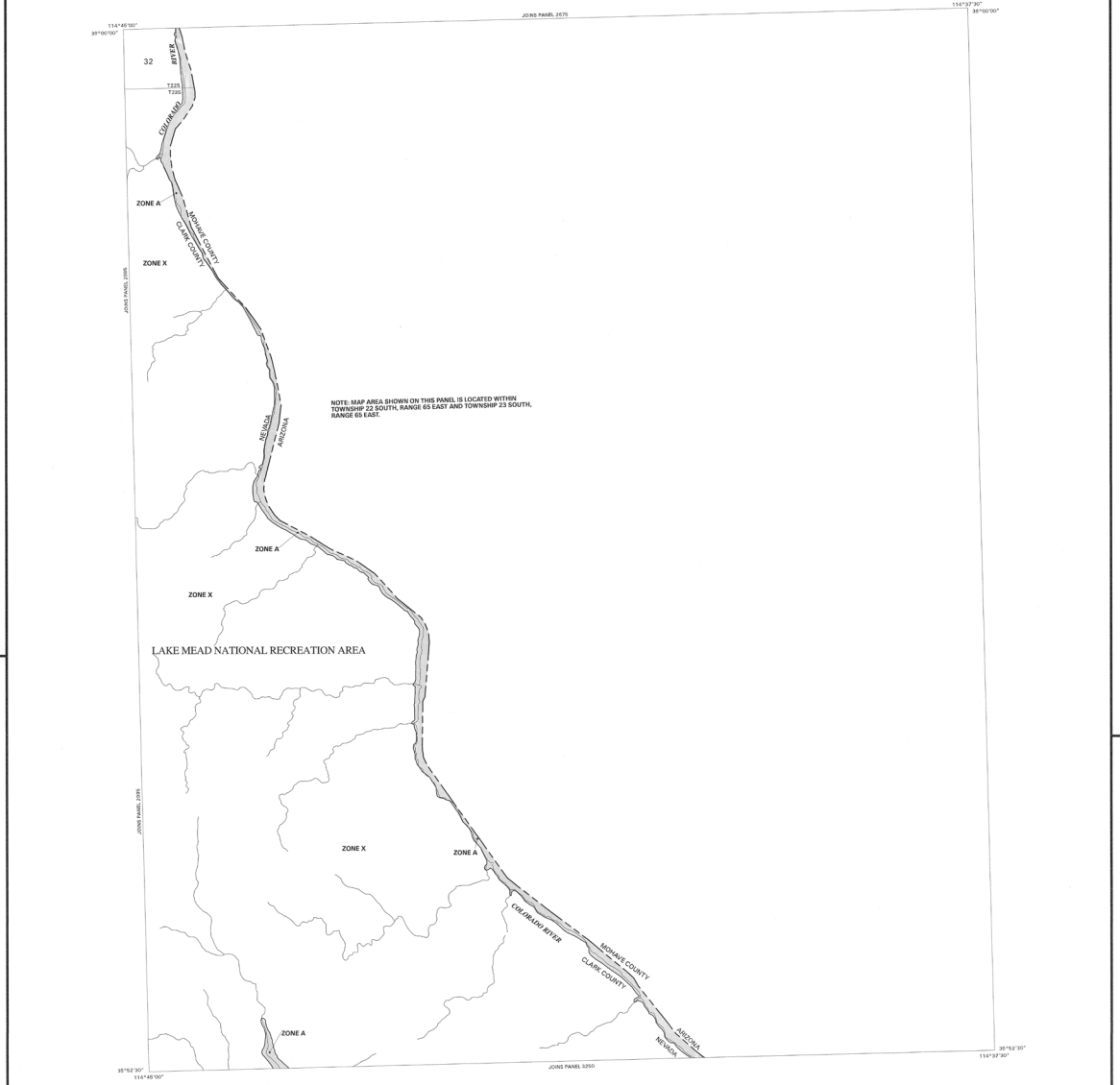
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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cell/gismo/gismo.htm



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ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

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FLOODWAY AREAS IN ZONE AE

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OTHER FLOOD AREAS

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(23) (23) Transect Line
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EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
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MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
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NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3025 E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 3025 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	3025	E

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MAP NUMBER 32003C3025 E

MAP REVISED: SEPTEMBER 27, 2002

Federal Emergency Management Agency

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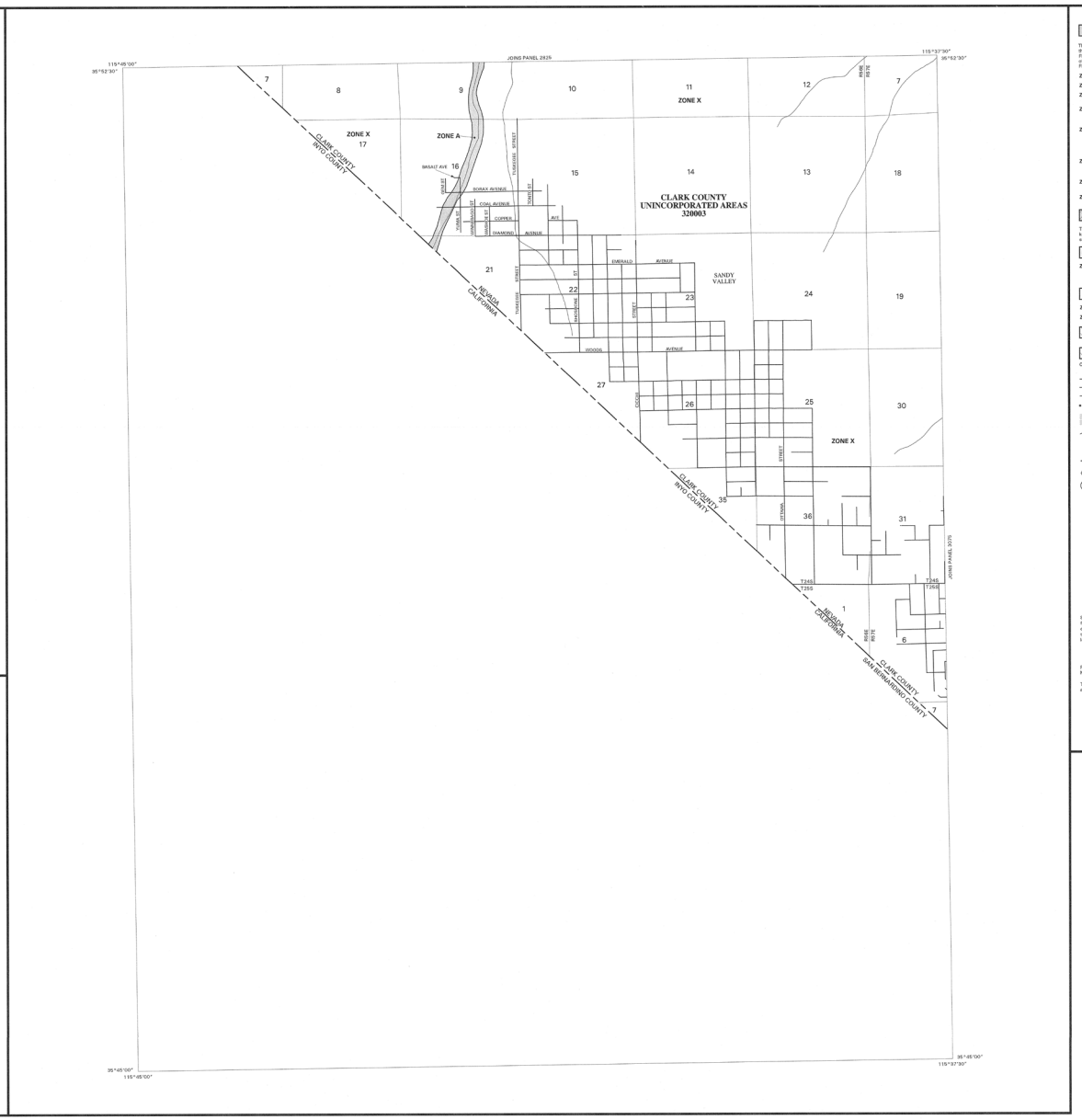
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97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000m 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT 5000-foot grid ticks
DX5513; Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3050 E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY,
NEVADA AND
INCORPORATED AREAS

PANEL 3050 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY: UNINCORPORATED AREAS	320003	3050	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C3050 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevation** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map is Universal Tranverse Mercator (UTM) Zone 11. The **horizontal** datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242,** or visit their website at www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format by Clark County Regional Flood Control District. This information was converted using Orthophotography, dated 1999 or newer, and GBF/DIME data. Segments were digitized off of the orthophotography based on center of pavement.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/msc

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at www.fema.gov.

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report may reflect stream channel distances that differ from what is shown on this map.

This Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).

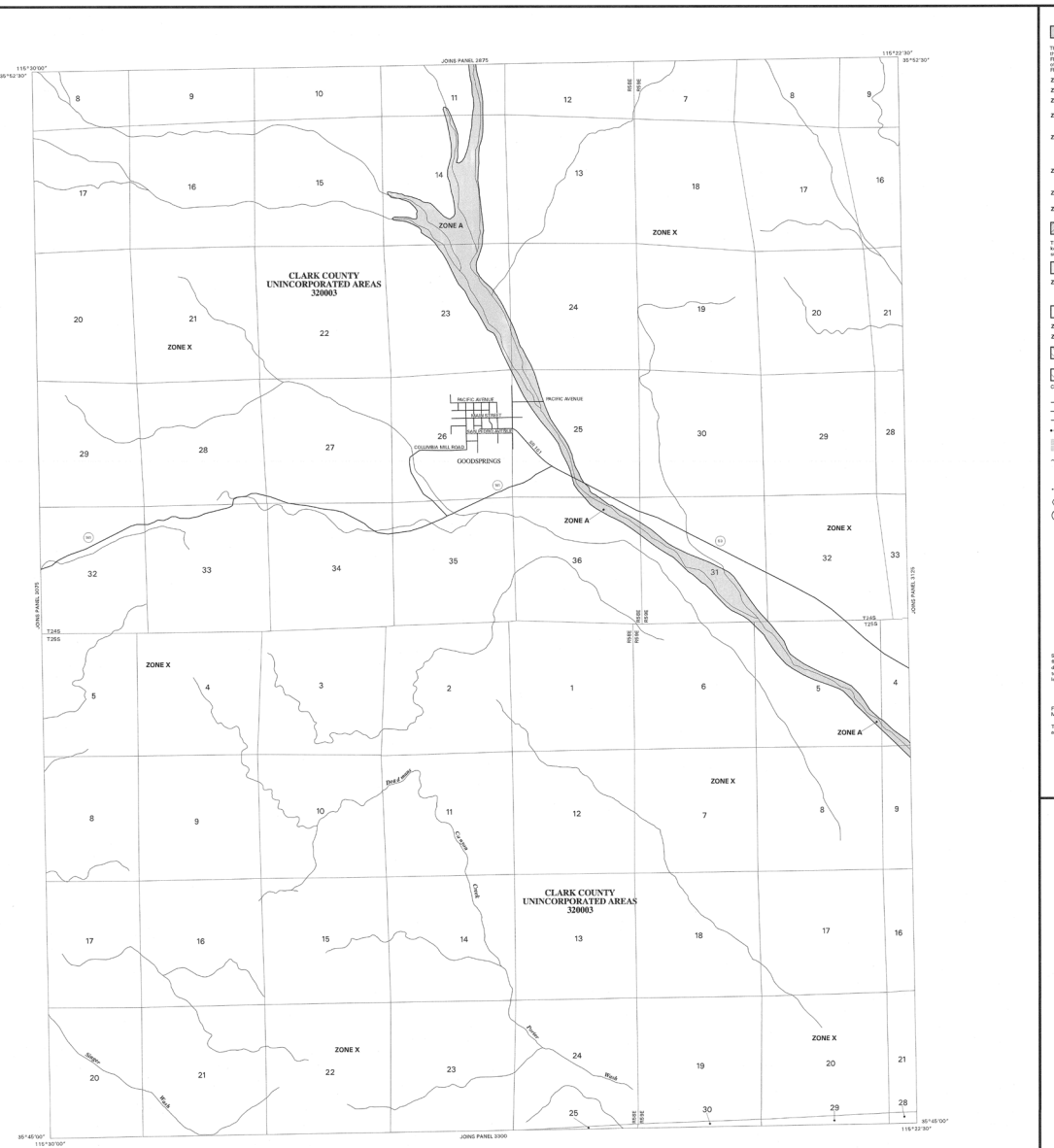
This DFIRM reflects several innovative features. These include:
- Southern Nevada GIS - Cooperation among local governmental agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS Metadata.
- The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the base map for this DFIRM.

DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cell/gismo/gismo.htm









LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain Boundary
- Floodway Boundary
- Zone D Boundary
- Coastal Barrier Boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
- 513 Base Flood Elevation line and value; elevation in feet*
- (EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- (A) — (A) Cross Section Line
- (23) — (23) Transect Line
- 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000M 1000-meter Universal Transverse Mercator grid values, zone 11
- 600000 FT 5000-foot grid ticks
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel).
- M1.5 River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS

PANEL 3100 E

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY,
NEVADA AND
INCORPORATED AREAS

PANEL 3100 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

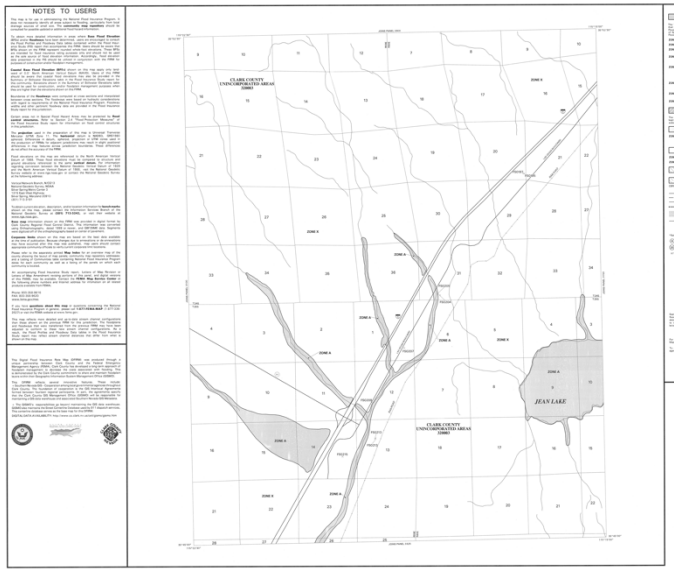
COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	3100	E

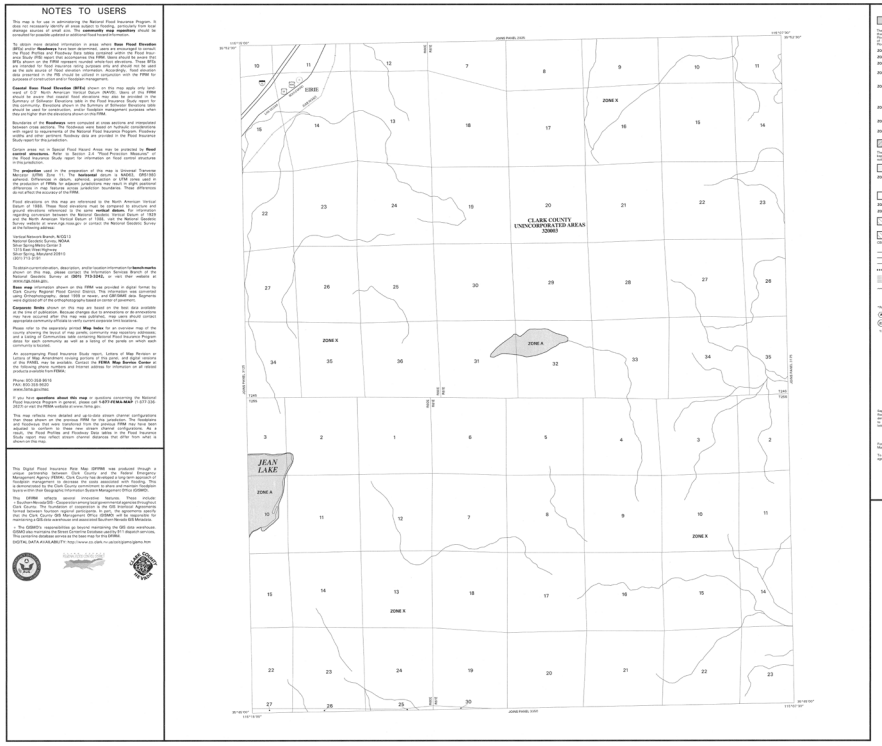
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

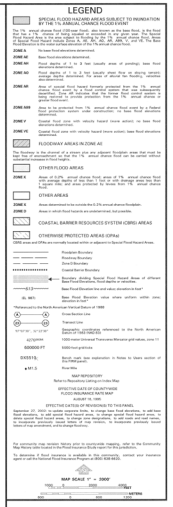
MAP NUMBER
32003C3100 E

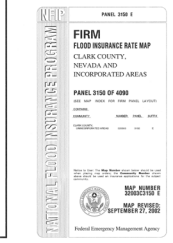
MAP REVISED:
SEPTEMBER 27, 2002

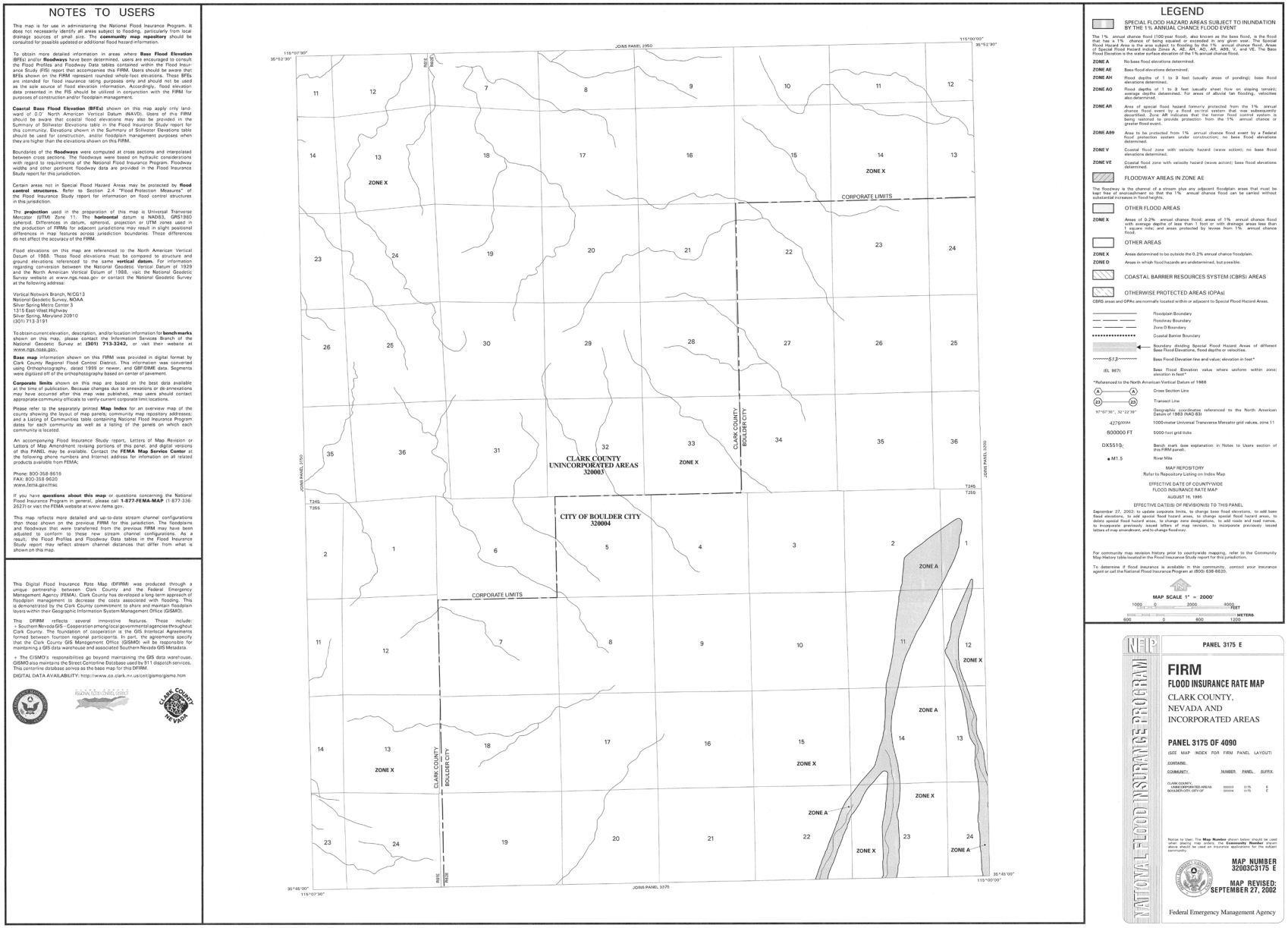
Federal Emergency Management Agency


NOTES TO USERS
LEGEND
CLARK COUNTY
UNINCORPORATED AREAS
320003
JEAN LAKE
ZONE A
ZONE X
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY,
NEVADA AND
INCORPORATED AREAS
PANEL 3135 E
MAP REVISED
SEPTEMBER 27, 2002
Federal Emergency Management Agency


NOTES TO USERS
CLARK COUNTY
UNINCORPORATED AREAS
320003
ZONE A
ZONE X
JEAN LAKE


LEGEND
SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT
FLOODWAY AREAS IN ZONE AE
OTHER FLOOD AREAS
OTHER AREAS
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)


FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY,
NEVADA AND
INCORPORATED AREAS
PANEL 3135D OF 4090
MAP NUMBER
32003C3135 E
MAP REVISED:
SEPTEMBER 27, 2002
Federal Emergency Management Agency


NOTES TO USERS
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Silver Spring Metro Center 3
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Silver Spring, Maryland 20910
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www.fema.gov/mac
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+ The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the base map for this DFIRM.
DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/ceit/gismo/gismo.htm
REGIONAL FLOOD CONTROL DISTRICT
CLARK COUNTY NEVADA
115°07'30"
35°52'30"
115°00'00"
35°45'00"
JOINS PANEL 2950
JOINS PANEL 3150
JOINS PANEL 3350
JOINS PANEL 3375
R61E
R60E
ZONE X
ZONE A
CORPORATE LIMITS
CLARK COUNTY
BOULDER CITY
CLARK COUNTY UNINCORPORATED AREAS 320003
CITY OF BOULDER CITY 320004
T24S
T25S
LEGEND
SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.
ZONE A — No base flood elevations determined.
ZONE AE — Base flood elevations determined.
ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR — Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99 — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.
FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
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OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
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Floodway Boundary
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Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*
*Referenced to the North American Vertical Datum of 1988
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23 — 23 — Transect Line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000M — 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT — 5000-foot grid ticks
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M1.5 — River Mile
MAP REPOSITORY
Refer to Repository Listing on Index Map
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.
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MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS
PANEL 3175 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 3175 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY — NUMBER — PANEL — SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS — 320003 — 3175 — E
BOULDER CITY, CITY OF — 320004 — 3175 — E
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 32003C3175 E
MAP REVISED: SEPTEMBER 27, 2002
Federal Emergency Management Agency



NOTES TO USERS

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Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

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FAX: 800-358-9620
www.fema.gov/msc

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at www.fema.gov.

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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/ceit/gismo/gismo.htm

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain Boundary
- Floodway Boundary
- Zone D Boundary
- Coastal Barrier Boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- (A)–(A) — Cross Section Line
- (23)–(23) — Transect Line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000m — 1000-meter Universal Transverse Mercator grid values, zone 11
- 600000 FT — 5000-foot grid ticks
- DX5510; — Bench mark (see explanation in Notes to Users section of this FIRM panel).
- M1.5 — River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET
300 0 600 1200 METERS

PANEL 3200 E

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 3200 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

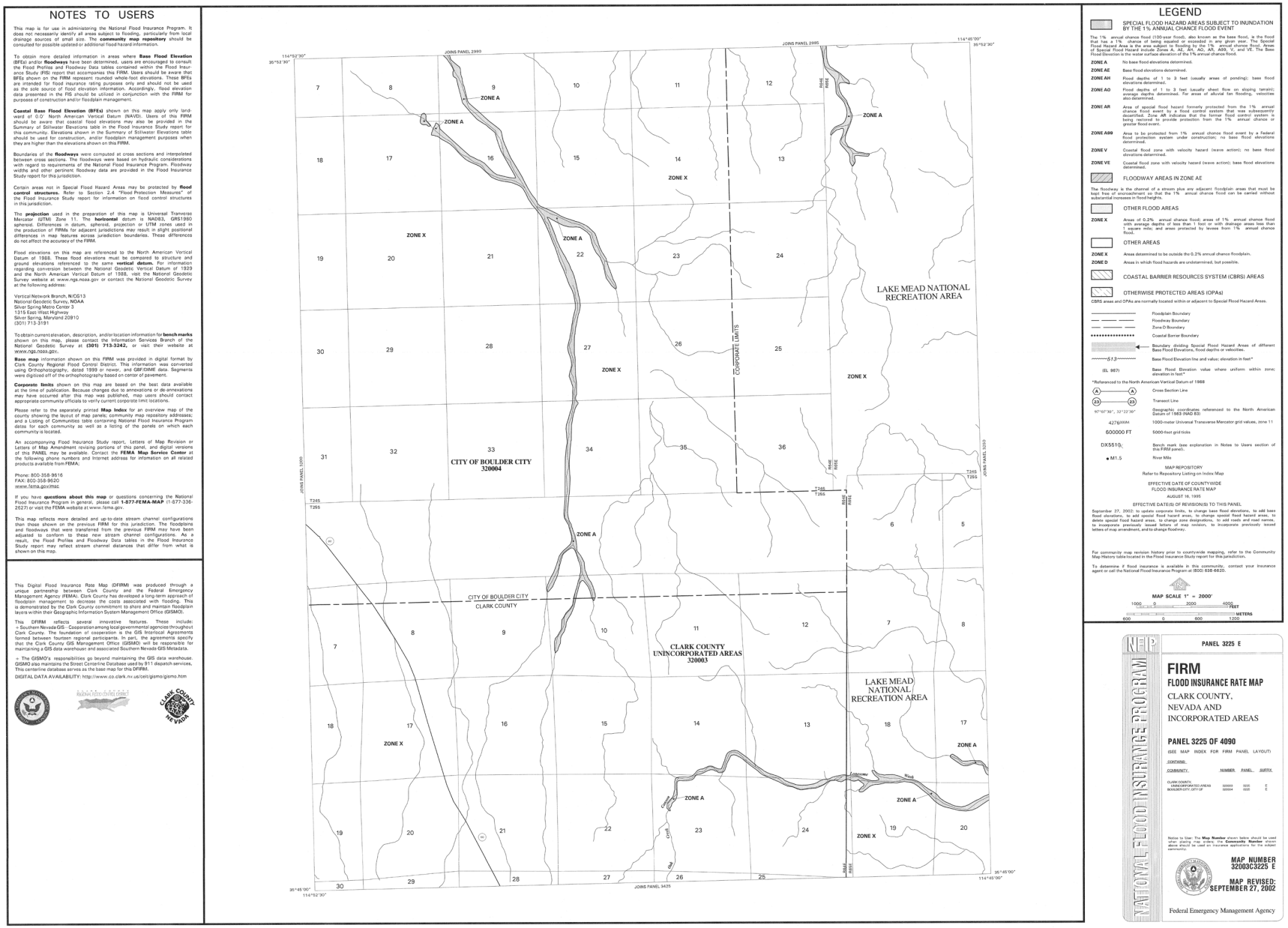
COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	3200	E
BOULDER CITY, CITY OF	320004	3200	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C3200 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency


NOTES TO USERS
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To obtain more detailed information in areas where Base Flood Elevation (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.
Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.
Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.
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The projection used in the preparation of this map is Universal Transverse Mercator (UTM) Zone 11. The horizontal datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.
Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:
Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191
To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit their website at www.ngs.noaa.gov.
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FAX: 800-358-9620
www.fema.gov/msc
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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cet/gismo/gismo.htm
JOINS PANEL 2990
JOINS PANEL 2995
JOINS PANEL 3000
JOINS PANEL 3210
JOINS PANEL 3435
ZONE A
ZONE X
CITY OF BOULDER CITY
320004
CLARK COUNTY
UNINCORPORATED AREAS
320003
CITY OF BOULDER CITY
CLARK COUNTY
CORPORATE LIMITS
LAKE MEAD NATIONAL RECREATION AREA
LAKE MEAD NATIONAL RECREATION AREA
RANGE
T34S
T35S
LEGEND
SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT
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ZONE A No base flood elevations determined.
ZONE AE Base flood elevations determined.
ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
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ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
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ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.
FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
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Floodplain Boundary
Floodway Boundary
Zone D Boundary
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Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513
Base Flood Elevation line and value; elevation in feet*
(EL 987)
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DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel).
M1.5 River Mile
MAP REPOSITORY
Refer to Repository Listing on Index Map
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995
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September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.
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MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS
PANEL 3225 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 3225 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
CLARK COUNTY 320003 3225 E
UNINCORPORATED AREAS 320004 3225 E
BOULDER CITY, CITY OF
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER
32003C3225 E
MAP REVISED:
SEPTEMBER 27, 2002
Federal Emergency Management Agency
NATIONAL FLOOD INSURANCE PROGRAM

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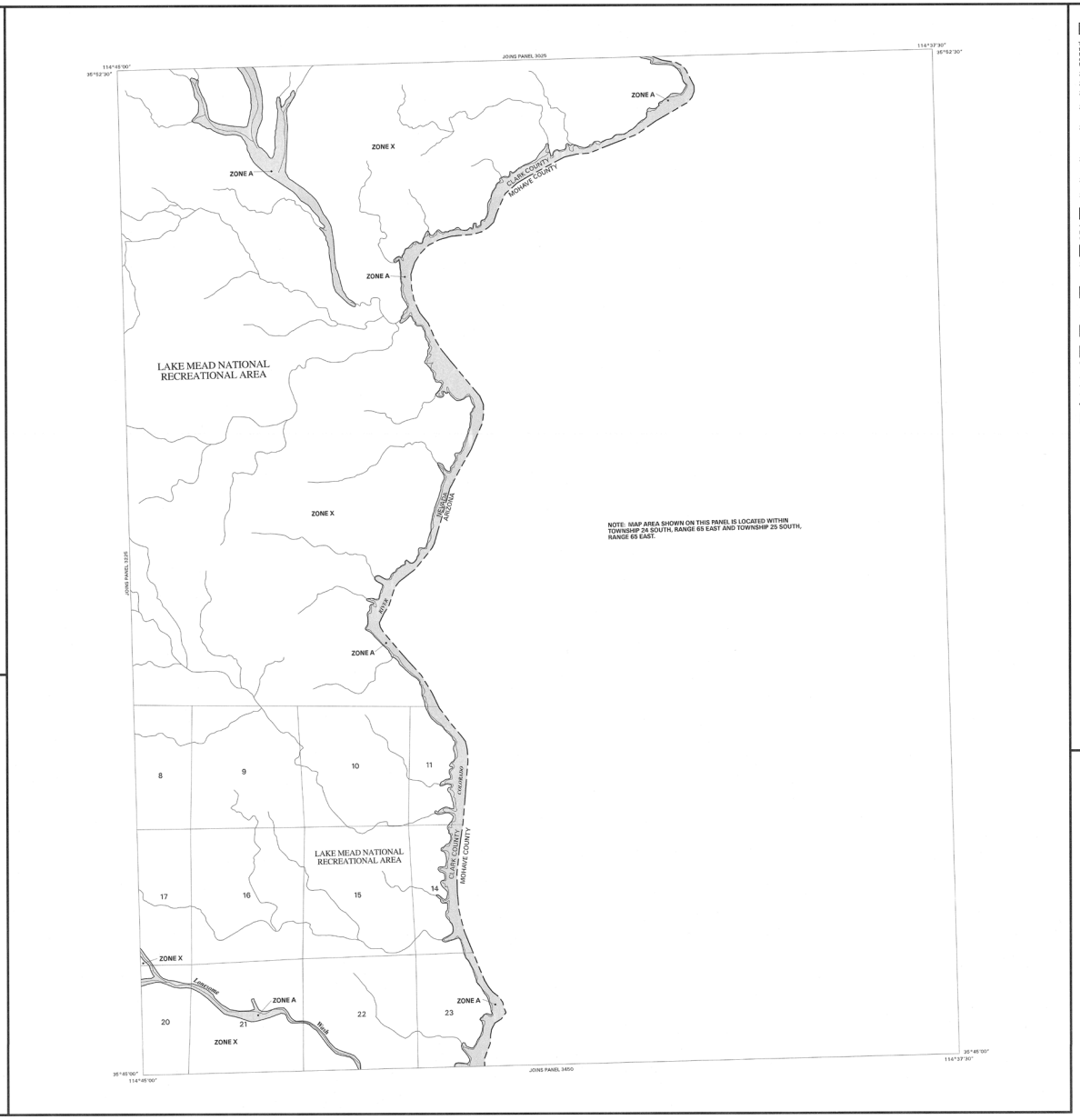
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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cet/gismo/gismo.htm









LEGEND

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OTHER AREAS

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Floodway Boundary
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Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513 Base Flood Elevation line and value; elevation in feet*
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A — A Cross Section Line
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4276000mN 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT 5000-foot grid ticks
DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued Letters of Map Revision, to incorporate previously issued letters of map amendment, and to change flood way.

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MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS

PANEL 3250 E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY,
NEVADA AND
INCORPORATED AREAS

PANEL 3250 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	3250	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C3250 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency

NOTES TO USERS

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www.fema.gov/msc

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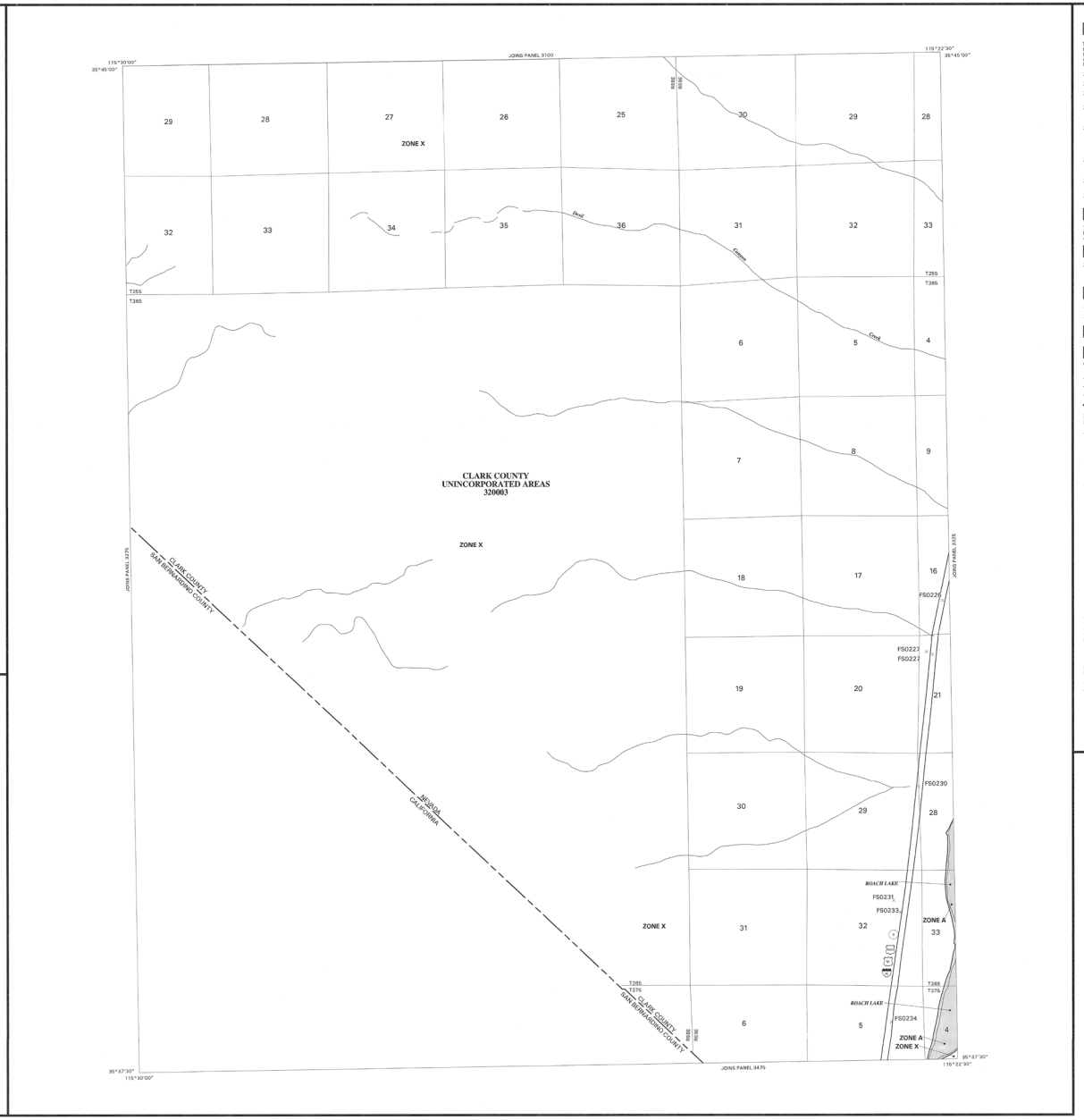
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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/ceit/gismo/gismo.htm



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain Boundary
- Floodway Boundary
- Zone D Boundary
- Coastal Barrier Boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- (A)–(A) — Cross Section Line
- (23)–(23) — Transect Line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000mN — 1000-meter Universal Transverse Mercator grid values, zone 11
- 600000 FT — 5000-foot grid ticks
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002; to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
500 0 500 1000 METERS

PANEL 3300 E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 3300 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	3300	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C3300 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevation** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum (NAVD). Users of this **FIRM** should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map is Universal Transverse Mercator (UTM) Zone 11. The **horizontal** datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

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www.fema.gov/mtac

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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cet/gismo/gismo.htm







LEGEND

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ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

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OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

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- Floodway Boundary
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- Coastal Barrier Boundary
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- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

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MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
600 0 600 1200 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3325 E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 3325 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

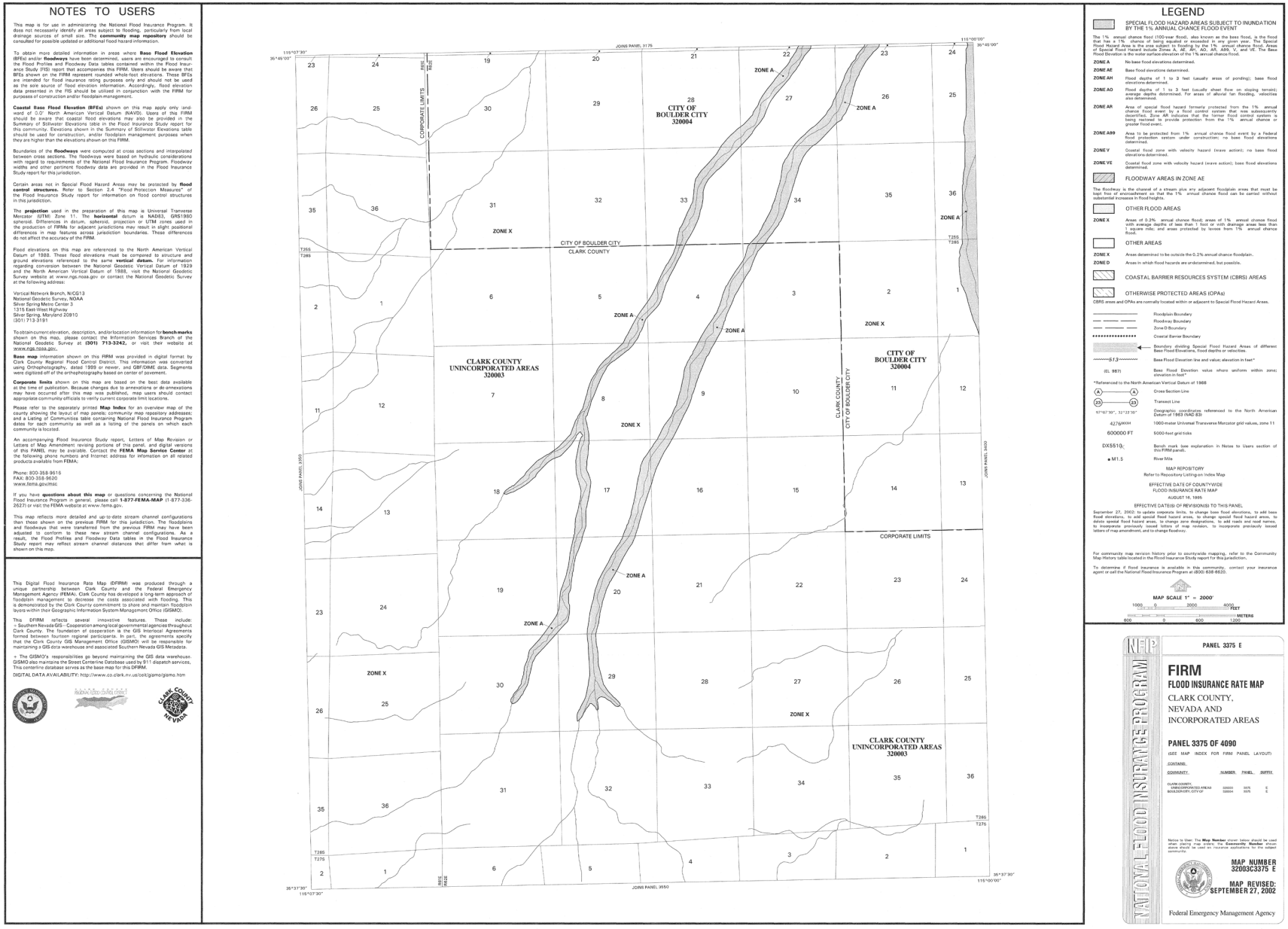
CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	3325	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C3325 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency



NOTES TO USERS

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LEGEND

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ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

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OTHER FLOOD AREAS

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OTHER AREAS

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COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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*Referenced to the North American Vertical Datum of 1988

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- M1.5 River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

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MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET
300 0 600 1200 METERS

PANEL 3375 E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 3375 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

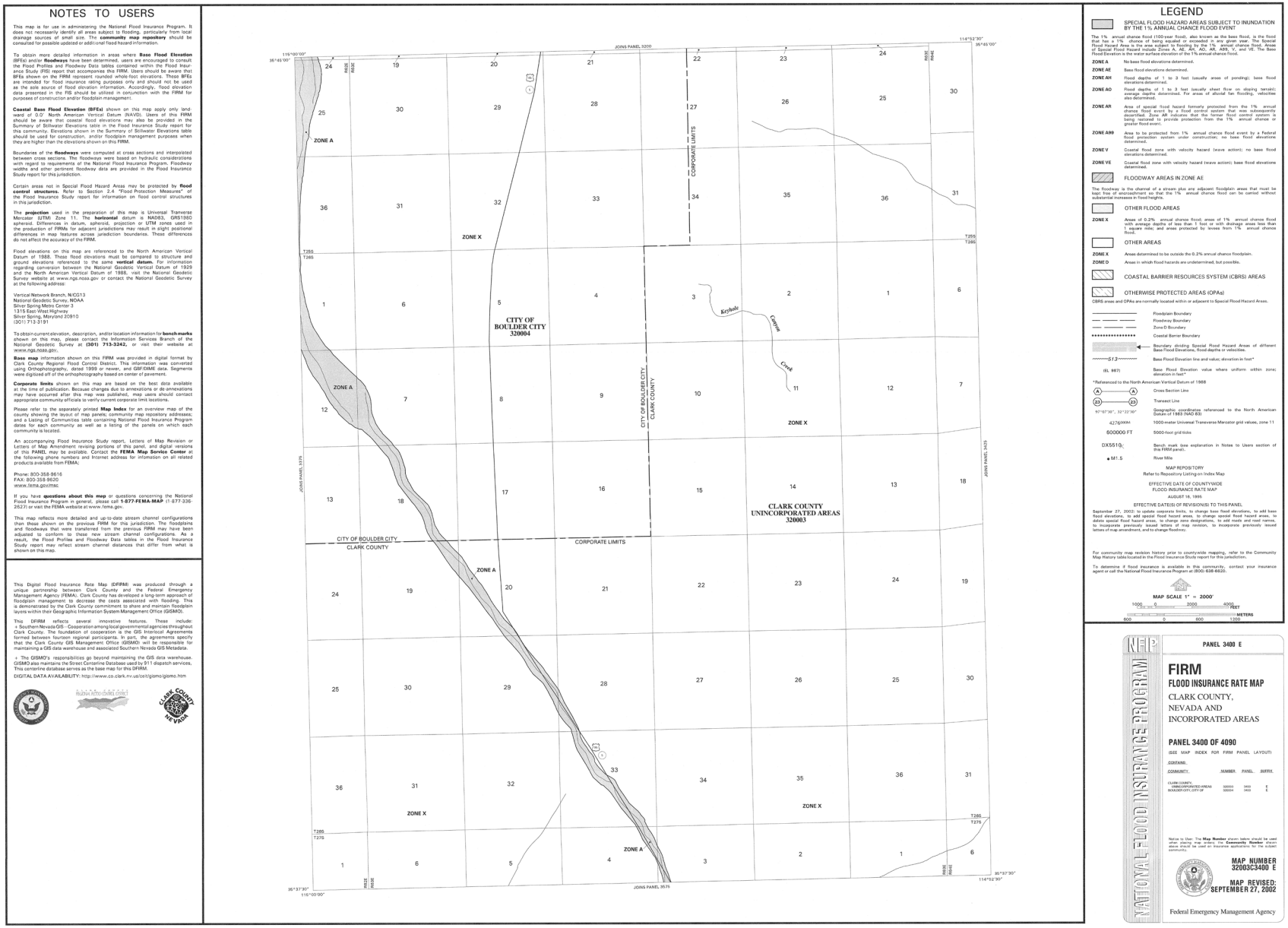
COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	3375	E
BOULDER CITY, CITY OF	320004	3375	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C3375 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency



NOTES TO USERS

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Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242,** or visit their website at www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format by Clark County Regional Flood Control District. This information was converted using Orthophotography, dated 1999 or newer, and GBF/DIME data. Segments were digitized off of the orthophotography based on center of pavement.

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Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/msc

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at www.fema.gov.

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+ Southern Nevada GIS - Cooperation among local governmental agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS Metadata.

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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cell/gismo/gismo.htm

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

- **ZONE A** — No base flood elevations determined.
- **ZONE AE** — Base flood elevations determined.
- **ZONE AH** — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
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- **ZONE AR** — Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
- **ZONE A99** — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
- **ZONE V** — Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
- **ZONE VE** — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** — Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain Boundary
- Floodway Boundary
- Zone D Boundary
- Coastal Barrier Boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- (A)—(A) — Cross Section Line
- (23)—(23) — Transect Line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000M — 1000-meter Universal Transverse Mercator grid values, zone 11
- 600000 FT — 5000-foot grid ticks
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel).
- M1.5 — River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
500 0 600 1200 METERS

PANEL 3400 E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 3400 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320033	3400	E
BOULDER CITY, CITY OF	320004	3400	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C3400 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency

NOTES TO USERS

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Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

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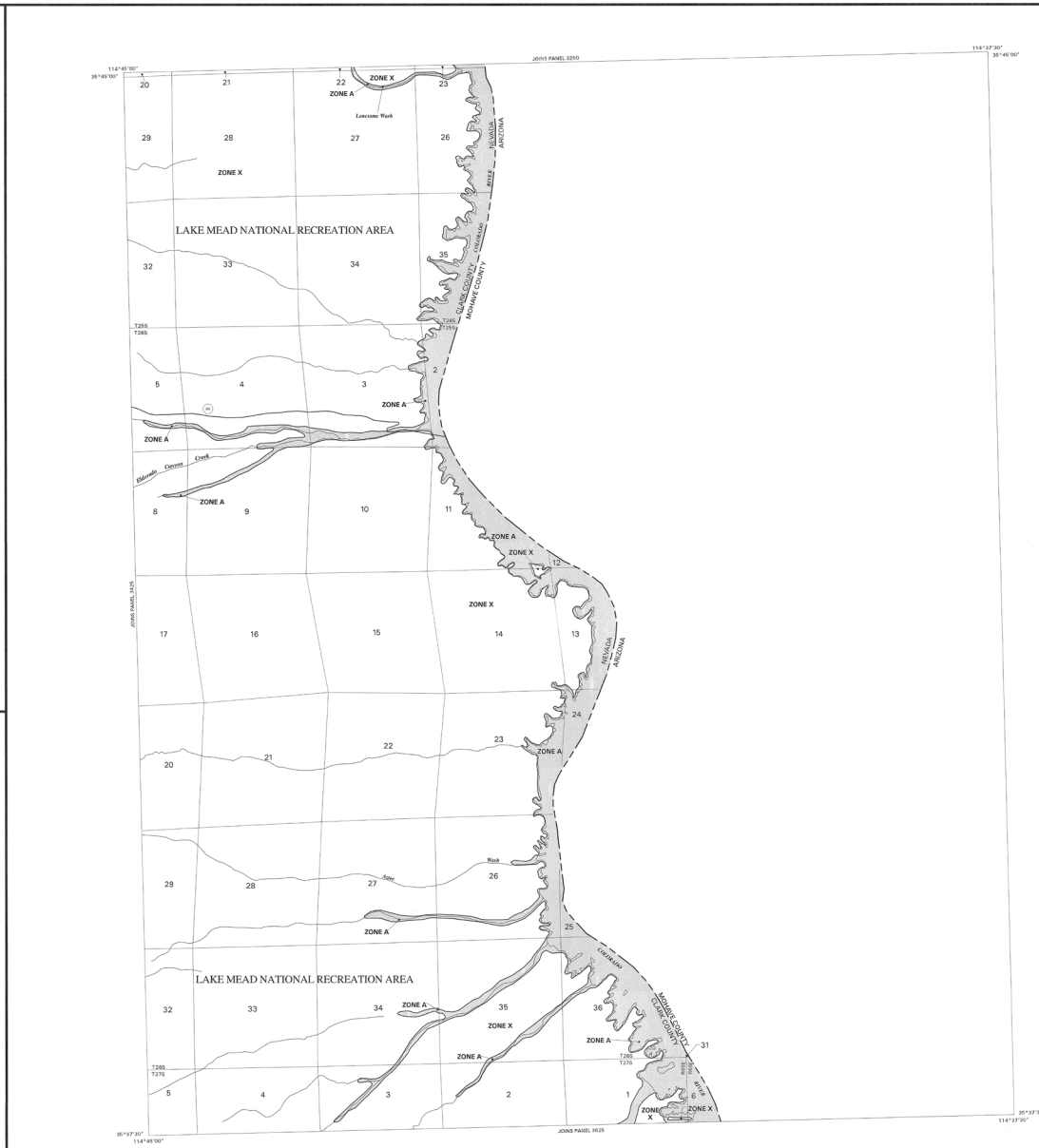
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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cstl/gismo/gismo.htm



LEGEND

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FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

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OTHERWISE PROTECTED AREAS (OPAs)

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- Floodplain Boundary
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MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

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MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
500 0 600 1200 METERS

PANEL 3450 E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 3450 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	3450	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C3450 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency

NOTES TO USERS

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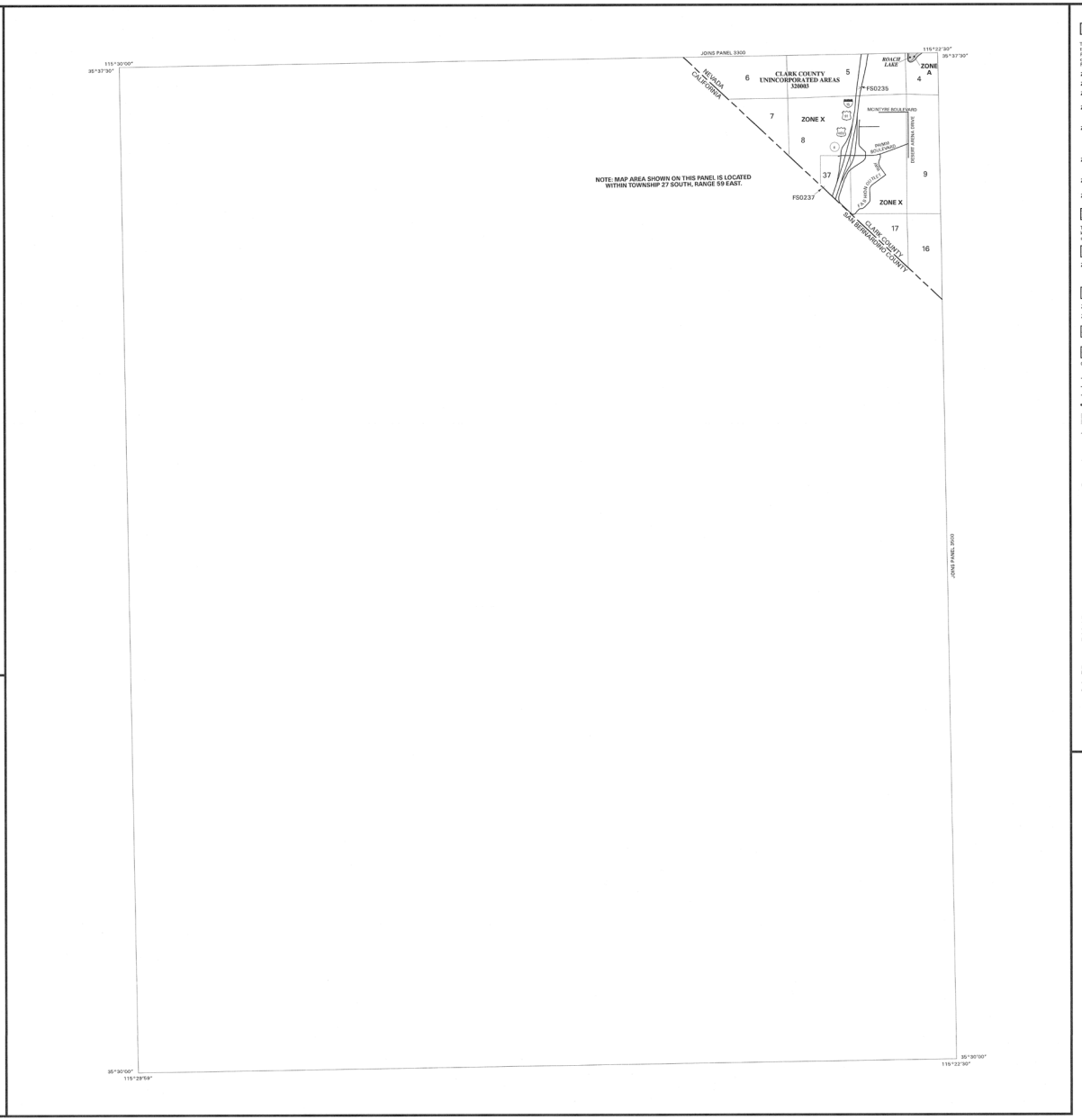
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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cot/gisma/gismo.htm



LEGEND

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ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

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OTHER FLOOD AREAS

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MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET

600 0 600 1200 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3475 E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 3475 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

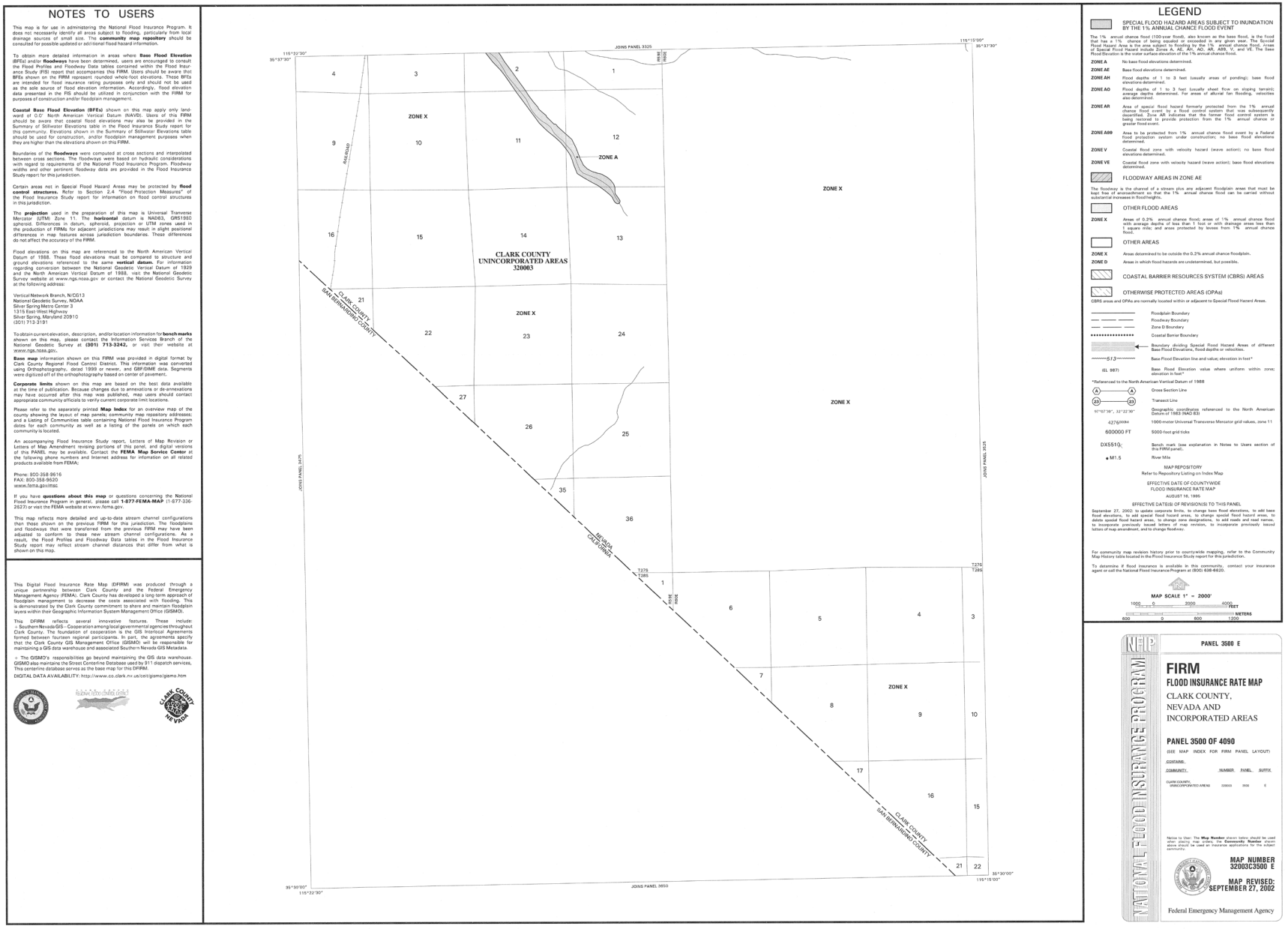
COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	3475	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 32003C3475 E

MAP REVISED: SEPTEMBER 27, 2002

Federal Emergency Management Agency


NOTES TO USERS
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Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0° North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.
Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.
Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.
The projection used in the preparation of this map is Universal Tranverse Mercator (UTM) Zone 11. The horizontal datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.
Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:
Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191
To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit their website at www.ngs.noaa.gov.
Base map information shown on this FIRM was provided in digital format by Clark County Regional Flood Control District. This information was converted using Orthophotography, dated 1998 or newer, and GBF/DIME data. Segments were digitized off of the orthophotography based on center of pavement.
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An accompanying Flood Insurance Study report, Letters of Map Revision or Letters of Map Amendment revising portions of this panel, and digital versions of this PANEL may be available. Contact the FEMA Map Service Center at the following phone numbers and Internet address for information on all related products available from FEMA:
Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/msc
If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at www.fema.gov.
This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report may reflect stream channel distances that differ from what is shown on this map.
This Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).
This DFIRM reflects several innovative features. These include:
- Southern Nevada GIS– Cooperation among local governmental agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS Metadata.
- The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the base map for this DFIRM.
DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cot/gismo/gismo.htm
JOINS PANEL 3325
JOINS PANEL 3475
JOINS PANEL 3625
JOINS PANEL 3650
115°22'30"
35°37'30"
115°15'00"
35°30'00"
ZONE X
ZONE A
CLARK COUNTY
UNINCORPORATED AREAS
320003
CLARK COUNTY
SAN BERNARDINO COUNTY
NEVADA
CALIFORNIA
RAILROAD
RIVER
RIDGE
LEGEND
SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.
ZONE A — No base flood elevations determined.
ZONE AE — Base flood elevations determined.
ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR — Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99 — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.
FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
Floodplain Boundary
Floodway Boundary
Zone D Boundary
Coastal Barrier Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*
*Referenced to the North American Vertical Datum of 1988
A — A — Cross Section Line
23 — 23 — Transect Line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000m — 1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT — 5000-foot grid ticks
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile
MAP REPOSITORY
Refer to Repository Listing on Index Map
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.
For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.
MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
300 0 600 1200 METERS
NFIP
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 3500 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 3500 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY — NUMBER — PANEL — SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS — 320003 — 3500 — E
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER
32003C3500 E
MAP REVISED:
SEPTEMBER 27, 2002
Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

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The **projection** used in the preparation of this map is Universal Tranverse Mercator (UTM) Zone 11. The **horizontal** datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

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Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/msc

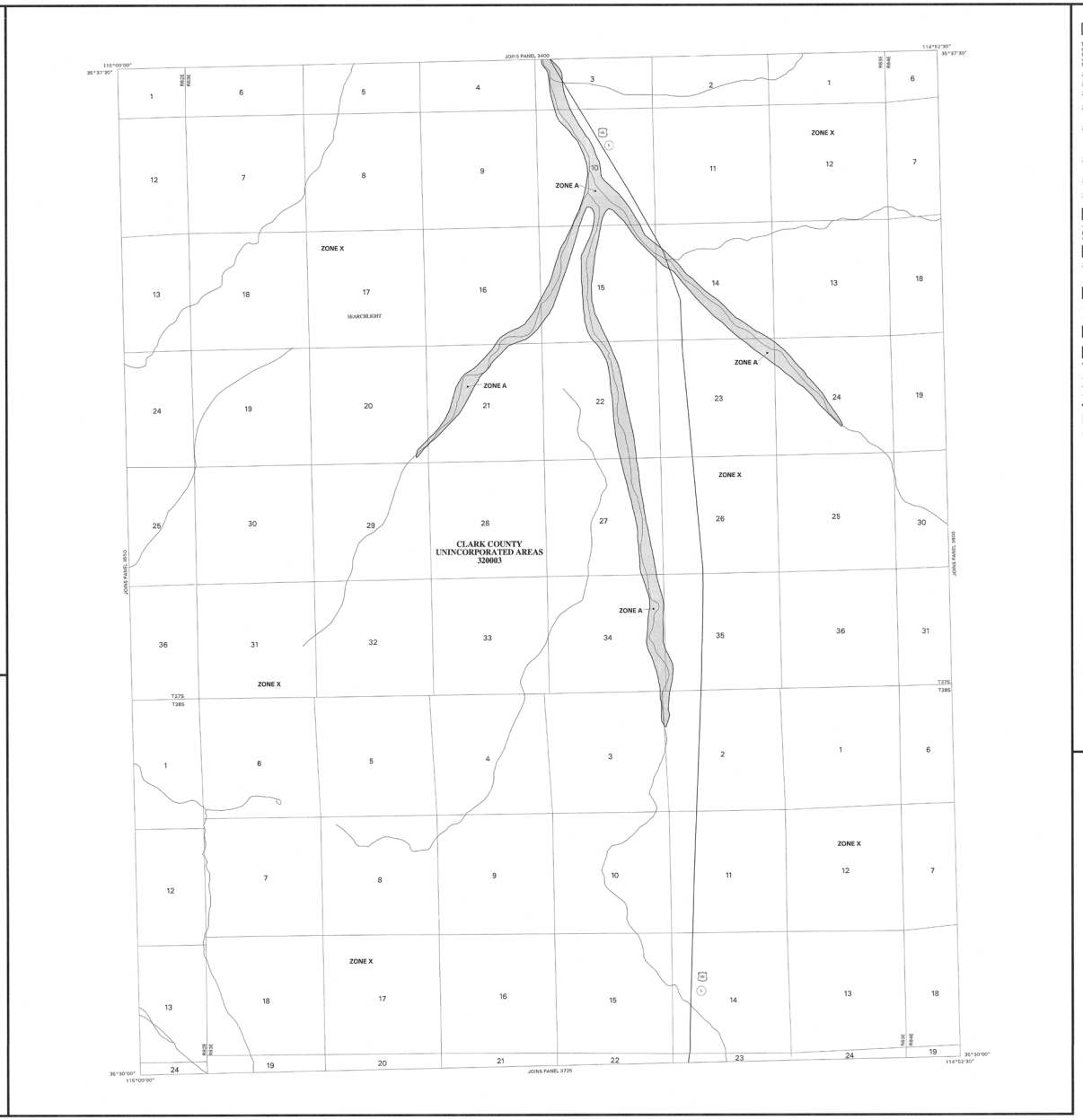
If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at www.fema.gov.

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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cet/gismo/gismo.htm



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

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ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

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ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain Boundary
- Floodway Boundary
- Zone D Boundary
- Coastal Barrier Boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
- 513 Base Flood Elevation line and value; elevation in feet*
- (EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- (A)—(A) Cross Section Line
- (23)—(23) Transect Line
- 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000M 1000-meter Universal Transverse Mercator grid values, zone 11
- 600000 FT 5000-foot grid ticks
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002: to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to delete special flood hazard areas, to change zone designations, to add roads and road names, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change floodway.

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To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
METERS 600 0 600 1200

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 3575 E

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 3575 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

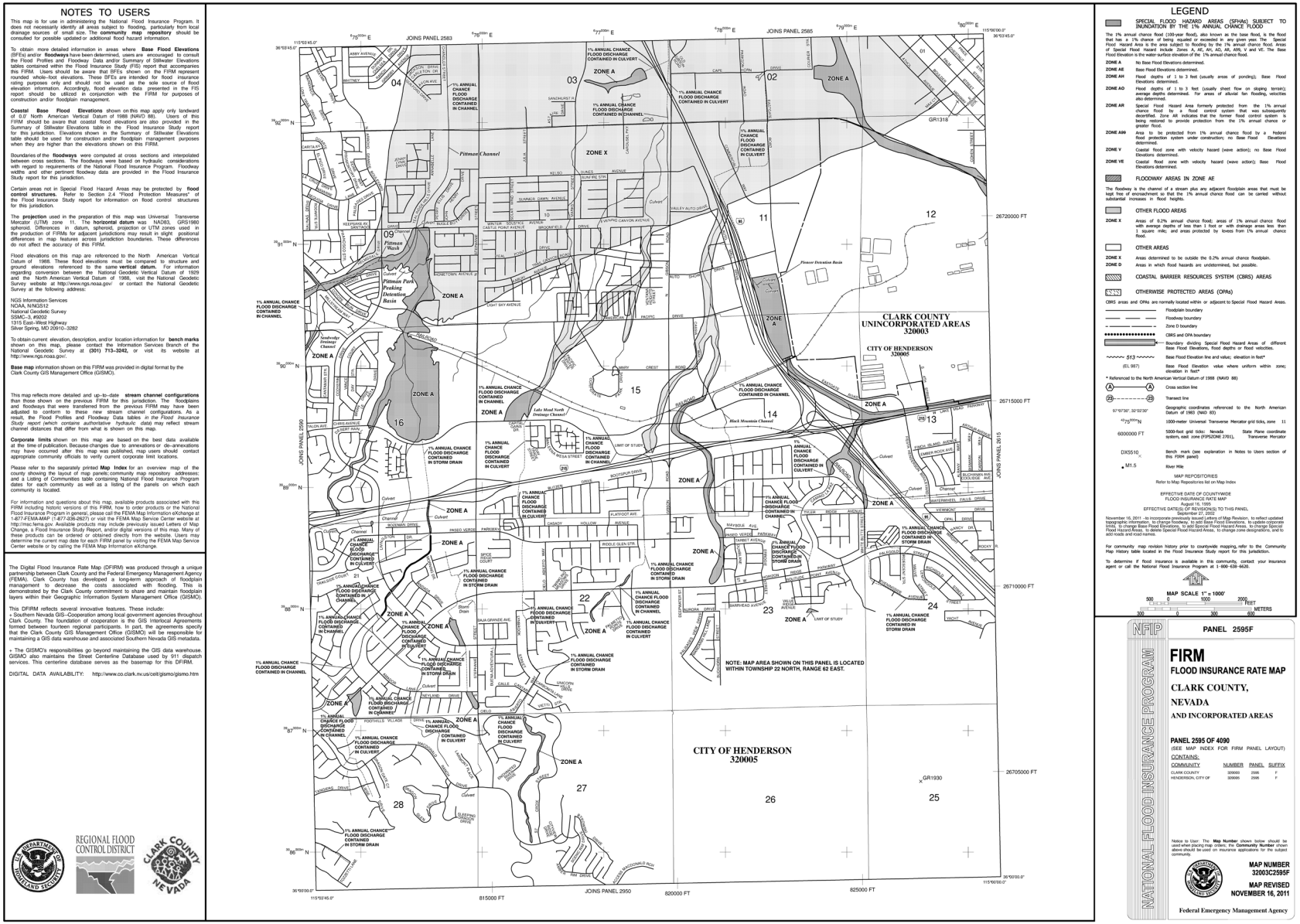
COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY, UNINCORPORATED AREAS	320003	3575	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C3575 E

MAP REVISED:
SEPTEMBER 27, 2002

Federal Emergency Management Agency



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NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC–3, #9202
1315 East–West Highway
Silver Spring, MD 20910–3282

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For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1–877–FEMA–MAP (1–877–336–2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cell/gismo/gismo.htm

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

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- **ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

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OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

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OTHERWISE PROTECTED AREAS (OPAs)

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- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
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- 513 Base Flood Elevation line and value; elevation in feet*
- (EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- A–A Cross section line
- 23–23 Transect line
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- 4279000mN 1000-meter Universal Transverse Mercator grid ticks, zone 11
- 6000000 FT 5000-foot grid ticks: Nevada State Plane coordinate system, east zone (FIPSZONE 2701), Transverse Mercator
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
August 16, 1995

EFFECTIVE DATES OF REVISION(S) TO THIS PANEL
November 16, 2011

November 16, 2011 - to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, to change floodway, to add Base Flood Elevations, to update corporate limits, to change Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to change zone designations, and to add roads and road names.

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To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1–800–638–6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 22 NORTH, RANGE 62 EAST.

PANEL 2595F

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 2595 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

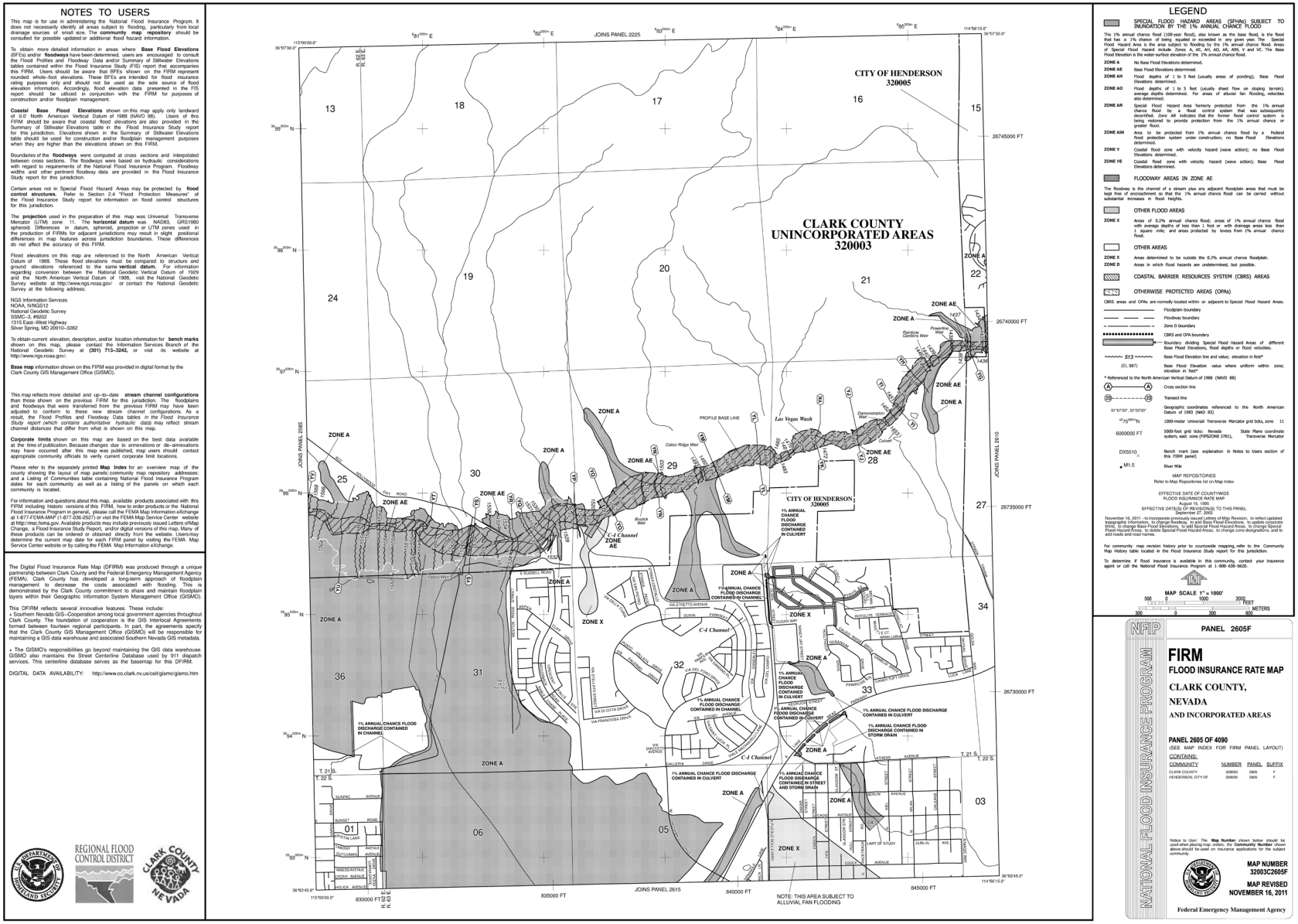
COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY	320003	2595	F
HENDERSON, CITY OF	320005	2595	F

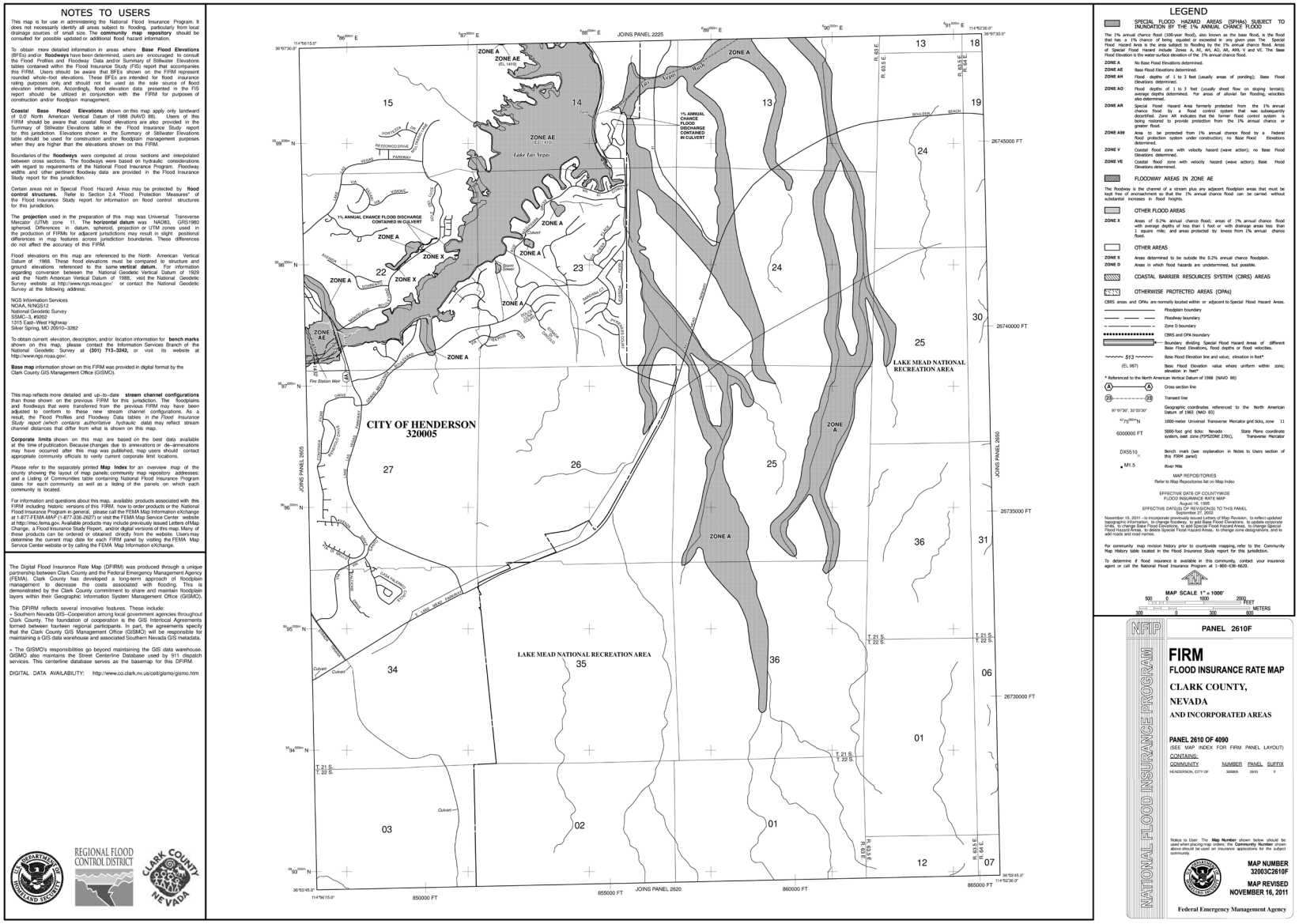
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C2595F

MAP REVISED
NOVEMBER 16, 2011

Federal Emergency Management Agency


NOTES TO USERS
This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.
To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.
Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.
Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.
Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.
The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.
Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:
NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910–3282
To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713–3242, or visit its website at http://www.ngs.noaa.gov/.
Base map information shown on this FIRM was provided in digital format by the Clark County GIS Management Office (GISMO).
This map reflects more detailed and up–to–date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.
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Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.
For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.
The Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).
This DFIRM reflects several innovative features. These include:
• Southern Nevada GIS–Cooperation among local government agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS metadata.
• The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the basemap for this DFIRM.
DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/coit/gismo/gismo.htm
REGIONAL FLOOD CONTROL DISTRICT
CLARK COUNTY NEVADA
CITY OF HENDERSON 320005
CLARK COUNTY UNINCORPORATED AREAS 320003
JOINS PANEL 2225
JOINS PANEL 2585
JOINS PANEL 2610
JOINS PANEL 2615
ZONE A
ZONE AE
ZONE X
PROFILE BASE LINE
Las Vegas Wash
C-4 Channel
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CHANNEL
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CULVERT
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN STORM DRAIN
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN STREET AND STORM DRAIN
NOTE: THIS AREA SUBJECT TO ALLUVIAL FAN FLOODING
LEGEND
SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
ZONE A — No Base Flood Elevations determined.
ZONE AE — Base Flood Elevations determined.
ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
Floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*
* Referenced to the North American Vertical Datum of 1988 (NAVD 88)
A — A — Cross section line
23 — 23 — Transect line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4275000mN — 1000-meter Universal Transverse Mercator grid ticks, zone 11
6000000 FT — 5000-foot grid ticks: Nevada State Plane coordinate system, east zone (FIPSZONE 2701), Transverse Mercator
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile
MAP REPOSITORIES
Refer to Map Repositories list on Map Index
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
November 16, 2011
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002
November 16, 2011 - to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, to change floodway, to add Base Flood Elevations, to update corporate limits, to change Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to change zone designations, and to add roads and road names.
For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.
MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS
NFIP
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 2605F
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA
AND INCORPORATED AREAS
PANEL 2605 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY — NUMBER — PANEL — SUFFIX
CLARK COUNTY — 320003 — 2605 — F
HENDERSON, CITY OF — 320005 — 2605 — F
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 32003C2605F
MAP REVISED NOVEMBER 16, 2011
Federal Emergency Management Agency


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DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cell/gismo/gismo.htm
REGIONAL FLOOD CONTROL DISTRICT
CLARK COUNTY NEVADA
JOINS PANEL 2225
JOINS PANEL 2620
JOINS PANEL 2605
JOINS PANEL 2800
CITY OF HENDERSON
320005
LAKE MEAD NATIONAL RECREATION AREA
ZONE A
ZONE AE
(EL 1410)
ZONE X
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CULVERT
Lake Las Vegas
Fire Station Weir
Culvert
Storm Sewer
T. 21 S.
T. 22 S.
R. 63 E.
R. 64 E.
R. 64 S E.
R. 65 E.
R. 65 S E.
26745000 FT
26740000 FT
26735000 FT
26730000 FT
850000 FT
855000 FT
860000 FT
865000 FT
36°03'45.0"
36°03'15.0"
114°56'15.0"
114°52'30.0"
LEGEND
SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
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Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
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4429000 mN — 1000-meter Universal Transverse Mercator grid ticks, zone 11
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M1.5 — River Mile
MAP REPOSITORIES
Refer to Map Repositories list on Map Index
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
August 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002
November 16, 2011 -to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, to change floodway, to add Base Flood Elevations, to update corporate limits, to change Special Flood Hazard Areas, to change zone designations, to change Base Flood Elevations, to delete Special Flood Hazard Areas, to change zone designations, and to add roads and road names.
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MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS
NFIP
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 2610F
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA
AND INCORPORATED AREAS
PANEL 2610 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY — NUMBER — PANEL — SUFFIX
HENDERSON, CITY OF — 320005 — 2610 — F
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MAP NUMBER
32003C2610F
MAP REVISED
NOVEMBER 16, 2011
Federal Emergency Management Agency

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Silver Spring, MD 20910-3282

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Accredited Levee Notes to Users: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1–percent–annual–chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at http://www.fema.gov/business/nfip/index.shtm.

Provisionally Accredited Levee Notes to Users: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1–percent–annual–chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To maintain accreditation, the levee owner or community is required to submit the data and documentation necessary to comply with Section 65.10 of the NFIP regulations by December 16, 2010. If the community or owner does not provide the necessary data and documentation or if the data and documentation provided indicate the levee system does not comply with Section 65.10 requirements, FEMA will revise the flood hazard and risk information for this area to reflect de-accreditation of the levee system. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at http://www.fema.gov/business/nfip/index.shtm.

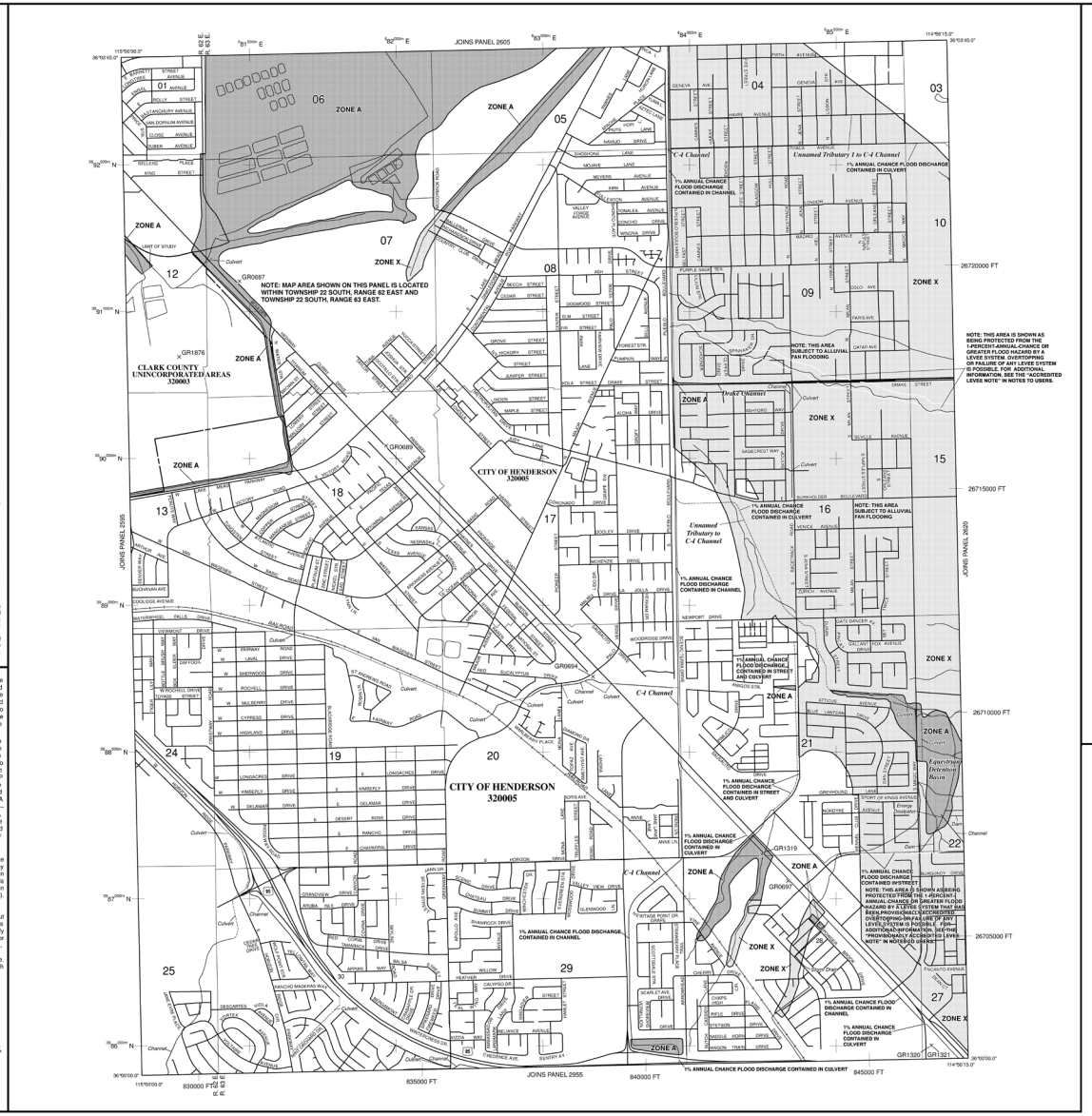
The Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).

This DFIRM reflects several innovative features. These include:

- Southern Nevada GIS–Cooperation among local government agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS metadata.
- The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the basemap for this DFIRM.

DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/ceit/gismo/gismo.htm





LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

- **ZONE A** No Base Flood Elevations determined.
- **ZONE AE** Base Flood Elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 Base Flood Elevation line and value; elevation in feet*
- (EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- A–A Cross section line
- 23–23 Transect line
- 97°03'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276000mN 1000-meter Universal Transverse Mercator grid ticks, zone 11
- 6000000 FT 5000-foot grid ticks: Nevada State Plane coordinate system, east zone (FIPSZONE 2701), Transverse Mercator
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
August 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002
November 15, 2011 - to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, to change Base Flood Elevations, to update corporate limits, to change Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to change zone designations, and to add roads and road names.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2615F

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

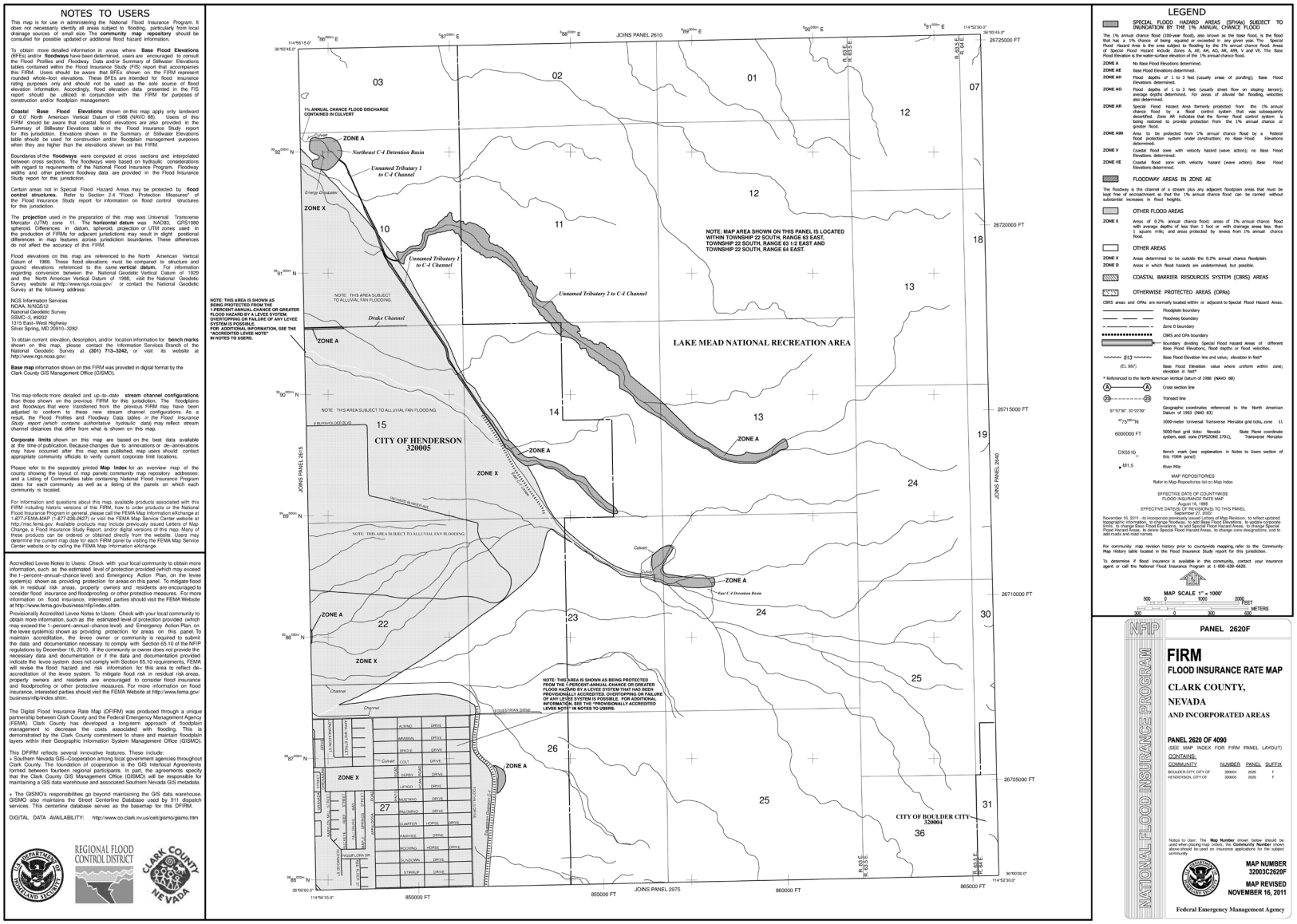
PANEL 2615 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLARK COUNTY	320003	2615	F
HENDERSON, CITY OF	320005	2615	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C2615F
MAP REVISED
NOVEMBER 16, 2011

Federal Emergency Management Agency



NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC–3, #9202
1315 East–West Highway
Silver Spring, MD 20910–3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713–3242,** or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was provided in digital format by the Clark County GIS Management Office (GISMO).

This map reflects more detailed and up–to–date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables *in the Flood Insurance Study report* (which contains authoritative *hydraulic data*) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de–annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

Accredited Levee Notes to Users: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1–percent–annual–chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at http://www.fema.gov/business/nfip/index.shtm.

Provisionally Accredited Levee Notes to Users: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1–percent–annual–chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To maintain accreditation, the levee owner or community is required to submit the data and documentation necessary to comply with Section 65.10 of the NFIP regulations by December 16, 2010. If the community or owner does not provide the necessary data and documentation or if the data and documentation provided indicate the levee system does not comply with Section 65.10 requirements, FEMA will revise the flood hazard and risk information for this area to reflect de–accreditation of the levee system. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at http://www.fema.gov/business/nfip/index.shtm.

The Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).

This DFIRM reflects several innovative features. These include:

+ Southern Nevada GIS–Cooperation among local government agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between fourteen regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS metadata.

+ The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the basemap for this DFIRM.

DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/celt/gismo/gismo.htm

REGIONAL FLOOD CONTROL DISTRICT

CLARK COUNTY NEVADA

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 Base Flood Elevation line and value; elevation in feet*
- (EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- A — A Cross section line
- 23 — 23 Transect line
- 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4475000mN 1000-meter Universal Transverse Mercator grid ticks, zone 11
- 6000000 FT 5000-foot grid ticks: Nevada State Plane coordinate system, east zone (FIPSZONE 2701), Transverse Mercator
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
August 16, 1988
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002

November 16, 2011 - to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, to change Base Flood Elevations, to change Special Flood Hazard Areas, to change Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to change zone designations, and to add roads and road names.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2620F

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS

PANEL 2620 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

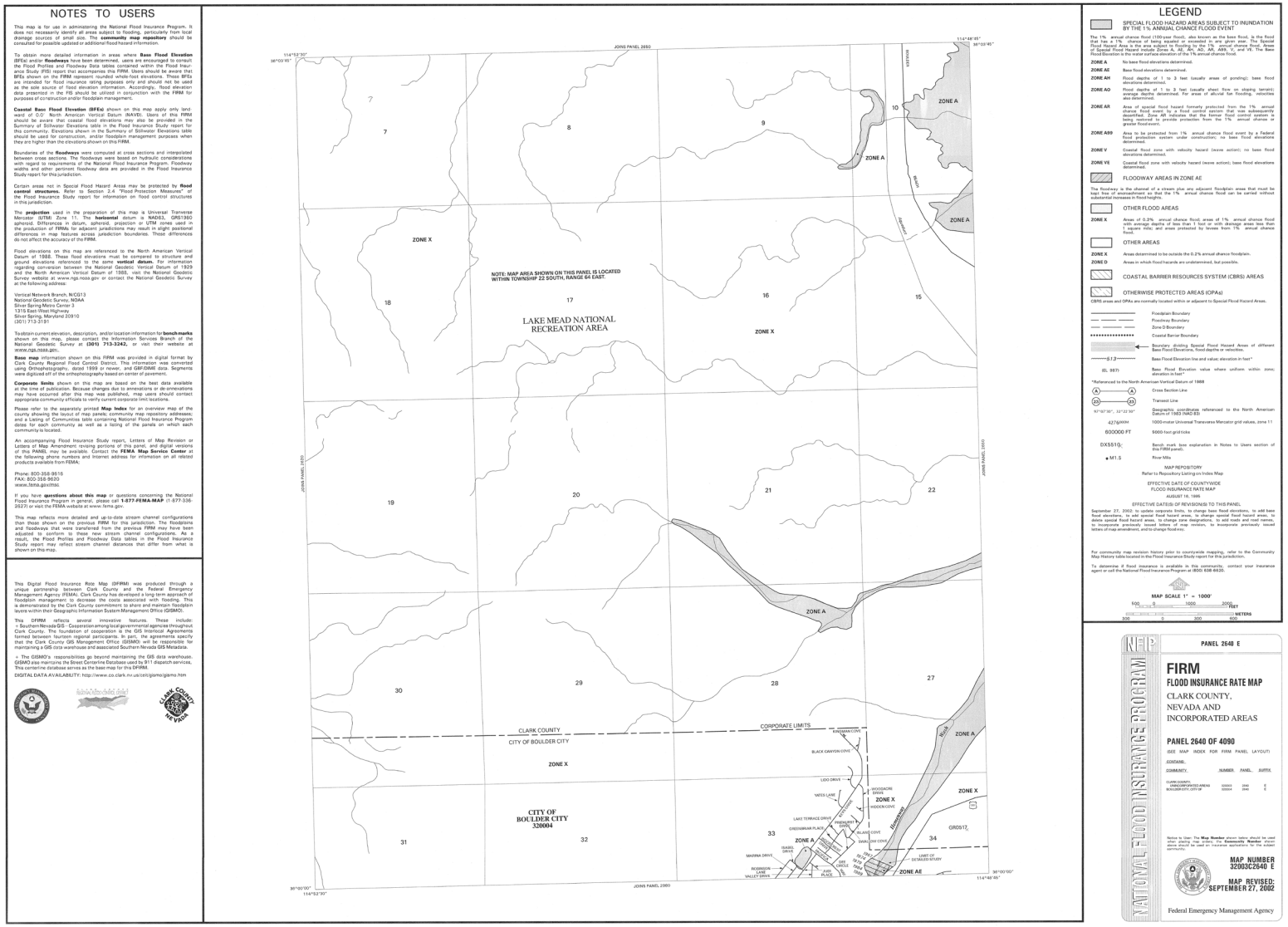
COMMUNITY	NUMBER	PANEL	SUFFIX
BOULDER CITY, CITY OF	320004	2620	F
HENDERSON, CITY OF	320005	2620	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
32003C2620F

MAP REVISED
NOVEMBER 16, 2011

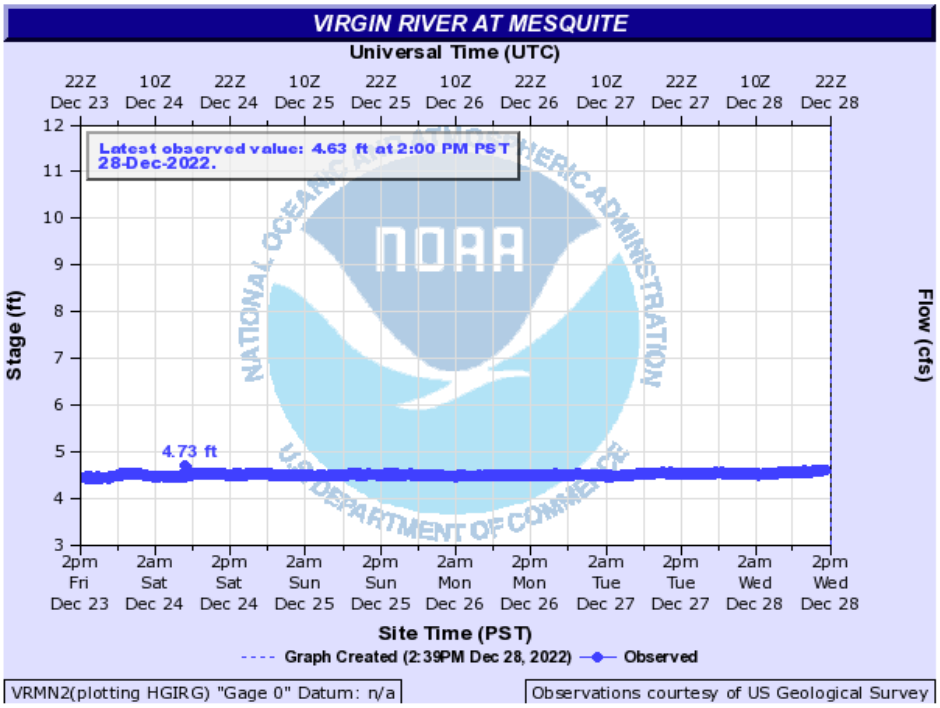
Federal Emergency Management Agency


NOTES TO USERS
This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.
To obtain more detailed information in areas where Base Flood Elevation (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profiles and Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.
Coastal Base Flood Elevation (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum (NAVD). Users of this FIRM should be aware that coastal flood elevations may also be provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this community. Elevations shown in the Summary of Stillwater Elevations table should be used for insurance rating purposes only. Floodplain management purposes when they are higher than the elevations shown on this FIRM.
Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.
Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.
The projection used in the preparation of this map is Universal Transverse Mercator (UTM) Zone 11. The horizontal datum is NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.
Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:
Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191
To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit their website at www.ngs.noaa.gov.
Base map information shown on this FIRM was provided in digital format by Clark County Regional Flood Control District. This information was converted using Orthophotography, dated 1999 or newer, and GBF/DIME data. Segments were digitized off of the orthophotography based on center of pavement.
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.
Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.
An accompanying Flood Insurance Study report, Letters of Map Revision or Letters of Map Amendment revising portions of this panel, and digital versions of this PANEL may be available. Contact the FEMA Map Service Center at the following phone numbers and Internet address for information on all related products available from FEMA.
Phone: 800-358-9616
FAX: 800-358-9620
www.fema.gov/msc
If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at www.fema.gov.
This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report may reflect stream channel distances that differ from what is shown on this map.
This Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).
This DFIRM reflects several innovative features. These include:
+ Southern Nevada GIS - Cooperation among local governments and agencies throughout Clark County. The foundation of cooperation is the interlocal agreements between Clark County and participating governments. As part of the agreement, it is that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS Metadata.
+ The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the base map for this DFIRM.
DIGITAL DATA AVAILABILITY: http://www.co.clark.nv.us/cnt/gismo/gismo.htm
NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 22 SOUTH, RANGE 64 EAST.
LAKE MEAD NATIONAL RECREATION AREA
CLARK COUNTY
CITY OF BOULDER CITY
CORPORATE LIMITS
CITY OF BOULDER CITY 320004
ZONE A
ZONE X
ZONE AE
JOINS PANEL 2650
JOINS PANEL 2630
JOINS PANEL 2660
LEGEND
SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.
ZONE A — No base flood elevations determined.
ZONE AE — Base flood elevations determined.
ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR — Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99 — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); base flood elevations determined.
FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
Floodplain Boundary
Floodway Boundary
Zone D Boundary
Coastal Barrier Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
Base Flood Elevation line and value; elevation in feet*
(EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*
*Referenced to the North American Vertical Datum of 1988
Cross Section Line
Transect Line
97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000M 1000-meter Universal Transverse Mercator grid values, zone 11
6000000 FT 5000-foot grid ticks
DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 River Mile
MAP REPOSITORY
Refer to Repository Listing on Index Map
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 16, 1995
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 27, 2002 to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to change zone designations, to change floodway widths, to incorporate previously issued letters of map revision, to incorporate previously issued letters of map amendment, and to change flood risks.
For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.
MAP SCALE 1" = 1000'
PANEL 2640 E
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, NEVADA AND INCORPORATED AREAS
PANEL 2640 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
CLARK COUNTY 320003 2640 E
UNINCORPORATED AREAS 320003 2640 E
BOULDER CITY, CITY OF 320004 2640 E
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER 32003C2640 E
MAP REVISED: SEPTEMBER 27, 2002
Federal Emergency Management Agency
NATIONAL FLOOD INSURANCE PROGRAM

Appendix G: Flooding, Storm Gauges, and Historical Crest Data

1. Virgin River at Mesquite

National Weather Service
Advanced Hydrologic Prediction Service
water.weather.gov/ahps/



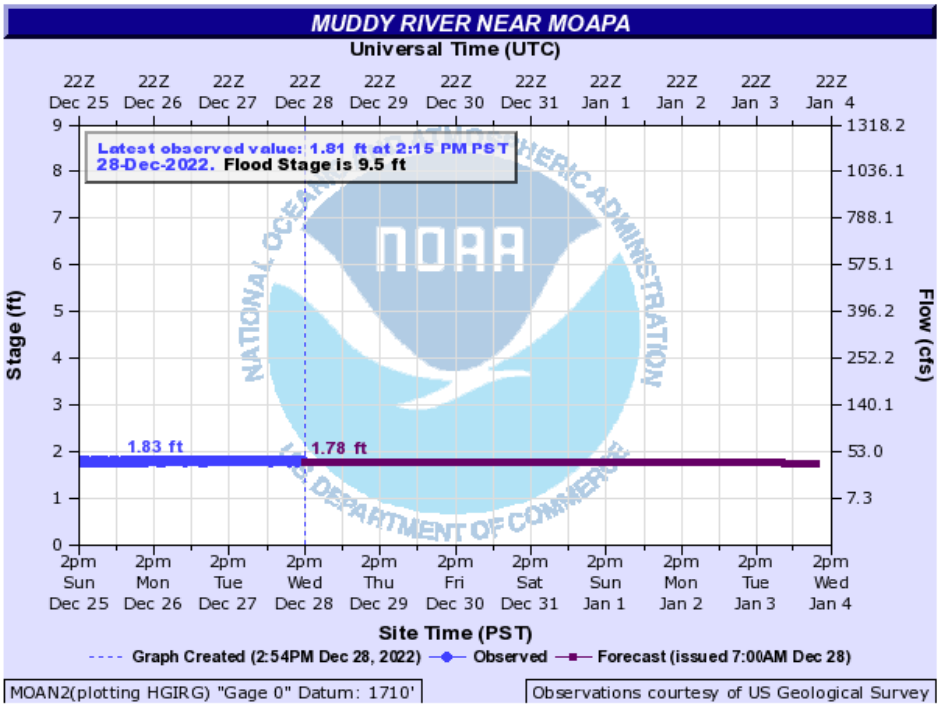
Observations courtesy of US Geological Survey .

Forecasts are not available for the Virgin River at Mesquite. Only observed stages are available for this point.

Historical Crest Data for Virgin River at Mesquite		
Ranking	*Height*	*Date*
1	8.08 ft	3/14/2020

2. Muddy River near Moapa

National Weather Service
Advanced Hydrologic Prediction Service
water.weather.gov/ahps/



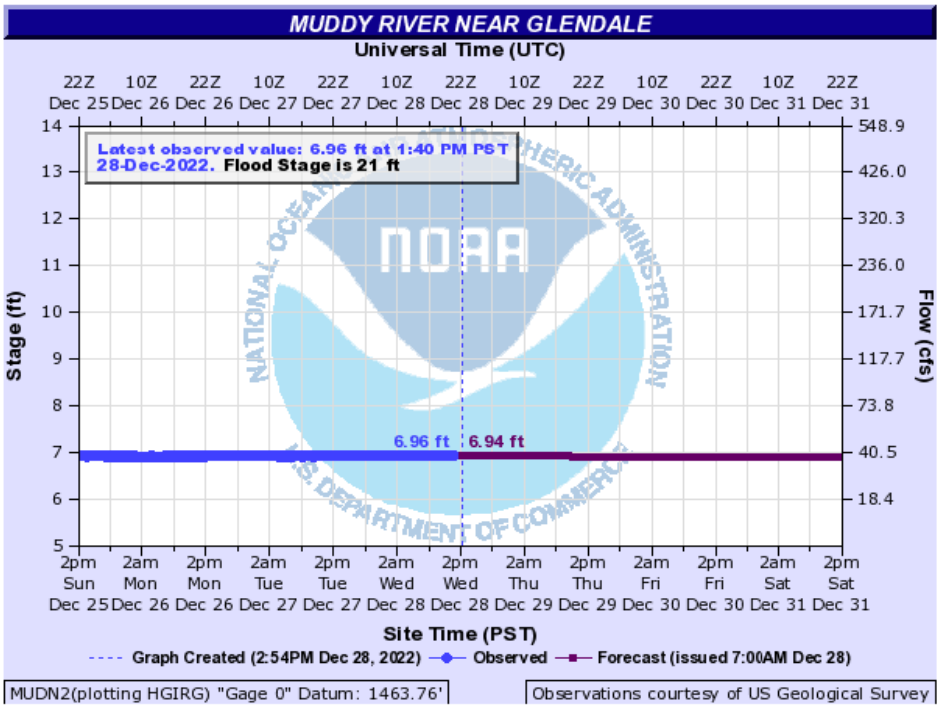
Observations courtesy of US Geological Survey .

Forecasts for the Muddy River near Moapa are issued routinely year-round.

Historical Crest Data for Muddy River near Moapa		
Ranking	*Height*	*Date*
1	14.26 ft	09/27/2014
2	13.64 ft	08/13/1979

3. Muddy River Near Glendale

National Weather Service
Advanced Hydrologic Prediction Service
water.weather.gov/ahps/



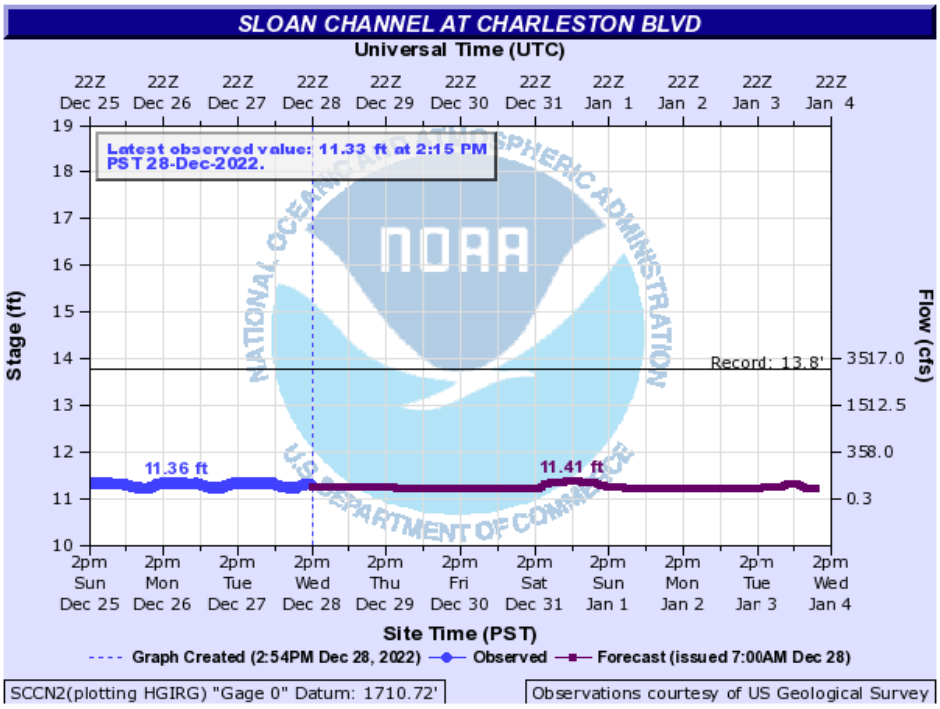
Observations courtesy of US Geological Survey .

Forecasts for the Muddy River near Glendale are issued routinely year-round.

Historical Crest Data for Muddy River near Glendale		
Ranking	*Height*	*Date*
1	27.10 ft	08/10/1981
2	27.06 ft	09/09/2014
3	24.89 ft	01/11/2005

4. Sloan Channel at Charleston Blvd

National Weather Service
Advanced Hydrologic Prediction Service
water.weather.gov/ahps/



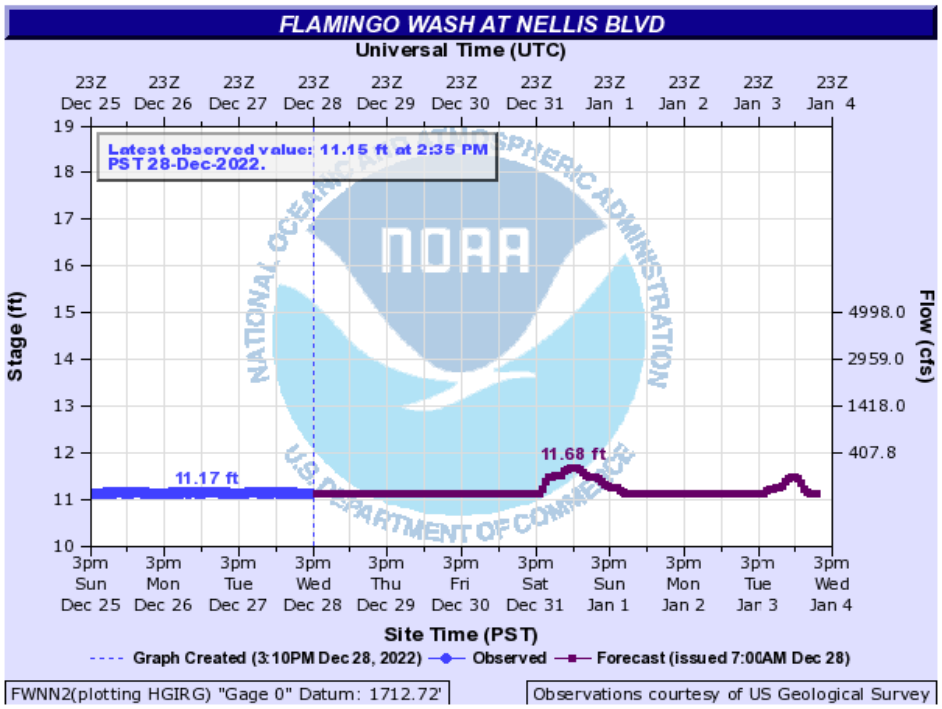
Observations courtesy of US Geological Survey .

Forecasts for the Sloan Channel at Charleston Blvd are issued routinely year-round.

Historical Crest Data for Sloan Channel at Charleston Blvd		
Ranking	*Height*	*Date*
1	13.79 ft	12/29/2004
2	13.24 ft	09/11/2012
3	13.14 ft	08/22/2016
4	13.09 ft	10/12/2012
5	12.48 ft	12/22/2010

5. Flamingo Wash at Nellis Blvd

National Weather Service
Advanced Hydrologic Prediction Service
water.weather.gov/ahps/



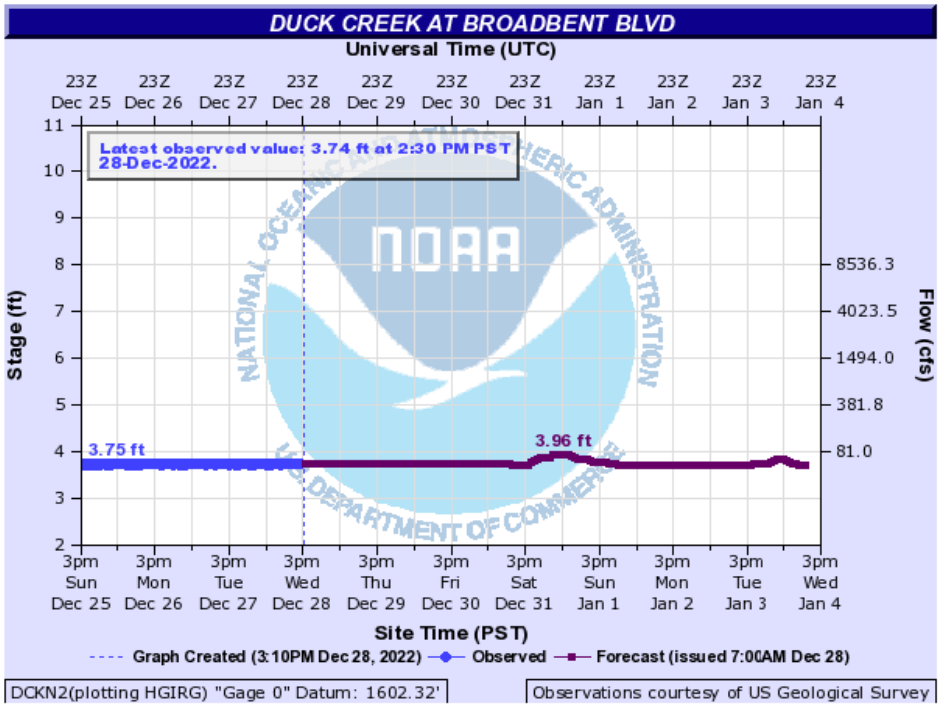
Observations courtesy of US Geological Survey .

Forecasts for the Flamingo Wash at Nellis Blvd are issued routinely year-round.

Historical Crest Data for Flamingo Wash at Nellis Blvd		
Ranking	*Height*	*Date*
1	13.85 ft	03/12/2020
2	13.21 ft	01/09/2018
3	13.15 ft	02/14/2019
4	12.58 ft	02/18/2017
5	11.90 ft	07/26/2021

6. Duck Creek at Broadbent Blvd

National Weather Service
Advanced Hydrologic Prediction Service
water.weather.gov/ahps/



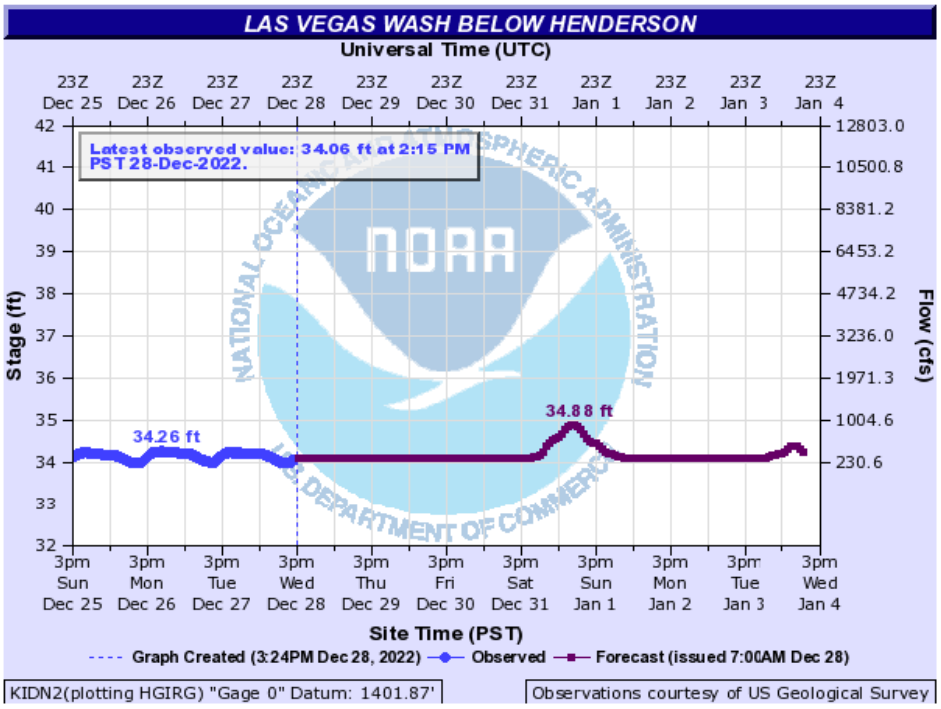
Observations courtesy of US Geological Survey .

Forecasts for the Duck Creek at Broadbent Blvd are issued routinely year-round.

Historical Crest Data for Duck Creek at Broadbent Blvd		
Ranking	*Height*	*Date*
1	8.70 ft	07/06/2001
2	8.21 ft	06/30/2016
3	8.16 ft	08/22/2012
4	7.57 ft	09/10/1984
5	7.21 ft	03/12/2020

7. Las Vegas Wash below Henderson

National Weather Service
Advanced Hydrologic Prediction Service
water.weather.gov/ahps/



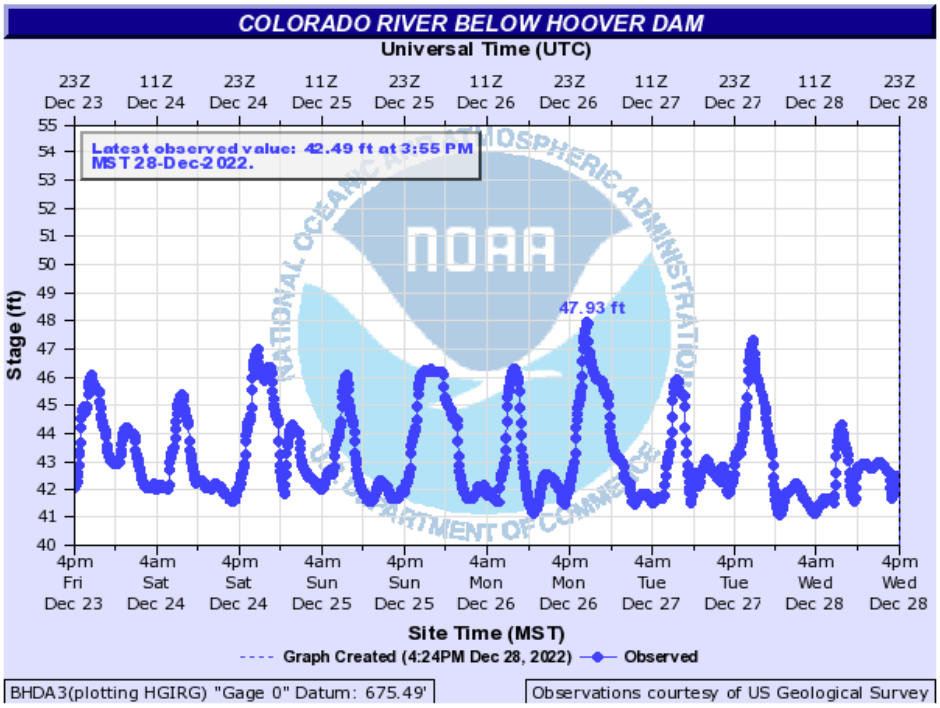
Observations courtesy of US Geological Survey .

Forecasts for the Las Vegas Wash below Henderson are issued routinely year-round.

Historical Crest Data for Las Vegas Wash below Henderson		
Ranking	*Height*	*Date*
Currently, there is no historic crest date for Las Vegas Wash below Henderson available		

8. Colorado River below Hoover Dam

National Weather Service
Advanced Hydrologic Prediction Service
water.weather.gov/ahps/



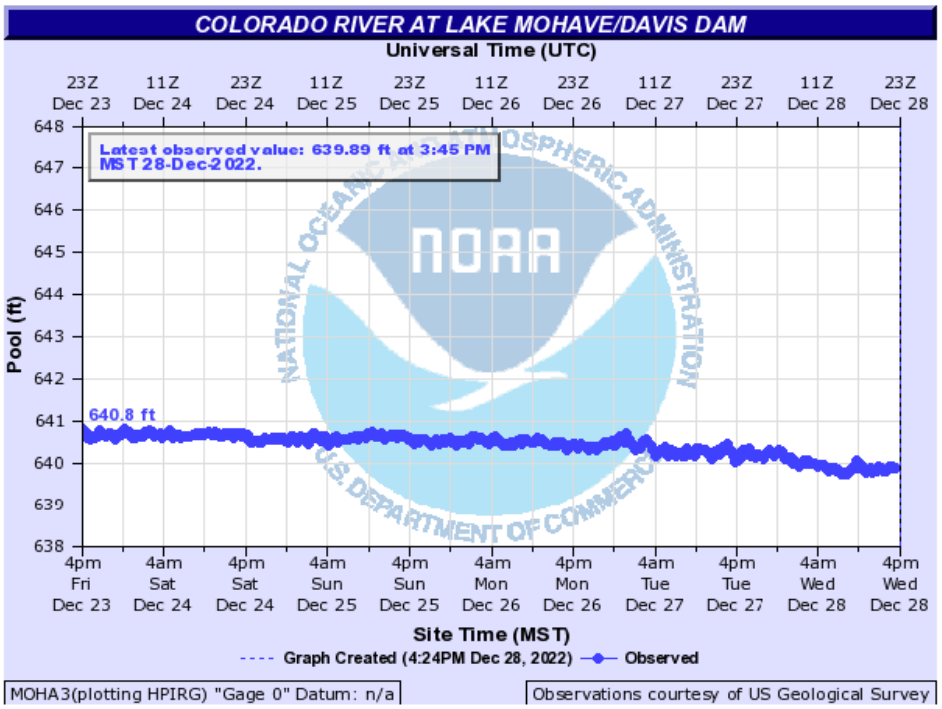
Observations courtesy of US Geological Survey .

Forecasts are not available for the Colorado River below Hoover Dam. Only observed stages are
available for this point.

Historical Crest Data for Colorado River below Hoover Dam		
Ranking	*Height*	*Date*
Currently, there is no historic crest date for the Colorado River below Hoover Dam available		

9. Colorado River at Lake Mohave/Davis Dam

National Weather Service
Advanced Hydrologic Prediction Service
water.weather.gov/ahps/



Observations courtesy of US Geological Survey .

Forecasts are not available for the Colorado River at Lake Mohave/Davis Dam. Only observed stages are
available for this point.

Historical Crest Data for Colorado River at Lake Mohave/Davis Dam		
Ranking	*Height*	*Date*
Currently, there is no historic crest date for the Colorado River Lake Mohave/Davis Dam available		

Appendix H: Mitigation Action Prioritization Table

Mitigation Action Project Prioritization, Clark County Department (Clark County Unincorporated)

Mitigation Project Prioritization, Clark County Departments (Clark County Unincorporated)																	
Mitigation Project or Activity	STAPLE+E	MPE	Hazards												Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Storms	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Implementing Benchmarking Ordinance with Energy/Water Assistance for Building	28	Medium (1)			10											10	10	**Medium**
Efficiency Program Stacking Model	28.91	Medium (1)	15	5	10	10		15	5		15	10	5	15	15	120	10.91	**Medium**
Develop and implement a regional education program on topics like resilience and sustainability	25.91	Medium (1)	15	5	10	10		15	5		15	10	5	15	15	120	10.91	**Low**
State Renewable Portfolio Standard Advocacy Initiatives	27.91	Medium (1)	15	5	10	10		15	5		15	10	5	15	15	120	10.91	**Medium**

Mitigation Project Prioritization, Clark County Departments (Clark County Unincorporated)																		
Mitigation Project or Activity	**STAPLE+E**	**MPE**	**Hazards**													**Hazard Total**	**HRT Value**	**Priority**
			Climate Change	**Dam Failure**	**Drought**	**Earthquake**	**Extreme Heat**	**Flood**	**Fissures & Subsidence**	**Severe Storms**	**Wildfire**	**Infestation**	**Infection Disease**	**Hazardous Materials**	**Terrorism**			
Expansion of Community Solar Program	28.91	Medium (1)	15	5	10	10		15	5		15	10	5	15	15	120	10.91	**Medium**
Community Resilience Hubs	26.91	Medium (1)	15	5	10	10		15	5		15	10	5	15	15	120	10.91	**Medium**
Community Wildfire Protection Plans	32.5	**1.5**									**15**					15	15	**Medium**
Homeowner Education and Outreach	21	**0.5**									**15**					15	15	**Low**
Fire Breaks Near Public Lands	32	**1**									**15**					15	15	**Medium**
Generator Installation, Searchlight FS 75	33.31	**1**	15	**5**	**10**	**10**	**15**	**15**	**5**	**15**	**15**	**10**	**5**	**15**	**15**	150	11.53846154	**Medium**
Generator Installation, Indian Springs FS 83	33.31	**1.5**	15	**5**	**10**	**10**	**15**	**15**	**5**	**15**	**15**	**10**	**5**	**15**	**15**	150	11.53846154	**Medium**
Bunkerville Generator Replacement	33.31	**1.5**	15	**5**	**10**	**10**		**15**	**5**		**15**	**10**	**5**	**15**	**15**	150	11.53846154	**Medium**
Phase II-Unreinforced Masonry Structure Survey	16	**1**				**10**										10	10	**Low**

Mitigation Project Prioritization, Clark County Departments (Clark County Unincorporated)																		
Mitigation Project or Activity	**STAPLE+E**	**MPE**	**Hazards**													**Hazard Total**	**HRT Value**	**Priority**
			Climate Change	**Dam Failure**	**Drought**	**Earthquake**	**Extreme Heat**	**Flood**	**Fissures & Subsidence**	**Severe Storms**	**Wildfire**	**Infestation**	**Infection Disease**	**Hazardous Materials**	**Terrorism**			
Research into earthquake hazard	16.5	**0.5**				**10**										10	10	**Low**
Wildfire Awareness	16.5	**0.5**									**15**					15	15	**Low**
Flood Projects through the CCRFCD - Blue Diamond Channel 02, Decatur-Le Baron to Richma	37.5	**1.5**						15								15	15	**Medium**
Flood Projects through the CCRFCD - Wagon Trail Channel, Sunset Road to Teco Ave	37.5	**1.5**						**15**								15	15	**Medium**
Flood Projects through the CCRFCD - Blue Diamond Wash, Arville Street	37.5	**1.5**						**15**								15	15	**Medium**
Flood Projects through the CCRFCD- Harry Reid Airport Peaking Basin - East Outfall	37.5	**1.5**						**15**								15	15	**Medium**

Mitigation Project Prioritization, Clark County Departments (Clark County Unincorporated)																	
Mitigation Project or Activity	STAPLE+E	MPE	Hazards												Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Storms	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Flood Projects through the CCRFCD- Reduce the threat of flood and flash flooding through development of flooding facilities and public awareness.	37.5	**1.5**						**15**								15	15	**Medium**
Emergency Power	28	**1**	15			**10**		**15**			**15**					55	13.75	**Medium**
Fuel Management	28	**1**									**15**					15	15	**Medium**
Mosquito Abatement Program	22	**1**											**10**	**5**		15	7.5	**Low**
Flamingo Wash, Maryland Parkway to Palos Verdes Street	27.5	**1.5**						**15**								15	15	**Medium**
Jim McGaughey Detention Basin, Collection & Outfall	27.5	**1.5**						**15**								15	15	**Medium**

Mitigation Project Prioritization, Clark County Departments (Clark County Unincorporated)																	
Mitigation Project or Activity	**STAPLE+E**	**MPE**	**Hazards**												**Hazard Total**	**HRT Value**	**Priority**
			Climate Change	**Dam Failure**	**Drought**	**Earthquake**	**Extreme Heat**	**Flood**	**Fissures & Subsidence**	**Severe Storms**	**Wildfire**	**Infestation**	**Infection Disease**	**Hazardous Materials**	**Terrorism**			
Las Vegas Wash -Branch 02 - Monson Channel - Jimmy Durante to Boulder Hwy	27.5	**1.5**						**15**								15	15	**Medium**
Orchard Detention Basin Collector - Charleston to Linden	27.5	**1.5**						**15**								15	15	**Medium**
Goodsprings Phase I	27.5	**1.5**						**15**								15	15	**Medium**
Blue Diamond Railroad Channel	27.5	**1.5**						**15**								15	15	**Medium**
Windmill Wash Detention Basin Expansion and Jess Waite Levee Facilities	22	**1**						**15**								15	15	**Low**
SR163 at Casino Drive - Phase 2 Sediment Basin	27.5	**1.5**						**15**								15	15	**Medium**

Mitigation Project Prioritization, Clark County Departments (Clark County Unincorporated)																		
Mitigation Project or Activity	STAPLE+E	MPE	Hazards													Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Storms	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Airport Channel - Naples	27.5	**1.5**						**15**								15	15	**Medium**
Duck Creek/Blue Diamond, Bermuda Road to Las Vegas Blvd	27.5	**1.5**						**15**								15	15	**Medium**
Blue Diamond Channel Amigo to Haven	27.5	**1.5**						**15**								15	15	**Medium**
Flamingo, Cimarron Branch - Russell Road to Patrick Lane	27.5	**1.5**						**15**								15	15	**Medium**
Hiko Springs Wash Detention Basin Expansion	27.5	**1.5**						**15**								15	15	**Medium**
Flamingo Wash, UPRR to Hotel Rio Drive	27.5	**1.5**						**15**								15	15	**Medium**
Sunset Park - Duck Creek Wash to Eastern Avenue	27.5	**1.5**						**15**								15	15	**Medium**
Annual Review and Update of Hazard Mitigation Plan	24.54	**1**	15	**5**	**10**	**10**	**15**	**15**	**5**	**15**	**15**	**10**	**5**	**15**	**15**	150	11.538 46154	**Low**

Mitigation Project Prioritization, Clark County Departments (Clark County Unincorporated)																		
Mitigation Project or Activity	**STAPLE+E**	**MPE**	**Hazards**													**Hazard Total**	**HRT Value**	**Priority**
			Climate Change	**Dam Failure**	**Drought**	**Earthquake**	**Extreme Heat**	**Flood**	**Fissures & Subsidence**	**Severe Storms**	**Wildfire**	**Infestation**	**Infection Disease**	**Hazardous Materials**	**Terrorism**			
Annual Review and Update of Continuity of Operations (COOP) Plan	24.54	**1**	15	**5**	**10**	**10**	**15**	**15**	**5**	**15**	**15**	**10**	**5**	**15**	**15**	150	11.538 46154	**Low**
Development of a County Sheltering Plan	24.54	**1**	15	**5**	**10**	**10**	**15**	**15**	**5**	**15**	**15**	**10**	**5**	**15**	**15**	150	11.538 46154	**Low**
Annual Review and Update of Local Emergency Operations Plan (LEOP)	24.54	**1**	15	**5**	**10**	**10**	**15**	**15**	**5**	**15**	**15**	**10**	**5**	**15**	**15**	150	11.538 46154	**Low**
Animal Evacuation Measures Public Awareness Campaign	17.77	**0.5**	15	**5**	**10**	**10**	**15**	**15**	**5**	**15**	**15**	**10**	**5**	**15**	**15**	150	11.538 46154	**Low**
Procure Emergency Evacuation Trailer	23.54	**1**	15	**5**	**10**	**10**	**15**	**15**	**5**	**15**	**15**	**10**	**5**	**15**	**15**	150	11.538 46154	**Low**
Temporary Sheltering Needs for Animal Services	17.77	**0.5**	15	**5**	**10**	**10**	**15**	**15**	**5**	**15**	**15**	**10**	**5**	**15**	**15**	150	11.538 46154	**Low**
Community Wildfire Protection Plans	32.5	**1.5**									**15**					15	15	**Medium**

Mitigation Project Prioritization, Clark County Departments (Clark County Unincorporated)																		
Mitigation Project or Activity	**STAPLE+E**	**MPE**	**Hazards**													**Hazard Total**	**HRT Value**	**Priority**
			Climate Change	**Dam Failure**	**Drought**	**Earthquake**	**Extreme Heat**	**Flood**	**Fissures & Subsidence**	**Severe Storms**	**Wildfire**	**Infestation**	**Infection Disease**	**Hazardous Materials**	**Terrorism**			
Homeowner Education and Outreach	21	**0.5**									**15**					15	15	**Low**
Fire Breaks Near Public Lands	32	**1**									**15**					15	15	**Medium**

Mitigation Action Project Prioritization, Clark County Water Reclamation District

Mitigation Project Prioritization, Clark County Water Reclamation District																	
Mitigation Project or Activity	STAPLE+E	MPE	Hazards												Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Weather	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Emergency Power	22.25	0.5	10			**10**		**15**			**15**					50	12.5	**Low**
Mosquito Abatement Program	21.5	1										**5**	**10**			15	7.5	**Low**
Green Energy Projects	20	1	10			**10**		**15**	**10**		**15**			**5**	**5**	70	10	**Low**
Surge Pond Overflow Protection	34.5	1.5						**15**								15	15	**Medium**

Mitigation Action Project Prioritization, Boulder City, NV

Mitigation Project Prioritization, Boulder City, NV																	
Mitigation Project or Activity	STAPLE+E	MPE	Hazards												Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Weather	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Implement floodplain and stream restoration projects	37.5	1.5						15								15	15	**Medium**
Maximize Maintenance Funding for Existing Flood Control Facilities	31	1						15								15	15	**Medium**
Continue Water Conservation Measures	25	1			10											10	10	**Low**
Flood Control Improvements	37.5	1.5						15								15	15	**Medium**

Mitigation Action Project Prioritization, Henderson, NV

Mitigation Project Prioritization, Henderson, NV																	
Mitigation Project or Activity	STAPLE+E	MPE	Hazards													Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Weather	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Unreinforced Masonry Database	25.75	1	15			10		15			15					55	13.75	**Medium**
Critical Infrastructure Flood Risk Reduction	22	1		5				15								20	10	**Low**
Critical Facilities & Infrastructure Seismic Retrofit or Replacement	21	1	15	5		10										30	10	**Low**
Flood Control	22	1		5				15								20	10	**Low**

Mitigation Action Project Prioritization, Las Vegas, NV

Mitigation Project Prioritization, Las Vegas, NV																		
Mitigation Project or Activity	**STAPLE+E**	**MPE**	**Hazards**												**Hazard Total**	**HRT Value**	**Priority**
			Climate Change	**Dam Failure**	**Drought**	**Earthquake**	**Extreme Heat**	**Flood**	**Severe Storms**	**Fissures & Subsidence**	**Wildfire**	**Infestation**	**Infection Disease**	**Hazardous Materials**	**Terrorism**			
Hazard Prevention Framework	17.68	0.5	15	**5**	**10**	**10**		**15**		**10**	**15**	**10**	**5**	**15**	**15**	125	11.36	**Low**
Cooling Infrastructure Investment	30	1.5			**10**											10	10	**Medium**
Hazard Economic Recovery Framework	19.68	**0.5**	15	**5**	**10**	**10**		**15**		**10**	**15**	**10**	**5**	**15**	**15**	125	11.36	**Low**
Update of RFCD Master Plan Improvements within the City	35.5	**1.5**						**15**								15	15	**Medium**
Seasonal Monsoon Season Study	19.5	**0.5**						**15**								15	15	**Low**
Low Impact Development of Natural Drainage Techniques	28.5	**1**						**15**		**10**						25	12.5	**Medium**

Mitigation Project Prioritization, Las Vegas, NV																	
Mitigation Project or Activity	**STAPLE+E**	**MPE**	**Hazards**												**Hazard Total**	**HRT Value**	**Priority**
			Climate Change	**Dam Failure**	**Drought**	**Earthquake**	**Extreme Heat**	**Flood**	**Fissures & Subsidence**	**Severe Storms**	**Wildfire**	**Infestation**	**Infection Disease**	**Hazardous Materials**	**Terrorism**			
Early Warning Notification Education Program	23.5	**0.5**						**15**								15	15	**Low**
Turf Limits Program	21.25	**0.5**	15		**10**											25	15	**Low**
Critical Infrastructure Flood Risk Reduction (Bonnevile Stormwater)	31	**1**						**15**								15	15	**Medium**
Aquifer Storage and Recovery (Water Use and Conservation)	27	**1**			**10**				**10**							20	10	**Medium**
NIPP's Security and Resilience Challenge (Smart City)	30	**1**												**15**	**15**	30	15	**Medium**
NIPP's Security and Resilience Challenge (Connected Corridors)	30	**1**												**15**	**15**	30	15	**Medium**

Mitigation Project Prioritization, Las Vegas, NV																		
Mitigation Project or Activity	**STAPLE+E**	**MPE**	**Hazards**													**Hazard Total**	**HRT Value**	**Priority**
			Climate Change	**Dam Failure**	**Drought**	**Earthquake**	**Extreme Heat**	**Flood**	**Fissures & Subsidence**	**Severe Storms**	**Wildfire**	**Infestation**	**Infection Disease**	**Hazardous Materials**	**Terrorism**			
Aquifer Storage and Recovery (Water Use and Conservation)	27	**1**			**10**				**10**							20	10	Medium

Mitigation Action Project Prioritization, Las Vegas Valley Water District/SWNA

Mitigation Project Prioritization, Las Vegas Valley Water District/SWNA																		
Mitigation Project or Activity	STAPLE+E	MPE	Hazards													Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Storms	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Installation of Perimeter Fence	30	1													15	15	15	**Medium**
Septic to Sewer Conversions	30.5	1	15		10											25	12.5	**Medium**
Treatment Facility Network Improvements	30	1													15	15	15	**Medium**
Risk Solutions Software for Continuity of Operations Plan Management	27.54	1	15	5	10	10	15	15	5	15	15	10	5	15	15	150	11.538 6154	**Medium**
Equip Riverbank Well	22.25	0.5	15		10											25	12.5	**Low**
Replace Aging/Failed Surveillance and Networking Equipment	21.5	0.5													15	15	15	**Low**

Mitigation Project Prioritization, Las Vegas Valley Water District/SWNA																	
Mitigation Project or Activity	STAPLE+E	MPE	Hazards												Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Storms	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Design and Installation of Horizon Lateral	22.875	0.5	15			10		15			15					55	13.75	**Low**
Purchase generators and develop plan to use well water to provide critical service water supply if treatment plants operations are disrupted	28.75	1	15			10		15			15					55	13.75	**Medium**
Turf Limits	21.25	0.5	15		10											25	12.5	**Low**
Water Conservation Program	28.5	1	15		10											25	12.5	**Medium**

Mitigation Action Project Prioritization, Mesquite, NV

Mitigation Project Prioritization, Mesquite, NV																	
Mitigation Project or Activity	STAPLE+E	MPE	Hazards												Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Weather	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Damage Assessment Forms for Flooding and Earthquake	26	1	15			10		15								40	13.333 33333	**Medium**
Flooding-Levy Build Up	30.3636365	1.5						15								15	15	**Medium**
Senior Center Backup Power Supply	25.54	1	15	5	10	10	15	15	5	15	15	10	5	15	15	150	11.538 46154	**Medium**
Recreation Center Backup Power Supply	25.54	1	15	5	10	10	15	15	5	15	15	10	5	15	15	150	11.538 46154	**Medium**
Drought-Water Conservation Planning	21.5	0.5	15			10										25	12.5	**Low**
Mesquite Town Wash, Abbott Wash Channel, Pulsipher Wash Channel	38.5	1.5						15								15	15	**Medium**

Mitigation Action Project Prioritization, North Las Vegas

Mitigation Project Prioritization, North Las Vegas, NV																	
Mitigation Project or Activity	STAPLE+E	MPE	Hazards													Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Weather	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Lower Las Vegas Wash Detention Basin Inflow Channel	35.5	1.5							15							15	15	**Medium**
Range Wash - Las Vegas Diversion Channel	35.5	1.5							15							15	15	**Medium**
Las Vegas Boulevard Storm Drain	35.5	1.5							15							15	15	**Medium**
Range Wash Beltway Conveyance	35.5	1.5							15							15	15	**Medium**
Beltway Collection System - Pecos	35.5	1							15							15	15	**Medium**
Speedway North Detention Basin and Outfall	35.5	1.5							15							15	15	**Medium**

Mitigation Project Prioritization, North Las Vegas, NV																	
Mitigation Project or Activity	**STAPLE+E**	**MPE**	**Hazards**												**Hazard Total**	**HRT Value**	**Priority**
			Climate Change	**Dam Failure**	**Drought**	**Earthquake**	**Extreme Heat**	**Flood**	**Fissures & Subsidence**	**Severe Storms**	**Wildfire**	**Infestation**	**Infection Disease**	**Hazardous Materials**	**Terrorism**			
North Apex - System 1 Detention Basin and Outfall	29	1						15								15	15	**Medium**
Flood Control	27	1		5				15								30	15	**Medium**
Turf Conversion Subsidy	24	1			10											20	10	**Low**
Emergency Power	20.5	0.5	15			15		15								60	15	**Low**

Mitigation Action Project Prioritization, Las Vegas Paiute Tribe

Mitigation Project Prioritization, Las Vegas Paiute Tribe																	
Mitigation Project or Activity	STAPLE+E	MPE	Hazards												Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Weather	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Purchase of Law Enforcement Facility Generator	25.3333				10	10		15			15					50	12.5	Medium
Flood Control Project Maintenance Project - US 95 Highway Culvert	30							15								15	15	Medium
Flood Control Project - Paiute Golf Course - Wolf Course Channel Extension	30							15								15	15	Medium
Protect Snow Mountain Water Well	26.5				10	10	15				15					50	12.5	Medium
Acquire Water Well Backup Generator for Snow Mountain	27.333				10	10		15			15			15	15	80	13.333 3333	Medium
Create a Tribal Continuity of Operations Plan (COOP)	18.769231		15	5	10	15	15	15	5	15	15	10	5	15	15	150	11.538 4615	Low

Mitigation Action Project Prioritization, Moapa Band of Paiutes

Mitigation Project Prioritization, Moapa Band of Paiutes																	
Mitigation Project or Activity	**STAPLE+E**	**MPE**	**Hazards**												**Hazard Total**	**HRT Value**	**Priority**
			Climate Change	**Dam Failure**	**Drought**	**Earthquake**	**Extreme Heat**	**Flood**	**Fissures & Subsidence**	**Severe Weather**	**Wildfire**	**Infestation**	**Infection Disease**	**Hazardous Materials**	**Terrorism**			
Emergency Power for Admin and Law Enforcement	34.4825	1	15	5	10	10	15	15	5	15	15	10	5	15	15	150	21.4285	**Medium**
Tribal Emergency Preparation (Training, Purchasing, Planning, and Events Planning)	34.825		15	5	10	10	15	15	5	15	15	10	5	15	15	150	21.4285	**Medium**

Appendix I: Jurisdictional Annexes

Boulder City

Planning Area

The City of Boulder City is known to be a small town with big adventure. The Boulder City Visitor Brochure mentions that it's just beyond the glitz and glam is Boulder City, the town that built Hoover Dam. It doesn't take long to feel its thrill-seeking spirit and welcoming charm. But it may take a while to see all of the recreational and outdoor activities. There are so many ways to explore, whether it be by land, water or air. If you're passing through, or staying a while, welcome.

Figure 125: City of Boulder City Community Profile Map

Data Source: Boulder City GIS Department

Demographics and Hazard Vulnerabilities

Demographic data is crucial to effective hazard mitigation planning. This is especially true for the numbers associated with population, housing units, and building permits as they, over time, can increase or decrease a planning area's vulnerabilities to any/all identified natural hazards. It is important to note, however, that demographic data can fluctuate or even lag in the short term, i.e., one to two years. While these numbers tend to self-correct over time, temporary decreases or increases in population and/or the number of housing units may occur. In these instances, it is best to consider demographic data from longer periods, such as ten (10) to 20 years, for mitigation planning purposes.

As for Boulder City, the U.S. Census Bureau determined its population to be 14,996 in 2000. That number increased by 0.381% to 15,023 in 2010. In 2020, the U.S. Census Bureau determined the Boulder City population to be 14,885, a decrease of 0.919%.

Similarly, the U.S. Census Bureau determined the number of housing units in Boulder City to be 7,412 in 2021 and 7,423 in 2020, a 0.1484% increase.

The following table provides a visual representation of Boulder City's demographic information (as previously described) and how it specifically relates to hazard probability and the planning area's vulnerabilities to all identified natural hazards.

Table 79: Demographics and Vulnerability, Boulder City

Demographics & Vulnerability, Boulder City								
Population (2000 U.S. Census)	Population 2010 U.S. Census	Population (2020 U.S. Census)	% of Population Change (2010-2020)	# of Housing Units (2020 Census)	% of Housing Units (2010-2020)	Identified Hazards	CPRI Results	Probability of Hazards (From Risk Summary)
14,966	15,023	14,855	0.919%	7,423	0.1484%	Climate Change	M (2.5)	Highly Likely
						Drought	H (3.25)	Likely
						Extreme/ Excessive Heat	H (3.3)	Highly Likely
						Fissures & Subsidence	L (1)	Occasional
						Flood, Landslides & Debris Flow, Flooding	H (3.25)	Highly Likely
						Geohazards-Earthquake and Seismic Hazards	M (2.05)	Likely
						Severe Weather (including Thunderstorms, Hail, Wind, Lightning, and Tornadoes)	L (1.75)	Highly Likely
						Fire, Wildland Urban Interface (Wildfire)	L (1.15)	Highly Likely
						Hazardous Materials	H (3.15)	Highly Likely
						Infrastructure, Dam Failure	L (1)	Occasional
						Infestation	M (2.0)	Likely
						Infectious Disease	H (3.25)	Occasional
						Terrorism	M (2.2)	Highly Likely

Data Source: U.S. Census Bureau, Nevada: 2010 Population and Housing Unit Count; and U.S. Census Bureau, Profile: data.census.gov; Percent of Population Change Calculation Change: https://www.omnicalculator.com/math/percentage-change#how-to-calculate-the-percent-change

Critical Facilities Information

As previously stated in this MJHMP Update, certain facilities have a net positive value on the community, i.e., they contribute to the public good by facilitating the basic functions of society. These facilities maintain order, public health, education, and help the local economy function. Additionally, there are facilities and infrastructure integral to disaster response and recovery operations. Conversely, some of these are of extreme importance due to the negative externalities created when impacted by a disaster. What fits these definitions varies slightly from community to community, but the definitions remain as a guideline for identifying critical infrastructure and facilities.

The following table and map summarize the identified critical facilities and infrastructure for Boulder City. A complete list can be found in Appendix D of this plan update.

City of Boulder City - Critical Facilities Listing																				
	Casinos/Resorts/ Hotels	Child Care	City Hall	Communications	Community Colleges	Correctional Facilities	Court House	Fire Stations	Government Offices	Hazardous Materials	Hospitals	Native Reservations	Natural Gas	Places of Worship	Police	Schools	Solar	Stadiums	Transportation	University	Water/Sewer
Total	-	5	1	14	-	-	1	1	24	2	3	-	1	20	1	5	8	-	3	-	22

National Flood Insurance Program (NFIP) and Community Rating System (CRS) Summary

According to FEMA, the National Flood Insurance Program (NFIP) is a federal insurance program that enables property owners in member communities to purchase flood insurance. This insurance is only made available to municipalities that adopt and enforce a floodplain management ordinance. The fundamental goal of NFIP floodplain management requirements is to reduce the threat to lives and the potential for property damage in flood-prone areas. Each municipality that participates in the NFIP has a Flood Insurance Rate Map (FIRM) that is issued by FEMA. This document maps out flood hazard areas in the municipality.

Like several other jurisdictions in Clark County, Boulder City participates in the NFIP. However, it is not listed as an eligible community of the Community Rating System (CRS), https://www.fema.gov/cis/NV.html, as of February 2023. CRS is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirement of NFIP.

The following tables contain NFIP & CRS Community Status information specific to Boulder City.

NFIP & CRS Community Status, Boulder City					
CID	CRS Rating	Initial FHBM Identified	Initial Firm Identified	Current Effective Map Date	Registration/ Entry Date
320004#	N/A	06/28/74	09/16/81	11/16/11	09/16/81

Data Source: FEMA - Nevada National Flood Insurance Program Community Status Book (https://www.fema.gov/cis/NV.html), February 2023

Building Codes Ordinance for Boulder City

City Code Flood Hazard Reduction ordinance – Title 11, Chapter 40. Also, Boulder City has adopted the Clark County Regional Flood Control District Rules, Regulations and Constructions Standards effective September 30, 2022. A copy of the Uniform Regulations Reference Document for CCRFD can be found here. For more information related to floodplain management in Boulder City, NV, contact Jim Kean at jkean@bcnv.org.

NFIP Policies, Claims & Payments, Boulder City					
Jurisdiction	Comm ID	# of Policies	Total Coverage	Total Written Premium + FPF	Floodplain Management Role
Boulder City	320004#	12	$3,544,000	$5,954	Provides in-house floodplain management. Participant of the CCFCD.

***Note**: *Indicates CRS participating jurisdiction.*

Data Source: Dictionary as mentioned in the NFIP Policy Information by State and Community document:

- Community ID: The 6-character community ID in which the policy resides.
- # of Policies: The number of policies in force for a given state and combination of attributes.
- Total Coverage: The total building and contents coverage for the policies in force.

Total Written Premium + FPF: This represents the sum of the premium and the FPF (federal policy fee) for the policies in force.

Data Sources: Participation – FEMA's Community Status Book Report, Nevada, 03/01/2023. Policy statistics (current as of 03/01/2023) https://www.fema.gov/cis/NV.html
NFIP Policy Information by State (Policy statistics current as of 1/31/2023) https://nfipservices.floodsmart.gov/sites/default/files/nfip_policy-information-by-state_20230131.xlsx

Repetitive Loss (RL) Properties

As of December 5, 2022, there are Repetitive Loss (RL) properties, and subsequently, NFIP-insured properties within Clark County. The following table, provided by the State of Nevada Division of Emergency Management (NVDEM), indicates the locations, number of losses, and number of policies.

Community Name	Community Number	Mitigated	Occupancy 1	Cumulative Building Payment	Cumulative Contents Payment	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
BOULDER CITY, CITY OF	320004	NO	SINGLE FMLY (OLD METHODOLOGY)	13935.24	0	13935.24	N	N	N	N	Y

Mitigation Strategy and Capabilities

Capabilities Assessment, Boulder City

As with any jurisdiction, there are numerous stakeholders involved in developing a mitigation strategy. Each type of stakeholder provides a set of capabilities, in some cases broad and in others narrow, by which they can help increase the planning area's resiliency. The broadest form of mitigation capabilities comes from counties, such as Clark County, and municipal governments, such as Boulder City. Their inherent legal authority allows them to institute the greatest regulatory and developmental changes.

The primary capabilities of Clark County and Boulder City are 1) institutional, 2) political, 3) technical, and 4) fiscal. Representing the City of Boulder City. A capability assessment was conducted of the MJHMP participating jurisdictions' authorities, policies, programs, and resources. From the assessment, goals and mitigation actions were developed. Capabilities for Boulder City are described in detail below. The Yes/No column denotes if a particular jurisdiction has that specific capability.

Planning and Regulatory Capabilities

These include local ordinances, policies and laws to manage growth and development. Examples include land use plans, capital improvement plans, transportation plans, emergency preparedness and response plans, building codes and zoning ordinances. Based upon the specific authorities contained in each of these planning and regulatory capabilities, they may be used to support mitigation activities.

Planning and Regulatory Capability Assessment for Boulder City

PLANS	Yes/No	Does the plan address hazards? Does the plan ID project to include in the mitigation strategy? Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Community Wildfire Protection Plan	No	The city does not have a substantial wildfire risk.
Comprehensive/Master Plan	No	Does not address hazard mitigation directly.
Continuity of Operations Plan	Yes	Yes. All departments have a COOP that was revised in 2023.
Capital Improvement Plan	Yes	Some foreseen hazards, but not unknown. FY 23, FY 24 will be approved in May 2024.
Economic Development Plan	Yes	The plan does not address hazards.
Emergency Operations Plan	Yes	2019. Yes, the current EOP addresses hazards & mitigation strategies. It is undergoing a revision in 2023.
Stormwater Management Plan	Yes	2023. Regional Flood Control Masterplan addresses hazards & mitigation strategies.
Transportation Plan	No	Pavement Management System due to growth ordinance that addresses hazards & mitigation strategies.
Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	What type of codes? Are codes adequately enforced?
Building Codes	Yes	The 2018 ICC codes, 2018 U-codes, NFPA 72 are all adequately enforced. More information regarding the City of Boulder City building codes can be found online here.
Site plan review requirements	Yes	2018 IRC, IBC are enforced in the site plan reviews.
Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		
LAND USE PLANNING & ORDINANCES	**Yes/No**	Is the ordinance effective for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Floodplain ordinance	Yes	Yes, Flood Hazard Reduction Ordinance – Title 11, Chapter 40, as current as 01/23/2023. This ordinance does address hazard impacts and is adequately administered and enforced.
Subdivision ordinance	Yes	Yes, Subdivision Regulation – Chapter 39 as current as 01/23/2023, does address hazard impacts and is adequately administered and enforced.
Zoning ordinance	Yes	Same Title as Subdivisions and Floodplain which addresses hazard mitigation. The current codes (as current as 01/23/2023) can be found online here.
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		
How can capabilities be expanded and improved to reduce risk?	Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.	

Administrative and Technical Capabilities

These capabilities include community (public and private) staff and their skills and tools which can be used for mitigation planning and implementation. This capability includes engineers, planners, emergency managers, GIS analysts, building inspectors, grant writers, and floodplain managers. Small communities may rely on other government entities such as counties or special districts for resources. Based upon the specific expertise contained in each of these administrative and technical capabilities, they may be used to support mitigation activities.

Administrative and Technical Capability Assessment for Boulder City

ADMINISTRATION	Yes/No	Describe capability. • Is coordination effective?
Mutual aid agreements	Yes	Yes, the city is multiple, current mutual aid agreements.
Planning Commission	Yes	They are effective in communication with the city council.
TECHNICAL STAFF	**Yes/No FT/PT**	• Is staff trained on hazards and mitigation? • Is coordination between agencies and staff effective? • Have skills/expertise been used to assess/mitigate risk in the past?
Building Official	Yes	Yes, to all.
Community Planner	Yes	For the Community Development Director who oversees the Planner, yes to all.
Emergency Manager	Yes	Yes, to all.
Engineer	Yes	Yes, to all.
Fire Chief	Yes	Yes, to all.
Floodplain Manager/Administrator	Yes	Yes, to all.
GIS/HAZUS Coordinator	Yes	Yes, to all.
How can capabilities be expanded and improved to reduce risk?		Additional training of staff in hazard mitigation and financial resources to pursue mitigation projects.

Financial Capabilities

The following table contains a list of administrative and financial capabilities available to Boulder City. Based upon procedures for each resource, these financial capabilities may be used to support mitigation activities.

Financial Capability Assessment for Boulder City

FINANCIAL	Yes/No	• Has the funding resource been used in past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities Grant (BRIC)	No	FEMA's BRIC grant program give states, local communities, tribes and territories funding to address future risks to natural disasters, including ones involving wildfires, drought, hurricanes, earthquakes, extreme heat, and flooding. Addressing these risks helps make communities more resilient. Boulder City could apply for assistance for such a project.
Hazard Mitigation Grant Program (HMPG)	No	
Pre-Disaster Mitigation grant program (PDM)	No	
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	No	
Flood Mitigation Assistance grant program (FMA)	No	Flood Mitigation Assistance funds may be used for projects such as Project Scoping; Technical Assistance; Community Flood Mitigation Projects; Individual Structure/Property-Level Flood Mitigation Projects; and Management Costs. Boulder City could apply for a apply for assistance for such a project.
Water Preservation Funds (SWNA)	Yes	Currently participating in rebate program for Water Smart Landscaping
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)	Yes	The fire department has a current, two-year agreement with the Division of Forestry to provide response and training services.
Capital improvements project funding	Yes	Receive funding from both RTC and CCRFC
Community Development Block Grant	Yes	Annually receives approximately $35K that is provided to Lend a Hand and Emergency Aid. Currently using grant for improvements to a building that will house Lend a Hand.
Authority to levy taxes for specific purposes	No/Yes	Have not used this in the past.
Impact fees for new development	No	
Incur debt through special tax bond	No	Debt over $1M must be approved by voters
Incur debt through general obligation bonds	Yes	Debt over $1M must be approved by voters. Before ballot question was approved debt was used for water line infrastructure.
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.

Education and Outreach Capabilities

The following table lists education and public outreach capabilities. These capabilities include programs such as fire safety programs, hazard awareness campaigns, public information or communications offices. Education and outreach capabilities can be used to inform the public on current and potential mitigation activities.

Table 60: Education and Outreach Capability Assessment for Boulder City

PROGRAM / ORGANIZATION	Changes since 2018 Plan Update Yes or No	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
Jurisdiction (County/City/Tribe) Website and Social Media (PIO/PAO Programming	No	Yes	The city maintains a website and accounts with Facebook, Instagram, Twitter, and YouTube. County libraries, law enforcement, and fire/rescue agencies also maintain social media accounts. These resources are regularly used to convey hazard mitigation and disaster-related information to the public, as well as develop awareness of in-person and online events. They can be used to support future mitigation activities.
Firewise Communities certification	No	No	
Storm Ready certification	No		
Citizen groups focused on emergency preparedness, environmental protection, etc.	No	No	This does not currently exist in Boulder City
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)	No	Yes	The Boulder City Fire Dept frequently addresses public information needs through a variety of mechanisms. The fire department social media sites and city website is a primary tool for dissemination of public information.
Public-private partnership initiatives addressing disaster-related issues	No	Yes	Examples of organizations for this effort include VOAD (Volunteer Organizations Active in Disaster), LEPC (Local Emergency Planning Committee) for addressing hazardous materials issues,
How can capabilities be expanded and improved to reduce risk?			This can be accomplished by including the organizations in our public outreach, planning, training and overall preparedness efforts and real time events.

Planning Integration, Boulder City

Mitigation does not end at plan approval. Plan approval is only the beginning. The successful implementation of any number of mitigation activities and projects requires the coordination and collaboration of a number of local agencies, departments, and organizations. Each group has varying decision-making processes and authorities governing their actions. This plan, once approved, must be integrated into their decision-making processes as a tool for improving their respective resiliencies.

Clark County intends to incorporate this Clark County Multi-Jurisdictional Hazard Mitigation Plan (update) into other planning documents the County and its participating jurisdiction(s)' (which includes Clark County Unincorporated Area, cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, NV, and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) utilizes. Where applicable, portions of the previous MJHP (2012 and 2018) were considered for incorporation into other jurisdictions plans (i.e., participating cities and tribal government comprehensive/master plans) and programs. Also, portions of the previous MJHMP (2012 and 2018) in some form was incorporated into the Clark County Emergency Operations Plan (2019), and other existing or future public safety-related plans. This plan is not only useful for implementing mitigation activities and projects but also critical in creating development plans and capital improvement projects. The risk assessment in this plan can prevent unmanaged and dangerous development in identified hazard areas or other portions of the planning area that decrease a community's overall resiliency.

Mitigation Projects/Activities

Boulder City completed two (2) mitigation projects in the last MJHMP update (2018).

Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Structural Emphasis (in 2018 MHJMP)	Cost Estimate	Estimated Timeline	Potential Funding Source	Status
Flood Control	Alleviate the damage associated with flooding through new and reinforced flood control projects, including storm drains, culverts, drop inlets, channels, and detention basins. Hemenway Watershed Improvements Phase IIB – Hemenway channel improvements to meet flood control freeboard requirements, improve access for maintenance, and reduce erosion around existing facilities. Project Update: Since the last plan update (2018), the Hemenway Watershed Improvements Phase IIB – Hemenway channel improvements to meet flood control freeboard requirements, improve access for maintenance, and reduce erosion around existing facilities maintenance and freeboard extensions was completed in 2022.	Flood, Dam Failure	Boulder City Public Works Department	New	$5.5M	1-5 years	FEMA Grants; Potential CIP Funding	Completed
Flood Control	Alleviate the damage associated with flooding through new and reinforced flood control projects, including storm drains, culverts, drop inlets, channels, and detention basins. North Railroad Conveyance Phase 2 – Improvements to install a channel around the Veterans Home to convey flows from the drainage basin to the North Railroad Detention Basin. The project will also increase the capacity of the North Railroad Detention Basin to accommodate additional flows. **Project Update:** Since the last plan update (2018), North Railroad Conveyance Phase 2 – Improvements to install a channel around the Veterans Home to convey flows from the drainage basin to the North Railroad Detention Basin. The project will also increase the capacity of the North Railroad Detention Basin to accommodate additional flow was completed in 2019.	Flood, Dam Failure	Boulder City Public Works Department	New	$2.5M	1-5 years	FEMA Grants; Potential CIP Funding	Complete

To support the planning area's mitigation goals, the Clark County MPSC identified 61 possible and unique mitigation projects and activities. Of these, five are from Boulder City as identified in the following table.

Mitigation & Projects Summary, Boulder City	
Mitigation Project or Activity	**Hazard(s) Addressed**
Implement floodplain and stream restoration projects	Flooding
Maximize Maintenance Funding for Existing Flood Control Facilities	Flooding
Continue Water Conservation Measures	Drought
Flood Control Improvements	Flooding
Emergency Power	Earthquake, Flood, Climate Change, Wildfire
Implement floodplain and stream restoration projects	Flooding
Maximize Maintenance Funding for Existing Flood Control Facilities	Flooding

STAPLE+E Rankings, Boulder City

STAPLE+E Rankings, Boulder City																							
X = N/A - Even Impact	**+ = Positive Influence**											**- = Negative Influence**											
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribute to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Goals	Consistent with Federal Laws	
Implement floodplain and stream restoration projects	+	x	+	+	-	+	-	+	+	x	+	x	+	+	+	x	+	-	+	+	x	+	+	15
Maximize Maintenance Funding for Existing Flood Control Facilities	+	-	+	+	-	+	+	+	+	x	+	x	+	+	+	+	+	+	-	-	-	+	+	16
Continue Water Conservation Measures	+	-	x	+	-	+	+	+	+	+	+	x	+	+	+	x	-	+	+	-	-	+	+	15
Flood Control Improvements	+	-	+	+	-	+	+	+	+	+	+	x	+	-	+	+	+	+	x	x	x	+	x	15
Emergency Power	+	-	+	+	-	+	-	+	+	+	+	x	+	-	+	x	+	-	x	-	-	x	x	11

Proposed and Carry-Over Mitigation Activities – Boulder City

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Boulder City 1	Implement floodplain and stream restoration projects	Alleviate the damage associated with flooding through new and reinforced flood control projects, including storm drains, culverts, drop inlets, channels, and detention basins. Implement floodplain and stream restoration projects to reduce flood risk and erosion by providing stable reaches and also mitigate drought impacts by providing baseflow recharge, water supply augmentation, floodwater storage, terrestrial and aquatic wildlife habitat, and recreation opportunities by restoring the site's soil, hydrology and vegetation conditions that mimic pre-development channel flow and floodplain connectivity. **Project Update:** Maximize the use of maintenance funding provided by the Clark County Regional Flood Control District for the maintenance of existing flood control facilities.	Flooding	Boulder City Public Works	Medium (37.5)	New	$33M	1-5 years	CCRFCD	Carry-over project from the 2018 plan.
Boulder City 2	Flood Control Improvements	Facilitate design and construction of flood control improvements identified in the 2023 Boulder City Flood Control Master Plan Update.	Flooding	Boulder City Public Works	Medium (37.5)	New	$32.6M	1-5 years	CCRFCD	Proposed project for the 2023 plan update.

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Boulder City 3	Emergency Power	Provide additional emergency power, such as a generator equipment, for new and existing critical facilities to operate continuously but cannot do so for long durations of power outage. **Project Update:** In the last five years, the emergency generators for critical facilities projects is partially complete and will be carried over to the 2023 plan update. The facilities were a emergency generator was added or maintenance were the following: PD, FD, WWTP, Red Mountain communication site, City Hall/Parks & Rec. are complete. The maintenance yard with fueling site 1 should be complete within a year. (Generator is on site and electrical work needs to be completed.)	Earthquake, Flooding, Climate Change, Wildfire	Boulder City Fire Department	Medium (31.625)	Existing	$300K	1-5 years	CIP	Carry-over project from the 2018 plan.
Boulder City 4	Maximize Maintenance Funding for Existing Flood Control Facilities	Maximize the use of maintenance funding provided by the Clark County Regional Flood Control District for the maintenance of existing flood control facilities.	Flooding	Boulder City Public Works	Medium (31)	Existing	$2.0M	Ongoing, Continuous through the five-year plan cycle.	CCRFCD	Carry-over project from the 2018 plan.
Boulder City 5	Continue Water Conservation Measures	Continue water conservation measures in coordination with the Southern Nevada Water Authority (SNWA) and other purveyor members. Measures include prohibiting new golf course development,	Drought	Boulder City Public Works, Community Development, &Utilities	Medium (25)	Existing	$6.5M	Ongoing, Continuous through the five-year plan cycle.	ARPA Funds	Carry-over project from the 2018 plan.

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		reducing golf course water budgets, converting cool season turf, implementing large water user policy, implementing AB356 (non-functional turf removal), implementing pool development standards, enhancing leak resolutions, implementing park efficiency improvements, implementing cooling efficiency standards, enhancing landscape watering compliance, making asset management investments, limiting new turf installations, implementing pricing changes, and optimizing return-flow credits.								

Deferred Projects List from Clark County MJHMP (2018) for Boulder City

Boulder City did not have any deferred projects.

Mitigation Prioritization Tables for Boulder City

		Mitigation Project Prioritization, Boulder City															
Mitigation Project or Activity	STAPLE+E	MPE	Hazards												Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Weather	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Unreinforced Masonry Database	25.75	1	15			10		15			15					55	13.75	Medium
Critical Infrastructure Flood Risk Reduction	22	1		5				15								20	10	Low
Critical Facilities & Infrastructure Seismic Retrofit or Replacement	21	1	15	5		10										30	10	Low
Flood Control	22	1		5				15								20	10	Low

Henderson

Planning Area

The City of Henderson was officially incorporated on April 16, 1953. According to the city's website, today, the City of Henderson has grown to more than 103 square miles and is the second largest city in Nevada. Henderson is often referred to as having small town values with big city efficiencies. The city's official slogan "Henderson-a Place to Call Home" reflects a community that enjoys small town values while benefiting from big city efficiencies. Henderson is also located just a few miles from Harry Reid International Airport (previously known as McCarran International Airport), and the Henderson Executive Airport, has completed major renovations and serves as a reliever airport to Harry Reid International Airport (McCarran). With the I-215 highway into Henderson, the City is just minutes away from the famous Las Vegas Strip.

Figure 126: City of Henderson, NV Community Profile Map: City Limits Map (Source: City of Henderson's website)

Demographics and Hazard Vulnerabilities

Demographic data is crucial to effective hazard mitigation planning. This is especially true for the numbers associated with population, housing units, and building permits as they, over time, can increase or decrease a planning area's vulnerabilities to any/all identified natural hazards. It is important to note, however, that demographic data can fluctuate or even lag in the short term, i.e., one to two years. While these numbers tend to self-correct over time, temporary decreases or increases in population and/or the number of housing units may occur. In these instances, it is best to consider demographic data from longer periods, such as ten (10) to 20 years, for mitigation planning purposes.

As for the City of Henderson, the U.S. Census Bureau determined its population to be 175,381 in 2000. That number increased by 47% to 257,729 in 2010. In 2020, the U.S. Census Bureau determined the City of Henderson population to be 317,610, an increase of 23.23%.

Similarly, the U.S. Census Bureau determined the number of housing units in The City of Henderson to be 113,586 in 2010 but increased its estimate by 20% to 136,325 in 2020.

The following table provides a visual representation of Henderson's demographic information (as previously described) and how it specifically relates to hazard probability and the planning area's vulnerabilities to all identified natural hazards.

Demographics & Vulnerability, City of Henderson								
Population (2000 U.S. Census)	Population 2010 U.S. Census	Population (2020 U.S. Census)	% of Population Change (2010-2020)	# of Housing Units (2020 Census)	% of Housing Units (2010-2020)	Identified Hazards	CPRI Results	Probability of Hazards (From Risk Summary)
175,381	257,729	317,610	23.23%	136,325	20%	Climate Change	H (3.55)	Highly Likely
						Drought	S (4.0)	Likely
						Extreme/ Excessive Heat	S (4.0)	Highly Likely
						Fissures & Subsidence	H (3.25)	Likely
						Flood, Landslides & Debris Flow, Flooding	H (3.0)	Highly Likely
						Geohazards-Earthquake and Seismic Hazards	H (3.25)	Likely
						Severe Weather (including Thunderstorms, Hail, Wind, Lightning, and Tornadoes)	H (3.55)	Highly Likely
						Fire, Wildland Urban Interface (Wildfire)	L (1.15)	Highly Likely
						Hazardous Materials	H (3.55)	Highly Likely
						Infrastructure, Dam Failure	M (2.0)	Occasional
						Infestation	L (1.0)	Likely
						Infectious Disease	H (3.25)	Occasional
						Terrorism	S (4)	Highly Likely

Data Source: U.S. Census Bureau, Nevada: 2010 Population and Housing Unit Count; and U.S. Census Bureau, Profile: data.census.gov; Percent of Population Change Calculation Change: https://www.omnicalculator.com/math/percentage-change#how-to-calculate-the-percent-change

Critical Facilities Information

As previously stated in this MJHMP Update, certain facilities have a net positive value on the community, i.e., they contribute to the public good by facilitating the basic functions of society. These facilities maintain order, public health, education, and help the local economy function. Additionally, there are facilities and infrastructure integral to disaster response and recovery operations. Conversely, some of these are of extreme importance due to the negative externalities created when impacted by a disaster. What fits these definitions varies slightly from community to community, but the definitions remain as a guideline for identifying critical infrastructure and facilities.

The following table and map summarize the identified critical facilities and infrastructure for the City of Henderson. A complete list can be found in Appendix D of this plan update.

City of Henderson - Critical Facilities Listing																					
	Casinos/Resorts/ Hotels	Child Care	City Hall	Communications	Community Colleges	Correctional Facilities	Court House	Fire Stations	Government Offices	Hazardous Materials	Hospitals	Native Reservations	Natural Gas	Places of Worship	Police	Schools	Solar	Stadiums	Transportation	University	Water/Sewer
Total	18	63	1	66	1	1	1	11	77	5	11	-	-	41	4	69	-	-	3	2	1578

National Flood Insurance Program (NFIP) & Community Rating System (CRS) Summary

According to FEMA, the National Flood Insurance Program (NFIP) is a federal insurance program that enables property owners in member communities to purchase flood insurance. This insurance is only made available to municipalities that adopt and enforce a floodplain management ordinance. The fundamental goal of NFIP floodplain management requirements is to reduce the threat to lives and the potential for property damage in flood-prone areas. Each municipality that participates in the NFIP has a Flood Insurance Rate Map (FIRM) that is issued by FEMA. This document maps out flood hazard areas in the municipality.

Like several other jurisdictions in Clark County, the City of Henderson participates in the NFIP. However, it is not listed as an eligible community of the Community Rating System (CRS), https://www.fema.gov/cis/NV.html, as of February 2023. CRS is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirement of NFIP.

The following tables contain NFIP & CRS Community Status information specific to the City of Henderson.

NFIP & CRS Community Status, City of Henderson					
CID	**CRS Entry Data**	**Initial FHBM Identified**	**Initial Firm Identified**	**Current Effective Map Date**	**Registration/ Entry Date**
320005#	10/01/ 1991	06/28/1974	06/15/1985	11/16/2011	06/15/2013

Data Source: FEMA - Nevada National Flood Insurance Program Community Status Book (https://www.fema.gov/cis/NV.html), February 2023

Building Codes Ordinance for Henderson

City Code Flood Control and Control of Drainage – Title 15 Building and Construction, Chapter 15.50. Also, the City of Henderson follows these regulations by Clark County Regional Flood District related to drainage and drainage design:

- Title 15.50.010 – Uniform Regulations for Control Drainage, effective September 30, 2022
- Title 19.14.6 – Hydrologic Criteria and Drainage Design Manual, as of September 1999

For more information related to floodplain management in Henderson, NV, contact Al Jankowiak at Albert.Jankowiak@cityofhenderson.com.

NFIP Policies, Claims & Payments, City of Henderson					
Jurisdiction	Comm ID	# of Policies	Total Coverage	Total Written Premium + FPF	Floodplain Management Role
Henderson*	320005#	199	$66,119,100	$107,188	Provides in-house floodplain management. Participant of the CCFCD.

Note:*Indicates CRS participating jurisdiction.
Data Dictionary as mentioned in the NFIP Policy Information by State and Community document:
Community ID: The 6-character community ID in which the policy resides.
# of Policies: The number of policies in force for a given state and combination of attributes.
Total Coverage: The total building and contents coverage for the policies in force.

NFIP Policies, Claims & Payments, City of Henderson					
Jurisdiction	Comm ID	# of Policies	Total Coverage	Total Written Premium + FPF	Floodplain Management Role
Total Written Premium + FPF: This represents the sum of the premium and the FPF (federal policy fee) for the policies in force.					
Data Sources: Participation – FEMA's Community Status Book Report, Nevada, 03/01/2023. Policy statistics (current as of 03/01/2023) ***https://www.fema.gov/cis/NV.html*** NFIP Policy Information by State (Policy statistics current as of 1/31/2023) https://nfipservices.floodsmart.gov/sites/default/files/nfip_policy-information-by-state_20230131.xlsx					

Repetitive Loss (RL) Properties

As of December 5, 2022, there are Repetitive Loss (RL) properties, and subsequently, NFIP-insured properties within Clark County. The following table, provided by the State of Nevada Division of Emergency Management (NVDEM), indicates the locations, number of losses, and number of policies.

Community Name	Community Number	Mitigated	Occupancy 1	Cumulative Building Payment	Cumulative Contents Payment	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
HENDERSON, CITY OF	320005	YES	SINGLE FMLY (OLD METHODOLOGY)	6442.62	4968.19	11410.81	N	N	N	N	Y
HENDERSON, CITY OF	320005	NO	SINGLE FMLY (OLD METHODOLOGY)	9426.19	0	9426.19	Y	N	N	N	N

Mitigation Strategy and Capabilities

Capabilities Assessment, City of Henderson

As with any jurisdiction, there are numerous stakeholders involved in developing a mitigation strategy. Each type of stakeholder provides a set of capabilities, in some cases broad and in others narrow, by which they can help increase the planning area's resiliency. The broadest form of mitigation capabilities comes from counties, such as Clark County, and municipal governments, such as the City of Henderson. Their inherent legal authority allows them to institute the greatest regulatory and developmental changes.

The primary capabilities of Clark County and the City of Henderson are 1) institutional, 2) political, 3) technical, and 4) fiscal. Representing the City of Henderson. A capability assessment was conducted of the MJHMP participating jurisdictions' authorities, policies, programs, and resources. From the assessment, goals and mitigation actions were developed. Capabilities for the City of Henderson are described in detail below. The Yes/No column denotes if a particular jurisdiction has that specific capability.

Planning and Regulatory Capabilities

These include local ordinances, policies and laws to manage growth and development. Examples include land use plans, capital improvement plans, transportation plans, emergency preparedness and response plans, building codes and zoning ordinances. Based upon the specific authorities contained in each of these planning and regulatory capabilities, they may be used to support mitigation activities.

The Planning and Regulatory Capability Assessment for the City of Henderson

PLANS	Yes/No	• Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Capital Improvements Plan	Yes	2022. Yes, includes project identification and addresses community hazards, can be used to implement mitigation actions as needed.
Community Wildfire Protection Plan		
Comprehensive/Master Plan	Yes	2017. Describes hazard areas and regulates current and future development based on known hazard areas.
Continuity of Operations Plan	Yes	Annually updated, includes a COG and all city departments, includes relocation strategies and devolution, succession and alternative sites.
Economic Development Plan	Yes	2017. Component of the Comprehensive Plan.
Emergency Operations Plan	Yes	All Hazards EOP updated biannually, includes all ESFs, basic plan, pandemic plan and recovery plan.
Stormwater Management Plan	Yes	2011. Yes, to all.
Transportation Plan	Yes	2022. Component of the Comprehensive Plan.
Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	• What type of codes? • Are codes adequately enforced?
Building Codes	Yes	2018-2021 IBC Code Suite. Codes are enforced. Plan reviews, inspections, regulated construction and structures in Henderson. More information for the City of Henderson Building Codes can be found here.
Site plan review requirements	Yes	2022 Title 19 Development Code. Code is enforced.
Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		
LAND USE PLANNING & ORDINANCES	**Yes/No**	• Is the ordinance effective for reducing hazard impacts? • Is the ordinance adequately administered and enforced?
Floodplain ordinance	Yes	Yes, City Code Chapter 15.50- Flood Control and Control of Draining can be found online here.
Subdivision ordinance	Yes	Multiple Subdivision ordinances can be found online here.
Zoning ordinance	Yes	Yes, to all. Known as Codes of Ordinances (Development Code – Zoning) can be found online here. The purpose of this code is to establish the minimum requirements to safeguard public health, safety, and general welfare through structural strength, means of egress facilities, and stability; access for persons with disabilities, sanitation, adequate lighting, ventilation and energy conservation; and safety for life and property from fire and other hazards attributed to the built environment.
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		

Administrative and Technical Capabilities

These capabilities include community (public and private) staff and their skills and tools which can be used for mitigation planning and implementation. This capability includes engineers, planners, emergency managers, GIS analysts, building inspectors, grant writers, and floodplain managers. Small communities may rely on other government entities such as counties or special districts for resources. Based upon the specific expertise contained in each of these administrative and technical capabilities, they may be used to support mitigation activities.

Administrative and Technical Capability Assessment for the City of Henderson

ADMINISTRATION	**Yes/No**	**Describe capability** • Is coordination effective?
Mutual aid agreements		
Planning Commission		
TECHNICAL STAFF	**Yes/No FT/PT**	• Is staff trained on hazards and mitigation? • Is coordination between agencies and staff effective? • Have skills/expertise been used to assess/mitigate risk in the past?
Building Official	Yes FT	All trained on hazards and mitigation, and we adhere to the NIMS training program
Community Planner	Yes FT	Yes, develops and maintains the Comprehensive Plan, including the safety element. Develops area plans based on the Comprehensive Plan, to provide more specific guidance for the development of more specific areas. Reviews private development projects and proposed capital improvements projects and other physical projects involving property for consistency and conformity with the Comprehensive Plan. Anticipates and acts on the need for new plans, policies, and code changes. Applies the approved plans, policies, code provisions, and other regulations to proposed land uses.
Emergency Manager	Yes FT	Yes, all hazards trained, NIMS certified, ICS training, CBCP, coordinates with all departments and staff, uses skills to mitigate and assess risk, experience managing a variety of incidents.
Engineer	Yes FT	Yes. Oversees the effective, efficient, fair, and safe enforcement of the Nevada Building Code. Provides direct or contract civil, structural, and mechanical engineering services, including contract, project, and construction management. Maintains and operates a wide range of local equipment and facilities as well as providing assistance to members of the public. These include providing sufficient clean fresh water and reliable sewer services. Maintains and operates of a wide range of local equipment and facilities as well as providing assistance to members of
Fire Chief	.	Yes, all hazards trained, NIMS certified, ICS training, coordinates with all departments and staff, uses skills to mitigated and assess risk, experience managing a variety of incidents.
Floodplain Manager/Administrator	Yes FT	Yes, enforces the jurisdiction's floodplain management ordinance, which requires that new development proposals do not increase flood risk, and that new developments are not located below the 100 year flood level. In addition, the Floodplain Administrator is responsible for planning and managing flood risk reduction projects throughout the jurisdiction.
GIS/HAZUS Coordinator	Yes FT	Yes, all staff go through ICS training and are equipped to identify and assess hazards

ADMINISTRATION	Yes/No	Describe capability • Is coordination effective?
How can capabilities be expanded and improved to reduce risk?		Additional training of staff in hazard mitigation and financial resources to pursue mitigation projects.

Financial Capabilities

Table 5-14 contains a list of administrative and financial capabilities available to the City of Henderson. Based upon procedures for each resource, these financial capabilities may be used to support mitigation activities.

Financial Capability Assessment for the City of Henderson

FINANCIAL	Yes/No	• Has the funding resource been used in the past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities Grant (BRIC)	Yes	
Hazard Mitigation Grant Program (HMPG)	Yes	Supports pre- and post-disaster mitigation plans and projects. Available to Nevada communities after a Presidentially declared disaster has occurred in Nevada.
Pre-Disaster Mitigation grant program (PDM)	Yes	Supports pre-disaster mitigation plans and projects. Available on an annual basis as a nationally competitive grant.
Earthquake Mitigation Funds (Nevada Safety Council)	Yes	Allocates FEMA money for earthquake mitigation efforts/.
Flood Mitigation Assistance grant program (FMA)	Yes	Mitigates repetitively flooded structures and infrastructure. Available on an annual basis, distributed to Nevada communities by the Nevada DEM
Water Preservation Funds (SWNA)	Yes	Provides incentives to conserve and preserve water resources.
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)	Yes	Administers funding from FEMA, BLM, and U.S. Forest Service for certain types of wildfire emergency and mitigation funding
Capital improvements project funding	Yes	Can be used to address community hazards and implement mitigation actions as needed.
Community Development Block Grant	Yes	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
Authority to levy taxes for specific purposes	Yes	
Impact fees for new development	Yes	Established an assessment contribution on certain land uses to establish the equitable funding of infrastructure within a geographic boundary.
Incur debt through special tax bond	Yes	

FINANCIAL	Yes/No	• Has the funding resource been used in the past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Incur debt through general obligation bonds	Yes	General obligation bonds are appropriately used for the construction and/or acquisition of improvements to real property broadly available to residents and visitors. Such facilities include, but are not limited to, libraries, hospitals, parks, public safety facilities, and cultural and educational facilities
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.

Education and Outreach Capabilities

The following table lists education and public outreach capabilities. These capabilities include programs such as fire safety programs, hazard awareness campaigns, public information or communications offices. Education and outreach capabilities can be used to inform the public on current and potential mitigation activities.

Education and Outreach Capability Assessment for the City of Henderson

PROGRAM / ORGANIZATION	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
City Website and Social Media (PIO/PAO Programming)	Yes	The City maintains a website and accounts with Facebook, Instagram, Twitter, and YouTube. City libraries, law enforcement, and fire/rescue agencies also maintain social media accounts. These resources are regularly used to convey hazard mitigation and disaster-related information to the public, as well as develop awareness of in-person and online events. They can be used to support future mitigation activities.
Firewise Communities certification	Yes	ISO classification Class 1
Storm Ready certification	Yes	
Citizen groups focused on emergency preparedness, environmental protection, etc.	Yes	
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)	Yes	CERT (Community Emergency Response Team), MRC (Medical Reserve Corps), ARES (Amateur Radio Emergency Services), Faith Based organizations such as the First Baptist support group, Salvation Army, and United Way of Northern Arizona. These organizations provide First Responder Support and Emergency Management and EOC support to local communities and local government during times of disaster and preparedness training for local needs. The City also has a robust volunteer program that includes police and fire volunteers
Public-private partnership initiatives addressing disaster-related issues	Yes No (for water use)	The City frequently addresses public information needs through a variety of mechanisms. The local government organizations utilize a well-developed and coordinated PIO group with partners from all levels of government including city, county departments. and federal and state offices. This is especially effective during times of disaster Emergency Management utilizes public presentations and media outlets (e.g. radio,

PROGRAM / ORGANIZATION	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
		print) to provide public outreach on emergency preparedness. The City website is a primary tool for dissemination of public information
How can capabilities be expanded and improved to reduce risk?		This can be accomplished by including the organizations in our public outreach, planning, training and overall preparedness efforts and real time events.

Planning Integration, City of Henderson

Mitigation does not end at plan approval. Plan approval is only the beginning. The successful implementation of any number of mitigation activities and projects requires the coordination and collaboration of a number of local agencies, departments, and organizations. Each group has varying decision-making processes and authorities governing their actions. This plan, once approved, must be integrated into their decision-making processes as a tool for improving their respective resiliencies.

Clark County intends to incorporate this Clark County Multi-Jurisdictional Hazard Mitigation Plan (update) into other planning documents the County and its participating jurisdiction(s)' (which includes Clark County Unincorporated Area, cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, NV, and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) utilizes. Where applicable, portions of the previous MJHP (2012 and 2018) were considered for incorporation into other jurisdictions plans (i.e., participating cities and tribal government comprehensive/master plans) and programs. Also, portions of the previous MJHMP (2012 and 2018) in some form was incorporated into the Clark County Emergency Operations Plan (2019), and other existing or future public safety-related plans. This plan is not only useful for implementing mitigation activities and projects but also critical in creating development plans and capital improvement projects. The risk assessment in this plan can prevent unmanaged and dangerous development in identified hazard areas or other portions of the planning area that decrease a community's overall resiliency.

Mitigation Projects and Activities

The City of Henderson did not complete a mitigation project in the last MJHMP update (2018).

To support the planning area's mitigation goals, the Clark County MPSC identified 61 possible and unique mitigation projects and activities. Of these, four are from the City of Henderson as identified in the following table.

Mitigation & Projects Summary, City of Henderson	
Mitigation Project or Activity	**Hazard(s) Addressed**
Unreinforced Masonry Database	Earthquake, Flood, Climate Change, Wildfire
Critical Infrastructure Flood Risk Reduction	Flood, Dam Failure
Critical Facilities & Infrastructure Seismic Retrofit or Replacement	Earthquake, Dam Failure, Climate Change
Flood Control	Flood, Dam Failure

STAPLE+E Rankings, City of Henderson

STAPLE+E Rankings, Insert Jurisdiction Name																							
X = N/A - Even Impact	**+ = Positive Influence**											**- = Negative Influence**											
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribute to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Goals	Consistent with Federal Laws	
Unreinforced Masonry Database	+	-	+	+	-	x	-	x	+	+	x	+	+	x	+	x	+	+	x	x	x	+	+	12
Critical Infrastructure Flood Risk Reduction	x	x	+	+	-	x	-	+	+	x	x	+	+	x	+	x	+	+	+	x	x	+	+	12
Critical Facilities & Infrastructure Seismic Retrofit or Replacement	x	-	+	x	-	x	-	+	+	x	x	+	+	x	+	x	+	+	+	x	x	+	+	11
Flood Control	+	-	+	x	-	x	-	+	+	x	x	+	+	x	+	x	+	+	+	x	x	+	+	12

Proposed and Carry-Over Mitigation Activities – City of Henderson

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Henderson 1	Unreinforced Masonry Database	Continue to update and validate the Clark County Unreinforced Masonry (URM) Inventory Database by undertaking the following activities: complete screening for structures that were not able to be screened during this phase of the project; expand the scope of project to include screening of URMs within the incorporated cities in Clark County; prepare a GIS enabled map layer showing the validated database of URM structures; work collectively with state and local officials to determine the next appropriate step in mitigating the potential hazards associated with URM structures.	Earthquake, Flood, Climate Change, Wildfire	City of Henderson Community Development	Medium (25.75)	New	1-5 years	$1M	Federal and State Funding	Proposed project for 2023 plan.
Henderson 2	Critical Infrastructure Flood Risk Reduction	Reinforce roads/bridges that are prone to repetitive flooding and/or flash flooding through protection activities, including elevating the roads/bridges and installing/widening culverts beneath the roads/ bridges or upgrading storm drains.	Flood, Dam Failure	City of Henderson Public Works	Low (22)	New	5 years	$45M	Federal and State Funding, CIP, Maintenance	Proposed project for 2023 plan.

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Henderson 3	Flood Control	Alleviate the damage associated with flooding through new and reinforced flood control projects, including storm drains, culverts, drop inlets, channels, and detention basins. Implement the Clark County Regional Flood Control District (CCRFCD) Capital Improvement Plan to design and construct master plan flood control facilities.	Flood, Dam Failure	City of Henderson Public Works	Low (22)	Existing	1-5 years	$20M	FEMA grant Funding, CIP, Maintenance	Carry-over project from the 2018 plan.
Henderson 4	Critical Facilities & Infrastructure Seismic Retrofit or Replacement	Seismically retrofit or replace critical facilities and infrastructure that are categorized as structurally deficient and are located in strong to very strong ground shaking areas and/or are necessary to use during and/or immediately after a disaster or emergency. Retrofit existing potable water reservoirs with seismic couplings at inlet and outlet connections	Earthquake, Dam Failure, Climate Change	City of Henderson Public Work; City of Henderson Parks and Recreation; City of Henderson Utilities	Low (21)	Existing	5 Years	$5M	Federal and State Funding	Carry-over project from the 2018 plan.

Deferred Projects List from Clark County MJHMP (2018) for the City of Henderson

Deferred Projects List from Clark County MJHMP (2018) for the City of Henderson						
Project Name	**Project Description**	**Hazard(s) Addressed**	**Lead Department**	**Cost Estimate**	**Potential Funding Source(s)**	**Project Update**
Regional Flood Control Maintenance Work Program	Annual program to inspect and maintain Regional Flood Control District facilities to ensure the system conveys flows safely and efficiently. Funded by the Clark County Regional Flood Control District.	Flood, Dam Failure	City of Henderson	N/A	Funded by the Clark County Regional Flood Control District.	Deferred Project from the 2018 MJHMP.
Drop Inlet Inspection and Maintenance Program	Annual program to inspect and maintain drop inlets to ensure the system conveys flows safely and efficiently.	Flood	City of Henderson	N/A	N/A	Deferred Project from the 2018 MJHMP.
Turf Limits Program	Turf limits restrict or prohibit the amount of grass to be planted at new properties. The restrictions prohibiting types of grass that can be planted apply to all property owners.	Drought	City of Henderson	N/A	N/A	Deferred Project from the 2018 MJHMP.

Deferred Projects List from Clark County MJHMP (2018) for the City of Henderson						
Emergency Power	Provide additional emergency power, such as generator equipment, for new and existing critical facilities to operate continuously but cannot do so for long durations of power outage. Acquire and install permanent emergency generators and appropriate connections for the permanent generators at Downtown and Multi-Generational Recreation Centers. Acquire one (1) portable emergency generator and acquire and install appropriate connections for the portable emergency generator at Heritage Park, Whitney Ranch and Heritage Aquatics Recreation Centers. These centers will potentially be used as shelter locations.	All Hazards	City of Henderson Public Works Parks and Recreation	N/A	FEMA grant funding	Deferred Project from the 2018 MJHMP.

Mitigation Prioritization Tables for the City of Henderson

Mitigation Project Prioritization, City of Henderson																	
Mitigation Project or Activity	STAPLE+E	MPE	Hazards												Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Weather	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Unreinforced Masonry Database	25.75	1	15			10		15			15					55	13.75	Medium
Critical Infrastructure Flood Risk Reduction	22	1		5				15								20	10	Low
Critical Facilities & Infrastructure Seismic Retrofit or Replacement	21	1	15	5		10										30	10	Low
Flood Control	22	1		5				15								20	10	Low

City of Las Vegas

Planning Area

The City of Las Vegas began with a land auction in 1905 and has grown into a world-class city with a rich history. The history portion of the City of Las Vegas website mentions that Las Vegas was founded as a city on May 15, 1905, when 110 acres of land situated between Stewart Avenue on the north, Garces Avenue to the south, Main Street to the west, and Fifth Street (Las Vegas Boulevard) to the east, were auctioned off by the railroad company. Also, Las Vegas was incorporated on June 1, 1911. On that day, voters in the unincorporated township of Las Vegas went to the polls and voted on the issue of incorporation.

Figure 127: Las Vegas Metro Area Map

Source: City of Las Vegas, Website

Demographics and Hazard Vulnerabilities

Demographic data is crucial to effective hazard mitigation planning. This is especially true for the numbers associated with population, housing units, and building permits as they, over time, can increase or decrease a planning area's vulnerabilities to any/all identified natural hazards. It is important to note, however, that demographic data can fluctuate or even lag in the short term, i.e., one to two years. While these numbers tend to self-correct over time, temporary decreases or increases in population and/or the number of housing units may occur. In these instances, it is best to consider demographic data from longer periods, such as ten (10) to 20 years, for mitigation planning purposes.

As for the City of Las Vegas, the U.S. Census Bureau determined its population to be 479,137 in 2000. That number increased by 21.83% to 583,756 in 2010. In 2020, the U.S. Census Bureau determined the City of Las Vegas population to be 641,903, an increase of 9.96%.

Similarly, the U.S. Census Bureau determined the number of housing units in the City of Las Vegas to be 243,701 in 2010 but increased its estimate by 5.34% to 256,713 in 2020.

The following table provides a visual representation of the City of Las Vegas demographic information (as previously described) and how it specifically relates to hazard probability and the planning area's vulnerabilities to all identified natural hazards.

Demographics & Vulnerability, City of Las Vegas								
Population (2000 U.S. Census)	Population 2010 U.S. Census	Population (2020 U.S. Census)	% of Population Change (2010-2020)	# of Housing Units (2020 Census)	% of Housing Units (2010-2020)	Identified Hazards	CPRI Results	Probability of Hazards (From Risk Summary)
479,137	583,756	641,903	9.96%	256,713	5.34%	Climate Change	M (2.8)	Highly Likely
						Drought	H (3.25)	Likely
						Extreme/ Excessive Heat	M (2.85)	Highly Likely
						Fissures & Subsidence	L (1.85)	Likely
						Flood, Landslides & Debris Flow, Flooding	H (3.75)	Highly Likely
						Geohazards-Earthquake and Seismic Hazards	H (3.7)	Likely
						Severe Weather (including Thunderstorms, Hail, Wind, Lightning, and Tornadoes)	M (2.30)	Highly Likely
						Fire, Wildland Urban Interface (Wildfire)	L (1.75)	Highly Likely
						Hazardous Materials	H (3.2)	Highly Likely
						Infrastructure, Dam Failure	M (2.4)	Occasional
						Infestation	L (1.35)	Likely
						Infectious Disease	H (3.7)	Occasional
						Terrorism	H (3.85)	Highly Likely

Data Source: U.S. Census Bureau, Nevada: 2010 Population and Housing Unit Count; and U.S. Census Bureau, Profile: data.census.gov; Percent of Population Change Calculation Change: https://www.omnicalculator.com/math/percentage-change#how-to-calculate-the-percent-change

Critical Facilities Information

As previously stated in this MJHMP Update, certain facilities have a net positive value on the community, i.e., they contribute to the public good by facilitating the basic functions of society. These facilities maintain order, public health, education, and help the local economy function. Additionally, there are facilities and infrastructure integral to disaster response and recovery operations. Conversely, some of these are of extreme importance due to the negative externalities created when impacted by a disaster. What fits these definitions varies slightly from community to community, but the definitions remain as a guideline for identifying critical infrastructure and facilities.

The following table and map summarize the identified critical facilities and infrastructure for the City of Las Vegas. A complete list can be found in Appendix D of this plan update.

City of Las Vegas - Critical Facilities Listing																					
	Casinos/Resorts/ Hotels	Child Care	City Hall	Communications	Community Colleges	Correctional Facilities	Court House	Fire Stations	Government Offices	Hazardous Materials	Hospitals	Native Reservations	Natural Gas	Places of Worship	Police	Schools	Solar	Stadiums	Transportation	University	Water/Sewer
City of Las Vegas	190	264	1	797	1	10	5	69	361	40	99	4	9	591	18	344	5	7	23	2	25,106

National Flood Insurance Program (NFIP) & Community Rating System (CRS) Summary

According to FEMA, the National Flood Insurance Program (NFIP) is a federal insurance program that enables property owners in member communities to purchase flood insurance. This insurance is only made available to municipalities that adopt and enforce a floodplain management ordinance. The fundamental goal of NFIP floodplain management requirements is to reduce the threat to lives and the potential for property damage in flood-prone areas. Each municipality that participates in the NFIP has a Flood Insurance Rate Map (FIRM) that is issued by FEMA. This document maps out flood hazard areas in the municipality.

Like several other jurisdictions in Clark County, the City of Las Vegas participates in the NFIP. However, it is not listed as an eligible community of the Community Rating System (CRS), https://www.fema.gov/cis/NV.html, as of February 2023. CRS is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirement of NFIP.

The following tables contain NFIP & CRS Community Status information specific to the City of Las Vegas.

NFIP & CRS Community Status, City of Las Vegas					
CID	**CRS Entry Date**	**Initial FHBM Identified**	**Initial Firm Identified**	**Current Effective Map Date**	**Registration/ Entry Date**
325276#	10/01 /1991	12/02/1972	09/30/1980	10/01/2013	10/01/1991

Data Source: FEMA - Nevada National Flood Insurance Program Community Status Book (https://www.fema.gov/cis/NV.html), February 2023

Building Codes Ordinance for Las Vegas

City Code Title 20- Flood Control. Also, the City of Las Vegas follows the Clark County Regional Flood Control District Title 15.50.010 – Uniform Regulations for Control Drainage, effective September 30, 2022. For more information related to floodplain management in Las Vegas, NV, contact pjackson@LasVegasNevada.com.

NFIP Policies, Claims & Payments, City of Las Vegas					
Jurisdiction	**Comm ID**	**# of Policies**	**Total Coverage**	**Total Written Premium + FPF**	**Floodplain Management Role**
Las Vegas*	325276#	330	$103,217,600	$186,150	Provides in-house floodplain management. Participant of the CCFCD.

Notes:*Indicates CRS participating jurisdiction.*

Data Dictionary as mentioned in the NFIP Policy Information by State and Community document:

- Community ID: The 6-character community ID in which the policy resides.
- # of Policies: The number of policies in force for a given state and combination of attributes.
- Total Coverage: The total building and contents coverage for the policies in force.

Total Written Premium + FPF: This represents the sum of the premium and the FPF (federal policy fee) for the policies in force.

***Data Sources**: Participation – FEMA's Community Status Book Report, Nevada, 03/01/2023. Policy statistics (current as of 03/01/2023) https://www.fema.gov/cis/NV.html*

NFIP Policy Information by State (Policy statistics current as of 1/31/2023) https://nfipservices.floodsmart.gov/sites/default/files/nfip_policy-information-by-state_20230131.xlsx

Repetitive Loss (RL) Properties

As of December 5, 2022, there are Repetitive Loss (RL) properties, and subsequently, NFIP-insured properties within Clark County. The following table, provided by the State of Nevada Division of Emergency Management (NVDEM), indicates the locations, number of losses, and number of policies.

Community Name	Community Number	Mitigated	Occupancy 1	Cumulative Building Payment	Cumulative Contents Payment	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
LAS VEGAS, CITY OF	325276	YES	SINGLE FMLY (OLD METHODOLOGY)	10156.76	0	10156.76	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	YES	SINGLE FMLY (OLD METHODOLOGY)	14607.13	0	14607.13	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	YES	OTHR-NONRES (OLD METHODOLOGY)	5381.09	1332	6713.09	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	NO	SINGLE FMLY (OLD METHODOLOGY)	71336.57	34991.86	106328.43	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	YES	SINGLE FMLY (OLD METHODOLOGY)	4820.42	0	4820.42	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	YES	SINGLE FMLY (OLD METHODOLOGY)	6351.69	14378.14	20729.83	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	YES	SINGLE FMLY (OLD METHODOLOGY)	4271.16	408	4679.16	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	NO	OTHR-NONRES (OLD METHODOLOGY)	0	39633.9	39633.9	N	N	N	N	Y
LAS VEGAS, CITY OF	325276	YES	OTHR-NONRES (OLD METHODOLOGY)	103353.28	116445	219798.28	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	YES	OTHR-NONRES (OLD METHODOLOGY)	0	23786.4	23786.4	Y	N	N	N	N

Community Name	Community Number	Mitigated	Occupancy 1	Cumulative Building Payment	Cumulative Contents Payment	Total Paid	Is NFIP Repetitive Loss Flag	Is NFIP Severe Repetitive Loss Flag	Is FMA Repetitive Loss Flag	Is FMA Severe Repetitive Loss Flag	Not Repetitive Loss Flag
LAS VEGAS, CITY OF	325276	YES	OTHR-NONRES (OLD METHODOLOGY)	0	112460.01	112460.01	Y	Y	N	Y	N
LAS VEGAS, CITY OF	325276	NO	SINGLE FMLY (OLD METHODOLOGY)	17975.75	1893.5	19869.25	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	NO	OTHR-NONRES (OLD METHODOLOGY)	57007.85	59843.93	116851.78	Y	N	N	N	N
LAS VEGAS, CITY OF	325276	NO	BUSI-NONRES (OLD METHODOLOGY)	244270.67	54773.56	299044.23	Y	Y	N	Y	N
LAS VEGAS, CITY OF	325276	NO	SINGLE FMLY (OLD METHODOLOGY)	7358.35	0	7358.35	Y	N	N	N	N

Mitigation Strategy and Capabilities

Capabilities Assessment, City of Las Vegas

As with any jurisdiction, there are numerous stakeholders involved in developing a mitigation strategy. Each type of stakeholder provides a set of capabilities, in some cases broad and in others narrow, by which they can help increase the planning area's resiliency. The broadest form of mitigation capabilities comes from counties, such as Clark County, and municipal governments, such as the City of Las Vegas. Their inherent legal authority allows them to institute the greatest regulatory and developmental changes.

The primary capabilities of Clark County and the City of Las Vegas are 1) institutional, 2) political, 3) technical, and 4) fiscal. Representing the City of Las Vegas. A capability assessment was conducted of the MJHMP participating jurisdictions' authorities, policies, programs, and resources. From the assessment, goals and mitigation actions were developed. Capabilities for the City of Las Vegas are described in detail below. The Yes/No column denotes if a particular jurisdiction has that specific capability.

Planning and Regulatory Capabilities

These include local ordinances, policies, and laws to manage growth and development. Examples include land use plans, capital improvement plans, transportation plans, emergency preparedness and response plans, building codes and zoning ordinances. Based upon the specific authorities contained in each of these planning and regulatory capabilities, they may be used to support mitigation activities.

Planning and Regulatory Capability Assessment for the City of Las Vegas

PLANS	Yes/No	• Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Community Wildfire Protection Plan	N/A	City of Las Vegas is an urban environment with no wildfire protection zone to manage
Comprehensive/Master Plan	Yes	CLV 2050 Master Plan identifies hazards, mitigation strategies. Approved by Council July 2022
Continuity of Operations Plan	Yes	CLV continuously updates COOP by department. Approved by City Manager's Office 2023 (on-going)
Capital Improvement Plan	Yes	Managed by Public Works, this plan is updated annually.
Economic Development Plan	Yes	Economic & Urban Development partners with Redevelopment Agency (RDA) and Las Vegas Global and Economic Alliance
Emergency Operations Plan	Yes	CLV certifies or updates EOP annually (2022)
Stormwater Management Plan	Yes	The **Stormwater Quality Management Committee (SQMC)** is a community partnership of the Clark County Regional Flood Control District and is committed to the development and implementation of stormwater pollution monitoring, control and outreach efforts within the Las Vegas Valley.
Transportation Plan	N/A	CLV participates on Clark County Regional Transportation Commission's ITS

PLANS	Yes/No	• Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	• What type of codes? • Are codes adequately enforced?
Building Codes	Yes	The 2021 International Building Code (IBC) and International Fire Code (IFC) were adopted in September 2022. The effective date of these codes is March 23, 2023. More information for the City of Las Vegas Building Codes can be found here.
Site plan review requirements	Yes	Routine, Land Use and Fire Reviews for Buildings conducted by Community Development Dept
Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		
LAND USE PLANNING & ORDINANCES	**Yes/No**	• Is the ordinance effective for reducing hazard impacts? • Is the ordinance adequately administered and enforced?
Floodplain ordinance	Yes	Las Vegas Municipal Code 20.08.040 - Methods of reducing flood losses (1987). This code can be found online here.
Subdivision ordinance	Yes	Las Vegas Municipal Code 20.08.370 - Subdivision proposals (1987). This code can be found online here.
Zoning ordinance	Yes	Las Vegas Municipal Code Title 19 (2011). This code can be found online here.
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		

Administrative and Technical Capabilities

These capabilities include community (public and private) staff and their skills and tools which can be used for mitigation planning and implementation. This capability includes engineers, planners, emergency managers, GIS analysts, building inspectors, grant writers, and floodplain managers. Small communities may rely on other government entities such as counties or special districts for resources. Based upon the specific expertise contained in each of these administrative and technical capabilities, they may be used to support mitigation activities.

Administrative and Technical Capability Assessment for the City of Las Vegas

ADMINISTRATION	Yes/No	Describe capability • Is coordination effective?
Mutual aid agreements	Yes	Nevada Emergency Management Assistance Compact
Planning Commission	Yes	Members appointed by City Council, monthly meetings open to public
TECHNICAL STAFF	**Yes/No**	• Is staff trained on hazards and mitigation?

ADMINISTRATION	Yes/No	Describe capability • Is coordination effective?
	FT/PT	• Is coordination between agencies and staff effective? • Have skills/expertise been used to assess/mitigate risk in the past?
Building Official	Yes	Full Time position; yes to all.
Community Planner	Yes	Full Time position; yes to all.
Emergency Manager	Yes	Full Time position; yes to all.
Engineer	Yes	Full Time position; yes to all.
Fire Chief	Yes	Full Time position; yes to all.
Floodplain Manager/Administrator	Yes	Full Time position; yes to all.
GIS/HAZUS Coordinator	Yes	Full Time position; yes to all.
Sheriff	Yes	Full Time position; yes to all.
Procurement Services Manager	Yes	Full Time position; yes to all.
How can capabilities be expanded and improved to reduce risk?		Additional training of staff in hazard mitigation and financial resources to pursue mitigation projects.

Financial Capabilities

The following table contains a list of administrative and financial capabilities available to the City of Las Vegas. Based upon procedures for each resource, these financial capabilities may be used to support mitigation activities.

Financial Capability Assessment for the City of Las Vegas

FINANCIAL	Yes/No	• Has the funding resource been used in past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities Grant (BRIC)	No	Some mitigation activities planned in the next 5 years are eligible under this grant program.
Hazard Mitigation Grant Program (HMPG)	Yes	HMPG-Post Fire FFY2020, planning grant in progress.
Pre-Disaster Mitigation grant program (PDM)	No	Have not used this funding source in at least 15 years.
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	No	Potential source for seismic mitigation activities.
Flood Mitigation Assistance grant program (FMA)	No	Not a direct recipient, CLV supports applications made by Regional Flood Control District
Water Preservation Funds (SNWA)	No	Southern Nevada will soon surpass the region's 2035 goal to reduce consumption through conservation to 199 GPCD, CLV participates in the SNWA conservation planning.
Wildfire Emergency and Mitigation Funds	No	City of Las Vegas is an urban environment and is generally not involved in wildfire mitigation.

FINANCIAL	Yes/No	• Has the funding resource been used in past and for what type of activities? • Could the resource be used to fund future mitigation actions?
(Nevada Division of Forestry)		
Capital improvements project funding	Yes	The Public Works Department manages all CIP funding on an annual basis. CIP may be used as a match source for PDM, HMPG or BRIC.
Community Development Block Grant	Yes	Most CDBG grants are used in support of low-income housing initiatives, may be used to support context-sensitive planning efforts.
Authority to levy taxes for specific purposes	No	The city is a political subdivision of the state and is not authorized to levy taxes.
Impact fees for new development	Yes	The city imposes fees for various development activities to support cost of government support services.
Incur debt through special tax bond	No	The city is a political subdivision of the state and is not authorized to levy taxes.
Incur debt through general obligation bonds	Yes	The city has utilized bonds for projects such as city hall, municipal court and the civic plaza.
How can capabilities be expanded and improved to reduce risk?		Utilize subject matter experts to identify and apply for FEMA program grants.

Education and Outreach Capabilities

The following table lists education and public outreach capabilities. These capabilities include programs such as fire safety programs, hazard awareness campaigns, public information or communications offices. Education and outreach capabilities can be used to inform the public on current and potential mitigation activities.

Education and Outreach Capability Assessment for the City of Las Vegas

PROGRAM / ORGANIZATION	Changes since 2018 Plan Update Yes or No	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
Jurisdiction (County/City/Tribe) Website and Social Media (PIO/PAO Programming	Yes	Yes	The city maintains a website and accounts with Facebook, Instagram, Twitter, and YouTube. The Office of Emergency Management maintains a Twitter handle, @clvalerts and manages a mass notification / IPAWS system countywide, as well as maintains the Southern Nevada Emergency Preparedness app. City libraries, law enforcement, and fire/rescue agencies also maintain social media accounts. These resources are regularly used to convey hazard mitigation and disaster-related information to the public, as well as develop awareness of in-person and online events. They can be used to support future mitigation activities.
Firewise Communities certification	N/A	N/A	The city is an urban environment and supports urban fire prevention programs. Firewise is designed for wildfire prevention and resistance.
Storm Ready certification	Yes	Yes	Storm Ready Certification issued through the National Weather Service is due for renewal.

PROGRAM / ORGANIZATION	Changes since 2018 Plan Update Yes or No	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
Citizen groups focused on emergency preparedness, environmental protection, etc.	Yes	Yes	CERT (Community Emergency Response Team), MRC (Medical Reserve Corps), ARES (Amateur Radio Emergency Services), American Red Cross, Faith Based organizations such as Latter-Day Saints support group, Salvation Army, Red Rock Search and Rescue, Fire Explorers and United Way of Southern Nevada. These organizations, along with state VOAD, provide First Responder Support and Emergency Management and EOC support to local communities and local government during times of disaster and preparedness training for local needs.
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)	Yes	Yes	The City of Las Vegas frequently addresses public information needs through a variety of mechanisms. The local government organizations utilize a well–developed and coordinated PIO group with partners from all levels of government including city, county departments. and federal and state offices. This is especially effective during times of disaster. City of Las Vegas Emergency Management utilizes public presentations and media outlets (e.g. radio, print) to provide public outreach on emergency preparedness. The City of Las Vegas government website is a primary tool for dissemination of public information.
Public-private partnership initiatives addressing disaster-related issues	Yes	Yes	Examples of organizations for this effort include VOAD (Volunteer Organizations Active in Disaster), LEPC (Local Emergency Planning Committee) for addressing hazardous materials issues. The city Office of Emergency Management established a Downtown Resort Emergency Management Working Group to address issues specific to the Fremont Street Experience corridor.
How can capabilities be expanded and improved to reduce risk?			Additional interaction with faith-based organizations outside of the VOAD structure to build community wide credibility for government announcements of emergency conditions.

Planning Integration, City of Las Vegas

Mitigation does not end at plan approval. Plan approval is only the beginning. The successful implementation of any number of mitigation activities and projects requires the coordination and collaboration of a number of local agencies, departments, and organizations. Each group has varying decision-making processes and authorities governing their actions. This plan, once approved, must be integrated into their decision-making processes as a tool for improving their respective resiliencies.

Clark County intends to incorporate this Clark County Multi-Jurisdictional Hazard Mitigation Plan (update) into other planning documents the County and its participating jurisdiction(s)' (which includes Clark County Unincorporated Area, cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, NV, and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) utilizes. Where applicable, portions of the previous MJHP (2012 and 2018) were considered for incorporation into other jurisdictions plans (i.e., participating cities and tribal government comprehensive/master plans) and programs. Also, portions of the previous MJHMP (2012 and 2018) in some form was incorporated into the Clark County Emergency Operations Plan (2019), and other existing or future public safety-related plans. This plan is not only useful for implementing mitigation activities and projects but also critical in creating development plans and capital improvement projects. The risk assessment in this plan can prevent unmanaged and dangerous development in identified hazard areas or other portions of the planning area that decrease a community's overall resiliency.

Mitigation Projects and Activities

The City of Las Vegas did not complete a mitigation project in the last MJHMP update (2018).

To support the planning area's mitigation goals, the Clark County MPSC identified 61 possible and unique mitigation projects and activities. Of these, 13 are from the City of Las Vegas as identified in the following table.

Mitigation & Projects Summary, City of Las Vegas	
Mitigation Project or Activity	**Hazard(s) Addressed**
Hazard Prevention Framework	All Hazards
Cooling Infrastructure Investment	Drought
Hazard Economic Recovery Framework	All Hazards
Update of RFCD Master Plan Improvements within the City	Flooding
Seasonal Monsoon Season Study	Flooding
Low Impact Development of Natural Drainage Techniques	Flooding; Subsidence & Fissures
Early Warning Notification Education Program	Flooding
Turf Limits Program	Drought, Climate Change
Critical Infrastructure Flood Risk Reduction (Bonnevile Stormwater)	Flood
Emergency Power (Shelter Generators)	Earthquake, Dam Failure, Flood, Climate Change
Aquifer Storage and Recovery (Water Use and Conservation)	Drought, Subsidence & Fissures
NIPP's Security and Resilience Challenge (Smart City)	Hazardous Materials, Terrorism
NIPP's Security and Resilience Challenge (Connected Corridors)	Hazardous Materials, Terrorism
Hazard Prevention Framework	All Hazards
Cooling Infrastructure Investment	Drought
Hazard Economic Recovery Framework	All Hazards

STAPLE+E Rankings, City of Las Vegas

STAPLE+E Rankings, City of Las Vegas																							
X = N/A - Even Impact	**+ = Positive Influence**											**- = Negative Influence**											
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribute to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Goals	Consistent with Federal Laws	
Hazard Prevention Framework	+	X	+	X	-	+	+	X	+	X	X	+	+	X	+	+	+	+	X	X	X	+	X	12
Cooling Infrastructure Investment	+	x	+	x	-	+	+	+	+	x	x	+	+	x	+	+	+	+	+	x	x	+	+	15
Hazard Economic Recovery Framework	+	+	+	+	x	+	+	+	x	x	x	+	+	x	+	x	+	+	-	-	-	+	+	14
Update of RFCD Master Plan Improvements within the City	+	x	+	+	x	x	x	+	+	x	+	+	+	-	+	+	+	+	+	x	x	x	x	13
Seasonal Monsoon Season Study	-	-	+	+	-	+	+	+	x	x	x	+	+	-	+	+	+	+	-	-	-	+	x	12

STAPLE+E Rankings, City of Las Vegas																								
Low Impact Development of Natural Drainage Techniques	+	x	+	+	x	+	+	+	x	x	x	+	+	+	+	+	+	+	+	x	x	+	+	16
Early Warning Notification Education Program	-	-	+	+	-	+	+	+	+	x	+	+	+	+	+	+	+	+	-	-	-	+	+	16
Turf Limits Program	-	-	+	+	-	+	+	+	+	x	x	+	+	+	+	x	+	+	+	+	X	X	+	15
Critical Infrastructure Flood Risk Reduction (Bonneville Stormwater)	-	-	+	+	-	+	+	+	+	x	+	+	+	-	+	x	+	+	+	X	+	+	+	16
Emergency Power (Shelter Generators)	-	-	+	-	-	+	+	+	+	x	+	+	+	-	+	x	+	+	X	X	X	+	+	13
Aquifer Storage and Recovery (Water Use and Conservation)	-	-	+	+	-	+	+	+	+	x	+	+	+	+	+	x	+	+	+	+	X	+	+	17
NIPP's Security and Resilience Challenge (Smart City)	-	-	+	+	-	+	+	+	+	x	+	+	+	+	+	x	+	+	-	-	-	+	+	15
NIPP's Security and Resilience Challenge (Connected Corridors)	-	-	+	+	-	+	+	+	+	x	+	+	+	+	+	x	+	+	-	-	-	+	+	15

Proposed and Carry-Over Mitigation Activities – City of Las Vegas

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Las Vegas 1	Update of RFCD Master Plan Improvements within the City	Construct the recommended improvements contained within the RFCD's Master Plan to eliminate as much of the FEMA designated flood zone within the City as possible, thereby protecting residents and property	Flooding	Las Vegas Public Works, RFCD	Medium (35.5)	New	$200M+	5+ years	CIP, General Fund, BRIC	Proposed project for the 2023 plan update.
Las Vegas 2	Critical Infrastructure Flood Risk Reduction (Bonnevile Stormwater)	Reinforce roads/bridges that are prone to repetitive flooding and/or flash flooding through protection activities, including elevating the roads/bridges and installing/widening culverts beneath the roads/bridges or upgrading storm drains. Bonneville Underpass is constructed below the groundwater table, so constant groundwater dewatering is required to keep the underpass dry. Groundwater is contaminated and requires treatment before discharge into storm drain. The project is ongoing since 1992. The maintenance of pumping station costs approximately $40,000 per year. **Project Update:** New pump and generator installation will start this year and will be	Flooding	Public Works/ City of Las Vegas	Medium (31)	Existing	replacement/ upgrade is approximately $7 million. The maintenance of pumping station will continue with approximate annual cost of $40,000 per year.	Ongoing, Continuous through the five-year plan cycle.	CIP, Clark County Regional Flood Control District Grant Programs	Carry-over project from the 2018 plan.

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		completed in approximately 2-year. The cost for this replacement/upgrade is approximately $7 million. The maintenance of pumping station will continue with approximate annual cost of $40,000 per year.								
Las Vegas 3	Cooling Infrastructure Investment	Prepare for long-term, seasonal hazards such as extreme heat by investing in cooling infrastructure and developing urban design standards that mitigate the urban heat island effect	Drought	Las Vegas Community Development; Las Vegas Public Works; Las Vegas Parks & Recreation	Medium (30)	New	$50M+	5+ years	CIP, BRIC	Proposed project for the 2023 plan update.
Las Vegas 4	NIPP's Security and Resilience Challenge (Smart City)	Strengthen the security and resilience of critical infrastructure through state-of-the-art, cost-effective technology, tools, processes, and methods as part of the 2017 National Infrastructure Protection Plan's (NIPP) Security and Resilience Challenge. The city is underway with a robust connected vehicle corridor deployment. To date, 14 traffic signals within the region have been instrumented with Dedicated Short-Range Communications (DSRC) radios. Our experience includes the installation, inspection, and	Hazardous Materials, Terrorism	Public Works, Innovation and Technology, Planning / City of Las Vegas	Medium (30)	Existing		1-2 year (2025)	CIP	Carry-over project from the 2018 plan.

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		integration of the data into our regional traffic system. The city is developing a network of connected corridors within our Innovation District for deployment of Connected Autonomous Vehicles (CAVS). The roadways include Main and Fourth streets, Stewart, Bonneville and Clark avenues and Casino Center Boulevard. The connected corridor project is underway and will install 24 additional DSRC radios in the downtown Innovation District again using our significant fiber optic investment. This project will provide a solid backbone for the safe assessment of CAVs, that use this area as a proving ground, and offers the capability of monitoring the performance of various technology deployments. **Project Update:** To be provided by the City of Las Vegas								
Las Vegas 5	NIPP's Security and Resilience Challenge (Connected Corridors)	Strengthen the security and resilience of critical infrastructure through state-of-the-art, cost-effective technology, tools, processes, and methods as part of the 2017 National Infrastructure Protection Plan's	Hazardous Materials, Terrorism	Public Works, Innovation and Technology, Planning / City of Las Vegas	Medium (30)	Existing			CIP	Carry-over project from the 2018 plan.

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		(NIPP) Security and Resilience Challenge. The city is underway with a robust connected vehicle corridor deployment. To date, 14 traffic signals within the region have been instrumented with Dedicated Short-Range Communications (DSRC) radios. Our experience includes the installation, inspection, and integration of the data into our regional traffic system. The city is developing a network of connected corridors within our Innovation District for deployment of Connected Autonomous Vehicles (CAVS). The roadways include Main and Fourth streets, Stewart, Bonneville and Clark avenues and Casino Center Boulevard. The connected corridor project is underway and will install 24 additional DSRC radios in the downtown Innovation District again using our significant fiber optic investment. This project will provide a solid backbone for the safe assessment of CAVs, that use this area as a proving ground, and offers the capability of monitoring the performance of								

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		various technology deployments. **Project Update:** To be provided by the City of Las Vegas								
Las Vegas 6	Low Impact Development of Natural Drainage Techniques	Increase the number of multi-use facilities and utilize low-impact development and other natural drainage techniques	Flooding; Subsidence & Fissures	Las Vegas Parks & Recreation; Las Vegas Public Works	Medium (28.5)	New	$1M	5+years	CIP, General Fund, BRIC	Proposed project for the 2023 plan update.
Las Vegas 7	Aquifer Storage and Recovery (Water Use and Conservation)	Maximize the use of recycled water in areas where return flow to the Colorado River system is not practical, by creating aquifer storage and recovery (ASR). Source waters for injection into ASR wells range from potable water, reclaimed water, partially treated surface water, and raw groundwater. Explore use of Aquifer Recharge and Recovery (ARAR), where water is recharged to an aquifer either under gravity or injected for the purpose of recharging the aquifer. The primary source of water for the Las Vegas region is the Colorado River. The city plays a crucial role in the conservation and management of the water supply for its residents and businesses by	Drought, Subsidence & Fissures	Parks and Rec, Planning / City of Las Vegas	Medium (27)	Existing			CIP	Carry-over project from the 2018 plan.

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		supporting regional management efforts by the Southern Nevada Water Authority. Since 2008, the city has reduced its water consumption from 1.47 billion gallons to 1.18 billion gallons in 2016. These savings were achieved through the replacement of more than 40-acres of grass with synthetic turf at city sports fields and parks. City landscaping utilizes drought tolerant plants and public art. More than 75 million gallons of water per day have been recycled at the city's wastewater treatment plants and used at golf courses around the valley or returned to Lake Mead. In the community, water use has declined from approximately 350 gallons per person per day (GPCD) in 1990 to less than 220 GPCD today. Southern Nevada will soon surpass the region's 2035 goal to reduce consumption through conservation to 199 GPCD. Overall Colorado River water consumption has decreased 40 billion gallons despite an increase of 500,000 residents over the last decade. **Project Update:** To be provided by the City								

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		of Las Vegas								
Las Vegas 8	Emergency Power (Shelter Generators)	Provide additional emergency power, such as a generator equipment, for new and existing critical facilities to operate continuously but cannot do so for long durations of power outage. Two shelter locations have been identified with a need for back-up power improvements. At least two new trailer mounted diesel generator sets with quick connection cables and temporary fencing will be required. **Project Update:** To be provided by the City of Las Vegas	Earthquake, Dam Failure, Flood, Climate Change	Building and Safety, Community Services, Facilities, Emergency Management / City of Las Vegas	Low (24.25)	Existing		1-3 years	EMPG; CIP	Carry-over project from the 2018 plan.
Las Vegas 9	Early Warning Notification Education Program	Continue coordinating with the RFCD and National Weather Service on early warning notifications and education on the risks of flooding	Flooding	Las Vegas Emergency Management; RFCD; NWS; Las Vegas Communications	Low (23.5)	New	$50,000	5+years	General Fund, EMPG	Proposed project for the 2023 plan update.
Las Vegas 10	Turf Limits	Turf limits restrict or prohibit the amount of grass to be planted at new properties. The restrictions prohibiting types of grass that can be	Drought; Climate Change	Las Vegas Parks & Recreation, Las Vegas Planning	Low (21.5)	Existing				Carry-over project from the 2018 plan.

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
		planted apply to all property owners. Project Update: To be provided by the City of Las Vegas								
Las Vegas 11	Hazard Economic Recovery Framework	To lessen economic severity of all types of hazards, develop a comprehensive economic recovery framework that's context sensitive and adaptable to a variety of hazard scenarios	All Hazards	Las Vegas Emergency Management, Las Vegas Economic & Urban Development, Las. Vegas Community Development and Las Vegas	Low (19.77)	New	$200,000	5 years	EPMG, PDM, General Fund	Proposed project for the 2023 plan update.
Las Vegas 12	Seasonal Monsoon Season Study	Determine the effect an increasingly active monsoonal season may have on storm water infrastructure	Flooding	Las Vegas Public Works, National Weather Service	Low (19.5)	New	$100,000	2-4 years	General Fund	Proposed project for the 2023 plan update.
Las Vegas 13	Hazard Prevention Framework	Develop hazard prevention, mitigation, vulnerability, and recovery frameworks that apply to hazards	All Hazards	Las Vegas Emergency Management, Las Vegas Economic & Urban Development, Las. Vegas Community Development and Las Vegas Public Works	Low (17.77)	New	$200,000	5 years	EPMG, PDM, General Fund	Proposed project for the 2023 plan update.

Deferred Projects List from Clark County MJHMP (2018) for the City of Las Vegas

The City of Las Vegas did not have any deferred mitigation projects.

Mitigation Prioritization Tables for the City of Las Vegas

		Mitigation Project Prioritization, City of Las Vegas																
Mitigation Project or Activity	STAPLE+ E	MPE	Hazards													Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Weather	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Hazard Prevention Framework	17.77	0.5	15	**5**	**10**	**10**	**15**	**15**	**10**	**15**	**15**	**10**	**5**	**15**	**15**	150	11.538 4615	Low
Cooling Infrastructure Investment	30	1.5			**10**											10	10	Medium
Hazard Economic Recovery Framework	19.77	**0.5**	15	**5**	**10**	**10**	**15**	**15**	**10**	**15**	**15**	**10**	**5**	**15**	**15**	150	11.36	Low
Update of RFCD Master Plan Improvements within the City	35.5	**1.5**						**15**								15	15	Medium
Seasonal Monsoon Season Study	19.5	**0.5**						**15**								15	15	Low

		Mitigation Project Prioritization, City of Las Vegas																
Low Impact Development of Natural Drainage Techniques	28.5	**1**						**15**	**10**							25	12.5	Medium
Early Warning Notification Education Program	23.5	**0.5**						**15**								15	15	Low
Turf Limits Program	21.25	**0.5**	15		**10**											25	15	Low
Critical Infrastructure Flood Risk Reduction (Bonnevile Stormwater)	31	**1**						**15**								15	15	Medium
Aquifer Storage and Recovery (Water Use and Conservation)	27	**1**			**10**				**10**							20	10	Medium
NIPP's Security and Resilience Challenge (Smart City)	30	**1**												**15**	**15**	30	15	Medium
NIPP's Security and Resilience Challenge (Connected Corridors)	30	**1**												**15**	**15**	30	15	Medium
Aquifer Storage and Recovery (Water Use and Conservation)	27	**1**			**10**				**10**							20	10	Medium

City of Mesquite

Planning Area

Since incorporation Mesquite has experienced rapid growth, at one time being named “The fastest growing city in America” for its size. The population stands at 25,000. Per its website, since its incorporation, with this growth has come an increase of businesses and services never before enjoyed by residents of the area. A new hospital, medical and dental clinics brought care that had only been possible by traveling outside the valley. Stores, restaurants, movie theaters, art galleries, golf courses, hotels and casinos are providing employment and services for the lifestyle that has become a trademark of Mesquite. The construction of a new high school, a new middle school and two new elementary schools reflect the increase of young families in the population. Housing developments are creating beautiful neighborhoods for residents of all ages. Access to newly opened land west of Mesquite has been made possible by the addition of a new I-15 interchange encouraging the construction of new light industry. Mesquite has long been a stop on a busy western highway but now it is a destination!

Figure 128: City of Mesquite Area Map

Source: City of Mesquite, Website

Demographics and Hazard Vulnerabilities

Demographic data is crucial to effective hazard mitigation planning. This is especially true for the numbers associated with population, housing units, and building permits as they, over time, can increase or decrease a planning area's vulnerabilities to any/all identified natural hazards. It is important to note, however, that demographic data can fluctuate or even lag in the short term, i.e., one to two years. While these numbers tend to self-correct over time, temporary decreases or increases in population and/or the number of housing units may occur. In these instances, it is best to consider demographic data from longer periods, such as ten (10) to 20 years, for mitigation planning purposes.

As for the City of Mesquite, the U.S. Census Bureau determined its population to be 9,389 in 2000. That number increased by 62.7% to 15,276 in 2010. In 2020, the U.S. Census Bureau determined the City of Mesquite population to be 20,471, an increase of 34%.

Similarly, the U.S. Census Bureau determined the number of housing units in the City of Mesquite to be 8,911 in 2010 but increased its estimate by 25.66% to 11,198 in 2020.

The following table provides a visual representation of the City of Mesquite demographic information (as previously described) and how it specifically relates to hazard probability and the planning area's vulnerabilities to all identified natural hazards.

Demographics & Vulnerability, City of Mesquite								
Population (2000 U.S. Census)	Population 2010 U.S. Census	Population (2020 U.S. Census)	% of Population Change (2010-2020)	# of Housing Units (2020 Census)	% of Housing Units (2010-2020)	Identified Hazards	CPRI Results	Probability of Hazards (From Risk Summary)
9,389	15,276	20,471	34%	11,198	25.66%	Climate Change	H (3.25)	Highly Likely
						Drought	H (3.25)	Likely
						Extreme/ Excessive Heat	H (3.25)	Highly Likely
						Fissures & Subsidence	M (2.5)	Occasional
						Flood, Landslides & Debris Flow, Flooding	H (3.15)	Highly Likely
						Geohazards-Earthquake and Seismic Hazards	H (3.15)	Likely
						Severe Weather (including Thunderstorms, Hail, Lightning, Wind and Tornadoes)	H (3.15)	Highly Likely
						Fire, Wildland Urban Interface (Wildfire)	M (2.3)	Highly Likely
						Hazardous Materials	M (2.85)	Highly Likely
						Infrastructure, Dam Failure	H (3.1)	Occasional
						Infestation	M (2.05)	Likely
						Infectious Disease	H (3.1)	Occasional
						Terrorism	M (2.8)	Highly Likely

Data Source: U.S. Census Bureau, Nevada: 2010 Population and Housing Unit Count; and U.S. Census Bureau, Profile: data.census.gov; Percent of Population Change Calculation Change: https://www.omnicalculator.com/math/percentage-change#how-to-calculate-the-percent-change

Critical Facilities Information

As previously stated in this MJHMP Update, certain facilities have a net positive value on the community, i.e., they contribute to the public good by facilitating the basic functions of society. These facilities maintain order, public health, education, and help the local economy function. Additionally, there are facilities and infrastructure integral to disaster response and recovery operations. Conversely, some of these are of extreme importance due to the negative externalities created when impacted by a disaster. What fits these definitions varies slightly from community to community, but the definitions remain as a guideline for identifying critical infrastructure and facilities.

The following table and map summarize the identified critical facilities and infrastructure for the City of Mesquite. A complete list can be found in Appendix D of this plan update.

City of Mesquite - Critical Facilities Listing																				
	Casinos/Resorts/ Hotels	Child Care	City Hall	Communications	Community Colleges	Correctional Facilities	Court House	Fire Stations	Government Offices	Hazardous Materials	Hospitals	Native Reservations	Natural Gas	Places of Worship	Police	Schools	Solar	Stadiums	Transportation	University	Water/Sewer
City of Mesquite	3	2	1	1	1	1	1	3	22	-	2	-	-	3	2	4	-	-	2	-	55

National Flood Insurance Program (NFIP) and Community Rating System (CRS) Summary

According to FEMA, the National Flood Insurance Program (NFIP) is a federal insurance program that enables property owners in member communities to purchase flood insurance. This insurance is only made available to municipalities that adopt and enforce a floodplain management ordinance. The fundamental goal of NFIP floodplain management requirements is to reduce the threat to lives and the potential for property damage in flood-prone areas. Each municipality that participates in the NFIP has a Flood Insurance Rate Map (FIRM) that is issued by FEMA. This document maps out flood hazard areas in the municipality.

Like several other jurisdictions in Clark County, the City of Mesquite participates in the NFIP. However, it is not listed as an eligible community of the Community Rating System (CRS), https://www.fema.gov/cis/NV.html, as of February 2023. CRS is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirement of NFIP.

The following tables contain NFIP & CRS Community Status information specific to the City of Mesquite.

NFIP & CRS Community Status, City of Mesquite					
CID	**CRS Entry Date**	**Initial FHBM Identified**	**Initial Firm Identified**	**Current Effective Map Date**	**Registration/ Entry Date**
350035#	10/01/202	11/01/1985	09/28/1990	05/01/2007	09/28/1990

Data Source: FEMA - Nevada National Flood Insurance Program Community Status Book (https://www.fema.gov/cis/NV.html), February 2023

Building Codes Ordinance for Mesquite

City Code Title 8 - Flood Control Ordinance. The City of Mesquite also follow the Clark County Flood Control Districts Uniform Regulation for Control Drainage effective September 30, 2022. Also, the following ordinances have passed regarding Flood Control and Draining within the City of Mesquite:

- **City Ordinance 160:** an ordinance of the city of Mesquite, Nevada, amending the Mesquite Municipal Code, Title 8, Chapter 10, Section 10-080 (A) to conform to action of City Council and Section 10-040(A) deleting typographical errors in the original ordinance not consistent with the adopted draining regulations and all matters relating thereto.
- **City Ordinance #40:** An ordinance amending ordinance #39, dated jus, Mesquite Municipal Code Chapter 3, Title 1, Enacting Uniform Regulations for the control of drainage, wording in Section 10 regarding flood hazard reduction, defining and identifying floodways, and certain other word changes throughout, and any other matters properly related thereto.
- **City Ordinance #62:** An ordinance of the City of Mesquite, repealing Ordinance #39 Uniform Regulations for control of drainage and all amendments thereto, repealing Mesquite Municipal Code Title 3 in its entirety, and adopting the following set of Uniform Regulations for the Control of Drainage as mandated by NRS 543.595(1), governing the subdivision of land, parcel maps, division of land and any new development and/or substantial improvement of land in order to be eligible to participate in the regional fund for control of floods, and any other matters relating thereto.
- **City Ordinance #292:** An ordinance amending Mesquite Municipal code, Title 8, Chapter 1, Section 9 there of entitled “definitions” and specifically amending the revision of the definitions

entitled “Base Flood Elevation”; amending section 10.020 thereof entitled “areas of Special Flood Hazard” and specifically amending the subsections thereof entitled “Floodway Fringe: and “Areas of Shallow Flooding”; amending section 10.100 thereof entitled “Hazard Mitigation” and specifically amending the subsections thereof entitled “General Standards” (Elevation and Floodproofing) and “Specific Standards” (Residential Construction, Non-Residential Construction and Manufactured Homes); and other matters properly related thereto.

- **City Ordinance #273:** An ordinance amending Mesquite Municipal Code, Title 8, Chapter 1, Part 1, Sub Part B, Section 10.020, entitled “Areas of Special Flood Hazard’” and amending Mesquite Municipal Code, Title 9, Chapter 7, Article K, Section 9, Subsection K93) entitled “Duties of Operator” and Subsection M entitled “Prohibited Activities;” incorporating conditions related to recreational vehicles required to be adopted by the Federal Emergency Management Agency (FEMA).
- **City Ordinance #472:** An ordinance of the City Council of the City of Mesquite, Nevada, amending Title 8 of the Mesquite Municipal Code, entitled “Drainage Control Regulation: by amending Section 8: “Definitions;” Section 10.020: Areas of Special Flood Hazard;” Section 20: Effective Date”; Section 32: “Definitions”; Section 34: Permit Requirements”; and other matters properly related thereto.
- **City Ordinance #510:** An ordinance amending City of Mesquite Code, Title 8 Flood Control Ordinance, replacing section 8-1-Part II: Excavation and Grading with a New Section 8-2 Excavation and Grading Standards, and to provide for other matters properly related thereto.

For more information related to floodplain management for Mesquite, NV, contact Travis Anderson at tanderson@mesquitenv.gov.

NFIP Policies, Claims & Payments, City of Mesquite					
Jurisdiction	**Comm ID**	**# of Policies**	**Total Coverage**	**Total Written Premium + FPF**	**Floodplain Management Role**
Mesquite	320035#	34	$30,101,000	$19,811	Provides in-house floodplain management. Participant of the CCFCD.

***Notes:** *Indicates CRS participating jurisdiction.*
Data Dictionary as mentioned in the NFIP Policy Information by State and Community document:
Community ID: The 6-character community ID in which the policy resides.
# of Policies: The number of policies in force for a given state and combination of attributes.
Total Coverage: The total building and contents coverage for the policies in force.
Total Written Premium + FPF: This represents the sum of the premium and the FPF (federal policy fee) for the policies in force.

Data Sources: Participation – FEMA’s Community Status Book Report, Nevada, 03/01/2023. Policy statistics (current as of 03/01/2023) https://www.fema.gov/cis/NV.html
NFIP Policy Information by State (Policy statistics current as of 1/31/2023) https://nfipservices.floodsmart.gov/sites/default/files/nfip_policy-information-by-state_20230131.xlsx

Repetitive Loss (RL) Properties

As of December 5, 2022, there are Repetitive Loss (RL) properties, and subsequently, NFIP-insured properties within Clark County. The City of Mesquite did not have any recorded RL properties.

Mitigation Strategy and Capabilities

Capabilities Assessment, City of Mesquite

As with any jurisdiction, there are numerous stakeholders involved in developing a mitigation strategy. Each type of stakeholder provides a set of capabilities, in some cases broad and in others narrow, by which they can help increase the planning area's resiliency. The broadest form of mitigation capabilities comes from counties, such as Clark County, and municipal governments, such as the City of Mesquite. Their inherent legal authority allows them to institute the greatest regulatory and developmental changes.

The primary capabilities of Clark County and the City of Mesquite are 1) institutional, 2) political, 3) technical, and 4) fiscal. Representing the City of Mesquite. A capability assessment was conducted of the MJHMP participating jurisdictions' authorities, policies, programs, and resources. From the assessment, goals and mitigation actions were developed. Capabilities for the City of Mesquite are described in detail below. The Yes/No column denotes if a particular jurisdiction has that specific capability.

Planning and Regulatory Capabilities

These include local ordinances, policies and laws to manage growth and development. Examples include land use plans, capital improvement plans, transportation plans, emergency preparedness and response plans, building codes and zoning ordinances. Based upon the specific authorities contained in each of these planning and regulatory capabilities, they may be used to support mitigation activities.

Planning and Regulatory Capability Assessment for the City of Mesquite

PLANS	Yes/No	• Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Community Wildfire Protection Plan	No	The city follows under the County and State mitigation work related to the river that are related to wildland fire risk
Comprehensive/Master Plan	N/A	Per the last MJHMP (2018), the City of Mesquite indicated that the State of Nevada requires jurisdictions to address seismic activity. Mesquite is working to confirm if have an updated copy of this plan for MJHMP record
Continuity of Operations Plan	Yes	Yes, updated in 2022
Capital Improvement Plan	Yes	Yes, updated October 2022
Economic Development Plan	Yes	Yes, updated October 2022
Emergency Operations Plan	Yes	Yes, and EOP was reviewed and updated January 2023 to meet state of NV compliance
Stormwater Management Plan	Yes	Yes, updated October 2022
Transportation Plan	Yes	Yes, updated October 2022
Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	• What type of codes? • Are codes adequately enforced?
Building Codes	Yes	The IBC 2018 Code, however the City will be working to adopt 2004 IBC Code Suite. These codes are adequately enforced. More information for the City of Mesquite Building Codes can be found here.
Site plan review requirements	Yes	Yes, the City Building Inspector completed site plan review related to flooding and earthquake and the City Fire Inspector completes review for fire hazards.
Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses..		
LAND USE PLANNING & ORDINANCES	**Yes/No**	• Is the ordinance effective for reducing hazard impacts? • Is the ordinance adequately administered and enforced?
Floodplain ordinance	Yes	Yes, updated October 2022. Title – Flood Control District Ordinance can be found online here.
Subdivision ordinance	Yes	Yes, updated October 2022, Chapter 6 Subdivision Regulations can be found online here.
Zoning ordinance	Yes	Yes, updated October 2022, Chapter 7 – Zoning Districts Ordinance can be found online here.
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		

Administrative and Technical Capabilities

These capabilities include community (public and private) staff and their skills and tools which can be used for mitigation planning and implementation. This capability includes engineers, planners, emergency managers, GIS analysts, building inspectors, grant writers, and floodplain managers. Small communities may rely on other government entities such as counties or special districts for resources. Based upon the specific expertise contained in each of these administrative and technical capabilities, they may be used to support mitigation activities.

Administrative and Technical Capability Assessment for the City of Mesquite

ADMINISTRATION	**Yes/No**	**Describe capability** • Is coordination effective?
Mutual aid agreements	Yes	Yes, the City with Littlefield Beaver Dam Fire Dept (AZ), Clark County Station 71 in Bunkerville, and Lincoln County, NV for fire/rescue efforts. The City is written into the HAZMAT response plan for the County and will come into further MAA beginning in 2024.
Planning Commission	Yes	They are effective in communication with the City Council.
TECHNICAL STAFF	**Yes/No FT/PT**	• Is staff trained on hazards and mitigation? • Is coordination between agencies and staff effective? • Have skills/expertise been used to assess/mitigate risk in the past?
Building Official	Yes	Yes, to all.
Community Planner	Yes	Yes, to all.
Emergency Manager	Yes	Yes, to all. The Fire Chief also serves as the Emergency Manager for the City.
Engineer	Yes	Yes, to all.
Fire Chief	Yes,	Yes, to all. The Fire Chief also serves as the Emergency Manager for the City.
Floodplain Manager/Administrator	Yes	Ask Travis
GIS/HAZUS Coordinator	Yes	Yes, to all.
Sheriff	Yes	Yes, to all.
Procurement Services Manager	Yes	Yes, to all.
How can capabilities be expanded and improved to reduce risk?		By continuing to utilize and seek improved methods for including the necessary technical and planning staff in the development and updates of emergency operations plans, financial planning and mitigation planning efforts. An important component is the use of trained grant writers with the knowledge and skill sets to research and apply for federal funding opportunities.

Financial Capabilities

The following table contains a list of administrative and financial capabilities available to the City of Mesquite. Based upon procedures for each resource, these financial capabilities may be used to support mitigation activities.

Financial Capability Assessment for the City of Mesquite

FINANCIAL	Yes/No	• Has the funding resource been used in past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities Grant (BRIC)	NA	The City has not utilized this funding in the past. It is unknown if it could be a resource the city could utilize to fund mitigation actions.
Hazard Mitigation Grant Program (HMPG)	Yes	
Pre-Disaster Mitigation grant program (PDM)	Yes	
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	Yes	Project Specific
Flood Mitigation Assistance grant program (FMA)	Yes	Yes, it has been used in the past. Unknown if the resource could be used to fund future mitigation actions since the Flood Control District controls the resource funding
Water Preservation Funds (SWNA)	Yes	Project Specific
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)	Yes	Project specific – the City receives RFPs for the NV Division of Forestry to apply to secure funds for related projects
Capital improvements project funding	No	
Community Development Block Grant	Yes	Yes, as mentioned in the previous HMP (2018), 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. Grant award based on specific projects as they are identified.
Authority to levy taxes for specific purposes	Yes	Yes, it is allowable to use. Ability to use as a resource but has not been used yet.
Impact fees for new development	Yes	Yes, this has been used in the past, unknown at this time type of activities. Could be used in the future to fund mitigation activities
Incur debt through special tax bond	Yes	Yes, this has been used in the past, unknown at this time type of activities. Could be used in the future to fund mitigation activities
Incur debt through general obligation bonds	Yes	Yes, this has been used in the past, unknown at this time type of activities. Could be used in the future to fund mitigation activities
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.

Education and Outreach Capabilities

The following table lists education and public outreach capabilities. These capabilities include programs such as fire safety programs, hazard awareness campaigns, public information or communications offices. Education and outreach capabilities can be used to inform the public on current and potential mitigation activities.

Education and Outreach Capability Assessment for the City of Mesquite

PROGRAM / ORGANIZATION	Changes since 2018 Plan Update Yes or No	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
Jurisdiction (County/City/Tribe) Website and Social Media (PIO/PAO Programming		Yes	The County maintains a website and accounts with Facebook and Twitter. County libraries, law enforcement, and fire/rescue agencies also maintain social media accounts. These resources are regularly used to convey hazard mitigation and disaster-related information to the public, as well as develop awareness of in-person and online events. They can be used to support future mitigation activities.
Firewise Communities certification			
Storm Ready certification		Yes	The County Storm Ready Certification issued through the National Weather Service is current and due for renewal in July 2021 (i.e. applies to all of the County). The City fall under the County Certification
Citizen groups focused on emergency preparedness, environmental protection, etc.		Yes	CERT (Community Emergency Response Team), ARIS, and Volunteer police. These organizations provide First Responder Support and Emergency Management and EOC support to local communities and local government during times of disaster and preparedness training for local needs.
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)		Yes No (for water use)	The City frequently addresses public information needs through a variety of mechanisms. The local government organizations utilize a well–developed and coordinated PIO group with partners from all levels of government including city, county departments. and federal and state offices. This is especially effective during times of disaster. City of Mesquite Emergency Management utilizes public presentations and media outlets (e.g. radio, print) to provide public outreach on emergency preparedness. The City teaches the NFPA messaging to school and participates in Safety Rodeo events as community outreach
Public-private partnership initiatives addressing disaster-related issues		Yes	Examples of organizations for this effort include Mesquite Emergency Planning Committee meets twice a year and the faith based meets once a year for addressing all hazard events in the City as well as the City has a seat on the County LEPC.
How can capabilities be expanded and improved to reduce risk?			This can be accomplished by including the organizations in our public outreach, planning, training and overall preparedness efforts and real time events.

Planning Integration, City of Mesquite

Mitigation does not end at plan approval. Plan approval is only the beginning. The successful implementation of any number of mitigation activities and projects requires the coordination and collaboration of a number of local agencies, departments, and organizations. Each group has varying decision-making processes and authorities governing their actions. This plan, once approved, must be integrated into their decision-making processes as a tool for improving their respective resiliencies.

Clark County intends to incorporate this Clark County Multi-Jurisdictional Hazard Mitigation Plan (update) into other planning documents the County and its participating jurisdiction(s)' (which includes Clark County Unincorporated Area, cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, NV, and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) utilizes. Where applicable, portions of the previous MJHP (2012 and 2018) were considered for incorporation into other jurisdictions plans (i.e., participating cities and tribal government comprehensive/master plans) and programs. Also, portions of the previous MJHMP (2012 and 2018) in some form was incorporated into the Clark County Emergency Operations Plan (2019), and other existing or future public safety-related plans. This plan is not only useful for implementing mitigation activities and projects but also critical in creating development plans and capital improvement projects. The risk assessment in this plan can prevent unmanaged and dangerous development in identified hazard areas or other portions of the planning area that decrease a community's overall resiliency.

Mitigation Projects and Activities

The City of Mesquite did complete a mitigation project in the last MJHMP update (2018).

Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Structural Emphasis (in 2018 MHJMP)	Cost Estimate	Estimated Timeline	Potential Funding Source	Status
Emergency Power	Provide additional emergency power, such as a generator equipment, for new and existing critical facilities to operate continuously but cannot do so for long durations of power outage. Generator power needed a primary shelter (City of Mesquite Fire & Rescue)	Earthquake, Flood, Climate Change, Wildfire	City of Mesquite Fire and Rescue	New/Proposed	$280,000	1-5 years	FEMA Grant (PDM)	Completed
Mesquite Town Wash, Abbott Wash	Assessment of wash, inspection, cleaning and reshaping, vegetation control, species survey and removal, erosion control	Flood	City of Mesquite Public Works	Existing	$300,000	Ongoing	City Budget, FDA, NDA	Completed

To support the planning area's mitigation goals, the Clark County MPSC identified 61 possible and unique mitigation projects and activities. Of these, six are from the City of Mesquite as identified in the following table.

Mitigation & Projects Summary, City of Mesquite	
Mitigation Project or Activity	**Hazard(s) Addressed**
Damage Assessment Forms for Flooding and Earthquake	Earthquake, Flood, Climate Change
Flooding-Levy Build Up	Flood
Senior Center Backup Power Supply	All Hazards
Recreation Center Backup Power Supply	All Hazards
Drought-Water Conservation Planning	Drought, Climate Change

STAPLE+E Rankings, City of Mesquite

STAPLE+E Rankings, City of Mesquite																							
X = N/A - Even Impact	**+ = Positive Influence**											**- = Negative Influence**											
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribute to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Goals	Consistent with Federal Laws	
Damage Assessment Forms for Flooding and Earthquake	x	-	+	x	-	x	-	x	+	+	x	+	+	x	+	+	x	+	+	x	x	+	+	11
Flooding-Levy Build Up	x	+	+	+	x	x	+	+	+	+	x	+	+	x	+	+	-	+	-	x	x	+	+	14
Senior Center Backup Power Supply	+	+	+	x	-	+	-	+	+	+	x	+	+	x	+	+	-	+	-	x	x	+	+	14
Recreation Center Backup Power Supply	+	+	+	x	-	+	-	+	+	+	x	+	+	x	+	+	-	+	-	x	x	+	+	14
Drought-Water Conservation Planning	x	-	+	x	-	+	+	x	+	+	x	+	+	x	+	+	+	+	+	x	x	+	+	14
Channel, Pulsipher Wash Channel"	+	+	+	+	-	x	+	+	+	+	x	+	+	x	+	+	+	-	+	x	x	+	+	16

STAPLE+E Rankings, City of Mesquite																							
Town Wash Detention Basin, Abbott Wash Detention Basin, Pulsipher Wash Detention Basin	+	+	+	+	-	x	+	+	+	+	x	+	+	x	+	+	+	-	+	x	x	+	+	16

Proposed and Carry-Over Mitigation Activities – City of Mesquite

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Mesquite 1	Town Wash Detention Basin, Abbott Wash Detention Basin, Pulsipher Wash Detention Basin	Assessment of basin, inspection, cleaning and reshaping, vegetation control, species survey and removal, erosion control **Project Update:** This project is being carried over to this plan update because it is still in process and is 80% complete.	Flood	City of Mesquite Public Works	Medium (38.5)	Existing	$500,000	Ongoing, Continuous through the five-year plan cycle.	City Budget, FDA, NDR	Carry-over project from the 2018 plan
Mesquite 2	Flooding-Levy Build Up	Build up the Levy of the Virgin River to ensure homes, building and resources are protected during floods.	Flood	City of Mesquite Public Works	Medium (30.3636365)	New	$20 million	5 years	Regional Flood Control District	Proposed Project for the 2023 plan update.
Mesquite 3	Damage Assessment Forms for Flooding and Earthquake	Provide training for building inspector to properly perform building assessment after earthquakes or floods	Earthquake, Flood, Climate Change	City of Mesquite Developmental Services and Emergency Management	Medium (26)	New	$10,000	1-2 years	Mesquite General Fund Federal Funds	Proposed Project for the 2023 plan update.

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Mesquite 4	Recreation Center Backup Power Supply	Provide backup power supply to the Recreation Center as the identified shelter facility to operate independently.	All Hazards	City of Mesquite Public Works	Medium (25.54)	New	$200,000	1-2 Years	ARPA	Proposed Project for the 2023 plan update.
Mesquite 5	Senior Center Backup Power Supply	Provide backup power supply to the Senior Center as the identified shelter facility to operate independently.	All Hazards	City of Mesquite Public Works	Medium (25.54)	New	$100,000	1 Year	ARPA	Proposed Project for the 2023 plan update.
Mesquite 6	Drought-Water Conservation Planning	Develop and implement a city education program, focusing on resilience and drought conservation topics. Community members will be more prepared for climate hazards and can learn how to practice drought conservation sustainable planning	Drought, climate control	Virgin Valley Water District	Low (21.5)	New	$250,000	Ongoing, Continuous through the five-year plan cycle.	Virgin Valley Water District (VVWD)	Proposed Project for the 2023 plan update.

Deferred Projects List from Clark County MJHMP (2018) for the City of Mesquite

The City of Mesquite did not have any deferred projects.

Mitigation Prioritization Tables for the City of Mesquite

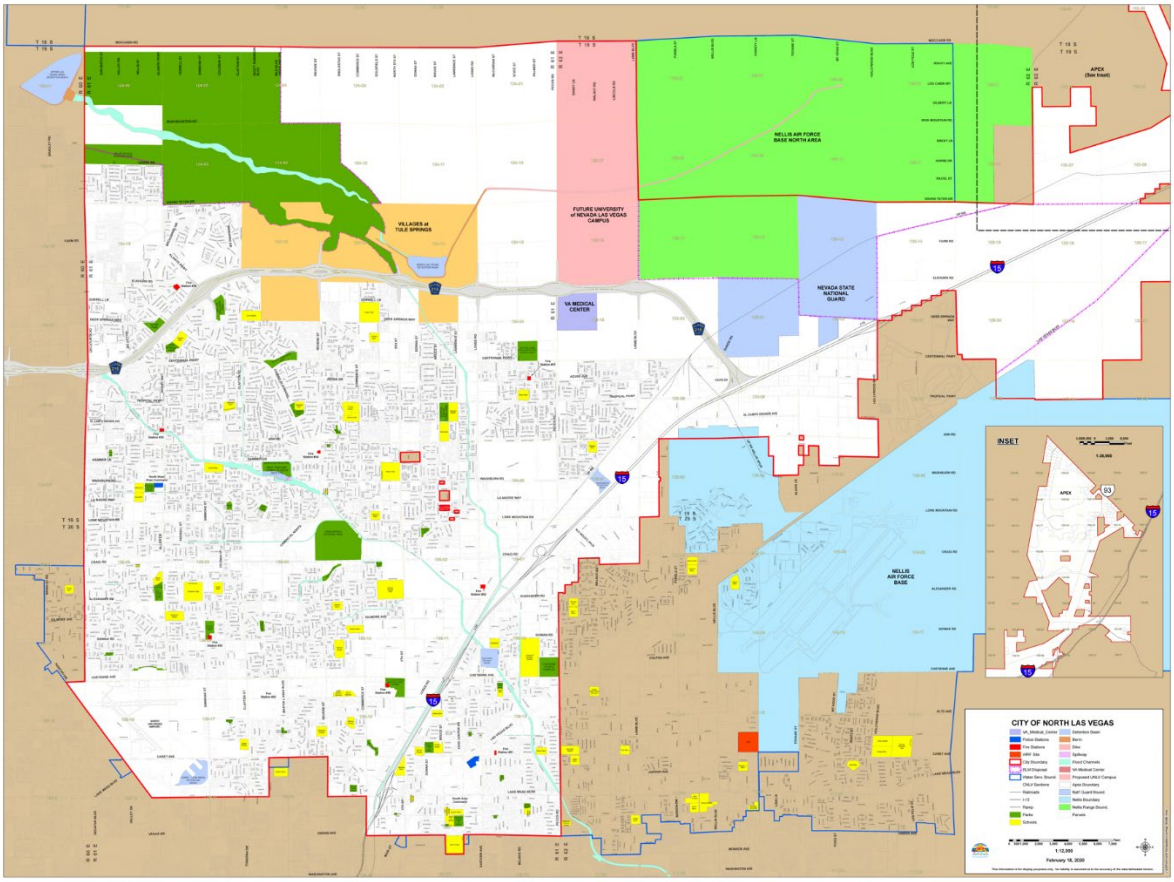
Mitigation Project Prioritization, City of Mesquite																		
Mitigation Project or Activity	STAPLE+ E	MPE	Hazards													Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Weather	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Damage Assessment Forms for Flooding and Earthquake	26	1	15			10		15								40	13.333 33333	Medium
Flooding-Levy Build Up	30.3636365	1.5						15								15	15	Medium
Senior Center Backup Power Supply	25.54	1	15	5	10	10	15	15	5	15	15	10	5	15	15	150	11.538 46154	Medium
Recreation Center Backup Power Supply	25.54	1	15	5	10	10	15	15	5	15	15	10	5	15	15	150	11.538 46154	Medium
Drought-Water Conservation Planning	21.5	0.5	15			10										25	12.5	Low
Mesquite Town Wash, Abbott Wash Channel, Pulsipher Wash Channel	38.5	1.5						15								15	15	Medium

City of North Las Vegas

Planning Area

The City of North Las Vegas has become one of the fastest growing cities within the State of Nevada. As indicated on its website, https://www.cityofnorthlasvegas.com/our-city/about-north-las-vegas, North Las Vegas is a premier place to live, work and play, the City of North Las Vegas leads Southern Nevada in both new home construction and economic development. Our fast-and-faster, business-friendly approach has made the City a top destination nationally for development opportunities. The City of North Las Vegas has become a hub for new job creation and economic diversification, attracting multiple fortune 500 and global brands, including Amazon, Sephora, Ball Corp., Crocs Inc. and Kroger. This success has enabled the City to reinvest in the community with expanded police and fire service, new parks, roads and amenities, and additional programming to serve residents' diverse needs.

Figure 129: City of North Las Vegas Metro Area Map (Source: City of North Las Vegas, Website)



Demographics and Hazard Vulnerabilities

Demographic data is crucial to effective hazard mitigation planning. This is especially true for the numbers associated with population, housing units, and building permits as they, over time, can increase or decrease a planning area's vulnerabilities to any/all identified natural hazards. It is important to note, however, that demographic data can fluctuate or even lag in the short term, i.e., one to two years. While these numbers tend to self-correct over time, temporary decreases or increases in population and/or the number of housing units may occur. In these instances, it is best to consider demographic data from longer periods, such as ten (10) to 20 years, for mitigation planning purposes.

As for the City of North Las Vegas, the U.S. Census Bureau determined its population to be 115,488 in 2000. That number increased by 87.9% to 216,961 in 2010. In 2020, the U.S. Census Bureau determined the City of North Las Vegas population to be 262,527, an increase of 21%.

Similarly, the U.S. Census Bureau determined the number of housing units in the City of North Las Vegas to be 76,073 in 2010 but increased its estimate by 13.5% to 86,353 in 2020.

The following table provides a visual representation of the City of North Las Vegas demographic information (as previously described) and how it specifically relates to hazard probability and the planning area's vulnerabilities to all identified natural hazards.

Demographics & Vulnerability, City of North Las Vegas								
Population (2000 U.S. Census)	Population 2010 U.S. Census	Population (2020 U.S. Census)	% of Population Change (2010-2020)	# of Housing Units (2020 Census)	% of Housing Units (2010-2020)	Identified Hazards	CPRI Results	Probability of Hazards (From Risk Summary)
111,488	216,961	262,527	21%	86,353	13.5%	Climate Change	H (3.55)	Highly Likely
						Drought	S (4)	Likely
						Extreme/ Excessive Heat	M (2.75)	Highly Likely
						Fissures & Subsidence	L (1.65)	Likely
						Flood, Landslides & Debris Flow, Flooding	H (3)	Highly Likely
						Geohazards-Earthquake and Seismic Hazards	H (3.1)	Likely
						Severe Storms	M (2.9)	Highly Likely
						Fire, Wildland Urban Interface (Wildfire)	L (1.0)	Highly Likely
						Hazardous Materials	M (2.75)	Highly Likely
						Infrastructure, Dam Failure	M (2.65)	Occasional
						Infestation	L (1.6)	Likely
						Infectious Disease	H (3.25)	Occasional
						Terrorism	M (2.2)	Highly Likely

Data Source: U.S. Census Bureau, Nevada: 2010 Population and Housing Unit Count; and U.S. Census Bureau, Profile: data.census.gov; Percent of Population Change Calculation Change: https://www.omnicalculator.com/math/percentage-change#how-to-calculate-the-percent-change

Critical Facilities Information

As previously stated in this MJHMP Update, certain facilities have a net positive value on the community, i.e., they contribute to the public good by facilitating the basic functions of society. These facilities maintain order, public health, education, and help the local economy function. Additionally, there are facilities and infrastructure integral to disaster response and recovery operations. Conversely, some of these are of extreme importance due to the negative externalities created when impacted by a disaster. What fits these definitions varies slightly from community to community, but the definitions remain as a guideline for identifying critical infrastructure and facilities.

The following table and map summarize the identified critical facilities and infrastructure for the City of North Las Vegas. A complete list can be found in Appendix D of this plan.

City of North Las Vegas - Critical Facilities Listing																				
	Casinos/Resorts/ Hotels	Child Care	City Hall	Communications	Community Colleges	Correctional Facilities	Court House	Fire Stations	Government Offices	Hazardous Materials	Hospitals	Native Reservations	Natural Gas	Places of Worship	Police	Schools	Solar	Stadiums	Transportation	University	Water/Sewer
City of North Las Vegas	7	33	1	46	1	3	1	8	44	9	9	-	-	39	3	52	2	-	5	-	1,044

National Flood Insurance Program (NFIP) and Community Rating System (CRS) Summary

According to FEMA, the National Flood Insurance Program (NFIP) is a federal insurance program that enables property owners in member communities to purchase flood insurance. This insurance is only made available to municipalities that adopt and enforce a floodplain management ordinance. The fundamental goal of NFIP floodplain management requirements is to reduce the threat to lives and the potential for property damage in flood-prone areas. Each municipality that participates in the NFIP has a Flood Insurance Rate Map (FIRM) that is issued by FEMA. This document maps out flood hazard areas in the municipality.

Like several other jurisdictions in Clark County, the City of North Las Vegas participates in the NFIP. However, it is not listed as an eligible community of the Community Rating System (CRS), https://www.fema.gov/cis/NV.html, as of February 2023. CRS is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirement of NFIP.

The following tables contain NFIP & CRS Community Status information specific to the City of North Las Vegas.

NFIP & CRS Community Status, City of North Las Vegas					
CID	CRS Entry Date	Initial FHBM Identified	Initial Firm Identified	Current Effective Map Date	Registration/ Entry Date
320007#	10/01/1991	02/15/1974	01/16/1981	11/16/2011	01/16/1981

Data Source: FEMA - Nevada National Flood Insurance Program Community Status Book (https://www.fema.gov/cis/NV.html), February 2023

Building Codes Ordinance for North Las Vegas

City Code Chapter 8.50 – Stormwater Regulations. Also, the City of North Las Vegas follows Clark County Regional Flood Control District's Uniform Regulations for Control Drainage effective September 30, 2022

***Note**: Information related to Repetitive Loss properties in the planning area can be found in Flooding Hazard profile of this MJHMP update under – Repetitive Loss Structure.*

The Clark County Regional Flood Control District (CCRFCD) reviews all plans related to land development to ensure compliance with NFIP and local floodplain regulations can be found on the CCRFCD website under "Land Development ." This compliance includes construction adjacent to and within the floodplain with the County. This process meets the minimum federal regulations set forth by the NFIP. CCRFCD website mentions that the submission of land development can be submitted electronically. For more information about the land development review process, can be found here: https://www.regionalflood.org/programs-services/projects-engineering/land-development-review-status. For more information related to floodplain management in the North Las Vegas, NV, contact Mark Escobedo at escobedom@cityofnorthlasvegas.com.

NFIP Policies, Claims & Payments, City of North Las Vegas					
Jurisdiction	**Comm ID**	**# of Policies**	**Total Coverage**	**Total Written Premium + FPF**	**Floodplain Management Role**
North Las Vegas*	320007#	96	$30,101,000	$57,771	Provides in-house floodplain management. Participant of the CCFCD

Notes: *Indicates CRS participating jurisdiction.
Data Dictionary as mentioned in the NFIP Policy Information by State and Community document:
Community ID: The 6-character community ID in which the policy resides.
# of Policies: The number of policies in force for a given state and combination of attributes.
Total Coverage: The total building and contents coverage for the policies in force.
Total Written Premium + FPF: This represents the sum of the premium and the FPF (federal policy fee) for the policies in force.

Data Sources: Participation – FEMA's Community Status Book Report, Nevada, 03/01/2023. Policy statistics (current as of 03/01/2023) https://www.fema.gov/cis/NV.html
NFIP Policy Information by State (Policy statistics current as of 1/31/2023)
https://nfipservices.floodsmart.gov/sites/default/files/nfip_policy-information-by-state_20230131.xlsx

Repetitive Loss (RL) Properties

As of December 5, 2022, there are Repetitive Loss (RL) properties, and subsequently, NFIP-insured properties within Clark County. The City of North Las Vegas did not have any recorded RL properties.

Mitigation Strategy and Capabilities

Capabilities Assessment, City of North Las Vegas

As with any jurisdiction, there are numerous stakeholders involved in developing a mitigation strategy. Each type of stakeholder provides a set of capabilities, in some cases broad and in others narrow, by which they can help increase the planning area's resiliency. The broadest form of mitigation capabilities comes from counties, such as Clark County, and municipal governments, such as the City of North Las Vegas. Their inherent legal authority allows them to institute the greatest regulatory and developmental changes.

The primary capabilities of Clark County and the City of North Las Vegas are 1) institutional, 2) political, 3) technical, and 4) fiscal. Representing the City of North Las Vegas. A capability assessment was conducted of the MJHMP participating jurisdictions' authorities, policies, programs, and resources. From the assessment, goals and mitigation actions were developed. Capabilities for the City of North Las Vegas are described in detail below. The Yes/No column denotes if a particular jurisdiction has that specific capability.

Planning and Regulatory Capabilities

These include local ordinances, policies and laws to manage growth and development. Examples include land use plans, capital improvement plans, transportation plans, emergency preparedness and response plans, building codes and zoning ordinances. Based upon the specific authorities contained in each of these planning and regulatory capabilities, they may be used to support mitigation activities.

Planning and Regulatory Capability Assessment for the City of North Las Vegas

PLANS	Yes/No	• Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Community Wildfire Protection Plan	**No**	No plan. No use for mitigation strategy or actions
Comprehensive/Master Plan	**Yes**	No, the plan address land development. No use for mitigation strategy or actions.
Continuity of Operations Plan	**Yes**	Annual updates. Yes, it addresses all hazards, identifies projects and includes mitigation strategies, and can be used to implement mitigation actions.
Capital Improvement Plan	**Yes**	Annual with forward projection. Yes, it addresses all hazards, identifies projects and includes mitigation strategies, and can be used to implement mitigation actions.
Economic Development Plan	**Yes**	Annual with forward projection. Yes, it addresses all hazards, identifies projects and includes mitigation strategies, and can be used to implement mitigation actions.
Emergency Operations Plan	**Yes**	Updated 2021. Yes, it addresses all hazards, identifies projects and includes mitigation strategies, and can be used to implement mitigation actions.
Stormwater Management Plan	**Yes**	The plan address city and developer storm water protection. No use for mitigation strategy or actions.
Transportation Plan	**Yes**	The plan address roadways. No use for mitigation strategy or actions.
Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	• What type of codes? • Are codes adequately enforced?
Building Codes	Yes	The 2018 IBC Code Suite. Yes, codes are adequately enforced. ICC, yes enforced. For more information about the City of North Las Vegas Building Codes can be found here.
Site plan review requirements	Yes	Regional criteria. Yes, enforced by inspectors and engineers
Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		
LAND USE PLANNING & ORDINANCES	**Yes/No**	• Is the ordinance effective for reducing hazard impacts? • Is the ordinance adequately administered and enforced?
Floodplain ordinance	Yes	Yes, as of March 14, 2023, City Ordinance Chapter 8.50 – Stormwater Regulations can be found online here.
Subdivision ordinance	Yes	Yes, as of March 14, 2023, City Ordinance Title 16 – Development Code, Title 16.01.190 – Subdivision can be found online here.
Zoning ordinance	Yes	Yes, as of March 14, 2023, City Ordinance Title 17 – Zoning Ordinances can be found online here.
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		
PLANS		• Does the plan address hazards?

	Yes/No	• Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Community Wildfire Protection Plan	No	The city follows under the County and State mitigation work related to the river that are related to wildland fire risk
Comprehensive/Master Plan	N/A	Per the last MJHMP (2018), the City of Mesquite indicated that the State of Nevada requires jurisdictions to address seismic activity. Mesquite is working to confirm if have an updated copy of this plan for MJHMP record
Continuity of Operations Plan	Yes	Yes, updated in 2022
Capital Improvement Plan	Yes	Yes, updated October 2022
Economic Development Plan	Yes	Yes, updated October 2022
Emergency Operations Plan	Yes	Yes, and EOP was reviewed and updated January 2023 to meet state of NV compliance
Stormwater Management Plan	Yes	Yes, updated October 2022
Transportation Plan	Yes	Yes, updated October 2022
Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	• What type of codes? • Are codes adequately enforced?
Building Codes	Yes	The IBC 2018 Code, however the City will be working to adopt 2004 IBC Code Suite. These codes are adequately enforced. More information for the City of Mesquite Building Codes can be found here.
Site plan review requirements	Yes	Yes, the City Building Inspector completed site plan review related to flooding and earthquake and the City Fire Inspector completes review for fire hazards.
Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses..		
LAND USE PLANNING & ORDINANCES	**Yes/No**	• Is the ordinance effective for reducing hazard impacts? • Is the ordinance adequately administered and enforced?
Floodplain ordinance	Yes	Yes, updated October 2022. Title – Flood Control District Ordinance can be found online here.
Subdivision ordinance	Yes	Yes, updated October 2022, Chapter 6 Subdivision Regulations can be found online here.
Zoning ordinance	Yes	Yes, updated October 2022, Chapter 7 – Zoning Districts Ordinance can be found online here.
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		

Administrative and Technical Capabilities

These capabilities include community (public and private) staff and their skills and tools which can be used for mitigation planning and implementation. This capability includes engineers, planners, emergency managers, GIS analysts, building inspectors, grant writers, and floodplain managers. Small communities may rely on other government entities such as counties or special districts for resources. Based upon the specific expertise contained in each of these administrative and technical capabilities, they may be used to support mitigation activities.

Administrative and Technical Capability Assessment for the City of North Las Vegas

ADMINISTRATION	**Yes/No**	**Describe capability.** **Is coordination effective?**
Mutual aid agreements	Yes	Yes
Planning Commission	Yes	They are effective in communication with the City Council.
TECHNICAL STAFF	**Yes/No** **FT/PT**	**Is staff trained on hazards and mitigation?** **Is coordination between agencies and staff effective?** **Have skills/expertise been used to assess/mitigate risk in the past?**
Building Official	Yes	Yes, to all.
Community Planner	Yes	Yes, to all.
Emergency Manager	Yes	Yes, to all.
Engineer	Yes	Yes, to all.
Fire Chief	Yes	Yes, to all.
Floodplain Manager/Administrator	Yes	Yes, to all.
GIS/HAZUS Coordinator	Yes	Yes, to all.
Sheriff	No.	City Police Chief
Procurement Services Manager	Yes	Procurement Manager and Accounting Manager
How can capabilities be expanded and improved to reduce risk?		By continuing to utilize and seek improved methods for including the necessary technical and planning staff in the development and updates of emergency operations plans, financial planning and mitigation planning efforts. An important component is the use of trained grant writers with the knowledge and skill sets to research and apply for federal funding opportunities.

Financial Capabilities

The following table contains a list of administrative and financial capabilities available to the City of North Las Vegas. Based upon procedures for each resource, these financial capabilities may be used to support mitigation activities.

Financial Capability Assessment for the City of North Las Vegas

FINANCIAL	Yes/No	Answer these questions in the space below: • Has the funding resource been used in past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities Grant (BRIC)	No	
Hazard Mitigation Grant Program (HMPG)	No	No prior awards. However, the City would like to pursue funding through this program for mitigation or flood activities.
Pre-Disaster Mitigation grant program (PDM)	No	No, the City does not currently have activities planned to fit into that funding.
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	No	No, the City does not currently have activities planned to fit into that funding.
Flood Mitigation Assistance grant program (FMA)	No	
Water Preservation Funds (SWNA)	Yes	Yes, the City currently has an active project funded through SNPLMA to support Water Preservation. The City is in the process of a Citywide Turf Reductions Program in Parks. The City also participates in Regional Water Preservation Programs with Southern Nevada Water Authority (SWNA). Additionally, the City plan to apply for BOR funding to increase water preservation abilities.
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)	No	No, the City does not currently have activities planned to fit into that funding.
Capital improvements project funding	Yes	Yes, The CIP is approved annually by City Council and managed by the Public Works Department. Many of the CIP projects are funded through a blend of local and federal grant dollars. Current CIP items included flood mitigation and control activities, water preservation, protection systems for water and sewer systems, City turf reduction, and park irrigation improvements.
Community Development Block Grant	Yes	Yes, CDBG formula grant is received annually by the City. These funds can be used for mitigation projects, but 51% or more beneficiaries must be low to moderate income persons. Additionally, the highest need for these funds at this time is community services. The City has requested HUD Community Project Funding for preparedness activities.
Authority to levy taxes for specific purposes	No	No, Per NRS, the City is not authorized to levy taxes.
Impact fees for new development	Yes	The City has a schedule for development fees. These fees are used to support the infrastructure growth and operational costs to services developing areas.
Incur debt through special tax bond	No	The City may, under the City Charter, levy a special assessment tax. However, the City does

		not have plans to do so.
Incur debt through general obligation bonds	Yes	Yes, the City may, under the City Charter, levy a special assessment or tax. However, the City does not have plans to do so. It has done so in the past for infrastructure, projects including water facilities.
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.
FINANCIAL	**Yes/No**	• Has the funding resource been used in past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Hazard Mitigation Grant Program (HMPG)	No	
Pre-Disaster Mitigation grant program (PDM)	No	
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	No	
Flood Mitigation Assistance grant program (FMA)	No	
Water Preservation Funds (SWNA)	No	
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)		
Capital improvements project funding	No	
Community Development Block Grant	No	
Authority to levy taxes for specific purposes	No	
Impact fees for new development	No	
Incur debt through special tax bond	No	
Incur debt through general obligation bonds	No	
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.

Education and Outreach Capabilities

The following table lists educational and public outreach capabilities. These capabilities include programs such as fire safety programs, hazard awareness campaigns, public information or communications offices. Education and outreach capabilities can be used to inform the public on current and potential mitigation activities.

Education and Outreach Capability Assessment for the City of North Las Vegas

PROGRAM / ORGANIZATION	Changes since 2018 Plan Update Yes or No	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Jurisdiction (County/City/Tribe) Website and Social Media (PIO/PAO Programming		Yes	The County maintains a website and accounts with Facebook, Instagram, Nextdoor, Twitter, and YouTube. County libraries, law enforcement, and fire/rescue agencies also maintain social media accounts. These resources are regularly used to convey hazard mitigation and disaster-related information to the public, as well as develop awareness of in-person and online events. They can be used to support future mitigation activities.
Firewise Communities certification		Yes	The Community Wildfire Protection Plans also serve to establish future mitigation projects and actions to support disaster resilience.
Storm Ready certification		Yes	The County Storm Ready Certification issued through the National Weather Service is current and due for renewal in 2023 (i.e., applies to all of the County).
Citizen groups focused on emergency preparedness, environmental protection, etc.		Yes	CERT (Community Emergency Response Team), MRC (Medical Reserve Corps), ARES (Amateur Radio Emergency Services), Faith Based organizations such as the First Baptist support group, Salvation Army, and United Way of Southern Nevada. These organizations provide responder Support and Emergency Management and EOC support to local communities and local government during times of disaster and preparedness training for local needs.
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)		Yes	The County frequently addresses public information needs through a variety of mechanisms. The local government organizations utilize a well-developed and coordinated PIO group with partners from all levels of government including city, county departments. and federal and state offices. This is especially effective during times of disaster. Clark County Emergency Management utilizes public presentations and media outlets (e.g., radio, print) to provide public outreach on emergency preparedness. The County website is a primary tool for dissemination of public information.
Public-private partnership initiatives addressing disaster-related issues		Yes	Examples of organizations for this effort include VOAD (Volunteer Organizations Active in Disaster), LEPC (Local Emergency Planning Committee) for addressing all hazard issues.
How can capabilities be expanded and improved to reduce risk?			This can be accomplished by including the organizations in our public outreach, planning, training and overall preparedness efforts and real time events.

Planning Integration, City of North Las Vegas

Mitigation does not end at plan approval. Plan approval is only the beginning. The successful implementation of any number of mitigation activities and projects requires the coordination and collaboration of a number of local agencies, departments, and organizations. Each group has varying decision-making processes and authorities governing their actions. This plan, once approved, must be integrated into their decision-making processes as a tool for improving their respective resiliencies.

Clark County intends to incorporate this Clark County Multi-Jurisdictional Hazard Mitigation Plan (update) into other planning documents the County and its participating jurisdiction(s)' (which includes Clark County Unincorporated Area, cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, NV, and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) utilizes. Where applicable, portions of the previous MJHP (2012 and 2018) were considered for incorporation into other jurisdictions plans (i.e., participating cities and tribal government comprehensive/master plans) and programs. Also, portions of the previous MJHMP (2012 and 2018) in some form was incorporated into the Clark County Emergency Operations Plan (2019), and other existing or future public safety-related plans. This plan is not only useful for implementing mitigation activities and projects but also critical in creating development plans and capital improvement projects. The risk assessment in this plan can prevent unmanaged and dangerous development in identified hazard areas or other portions of the planning area that decrease a community's overall resiliency.

Mitigation Projects and Activities

The City of North Las Vegas did not complete a mitigation project in the last MJHMP update (2018).

To support the planning area's mitigation goals, the Clark County MPSC 61 possible and unique mitigation projects and activities. Of these, eleven (11) are from the City of North Las Vegas as identified in the following table.

Mitigation & Projects Summary, City of North Las Vegas	
Mitigation Project or Activity	**Hazard(s) Addressed**
Lower Las Vegas Wash Detention Basin Inflow Channel	Flooding
Range Wash - Las Vegas Diversion Channel	Flooding
Las Vegas Boulevard Storm Drain	Flooding
Range Wash Beltway Conveyance	Flooding
Beltway Collection System - Pecos	Flooding
Speedway North Detention Basin and Outfall	Flooding
Speedway #3 Detention Basin Expansion and Inflow/Outflow Facilities	Flooding
North Apex - System 1 Detention Basin and Outfall	Flooding
Turf Conversion Subsidy	Drought
Flood Control	Flood, Dam Failure
Emergency Power	Earthquake, Flood, Climate Change, Wildfire

STAPLE+E Rankings, City of North Las Vegas

STAPLE+E Rankings, City of North Las Vegas																							
X = N/A - Even Impact	**+ = Positive Influence**											**- = Negative Influence**											
STAPLE+E Criteria	**Social**		**Technical**		**Administrative**				**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribute to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Goals	Consistent with Federal Laws	
Aquifer Storage and Recovery (Water Use and Conservation)	-	-	+	+	-	+	+	+	+	x	+	+	+	+	+	x	+	+	+	+	X	+	+	17
NIPP's Security and Resilience Challenge (Smart City)	-	-	+	+	-	+	+	+	+	x	+	+	+	+	+	x	+	+	-	-	-	+	+	15
NIPP's Security and Resilience Challenge (Connected Corridors)	-	-	+	+	-	+	+	+	+	x	+	+	+	+	+	x	+	+	-	-	-	+	+	15

Proposed and Carry-Over Mitigation Activities – City of North Las Vegas

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
NLV 1	Lower Las Vegas Wash Detention Basin Inflow Channel	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (35.5)	New	$4M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.
NLV2	Range Wash - Las Vegas Diversion Channel	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (35.5)	New	$11M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.
NLV 3	Las Vegas Boulevard Storm Drain	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (35.5)	New	$10M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.
NLV 4	Range Wash Beltway Conveyance	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (35.5)	New	$15M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.
NLV 5	Beltway Collection System - Pecos	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (35.5)	New	$5M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.
NLV 6	Speedway North Detention Basin and Outfall	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (35.5)	New	$16.5M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
NLV 7	Speedway #3 Detention Basin Expansion and Inflow/Outflow Facilities	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (35.5)	New	$5M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.
NLV 8	North Apex - System 1 Detention Basin and Outfall	Repair and replacement of channel bottom areas and basin erosion damage.	Flooding	North Las Vegas Public Works	Medium (28)	New	$31M	2-5 years	RFCD and Grants (Federal and State)	Proposed Project for 2023 plan.
NLV 9	Flood Control	Alleviate the damage associated with flooding through new and reinforced flood control projects, including storm drains, culverts, drop inlets, channels, and detention basins. Oak Island Storm Drain Mitigation Project: The City will eliminate the last residential Flood Zone “A” lots in the City’s jurisdiction; 100% capture of water flow; flow redirect conservation. Protect existing county/city assets and new developments from effects of floods within the 100-year floodplain.	Flood, Dam Failure	North Las Vegas Public Works	Medium (27)	New	Upon receipt of grant funding, within grant funding period.	2-5 years	FEMA Grants with Match from Clark County Regional Flood Control District	Carry-over project from the 2018 plan. This project was carried over from the 2018 MJHMP update due to lack of staffing and funding.
NLV 10	Turf Conversion Subsidy	Turf Conversion Study - Provide an additional turf conversion to supplement the already existing Southern Nevada Water Authority Program	Drought	North Las Vegas Public Works	Low (24)	New	$500,000	2-5 years	Federal and State Funds	Carry-over project from the 2018 plan. This project was carried over from the 2018 MJHMP update due to lack of staffing and funding.
NLV 11	Emergency Power	Provide additional emergency power, such as a generator equipment, for new and existing critical facilities to operate continuously but cannot do so for long durations of power outage. Emergency Generators for Critical Infrastructure and Sheltering Facilities	Earthquake Flood Climate Change Wildfire	North Las Vegas Public Works	Low (20.5)	New	Grant Application Opportunities	2-5 years	FEMA Grants; Potential CIP Funding	Carry-over project from the 2018 plan. This project was carried over from the 2018 MJHMP update due to lack of staffing and funding.

Deferred Projects List from Clark County MJHMP (2018) for the City of North Las Vegas

The City of North Las Vegas did not have any deferred projects.

Mitigation Prioritization Tables for the City of North Las Vegas

Mitigation Project Prioritization, North Las Vegas, NV																	
Mitigation Project or Activity	STAPLE+ E	MPE	Hazards													Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Weather	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Lower Las Vegas Wash Detention Basin Inflow Channel	35.5	1.5						15								15	15	**Medium**
Range Wash - Las Vegas Diversion Channel	35.5	1.5						15								15	15	**Medium**
Las Vegas Boulevard Storm Drain	35.5	1.5						15								15	15	**Medium**
Range Wash Beltway Conveyance	35.5	1.5						15								15	15	**Medium**
Beltway Collection System - Pecos	35.5	1						15								15	15	**Medium**
Speedway North Detention Basin and Outfall	35.5	1.5						15								15	15	**Medium**

Mitigation Project Prioritization, North Las Vegas, NV																	
Mitigation Project or Activity	STAPLE+ E	MPE	Hazards												Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Drought	Earthquake	Extreme Heat	Flood	Fissures & Subsidence	Severe Weather	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
North Apex - System 1 Detention Basin and Outfall	29	1						15								15	15	**Medium**
Flood Control	27	1		5				15								30	15	**Medium**
Turf Conversion Subsidy	24	1			10											20	10	**Low**
Emergency Power	20.5	0.5	15			15		15								60	15	**Low**

Moapa Band of Paiutes

Planning Area

As Moapa Paiutes strive to preserve our legends, songs and dances. However, cultural disruption during the past two centuries have threatened the continuation of traditional life. With the mission statement to advance the Moapa Band of Paiutes and preserve our homeland by building an independent and self-governing community that provides an opportunity for all peoples who have made a commitment to this mission. The Moapa Band of Paiutes (https://www.moapabandofpaiutes.com/tribal-history) created a Constitution and bylaws in 1941 along with a Business council which established the governing body of the Tribe.

Figure 130: Moapa Band of Paiutes Area Map (Source: Moapa Band of Pauites, Website)

Demographics and Hazard Vulnerabilities

Demographic data is crucial to effective hazard mitigation planning. This is especially true for the numbers associated with population, housing units, and building permits as they, over time, can increase or decrease a planning area's vulnerabilities to any/all identified natural hazards. It is important to note, however, that demographic data can fluctuate or even lag in the short term, i.e., one to two years. While these numbers tend to self-correct over time, temporary decreases or increases in population and/or the number of housing units may occur. In these instances, it is best to consider demographic data from longer periods, such as ten (10) to 20 years, for mitigation planning purposes.

As for Clark County (including the Moapa Band of Paiute Tribe), the U.S. Census Bureau determined its population to be xxx in 2000. That number increased by xxx% to xxx in 2010. In 2020, the U.S. Census Bureau determined the County (including the Moapa Band of Paiute Tribe) population to be xxx, a decrease of xxx%.

Similarly, the U.S. Census Bureau determined the number of housing units in the Moapa Band of Paiute Tribe to be XXX in 2010 but (insert increased or decreased) its estimate by X.XX% XXX in 2020.

Note: *The current demographics & hazard vulnerabilities for the Moapa Band of Paiute Tribe is based off Clark County since the tribal lands falls within the planning area and not having any population data for the tribe on www.data.census.gov. Though the Tribe participated in the planning process, they were unable to provide an update on accurate population data for this section of the jurisdictional annex. However, space has been made available in the above table for the Moapa Band of Paiutes to provide input for this plan update (20XX) at a later date.*

The following table provides a visual representation of Moapa Band of Paiutes Tribe demographic information (as previously described) and how it specifically relates to hazard probability and the planning area's vulnerabilities to all identified natural hazards.

Demographics & Vulnerability, Moapa Band of Paiutes Tribe								
Population (2000 U.S. Census)	Population 2010 U.S. Census	Population (2020 U.S. Census)	% of Population Change (2010-2020)	# of Housing Units (2020 Census)	% of Housing Units (2010-2020)	Identified Hazards	CPRI Results	Probability of Hazards (From Risk Summary)
						Climate Change	L (1.65)	Highly Likely
						Drought	H (3.25)	Likely
						Extreme/ Excessive Heat	H (3.60)	Highly Likely
						Fissures & Subsidence	L (1.95)	Occasional
						Flood, Landslides & Debris Flow, Flooding	H (3.75)	Highly Likely
						Geohazards-Earthquake and Seismic Hazards	L (1.90)	Likely
						Severe Weather (including Thunderstorms, Hail, Lighting, Wind, and Tornadoes)	M (2.45)	Highly Likely
						Fire, Wildland Urban Interface (Wildfire)	M (2.55)	Highly Likely
						Hazardous Materials	H (3.05)	Highly Likely
						Infrastructure, Dam Failure	H (3.60)	Occasional
						Infestation	M (2.35)	Likely
						Infectious Disease	H (3.75)	Occasional
						Terrorism	L (1.55)	Highly Likely

Data Source: U.S. Census Bureau, Nevada: 2010 Population and Housing Unit Count; and U.S. Census Bureau, Profile: data.census.gov; Percent of Population Change Calculation Change: https://www.omnicalculator.com/math/percentage-change#how-to-calculate-the-percent-change

Critical Facilities Information

As previously stated in this MJHMP Update, certain facilities have a net positive value on the community, i.e., they contribute to the public good by facilitating the basic functions of society. These facilities maintain order, public health, education, and help the local economy function. Additionally, there are facilities and infrastructure integral to disaster response and recovery operations. Conversely, some of these are of extreme importance due to the negative externalities created when impacted by a disaster. What fits these definitions varies slightly from community to community, but the definitions remain as a guideline for identifying critical infrastructure and facilities.

The following table and map summarize the identified critical facilities and infrastructure for the Moapa Band of Paiute Tribe. A complete list can be found in Appendix D of this plan update.

Moapa Band of Paiutes Tribe - Critical Facilities Listing																				
	Casinos/Resorts/ Hotels	Child Care	City Hall	Communications	Community Colleges	Correctional Facilities	Court House	Fire Stations	Government Offices	Hazardous Materials	Hospitals	Native Reservations	Natural Gas	Places of Worship	Police	Schools	Solar	Stadiums	Transportation	University	Water/Sewer
Total																					

Note: *Though the Tribe participated in the planning process, they were unable to provide an update on critical facilities data for this section of the jurisdictional annex. However, space has been made available in the above table for the Moapa Band of Paiutes to provide input for this plan update (20XX) at a later dat*

Mitigation Strategy and Capabilities

Capabilities Assessment, Moapa Band of Paiutes

As with any jurisdiction, there are numerous stakeholders involved in developing a mitigation strategy. Each type of stakeholder provides a set of capabilities, in some cases broad and in others narrow, by which they can help increase the planning area's resiliency. The broadest form of mitigation capabilities comes from counties, such as Clark County, and municipal governments, such as the Moapa Band of Paiute. Their inherent legal authority allows them to institute the greatest regulatory and developmental changes.

The primary capabilities of Clark County and the Moapa Band of Paiute are 1) institutional, 2) political, 3) technical, and 4) fiscal. Representing the Moapa Band of Paiute Tribe. A capability assessment was conducted of the MJHMP participating jurisdictions' authorities, policies, programs, and resources. From the assessment, goals and mitigation actions were developed. Capabilities for the Moapa Band of Paiute Tribe are described in detail below. The Yes/No column denotes if a particular jurisdiction has that specific capability.

Planning and Regulatory Capabilities

These include local ordinances, policies, and laws to manage growth and development. Examples include land use plans, capital improvement plans, transportation plans, emergency preparedness and response plans, building codes and zoning ordinances. Based upon the specific authorities contained in each of these planning and regulatory capabilities, they may be used to support mitigation activities.

Planning and Regulatory Capability Assessment for Moapa Band of Paiutes

PLANS	Yes/No Year	• Does the plan address hazards? • Does the plan ID projects to include in the mitigation strategy? • Can the plan be used to implement mitigation actions?
Capital Improvements Plan	Yes, 2015	As per the 2015 Moapa Band of Paiutes Hazard Mitigation Plan, the tribe has a 5-year Master Plan.
Community Wildfire Protection Plan	N/A	
Comprehensive/Master Plan	Yes	
Continuity of Operations Plan	N/A	
Economic Development Plan	Yes	As per the 2015 Moapa Band of Paiutes Hazard Mitigation Plan, the tribe has an Economic Development Plan (Economic Development Department).
Emergency Operations Plan	Yes	Yes, the 2015 Moapa Band of Paiutes Hazard Mitigation Plan does mention having a stormwater management program within its regulatory capabilities.
Stormwater Management Plan	Yes	Yes, the 2015 Moapa Band of Paiutes Hazard Mitigation Plan does mention having a stormwater management program within its regulatory capabilities. However, the Stormwater Management Program needed to be reconstructed.

PLANS	Yes/No Year	• Does the plan address hazards? • Does the plan ID projects to include in the mitigation strategy? • Can the plan be used to implement mitigation actions?
Transportation Plan	N/A	
How can these capabilities be expanded and improved to reduce risk?		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	**What type of codes?** • Are codes adequately enforced?
Building Codes	Yes	Yes, as mentioned in the 2015 Moapa Band of Paiutes Hazard Mitigation Plans regulatory capabilities, the tribe follows unified building code.
Site plan review requirements	No	No, the 2015 Moapa Band of Paiutes Hazard Mitigation Plan does not mention any site plan review requirement within its regulatory capabilities.
How can these capabilities be expanded and improved to reduce risk?		Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.
LAND USE PLANNING & ORDINANCES		• Is the ordinance effective for reducing hazard impacts? • Is the ordinance adequately administered and enforced?
Floodplain ordinance	No	No, the 2015 Moapa Band of Paiutes Hazard Mitigation Plan does not mention any ordinances like floodplain for the tribal reservation.
Subdivision ordinance	N/A	N/A, the 2015 Moapa Band of Paiutes Hazard Mitigation Plan does not mention any ordinances like subdivision for the tribal reservation.
Zoning ordinance	N/A	N/A, the 2015 Moapa Band of Paiutes Hazard Mitigation Plan does not mention any ordinances like zoning for the tribal reservation.
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		

Note: *As mentioned in the 2015 Moapa Band of Paiutes Hazard Mitigation Plan (April 2015), will adhere to the regulations, policies, program, regulatory capabilities related to hazard prone areas as described in the Clark County Plan, including pre-disaster hazard mitigation management and post-disaster mitigation management.*

Administrative and Technical Capabilities

These capabilities include community (public and private) staff and their skills and tools which can be used for mitigation planning and implementation. This capability includes engineers, planners, emergency managers, GIS analysts, building inspectors, grant writers, and floodplain managers. Small communities may rely on other government entities such as counties or special districts for resources. Based upon the specific expertise contained in each of these administrative and technical capabilities, they may be used to support mitigation activities.

Administrative and Technical Capability Assessment for Moapa Band of Paiutes

ADMINISTRATION	Yes/No	Describe capability • Is coordination effective?
Mutual aid agreements		
Planning Commission		
TECHNICAL STAFF	**Yes/No FT/PT**	• Is staff trained on hazards and mitigation? • Is coordination between agencies and staff effective? • Have skills/expertise been used to assess/mitigate risk in the past?
Building Official	Yes	Yes, Public Works Director
Community Planner	No	
Emergency Manager	Yes	Yes, Emergency Services Manager
Engineer	Yes	Yes, Tribal Planner
Floodplain Manager/Administrator	Yes	
GIS/HAZUS Coordinator	No	No, Indian Health Service
Grant writer	Yes	
How can capabilities be expanded and improved to reduce risk?		Additional training of staff in hazard mitigation and financial resources to pursue mitigation projects.

Note: *As mentioned in the 2015 Moapa Band of Paiutes Hazard Mitigation Plan (April 2015), the Moapa Band of Paiutes Emergency Management Program operates under the direction of the Moapa Band of Paiutes Tribal Council. Day-to-day operations and direction for the program is conducted under the management of the Tribal Chairman who has delegated coordination actions to the Moapa Band of Paiutes Emergency Coordinator. The final responsibility for all emergency management belongs to the Tribal Chairman. The Tribal Chairman and Council are responsible for all policy-level decisions. They are also required to be the approving body for public information releases to the public. During response operations, the elected officials will be available to their constituents to handle non-routine problems. The Tribal Emergency Management has responsibility for coordinating the entire emergency management program, within the boundaries of the Reservation, and can make routine decisions within the limits of disaster authority. During emergency operations, the Emergency Manager ensures that all parties are working in a concerted, supportive effort to overcome the disaster.*

Financial Capabilities

The following table contains a list of administrative and financial capabilities available to the Moapa Band of Paiute. Based upon procedures for each resource, these financial capabilities may be used to support mitigation activities.

Financial Capability Assessment for Moapa Band of Paiutes

FINANCIAL	Yes/No	• Has the funding resource been used in past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Hazard Mitigation Grant Program (HMPG)	N/A	
Pre-Disaster Mitigation grant program (PDM)	Yes	
Flood Mitigation Assistance grant program (FMA)	Yes	
Capital improvements project funding	Yes	

Community Development Block Grant	Yes	
Authority to levy taxes for specific purposes	Yes	
Impact fees for new development	Yes	
Incur debt through special tax bond	Yes	
Incur debt through general obligation bonds	No	
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.

Note: *As mentioned in the 2015 Moapa Band of Paiutes Hazard Mitigation Plan (April 2015), identifies financial tools or resources that Moapa Band of Paiutes could potentially used to help fund activities in addition to Economic Development Activities.*

Education and Outreach Capabilities

The following table lists education and public outreach capabilities. These capabilities include programs such as fire safety programs, hazard awareness campaigns, public information or communications offices. Education and outreach capabilities can be used to inform the public on current and potential mitigation activities.

Education and Outreach Capability Assessment for Moapa Band of Paiutes Tribe

PROGRAM / ORGANIZATION	Changes since 2018 Plan Update Yes or No	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. • Could the program/organization help implement future mitigation activities?
Jurisdiction (County/City/Tribe) Website and Social Media (PIO/PAO Programming			
Firewise Communities certification			
Storm Ready certification			
Citizen groups focused on emergency preparedness, environmental protection, etc.			
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)			
Public-private partnership			

initiatives addressing disaster-related issues			
How can capabilities be expanded and improved to reduce risk?			This can be accomplished by including the organizations in our public outreach, planning, training and overall preparedness efforts and real time events.

Note: *The 2015 Moapa Band of Paiutes Hazard Mitigation Plan (April 2015), did not identify any education and outreach capabilities for the Tribe.*

Planning Integration, Moapa Band of Paiutes

Mitigation does not end at plan approval. Plan approval is only the beginning. The successful implementation of any number of mitigation activities and projects requires the coordination and collaboration of a number of local agencies, departments, and organizations. Each group has varying decision-making processes and authorities governing their actions. This plan, once approved, must be integrated into their decision-making processes as a tool for improving their respective resiliencies.

Clark County intends to incorporate this Clark County Multi-Jurisdictional Hazard Mitigation Plan (update) into other planning documents the County and its participating jurisdiction(s)' (which includes Clark County Unincorporated Area, cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, NV, and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) utilizes. Where applicable, portions of the previous MJHP (2012 and 2018) were considered for incorporation into other jurisdictions plans (i.e., participating cities and tribal government comprehensive/master plans) and programs. Also, portions of the previous MJHMP (2012 and 2018) in some form was incorporated into the Clark County Emergency Operations Plan (2019), and other existing or future public safety-related plans. This plan is not only useful for implementing mitigation activities and projects but also critical in creating development plans and capital improvement projects. The risk assessment in this plan can prevent unmanaged and dangerous development in identified hazard areas or other portions of the planning area that decrease a community's overall resiliency.

Mitigation Projects and Activities

The Moapa Band of Paiutes Tribe completed one (1) mitigation project in the last MJHMP update (2018).

Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Structural Emphasis (in 2018 MHJMP)	Cost Estimate	Estimated Timeline	Potential Funding Source	Status
Emergency Power	Alleviate the damage associated with flooding through new and reinforced flood control projects including storm drains, culverts, drop inlets, channels, and detention basins	Flood	Moapa Band of Paiutes Business Department	New/Proposed	$2 Million	1-5 years	FEMA Grant	Completed. This mitigation project was a priority of Tribe during the last plan update period and was completed in 2020.

To support the planning area's mitigation goals, the Clark County MPSC identified 61 possible and unique mitigation projects and activities. Of these, two (2) are from the Moapa Band of Paiute as identified in the following table.

Mitigation & Projects Summary, Moapa Band of Paiute	
Mitigation Project or Activity	**Hazard(s) Addressed**
Emergency Power for Admin and Law Enforcement	All Hazards
Tribal Emergency Preparation (Training, purchasing, Planning, and Events Planning)	All Hazards

STAPLE+E Rankings, Moapa Band of Paiutes

STAPLE+E Rankings, Insert Jurisdiction Name																						
X = N/A - Even Impact	**+ = Positive Influence**										**- = Negative Influence**											
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribute to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Goals	Consistent with Federal Laws	
Emergency Power for Admin and Law Enforcement	+	-	+	x	-	x	-	+	+	+	+	x	+	+	+	+	-	+	x	x	x	+	+	13
Tribal Emergency Preparation (Training, purchasing, planning and events planning)	+	-	+	x	-	x	-	+	+	+	+	x	+	+	+	+	-	+	x	x	x	+	+	13

Proposed and Carry-Over Mitigation Activities – Moapa Band of Paiutes

Action ID	Project Name	Project Description	Hazard (s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Moapa 1	Emergency Power for Admin and Law Enforcement	The tribe is seeking to purchase and install backup generators for the Admin and Law enforcement buildings. The purpose would be to keep the Government working during Power Outages and have cooling stations during emergency events within the Tribal land.	All Hazards	Moapa Band of Paiutes Business Department; Moapa Band of Paiutes Government, and Moapa Band of Paiutes Law Enforcement	Medium (34.4285)	New	$1 Million	1-5 years	Federal and State Grants; Moapa Band of Paiutes	Proposed Project for the 2023 Plan Update
Moapa 2	Tribal Emergency Preparation (Training, purchasing, planning and events planning)	The Tribal Emergency Manager will work on preparing the community (Elders) and help prepare for events (Emergency or Non-Emergency) disasters by assessing Tribe's Emergency Preparedness and Event Planning efforts.	All Hazards	Moapa Band of Paiutes Business Department; Moapa Band of Paiutes Government, and Moapa Band of Paiutes Law Enforcement	Medium (34.4285)	New	$500,000	1-5 years	Federal and State Grants; Moapa Band of Paiutes	Proposed Project for the 2023 Plan Update

Deferred Projects List from Clark County MJHMP (2018) for the Moapa Band of Paiutes

The Moapa Band of Paiutes did not have any deferred mitigation projects.

Mitigation Prioritization Tables for the Moapa Band of Paiutes

		Mitigation Project Prioritization, Insert Jurisdiction Name															
Mitigation Project or Activity	**STAPLE+E**	**MPE**	**Hazards**												**Hazard Total**	**HRT Value**	**Priority**
			Climate Change	**Dam Failure**	**Droughts**	**Earthquake**	**Extreme Heat**	**Flood**	**Fissures & Subsidence**	**Severe Weather**	**Wildfire**	**Infestation**	**Infection Disease**	**Hazardous Materials**	**Terrorism**			
Emergency Power for Admin and Law Enforcement	34.4825	1	15	5	10	10	15	15	5	15	15	10	5	15	15	150	21.4825	**Medium**
Tribal Emergency Preparation (Training, Purchasing, Planning and Events Planning)	34.4825	1	15	5	10	10	15	15	5	15	15	10	5	15	15	150	21.4825	**Medium**

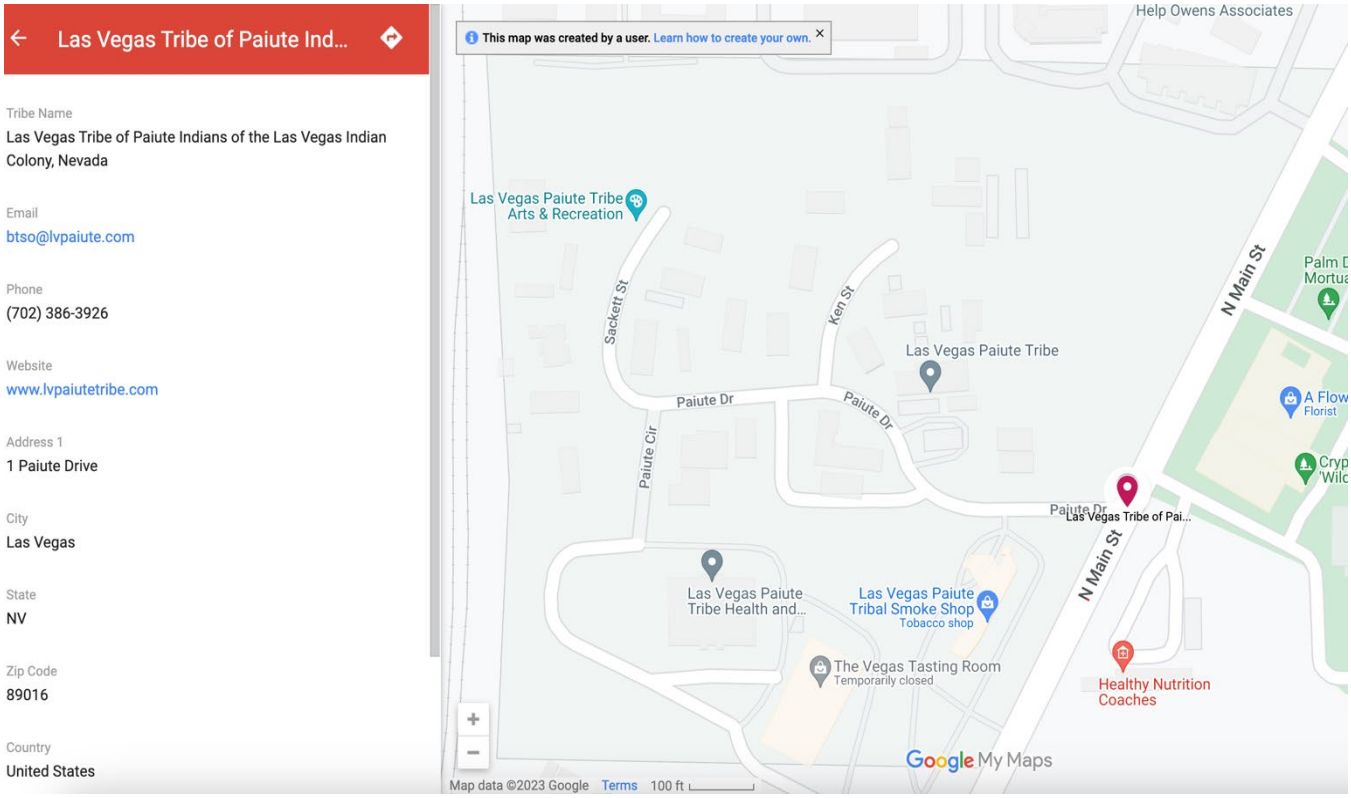
Las Vegas Paiute Tribe

Jurisdiction Profile

Planning Area

The Tudinu (or Desert People), ancestors of the Las Vegas Paiute Tribe, occupied the territory encompassing part of the Colorado River, most of Southeastern Nevada and parts of both Southern California and Utah. Per their website, https://www.lvpaiutetribe.com, the tribe established the Las Vegas Paiute Colony on December 30, 1911, ranch owner Helen J. Stewart deeded 10 acres of her land in downtown Las Vegas to the Paiutes, establishing the Las Vegas Paiute Colony. The Paiutes became a Sovereign Tribal Nation when the Indian Reorganization Act of June 18, 1934, in conjunction with the Las Vegas Paiute Tribal Constitution, approved on July 22, 1970, recognized the Tribe as a Sovereign nation.

Figure 131: Las Vegas Tribe of Pauite Indians Area Map



Source: Las Vegas Tribe of Pauite Website

Demographics and Hazard Vulnerabilities

Demographic data is crucial to effective hazard mitigation planning. This is especially true for the numbers associated with population, housing units, and building permits as they, over time, can increase or decrease a planning area's vulnerabilities to any/all identified natural hazards. It is important to note, however, that demographic data can fluctuate or even lag in the short term, i.e., one to two years. While these numbers tend to self-correct over time, temporary decreases or increases in population and/or the number of housing units may occur. In these instances, it is best to consider demographic data from longer periods, such as ten (10) to 20 years, for mitigation planning purposes.

As for Clark County (including the Las Vegas Paiute Tribe), the U.S. Census Bureau determined its population to be xxx in 2000. That number increased by xxx% to xxx in 2010. In 2020, the U.S. Census Bureau determined the County (including the Las Vegas Paiute Tribe) population to be xxx, a decrease of xxx%.

Similarly, the U.S. Census Bureau determined the number of housing units in the Las Vegas Paiute Tribe to be XXX in 2010 but (insert increased or decreased) its estimate by X.XX% XXX in 2020.

Note: *The current demographics & hazard vulnerabilities for the Las Vegas Paiute Tribe is based off Clark County since the tribal lands falls within the planning area and not having any population data for the tribe on www.data.census.gov. Though the Tribe participated in the planning process, they were unable to provide an update on accurate population data for this section of the jurisdictional annex. However, space has been made available in the above table for the Las Vegas Paiutes to provide input for this plan update (20XX) at a later date.*

The following table provides a visual representation of Las Vegas Paiute Tribe demographic information (as previously described) and how it specifically relates to hazard probability and the planning area's vulnerabilities to all identified natural hazards.

Demographics & Vulnerability, Las Vegas Paiute Tribe								
Population (2000 U.S. Census)	Population 2010 U.S. Census	Population (2020 U.S. Census)	% of Population Change (2010-2020)	# of Housing Units (2020 Census)	% of Housing Units (2010-2020)	Identified Hazards	CPRI Results	Probability of Hazards (From Risk Summary)
						Climate Change	H (3.55)	Highly Likely
						Drought	H (3.55)	Likely
						Extreme/ Excessive Heat	H (3.25)	Highly Likely
						Fissures & Subsidence	L (1.85)	Occasional
						Flood, Landslides & Debris Flow, Flooding	H (3.55)	Highly Likely
						Geohazards-Earthquake and Seismic Hazards	H (3.7)	Likely
						Severe Storms	H (3)	Highly Likely
						Fire, Wildland Urban Interface (Wildfire)	M (2)	Highly Likely
						Hazardous Materials	H (3.6)	Highly Likely
						Infrastructure, Dam Failure	L (1)	Occasional
						Infestation	M (2.05)	Likely
						Infectious Disease	M (2.05)	Occasional
						Terrorism	H (3.85)	Highly Likely

Data Source: U.S. Census Bureau, Nevada: 2010 Population and Housing Unit Count; and U.S. Census Bureau, Profile: data.census.gov; Percent of Population Change Calculation Change: https://www.omnicalculator.com/math/percentage-change#how-to-calculate-the-percent-change

Critical Facilities Information

As previously stated in this MJHMP Update, certain facilities have a net positive value on the community, i.e., they contribute to the public good by facilitating the basic functions of society. These facilities maintain order, public health, education, and help the local economy function. Additionally, there are facilities and infrastructure integral to disaster response and recovery operations. Conversely, some of these are of extreme importance due to the negative externalities created when impacted by a disaster. What fits these definitions varies slightly from community to community, but the definitions remain as a guideline for identifying critical infrastructure and facilities.

The following table and map summarize the identified critical facilities and infrastructure for the Las Vegas Paiute Tribe. A complete list can be found in Appendix D of this plan update.

Critical Facilities: Tribal Lands - Las Vegas Paiute Tribe																				
	Casinos/Resorts/ Hotels	Child Care	City Hall	Communications	Community Colleges	Correctional Facilities	Court House	Fire Stations	Government Offices	Maintenance	Hospitals\ Medical Clinic	Native Reservations	Natural Gas	Places of Worship	Police	Schools	Power Station	Stadiums	Transportation	University	Water/Sewer
Las Vegas Paiute Tribe	0	1	0	0	0	0	0	0	2	0	1	0	0	0	1	0	1	0	0	0	2
Total	0	1	0	0	0	0	0	0	2	0	1	0	0	0	1	0	1	0	0	0	2

Mitigation Strategy and Capabilities

Capabilities Assessment, Las Vegas Paiute Tribe

As with any jurisdiction, there are numerous stakeholders involved in developing a mitigation strategy. Each type of stakeholder provides a set of capabilities, in some cases broad and in others narrow, by which they can help increase the planning area's resiliency. The broadest form of mitigation capabilities comes from counties, such as Clark County, and municipal governments, such as the Moapa Band of Paiute. Their inherent legal authority allows them to institute the greatest regulatory and developmental changes.

The primary capabilities of Clark County and the Las Vegas Paiute Tribe are 1) institutional, 2) political, 3) technical, and 4) fiscal. Representing the Las Vegas Paiute Tribe. A capability assessment was conducted of the MJHMP participating jurisdictions' authorities, policies, programs, and resources. From the assessment, goals and mitigation actions were developed. Capabilities for the Las Vegas Paiute Tribe are described in detail below. The Yes/No column denotes if a particular jurisdiction has that specific capability.

Planning and Regulatory Capabilities

These include local ordinances, policies and laws to manage growth and development. Examples include land use plans, capital improvement plans, transportation plans, emergency preparedness and response plans, building codes and zoning ordinances. Based upon the specific authorities contained in each of these planning and regulatory capabilities, they may be used to support mitigation activities.

Planning and Regulatory Capability Assessment for Las Vegas Paiute Tribe

PLANS	Yes/No	Answer these questions in the space below: • Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Community Wildfire Protection Plan	No	
Comprehensive/Master Plan	No	
Continuity of Operations Plan	No	Though the Tribe doesn't have a COOP they understand the need and has included the creation and development of this plan as a priority/mitigation project for the next plan cycle
Capital Improvement Plan	N/A	
Economic Development Plan	N/A	
Emergency Operations Plan	Yes	Yes, there is one however, it is in draft but due to COVID, the Tribe is working to update the document to reflect the current capabilities of the Tribe
Stormwater Management Plan	N/A	
Transportation Plan	N/A	

PLANS	Yes/No	Answer these questions in the space below: • Does the plan address hazards? • Does the plan ID project to include in the mitigation strategy? • Can the plan be used to implement mitigation actions? Include date of the most recent plan.
Plan reviews and updates will include consideration of the hazards identified in the MJHMP including new hazards in the 2023 update.		
BUILDING CODES, PERMITTING, INSPECTIONS	**Yes/No**	**Answer these questions in the space below:** • **What type of codes?** • **Are codes adequately enforced?**
Building Codes	N/A	
Site plan review requirements	N/A	
Codes and requirements will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		
LAND USE PLANNING & ORDINANCES	**Yes/No**	**Answer these questions in the space below:** • **Is the ordinance effective for reducing hazard impacts?** • **Is the ordinance adequately administered and enforced?**
Floodplain ordinance	N/A	
Subdivision ordinance	N/A	
Zoning ordinance	N/A	
Planning and land use regulations will be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses.		

Administrative and Technical Capabilities

These capabilities include community (public and private) staff and their skills and tools which can be used for mitigation planning and implementation. This capability includes engineers, planners, emergency managers, GIS analysts, building inspectors, grant writers, and floodplain managers. Small communities may rely on other government entities such as counties or special districts for resources. Based upon the specific expertise contained in each of these administrative and technical capabilities, they may be used to support mitigation activities.

Administrative and Technical Capability Assessment for Las Vegas Paiute Tribe

ADMINISTRATION	Yes/No	Describe capability. Is coordination effective?
Mutual aid agreements	Yes	
Planning Commission	No	

TECHNICAL STAFF	Yes/No and include if Full Time (FT) or Part Time (PT) position	Answer these questions in the space below: • Is staff trained on hazards and mitigation? • Is coordination between agencies and staff effective? • Have skills/expertise been used to assess/mitigate risk in the past?
Building Official	N/A	
Community Planner	N/A	
Emergency Manager	FT	Yes, to all
Engineer	FT	Yes, to all
Fire Chief	N/A	
Floodplain Manager/Administrator	N/A	
GIS/HAZUS Coordinator	N/A	
Chief of Police	FT	Yes, to all
Procurement Services Manager	N/A	
By continuing to utilize and seek improved methods for including the necessary technical and planning staff in the development and updates of emergency operations plans, financial planning and mitigation planning efforts. An important component is the use of trained grant writers with the knowledge and skill sets to research and apply for federal funding opportunities.		

Financial Capabilities

The following table contains a list of administrative and financial capabilities available to the Las Vegas Paiute. Based upon procedures for each resource, these financial capabilities may be used to support mitigation activities.

Financial Capability Assessment for Las Vegas Paiute Tribe

FINANCIAL	Yes/No	Answer these questions in the space below: • Has the funding resource been used in the past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Building Resilient Infrastructure and Communities Grant (BRIC)	N/A	
Hazard Mitigation Grant Program (HMPG)	Yes	
Pre-Disaster Mitigation grant program (PDM)	Yes	
Earthquake Mitigation Funds (Nevada Earthquake Safety Council)	No	

FINANCIAL	Yes/No	Answer these questions in the space below: • Has the funding resource been used in the past and for what type of activities? • Could the resource be used to fund future mitigation actions?
Flood Mitigation Assistance grant program (FMA)	Yes	
Water Preservation Funds (SWNA)	Yes	
Wildfire Emergency and Mitigation Funds (Nevada Division of Forestry)	No	
Capital improvements project funding	No	
Community Development Block Grant	No	
Authority to levy taxes for specific purposes	No	
Impact fees for new development	No	
Incur debt through special tax bond	No	
Incur debt through general obligation bonds	No	
How can capabilities be expanded and improved to reduce risk?		Apply for FEMA program grants. Develop new and creative ways to acquire funding such as new legislation proposals to open the doors for improved funding opportunities.

Education and Outreach Capabilities

The following table lists education and public outreach capabilities. These capabilities include programs such as fire safety programs, hazard awareness campaigns, public information or communications offices. Education and outreach capabilities can be used to inform the public on current and potential mitigation activities.

Education and Outreach Capability Assessment for Las Vegas Paiute Tribe

PROGRAM / ORGANIZATION	Changes since 2018 Plan Update Yes or No	Access / Eligibility (Yes/No)	Describe program/organization and how it relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Jurisdiction (County/City/Tribe) Website and Social Media (PIO/PAO Programming		Yes	The Tribe maintains a website and a Facebook account. Currently, in the event of a disaster, Law Enforcement officer go door to door to notify residents of a hazard related events within the tribe. Law enforcement is currently working on methods to convey hazard mitigation and disaster related information to the public. The Golf Course makes notifications via a PA system to visitors about hazard related information. They can be used to support future mitigation activities
Firewise Communities certification		No	
Storm Ready certification		No	
Citizen groups focused on emergency preparedness, environmental protection, etc.		No	
Public education/information programs (fire safety, household preparedness, responsible water use, etc.)		Yes	In the future, the Tribe has a PIO which is also the Tribal Chairperson. The Police Department uses a group text to notify residents related to public outreach to Tribal residents. The Tribe is looking to implement a vendor to help with the creation of a notification system for the Tribe in the event hazard in the area.
Public-private partnership initiatives addressing disaster-related issues		No	
How can capabilities be expanded and improved to reduce risk?			This can be accomplished by including the organizations in our public outreach, planning, training and overall preparedness efforts and real time events.

Planning Integration, Las Vegas Paiute Tribe

Mitigation does not end at plan approval. Plan approval is only the beginning. The successful implementation of any number of mitigation activities and projects requires the coordination and collaboration of a number of local agencies, departments, and organizations. Each group has varying decision-making processes and authorities governing their actions. This plan, once approved, must be integrated into their decision-making processes as a tool for improving their respective resiliencies.

Clark County intends to incorporate this Clark County Multi-Jurisdictional Hazard Mitigation Plan (update) into other planning documents the County and its participating jurisdiction(s)' (which includes Clark County Unincorporated Area, cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas, NV, and the Tribal Lands of the Las Vegas Paiute Tribe and the Moapa Band of Paiutes/Moapa River Indian Reservation) utilizes. Where applicable, portions of the previous MJHP (2012 and 2018) were considered for incorporation into other jurisdictions plans (i.e., participating cities and tribal government comprehensive/master plans) and programs. Also, portions of the previous MJHMP (2012 and 2018) in some form was incorporated into the Clark County Emergency Operations Plan (2019), and other existing or future public safety-related plans. This plan is not only useful for implementing mitigation activities and projects but also critical in creating development plans and capital improvement projects. The risk assessment in this plan can prevent unmanaged and dangerous development in identified hazard areas or other portions of the planning area that decrease a community's overall resiliency.

Mitigation Projects/Activities

The Las Vegas Paiute Tribe did not complete a mitigation project in the last MJHMP update (2018).

To support the planning area's mitigation goals, the Clark County MPSC identified 61 possible and unique mitigation projects and activities. Of these, six (6) are from the Las Vegas Paiute as identified in the following table.

Mitigation & Projects Summary, Las Vegas Paiute Tribe	
Mitigation Project or Activity	**Hazard(s) Addressed**
Purchase of Law Enforcement Facility Generator	Drought, Earthquake, Flooding, Wildfire, Hazardous Materials, and Terrorism
Flood Control Project Maintenance Project - US 95 Highway Culvert	Flooding
Flood Control Project - Paiute Golf Course - Wolf Course Channel Extension	Flooding
Protect Snow Mountain Water Well	Drought, Excessive Heat, Wildfire, Earthquake
Acquire Water Well Backup Generator for Snow Mountain	Drought, Earthquake, Flooding, Wildfire, Hazardous Materials, and Terrorism
Create a Tribal Continuity of Operations Plan (COOP)	All Hazards

STAPLE+E Rankings, Las Vegas Paiute Tribe

STAPLE+E Rankings, Las Vegas Paiute Tribe																							
X = N/A - Even Impact	**+ = Positive Influence**											**- = Negative Influence**											
STAPLE+E Criteria	**Social**		**Technical**			**Administrative**			**Political**			**Legal**			**Economic**				**Environmental**					**Total Impact**
Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribute to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT / Waste Sites	Consistent with Community Goals	Consistent with Federal Laws	
Purchase of Law Enforcement Facility Generator	+	-	+	x	x	-	-	+	+	+	+	x	+	x	+	+	-	+	x	-	-	+	+	12
Flood Control Project Maintenance Project - US 95 Highway Culvert	+	+	+	+	-	-	-	+	+	+	+	x	+	x	+	+	+	+	x	-	-	+	+	15
Flood Control Project - Paiute Golf Course - Wolf Course Channel Extension	+	+	+	+	-	-	-	+	+	+	+	x	+	x	+	+	+	+	x	-	-	+	+	15
Protect Snow Mountain Water Well	+	+	+	+	-	+	-	+	+	+	x	x	+	x	+	+	-	+	x	-	-	+	+	14
Acquire Water Well Backup Generator for Snow Mountain	+	+	+	+	-	+	-	+	+	+	x	x	+	x	+	+	-	+	x	-	-	+	+	14
Create a Tribal Continuity of Operations Plan (COOP)	+	-	+	+	-	+	-	+	+	+	x	x	+	x	+	+	-	+	x	-	-	+	+	13

Proposed Mitigation Activities – Las Vegas Paiute Tribe

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Las Vegas Paiute 1	Flood Control Project Maintenance Project - US 95 Highway Culvert	Reinforce roads/bridges that are prone to repetitive flooding and/or flash flooding through protection activities, including elevating the roads/bridges and installing/widening culverts beneath the roads/bridges or upgrading storm drains. The Las Vegas Paiute Tribe is seeking funding for continued channel maintenance near U.S. 95 due to flooding. Following the 2013 flooding event, the highway was reconstructed to widen the culverts under the freeway to drain water past the resorts. The Tribe wants to continue channel maintenance efforts along U.S. 95 before another significant flooding event.	Flooding	Las Vegas Paiute Tribe (LVPT) Police Department	Medium (30)	New	$30,000-$50,000	1-5 years	Federal Grants and State Grants	Proposed Project for the 2023 Plan Update
Las Vegas Paiute 2	Flood Control Project - Paiute Golf Course - Wolf Course Channel Extension	The Tribe is seeking funds to extend a flood channel located on the Paiute Golf Resort - Wolf Course. The existing channel must be extended past the east fence on the golf course grounds. The extension of this channel will alleviate the damage associated with flooding through existing ends near Wolf Course, where river rocks have filled up over the past five years.	Flooding	Las Vegas Paiute Emergency Management Team; Las Vegas Paiute Public Works Department; NV Department of Transportation; Las Vegas Valley Water District	Medium (30)	New	$350,000-$500,000	1-5 years	Federal Grants and State Grants	Proposed Project for the 2023 Plan Update

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Las Vegas Paiute 3	Acquire Water Well Backup Generator for Snow Mountain	The Tribe does not have portable water access during a hazard event on the reservation and is looking to provide additional potable water (new water tank) to operate continuously for long durations during drought, severe storms, floods, or other disaster situations where water availability may be limited. Bringing 220v power to the existing water tank and adding an emergency power generator will allow the water pump at Snow Mountain to work during an extended power outage that could leave the residents of Snow Mountain without access to water in the event of an emergency.	Drought, Earthquake, Flooding, Wildfire, Hazardous Material, and Terrorism	Las Vegas Paiute Golf Resort and LVPT Maintenance Dept;	Medium (27.33333)	New	$200,000-$400,000	1-5 years	Federal Grants	Proposed Project for the 2023 Plan Update
Las Vegas Paiute 4	Protect Snow Mountain Water Well	The Snow Mountain Water Well is a vital critical facility to the Tribe and provides water to the residents of this part of the Tribe. The Tribe seeks funds to protect with measures like updating the tank, ensuring the well has the proper fencing, and protection against hazards like drought, earthquake, excessive heat, and wildfires.	Drought, Excessive Heat, Wildfire, and Earthquake	LVPT Maintenance Department	Medium (26.5)	New	$50,000-$100,000	1-5 years	Federal Grants and State Grants	Proposed Project for the 2023 Plan Update
Las Vegas Paiute 5	Purchase of Law Enforcement Facility Generator	Law Enforcement Department is looking to purchase a generator due to power supply issues causing loss in communication with tribal citizens and their officers in the field in the event of an emergency.	Drought, Earthquake, Flooding, Wildfire, Hazardous Materials, and Terrorism	LVPT Maintenance Department	Medium (25.333)	New	$90,000-$100,000	1-5 years	Federal Grants and State Grants	Proposed Project for the 2023 Plan Update

Action Identification	Project Name	Project Description	Hazard(s) Addressed	Responsible Party (ies)	Overall Priority (STAPLE+E)	Structural Emphasis	Cost Estimate	Estimated Timeline	Potential Funding Source	Current Status
Las Vegas Paiute 6	Create a Tribal Continuity of Operations Plan (COOP)	The Las Vegas Valley Paiute Tribe is seeking funding for professional contracted services to develop a Continuity of Operations Plan (COOP) to ensure the capability exists to continue essential Tribal functions in the event of an all-hazards event. The COOP will provide for the continuation of vital Tribal services across a wide range of potential emergencies. The professional contractor will work with Tribal Governments Officials and Tribal Government Departments to develop a continuity plan.	All Hazards	Las Vegas Paiute Emergency Management Team; Las Vegas Paiute Tribal Government	Low (18.769231)	New	$5,000-$10,000	1-5 years	Federal Grants and State Grants	Proposed Project for the 2023 Plan Update

Deferred Projects List from Clark County MJHMP (2018) for the Las Vegas Paiute

The Las Vegas Paiute Tribe did not have any deferred mitigation projects.

Mitigation Prioritization Tables for the Las Vegas Paiute Tribe

Mitigation Project Prioritization, Las Vegas Paiute Tribe																	
Mitigation Project or Activity	STAPLE+E	MPE	Hazards													Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Droughts	Earthquake	Flood	Extreme Heat	Fissures & Subsidence	Severe Weather	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Purchase of Law Enforcement Facility Generator	25.3333				10	10		15			15					50	12.5	Medium
Flood Control Project Maintenance Project - US 95 Highway Culvert	30							15								15	15	Medium
Flood Control Project - Paiute Golf Course - Wolf Course Channel Extension	30							15								15	15	Medium
Protect Snow Mountain Water Well	26.5				10	10	15				15					50	12.5	Medium

Mitigation Project Prioritization, Las Vegas Paiute Tribe																	
Mitigation Project or Activity	STAPLE+E	MPE	Hazards													Hazard Total	HRT Value	Priority
			Climate Change	Dam Failure	Droughts	Earthquake	Flood	Extreme Heat	Fissures & Subsidence	Severe Weather	Wildfire	Infestation	Infection Disease	Hazardous Materials	Terrorism			
Acquire Water Well Backup Generator for Snow Mountain	27.333				10	10		15			15			15	15	80	13.3333333	Medium
Create a Tribal Continuity of Operations Plan (COOP)	18.769231		15	5	10	15	15	15	5	15	15	10	5	15	15	150	11.5384615	Low



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