Dona Ana County

City of Anthony, City of Las Cruces, Elephant Butte Irrigation District, Village of Hatch, Town of Mesilla, New Mexico State University, and City of Sunland Park

ALL HAZARD MITIGATION PLAN



Final: June 2021

JE FULLER
define•communicate•solve

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SECTION 1: INTRODUCTION

1.1 DMA 2000 Requirements

1.1.1 General Requirements

The Doña Ana County, City of Anthony, Elephant Butte Irrigation District, Village of Hatch, City of Las Cruces, Town of Mesilla, New Mexico State University and City of Sunland Park All Hazard Mitigation Plan (Plan) has been prepared in compliance with Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Stafford Act), 42 U.S.C. 5165, as amended by Section 104 of the Disaster Mitigation Act of 2000 (DMA 2000) Public Law 106-390 enacted October 30, 2000. The regulations governing the mitigation planning requirements for local mitigation plans are published under the Code of Federal Regulations (CFR) Title 44, Section 201.6 (44 CFR §201.6). Additionally, this DMA 2000 compliant Plan addresses flooding and meets the minimum planning requirements for the Flood Mitigation Assistance program as provided for under 44 CFR §78.

DMA 2000 provides requirements for states, tribes, and local governments to undertake a risk-based approach to reducing risks to natural hazards through mitigation planning[1]. The local mitigation plan is the representation of the jurisdiction's commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards. Local plans also serve as a tool for a state to provide technical assistance and prioritize project funding.

Under 44 CFR §201.6, local governments must have a Federal Emergency Management Agency (FEMA)-approved local mitigation plan in order to apply for and/or receive project grants under the following hazard mitigation assistance programs:

- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation (PDM)
- Flood Mitigation Assistance (FMA)
- Severe Repetitive Loss (SRL)

FEMA, at its discretion, may also require a local mitigation plan under the Repetitive Flood Claims (RFC) program as well.

1.1.2 Update Requirements

DMA 2000 requires that local plans be updated every five years, with each plan cycle requiring a complete review, revision, and approval of the plan at both the state and FEMA levels. Doña Ana County, New Mexico State University (NMSU), Elephant Butte Irrigation District (EBID) and the incorporated communities of Hatch, Las Cruces, Anthony, Mesilla and Sunland Park were all adopting jurisdictions of the current hazard

[1] FEMA, 2008, *Local Multi-Hazard Mitigation Planning Guidance*

mitigation plan entitled: *Doña Ana County, City of Anthony, Elephant Butte Irrigation District, Village of Hatch, City Of Las Cruces, Town Of Mesilla, New Mexico State University and City of Sunland Park All Hazard Mitigation Plan (2013).*

This Plan is the result of a multi-jurisdictional hazard mitigation planning update process performed by Doña Ana County, the incorporated communities of Anthony, Hatch, Las Cruces, Mesilla and Sunland Park, Elephant Butte Irrigation District, and New Mexico State University. The result of the hazard mitigation planning process is a single, multi-jurisdictional plan that will replace the 2013 Plan.

The priorities for all jurisdictions participating in this effort have largely remained the same over the past 5 year cycle with the exception of additional hazards incorporated into the Plan. This is due to the unchanged concern regarding the hazards profiled, frequency of events, and direction of leadership within the communities. For this reason, while some of the mitigation actions/projects were completed over the past 5 years and additional projects have been incorporated within this update, the hazards identified for mitigation and the priority ranking of the projects selected are consistent with the priorities identified during the last cycle.

1.2 Official Jurisdiction Participation and Record of Adoption and Approval

Adoption of the Plan is accomplished by the governing body for each participating jurisdiction in accordance with the authority and powers granted to those jurisdictions by the State of New Mexico. The officially participating jurisdictions in the Plan include:

County	Cities, Towns, Villages	Other Agencies
• Doña Ana County	• City of Anthony • City of Las Cruces • City of Sunland Park • Town of Mesilla • Village of Hatch	• Elephant Butte Irrigation District • New Mexico State University

Each jurisdiction will keep a copy of their official resolution of adoption located in Appendix F of their copy of the Plan.

The Plan was submitted to the New Mexico Department of Homeland Security and Emergency Management (NMDHSEM), the authorized state agency, and FEMA for review and approval. FEMA's approval letter is included in Appendix F.

1.3 Plan Purpose and Authority

The purpose of the Plan is to identify natural hazards that impact the various jurisdictions located within Doña Ana County, assess the vulnerability and risk posed by those hazards to community-wide human and structural assets, develop strategies for mitigation of those identified hazards, present future maintenance procedures for the plan, and document the planning process. The Plan

is prepared in compliance with DMA 2000 requirements and represents a complete revision of the 2013 Plan. The State and FEMA review of this Plan was based on the criteria for a new plan.

Doña Ana County and all of the participating jurisdictions are political subdivisions of the State of New Mexico and are organized under 2011 NMSA 1978 (unannotated) / Chapter 3 Municipalities, Chapter 4 Counties, Chapter 21 State and Private Education Institutions, and/or Chapter 73 Special Districts. As such, each of these entities is empowered to formally plan and adopt the Plan on behalf of their respective jurisdictions.

Funding for the development of the Plan was provided through a Sub-Grant Agreement between Doña Ana County and NMDHSEM using 2017 Pre-Disaster Mitigation Grant (PDMC) funding. The funding cost share was 75% federal and 25% local. The Doña Ana County Flood Commission applied for, secured, and administrated the grant for the County. JE Fuller Hydrology & Geomorphology, Inc (JE Fuller) was retained by Doña Ana County to provide consulting services in guiding the planning process and Plan development and was selected through the County's Request For Proposal process.

1.4 Plan Description

1.4.1 2013 Plan History

The 2013 Plan was an update of the original 2004 Hazard Mitigation Plan for Doña Ana County and Incorporated Areas. Funding for the 2013 Plan update was pursued and secured by the Doña Ana County Flood Commission via a Sub-Grant agreement with NMDHSEM using HMGP funds from the presidential disaster declaration FEMA-1783-DR. Tectonic Engineering and Surveying, PC (Tectonic), was retained by Doña Ana County to provide consulting services in guiding the planning process and Plan development and was selected through the County's Request For Proposal process. JE Fuller was retained by Tectonic as a sub-consultant to assist with the effort.

The Steering Committee was convened and met for the first time on December 13, 2011 to begin the planning process. A total of four Steering Committee meetings were conducted over the period of December 2011 through April 2012. Throughout that period and for several months afterward, all the work required to collect, process, and document updated data and prepare the draft of the Plan was performed. In August 2012, the final draft was delivered to the state and FEMA for review and approval. Final FEMA approval was granted in October 2013 and the 2013 Plan expired in October of 2018.

1.4.2 General Content and Arrangement

The Plan is generally arranged and formatted to facilitate its review based on the review guidelines published by FEMA [2] and is comprised of the following major sections:

[2] 2011, FEMA, Local Mitigation Plan Review Guide

Section 1: Introduction – this section provides an overall introduction to the requirements, scope, and authority of the Plan, as well as some introductory information about the County and participating jurisdictions.

Section 2: Planning Process – this section summarizes the planning process used to update the Plan, describes the assembly of the Steering Committee and meetings conducted, and summarizes the public involvement efforts.

Section 3: Risk Assessment – this section summarizes the identification and profiling of natural and human-caused hazards that impact the County and the vulnerability assessment for each hazard that considers exposure/loss estimations and development trend analyses.

Section 4: Mitigation Strategy – this section presents a capability assessment for each participating jurisdiction and summarizes the Plan mitigation goals, objectives, actions/projects, and strategy for implementation of those actions/projects.

Section 5: Plan Maintenance Strategy – this section outlines the proposed strategy for evaluating and monitoring the Plan, updating the Plan in the next 5 years, incorporating plan elements into existing planning mechanisms, and continued public involvement.

Appendices – appendices are provided for documenting various elements of and details of the planning process.

This Plan is the result of a thorough update process that included a section by section review and evaluation of the 2013 Plan by the Steering Committee participants. At the onset, each participating jurisdiction was provided a digital copy of the 2013 Plan and was encouraged to print a working copy for use during the update process. With each meeting, the Steering Committee systematically reviewed each section of the 2013 Plan. More discussion regarding this process is summarized in Section 2 of this Plan. In general, the 2020 Plan was prepared to follow FEMA DMA 2000 requirements.

SECTION 2: JURISDICTIONAL DESCRIPTIONS

2.1 County Overview

2.1.1 History

Doña Ana County is one of 33 counties in the state of New Mexico. It was created in 1852 and is the second-most populated county in the state. According to the Doña Ana Historical Society, travelers between Mexico City and Santa Fe traversed Doña Ana County for more than 400 years, leaving a fascinating history, full of interesting people, places, events, and stories. Doña Ana County's rich and varied background predates that of Jamestown and Plymouth, as its history goes back to those first Spanish adventurers who wandered into this unknown territory in 1536. It was not until 1843 that the first intrepid settlers came north and established the Doña Ana Bend Colony, the County's first permanent settlement.[3] In 1900, the County hosted an agriculturally based society with a population of 10,187. The market centers were Las Cruces, El Paso and Ciudad Juarez. By 1990, the County was urbanized with a population of 135,510 and boasted an economy based on service and retail. Rapid population growth has occurred in and around the city of Las Cruces, as well as in the southern part of the County. The part of the County north of Hill remains primarily rural in nature.

2.1.2 Geography

The County comprises 3,804 square miles in south-central New Mexico as depicted in Figure 2-1. The County shares a portion of the east and southeast borders with El Paso County, Texas, its remaining southern border with the State of Chihuahua, Mexico, its western border with Luna County, its northern border with Sierra County, and a portion of the eastern border with Otero County. The County limits generally extend from longitude 106.31 to 107.32 degrees west and latitude 31.79 to 33.07 degrees north.

There are many geographically diverse areas within Doña Ana County, including mountain ranges, valleys and deserts. The most notable is the Mesilla Valley, which is essentially the geologic floodplain of the Rio Grande, that extends north to south through the center of the County. Rising from the valley are the San Andres and Organ Mountains along the eastern edge and the Sierra de las Uvas on the west. Other smaller mountain ranges in the County include the Robledo Mountains, Doña Ana Mountains, East and West Potrillo Mountains, and two small, isolated mountains, Tortugas (or A) Mountain on the east and Picacho Peak on the west side of Las Cruces. The County also includes one of New Mexico's four large lava fields, the Aden Malpais, and one of the world's largest maar volcanoes, Kilbourne Hole.[4]

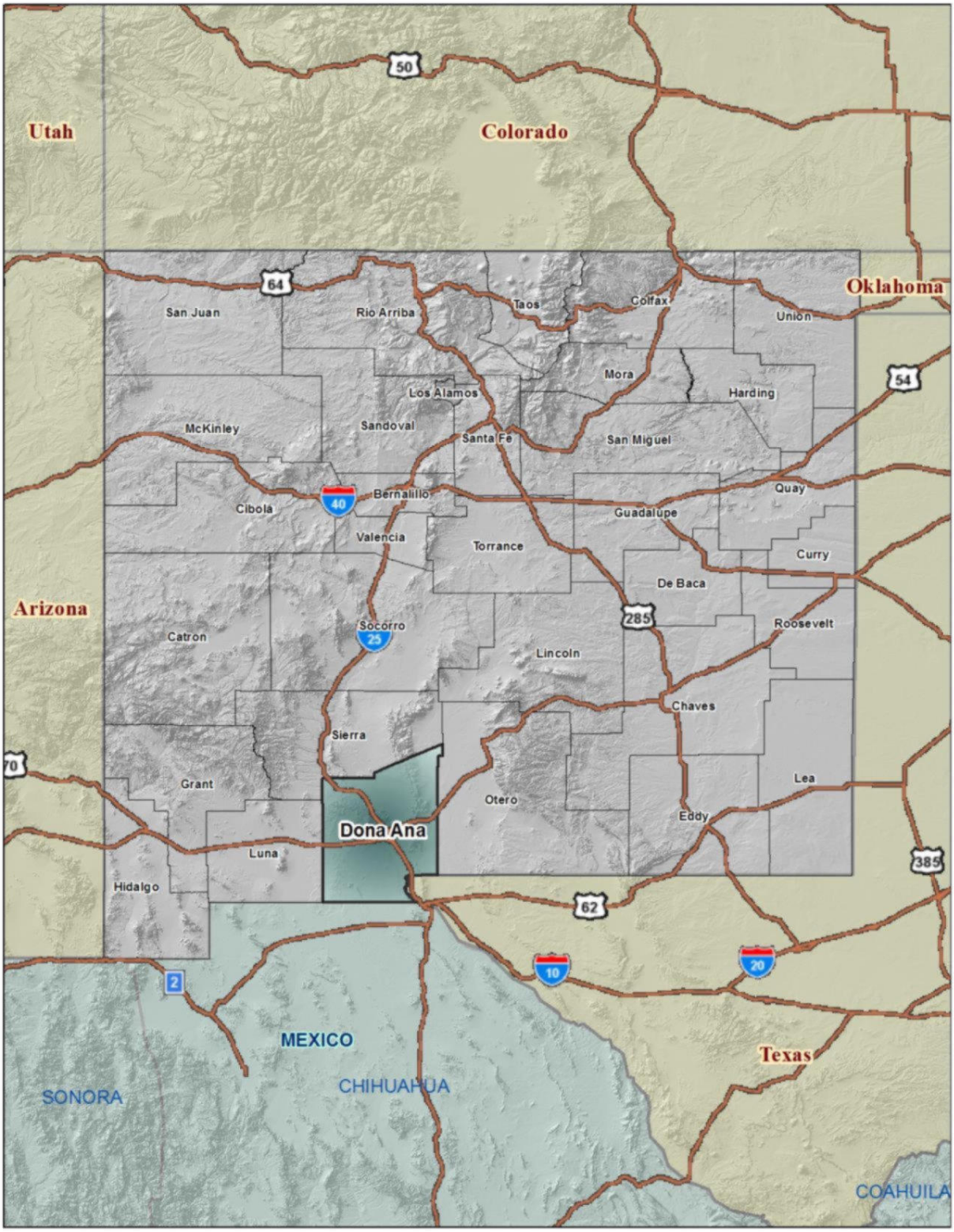


Figure 2-1
Vicinity Map

Elevations across the County range between approximately 8,900 feet at Organ Peak to approximately 3,750 feet at the southern end of the Mesilla Valley.

2.1.3 Transportation

Major roadway transportation routes through the County include U.S. Interstate Highways 10 (Los Angeles, California to Jacksonville, Florida) and 25 (Las Cruces, New Mexico to Billings, Montana)and U.S. Highways 70 and 85. There are also many state highways that serve mainly as rural farm roads. The County has three public airports located in Las Cruces, Hatch, and Santa Teresa. Rail freight is provided by both the Atchinson, Topeka and Santa Fe Railway (AT&SF) and the Southern Pacific Railway (SP). These railways have direct connections to the Midwest, California, and Texas Gulf. Daily rail service with "piggy back" and container service is provided by both rail companies in El Paso, Texas and major truck- rail (intermodal) facilities are being planned for future regional needs in Doña Ana County. Figure 2-2 shows all the major roadway and railway transportation routes and the airports within Doña Ana County.

2.1.4 Climate

Climatic statistics for weather stations within Doña Ana County are produced by the Western Region Climate Center[5] and span records dating back to the late 1890's. Three climate stations representing geographically different areas of Doña Ana County are shown on Figure 2-2. Figures 2-3, 2-4, and 2-5 present graphical depictions of temperature variability and extremes throughout the year for the Hatch 2W, State University, and Santa Teresa AP Stations, respectively. In general, average temperatures within Doña Ana County range from below freezing during the winter months to over 100 degrees Fahrenheit during the hot summer months. The severity of temperatures in either extreme is highly dependent upon the location, and more importantly the altitude, within the County.

Precipitation throughout Doña Ana County is governed to a great extent by elevation and season of the year. Average annual precipitation for most of the County averages around 10 inches. Summer rains fall almost entirely during brief, but frequently intense thunderstorms, which are often accompanied by strong winds, blowing dust, and hailstorms. The general southeasterly circulation from the Gulf of Mexico brings moisture for these storms into the state, and strong surface heating combined with orographic lifting as the air moves over higher terrain causes air currents and condensations. July and August are the rainiest months with from 30 to 40 percent of the year's total moisture falling at that time. During the warmest six months of the year, May through October, total precipitation averages from 60 to 70 percent of the annual total for the County.

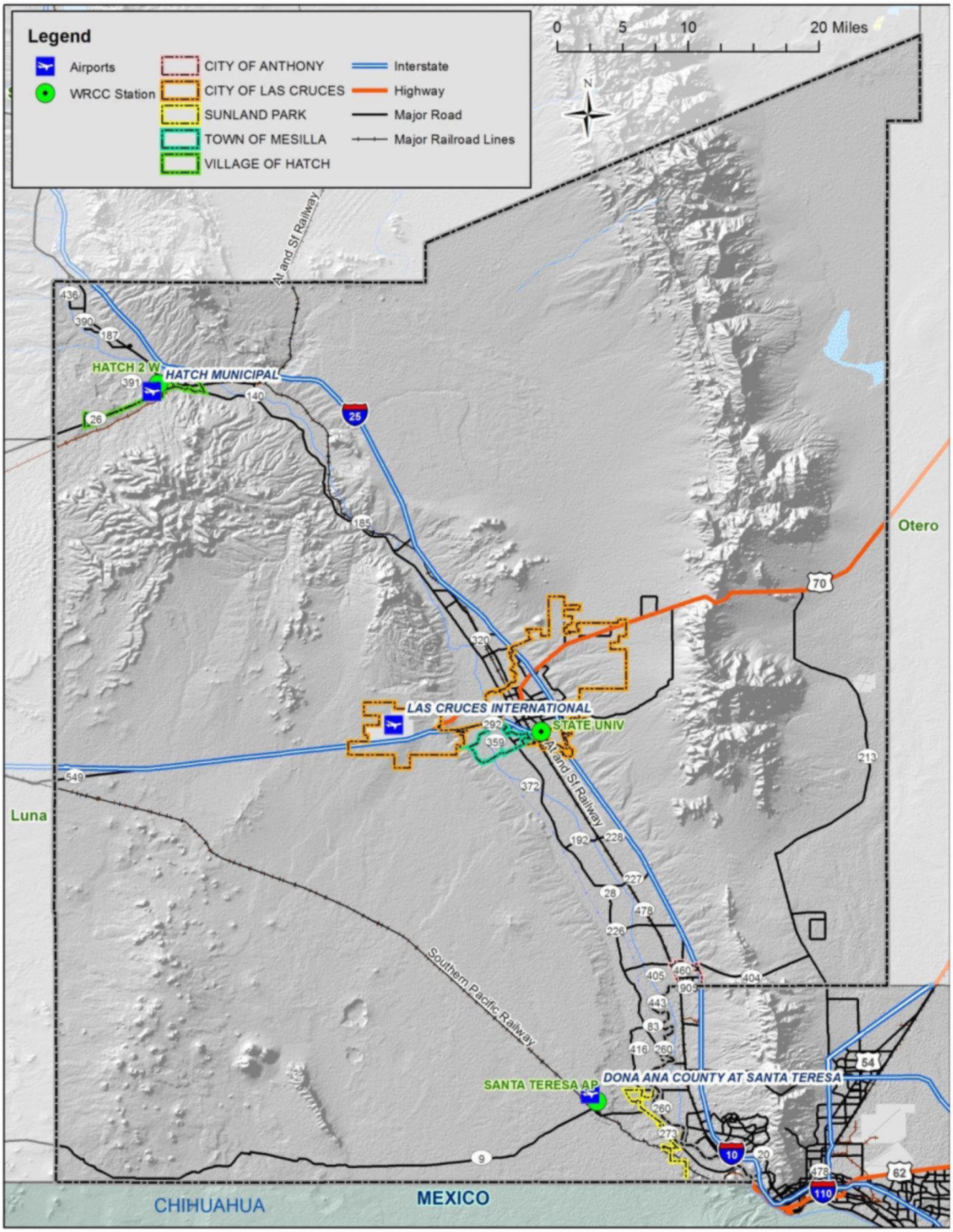


Figure 2-2
Transportation Routes Map

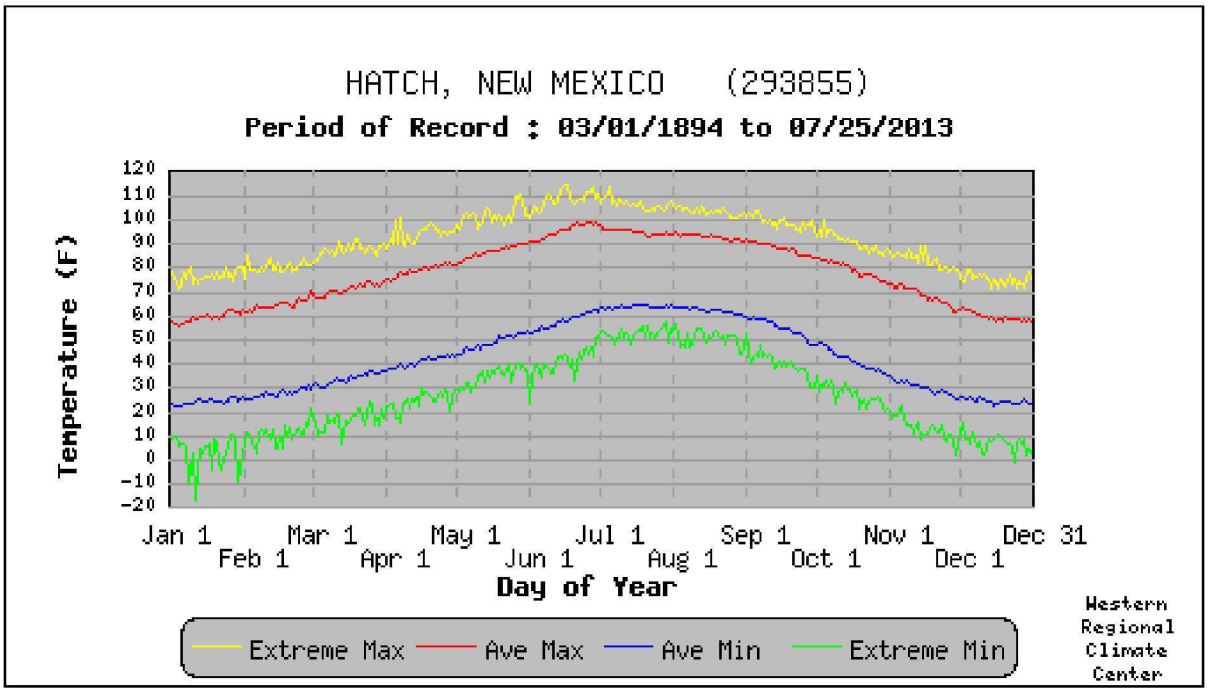


Figure 2-3
Daily Temperatures and Extremes for Hatch 2W Station, New Mexico

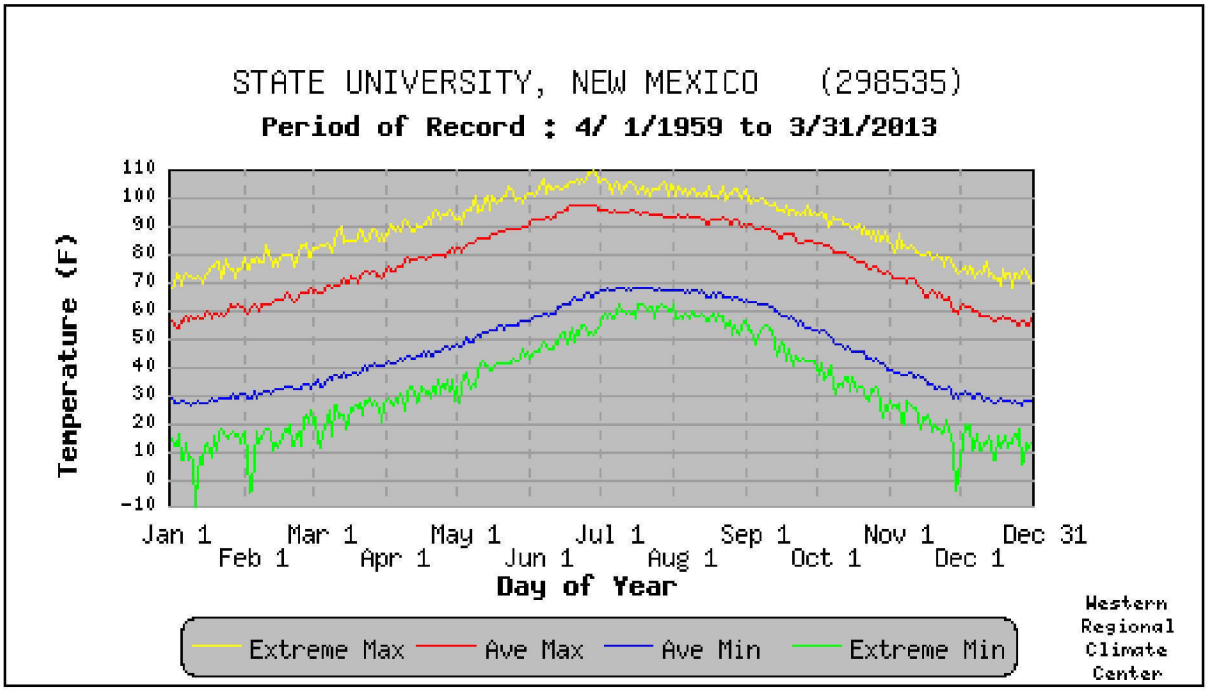


Figure 2-4
Daily Temperatures and Extremes for State University Station, New Mexico

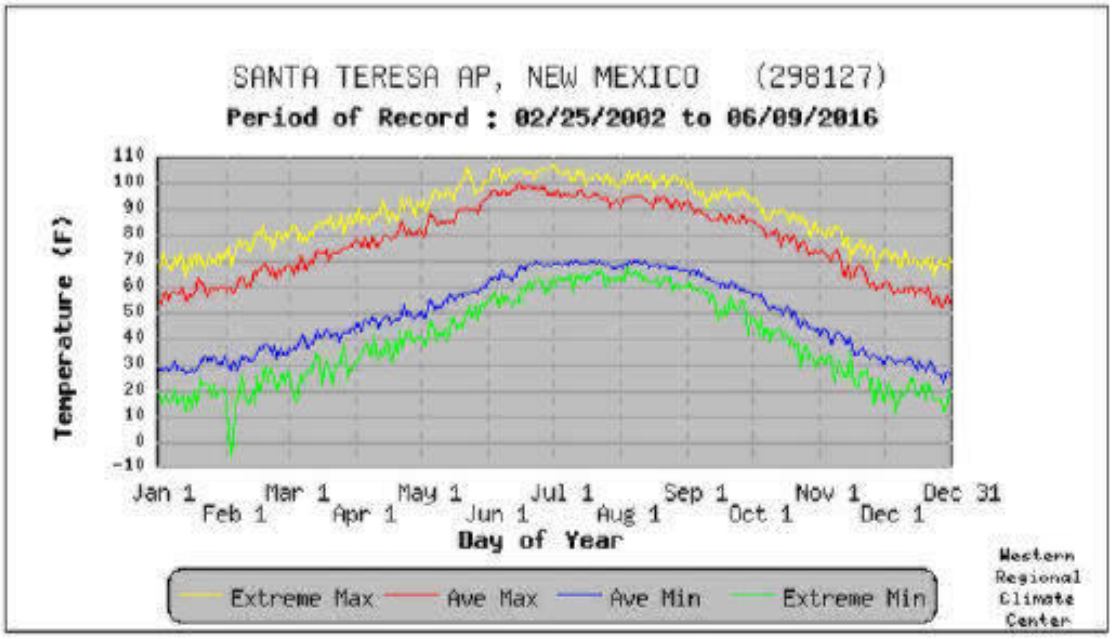


Figure 2-5
Daily Temperatures and Extremes for Santa Teresa AP Station, New Mexico

Winter precipitation is caused mainly by frontal activity associated with the general movement of Pacific Ocean storms across the country from west to east. As these storms move inland, much of the moisture is precipitated over the coastal and inland mountain ranges of California, Nevada, Arizona, and Utah. Much of the remaining moisture falls on the western slope of the Continental Divide. Winter is the driest season in Doña Ana County and winter precipitation can occur as either rain or snow, depending on the storm. Figures 2-6, 2-7, and 2-8 show tabular temperature and precipitation statistics for the Hatch 2W, State University, and Santa Teresa AP Stations, respectively. Statistics for other stations within the County and surrounding area may be viewed by accessing the WRCC website.

2.1.5 Population

The 2010 Census population estimate for Doña Ana County was 209,233 which is 19.8% greater than the 2000 Census of 174,682. A majority of the population is located in the Las Cruces metropolitan area. The other concentration of population is in the Sunland Park/Anthony area. Other non-incorporated communities and places located throughout the County are usually situated along a major highway and are mostly comprised of only one structure or landmark. Table 2-1 summarizes jurisdictional population statistics for the incorporated cities/towns/villages within the County.

HATCH, NEW MEXICO (293855)

Period of Record Monthly Climate Summary

Period of Record : 03/01/1894 to 07/25/2013

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	58.8	63.6	70.4	78.2	86.5	95.1	94.8	92.7	87.7	78.7	67.8	58.7	77.8
Average Min. Temperature (F)	23.9	27.2	33.9	40.6	48.5	57.1	63.3	61.7	54.3	41.4	29.9	23.8	42.1
Average Total Precipitation (in.)	0.47	0.38	0.26	0.28	0.30	0.62	1.88	2.06	1.47	0.90	0.39	0.67	9.66
Average Total SnowFall (in.)	1.1	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.0	3.0
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.
Max. Temp.: 70.6% Min. Temp.: 70.7% Precipitation: 94% Snowfall: 70.6% Snow Depth: 68.8%
Check Station Metadata or Metadata graphics for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu

Figure 2-6
Monthly Climate Summary for Hatch 2W Station, New Mexico

STATE UNIVERSITY, NEW MEXICO (298535)

Period of Record Monthly Climate Summary

Period of Record : 4/ 1/1959 to 3/31/2013

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	58.2	63.2	70.2	78.0	86.4	94.8	94.8	92.3	87.1	78.5	67.0	57.8	77.4
Average Min. Temperature (F)	28.1	31.5	37.2	44.0	52.3	61.6	67.5	65.7	58.7	46.1	34.7	28.5	46.3
Average Total Precipitation (in.)	0.47	0.37	0.22	0.21	0.33	0.68	1.55	2.08	1.36	0.85	0.46	0.69	9.28
Average Total SnowFall (in.)	0.9	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.3	3.4
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.
Max. Temp.: 99.6% Min. Temp.: 99.6% Precipitation: 99.6% Snowfall: 99.5% Snow Depth: 99.3%
Check Station Metadata or Metadata graphics for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu

Figure 2-7
Monthly Climate Summary for State University Station, New Mexico

SANTA TERESA AP, NEW MEXICO (298127)

Period of Record Monthly Climate Summary

Period of Record : 02/25/2002 to 06/09/2016

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	58.5	62.3	71.3	79.5	88.1	96.9	94.9	93.4	87.5	78.6	66.6	57.1	77.9
Average Min. Temperature (F)	29.7	32.6	38.9	47.2	55.6	65.3	69.0	67.9	61.3	50.0	36.6	28.8	48.6
Average Total Precipitation (in.)	0.53	0.55	0.13	0.19	0.43	0.68	2.13	1.59	1.36	0.74	0.57	0.50	9.40
Average Total SnowFall (in.)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.0	1.4
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.

Figure 2-8
Monthly Climate Summary for Santa Teresa AP Station, New Mexico

Table 2-1: Jurisdictional population estimates for Doña Ana County				
Jurisdiction	**2010**	**2018**	**2020**	**2025**
Doña Ana County – TOTAL	209,233	217,522	232,946	244,455
Doña Ana County – Unincorporated	83,563	84,208	95,217	no data
Cities, Towns and Villages				
City of Anthony (Anthony CDP)	9,504	9,308	10,181	no data
Village of Hatch	1,617	1,606	1,706	no data
City of Las Cruces	98,312	102,926	104,694	111,128
Town of Mesilla	2,196	1,835	2,222	no data
City of Sunland Park	14,332	17,639	18,926	no data

Sources:
- *Figures for 2010 and 2018 from US Census Bureau*
- *2020 and 2025 county projections from Bureau of Business and Economic Research, University of New Mexico, release date of February 2017.*

2020 City, Town, Village Projections from Mesilla Valley Economic Development Alliance ESRI Data

2.1.6 Economy

The Dona Ana County Plan 2040[6] and Mesilla Valley Economic Development Alliance provide discussions of the economic conditions and factors impacting Doña Ana County. Excerpts and information from that document are included below.

Agriculture – Agriculture is an important driver in the economy of Dona Ana County. According to the 2012 Census of Agriculture, Dona Ana County is the largest single pecan producing county in the Nation. Dona Ana County also ranked 35th in milk production in the nation. Market Value of farm products sold from Dona Ana farms in 2012 totaled more than $351 million.[3] Despite the fact that commercial agriculture is so important to Dona Ana County, it now has less cultivated land than a generation ago. Nevertheless, the crops cash value has increased dramatically, partly from foreign demand, including from China. From Hatch chile to Mesilla Valley pecan groves, commercial agriculture is central to the identity and the economy of Dona Ana. However, from 1974 to 2010, land in agricultural production shrank by over 14,000 acres. Cultivation of feed crops and vegetable decreased by 35,000 acres from 1974 to 2010 (a 41% decrease), while orchards increased by almost 20,000 acres (a 211% increase). Some of the loss is attributable to increased residential development in the valley, mainly near Las Cruces.[4]

Employment – Dona Ana County is a gateway for international trade and a hub of retail transportation. In 2010 Dona Ana County had a population of 210,000. It can expect to

[3] Mesilla Valley Economic Development Alliance (https://www.mveda.com/our-partners/agriculture/)

[4] Dona Ana County Comprehensive Plan – Plan 2040 (2015)

grow by about 85,000 people over the next 25 years. It will likely also add about 42,000 jobs in the next 25 years. Dona Ana County felt the effects of the Great Recession. It lost jobs and job growth. While New Mexico is currently 4.4% below its peak of total jobs in 2007, Dona Ana County has fared slightly better than the State. The County lost fewer jobs during the recession and has seen positive, though slower, job growth since 2010. As of 2014, Dona Ana County has 71,000 full-time equivalent (FTE) jobs. Employment is expected to grow by 42,000 jobs in the next 25 years, resulting in 113,000 full time jobs by 2040. The industries of leisure and hospitality, information, construction, and manufacturing are expected to have the highest rates of growth over the next 25 years.

Growth in Dona Ana County is most likely to occur in eastern Las Cruces and southeast Dona Ana along the border of El Paso. Eastern Las Cruces already has a critical mass of employment, new households, and new retail that will continue to expand as the housing market and economy improve and job growth strengthens. With an increase in border-related manufacturing and trade and Union Pacific's recent relocation to Dona Ana, the economies of El Paso and Dona Ana County will be closely tied together.

The strongest sectors of the Dona Ana economy include government (29% of jobs), education and health services (19% of jobs), and trade, transportation, and utilities (15% of jobs, though retail trade makes up about 70% of this), which are also the largest contributors to the County's GDP. The economy has been dependent on the federal government and associated contractors in past years with Fort Bliss and White Sands Missile Base, and stagnant government spending has been a contributor to the overall slow economic recovery. Dona Ana has been working to create a diversified economy with targeted industry growth of manufacturing and logistics, aerospace, renewable energy, business and financial services, technology, value-added agriculture, and digital media.

RCLCO, in preparing Dona Ana County's Plan 2040, evaluated non-agricultural employment growth as projected by Moody's Economy and the New Mexico Department of Workforce Solutions (NMDWS). While historical annual growth has been sporadic, Dona Ana County was producing about 1,600 new jobs annually in the 10 years preceding the Great Recession, while only 450 new jobs have been created annually in the most recent five years. Moody's predicts job growth to decline in 2014 and surge in 2015 and 2016, adding 1,500 to 2,000, as compared to the 150 jobs created in 2014, and NMDWS is projecting flat employment growth of about 885 new jobs annually through 2022.

As indicated by Table 2-1, growth in Doña Ana County on a whole has been moderate, with most of the growth occurring in metropolitan Las Cruces area and the southern region of the County around Sunland Park and Anthony. The Village of Hatch actually decreased in population from 2000 to 2010, and other areas essentially experienced no growth.

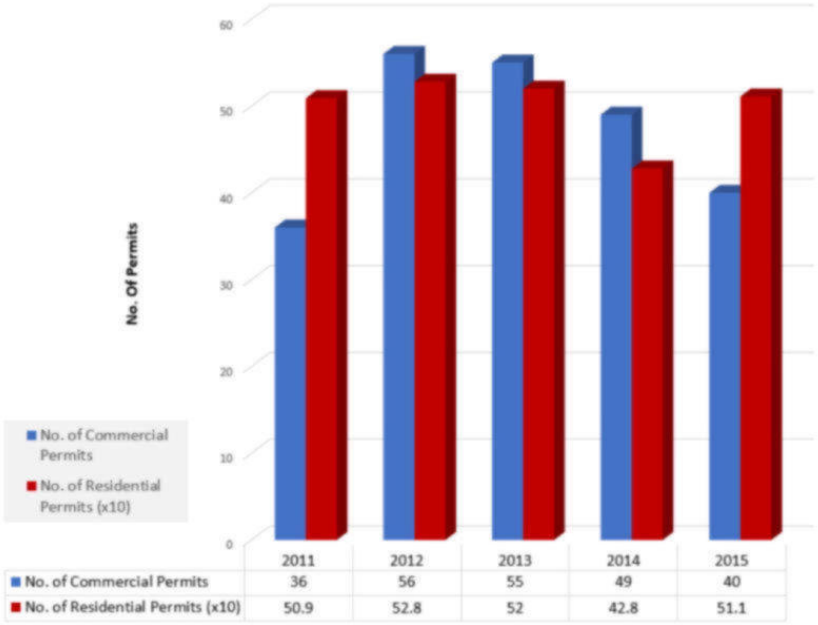
Figure 2-9 presents the number of residential and commercial building permits issued for Doña Ana County during the period of 2011 to 2015, as compiled by the Mesilla Valley Economic Development Alliance[5]. The trend is one of a general little variation, indicating

[5] Mesilla Valley Economic Development Alliance website, URL at: http://www.mveda.com/html/economic_indicators.html

a period of minimal growth or decline in annual development.

As of March 2012, the estimated Labor Force for the Las Cruces MSA is 100,138 with an unemployment rate of approximately 5.2%[6]

Gross Receipts – Table 2-2 provides a listing of gross receipts for fiscal year 2018 as reported by the New Mexico Taxation and Revenue Department.[7]



Source: Mesilla Valley Economic Development Alliance

Figure 2-9
Annual residential and commercial building permits for Doña Ana County

Table 2-2: 2018 Gross receipts for Doña Ana County and incorporated jurisdictions

Category	2018 Gross Receipts (x$1,000) City of Anthony	Village of Hatch	City of Las Cruces	Town of Mesilla	City of Sunland Park	Doña Ana County (Uninc.)
Agriculture, Forestry, Fishing and Hunting	$4,435	$4,032	$24,278	$0	$30	$24,418
Mining and Oil and Gas Extraction	$0	$0	$236	$0	$0	$4,481

[6] New Mexico Department of Workforce Solutions, Labor Analysis Statistics and Economic Research website, URL at: http://laser.state.nm.us/default.asp

[7] New Mexico Taxation and Revenue Department website, URL at: http://www.tax.newmexico.gov/Tax-Library/Economic- and-Statistical-Information/Pages/Quarterly-RP-80-Reports-Gross-Receipts-by-Geographic-Area-and-2-digit-NAICS- Code.aspx

Table 2-2: 2018 Gross receipts for Doña Ana County and incorporated jurisdictions						
	2018 Gross Receipts (x$1,000)					
Category	City of Anthony	Village of Hatch	City of Las Cruces	Town of Mesilla	City of Sunland Park	Doña Ana County (Uninc.)
Utilities	$4,328	$2,816	$91,962	$475	$15,890	$90,509
Construction	$17,541	$3,697	$464,156	$3,282	$69,627	$295,028
Manufacturing	$1,468	$1,600	$136,652	$5,326	$9,095	$422,665
Wholesale Trade	$1,142	$240	$508,249	$2,796	$12,330	$276,347
Retail Trade	$10,817	$20,694	$1,662,772	$10,500	$17,176	$171,965
Transportation and Warehousing	$5,108	$8,100	$96,384	$11	$7,464	$59,262
Information and Cultural Industries	$5,854	$1,346	$149,533	$4,147	$9,085	$66,490
Finance and Insurance	$543	$909	$66,056	$94	$384	$2,441
Real Estate and Rental and Leasing	$1,455	$617	$121,273	$693	$3,555	$61,911
Professional, Scientific and Technical Services	$1,616	$121	$243,246	$965	$4,858	$110,705
Management of Companies and Enterprises	$0	$0	$5,632	$0	$0	$0
Admin and Support, Waste Mgt and Remed	$3,741	$69	$64,277	$222	$544	$95,756
Educational Services	$1	$0	$13,370	$50	$1,606	$22,649
Health Care and Social Assistance	$14,222	$1,991	$1,696,856	$4,596	$26,155	$22,826
Arts, Entertainment and Recreation	$65	$0	$18,246	$112	$8,122	$3,186
Accommodation and Food Services	$1,974	$5,822	$287,857	$16,733	$9,418	$10,925
Other Services (except Public Admin)	$4,288	$718	$279,866	$3,166	$7,392	$157,371
Public Administration	$0	$0	$11,196	$0	$0	$3,501
Unclassified Establishments	$2,273	$42	$21,031	$8	$5,987	$10,836
Totals	**$80,870**	**$52,814**	**$5,963,127**	**$53,177**	**$208,718**	**$1,913,271**
Source: New Mexico Taxation and Revenue Department, 2019						

2.1.7 Land Ownership/Management

According to 2020 Bureau of Land Management records, land ownership/management within Doña Ana County is comprised of approximately 13.4% Private, 11.8% State, and 74.8% Federal interests. Table 2-3 summarizes the general land ownership statistics for Doña Ana County and Figure 2-10 depicts the geographic distribution of the holdings.

Table 2-3: Land ownership/management for Doña Ana County		
Ownership / Management Agency or Entity	**Land Area (SqMiles)**	**Percent of Doña Ana County**
US Bureau of Land Management	1,734.51	45.47%
US Bureau of Reclamation	1.31	0.03%
US Department of Agriculture	171.04	4.48%
US Department of Defense	773.60	20.28%
US Fish and Wildlife Service	88.71	2.33%
National Park Service	82.66	2.17%
Private	511.2	13.40%
State of New Mexico	450.22	11.80%
New Mexico State Park	0.89	0.02%
Source: U.S. Bureau of Land Management, 2020		

The government agencies having the largest landholdings in the County are:

- **U.S. Bureau of Land Management (BLM)** – the BLM has over 1,734 square miles of federally-owned land (45.5% of Doña Ana County land). Most BLM lands are located in the western portion of the County.
- **U.S. Department of Defense (DOD)** – the DOD owns and/or manages approximately 773.6 square miles of land (20.3% of Doña Ana County). The lands comprise a portion of the White Sands Missile Range and Fort Bliss Military Reservation located on the eastern side of the County. This land is not available for private ownership.
- **State of New Mexico** – the State of New Mexico, through the State Land Trust, New Mexico State University, New Mexico State Park, owns and manages over 450.2 square miles of land (11.8% of Doña Ana County). State Trust lands were allocated when the State of New Mexico was formed, and proceeds from the sale or lease of State Trust land must be used for education or public services. The Chihuahuan Desert Rangeland Research Center (CDRRC), located north and a little west of the City of Las Cruces on the eastern side of the Rio Grande, is the largest consolidated area of State owned land. The CDRRC and other NMSU properties comprise a significant portion of the State owned land within the County.
- **U.S. Department of Agriculture (USDA)** – the USDA owns 171 square miles of land (4.5% of Doña Ana County) north of Las Cruces and west of the White Sands Missile Range. The land is preserved and used for research by NMSU in conjunction with the CDRRC.

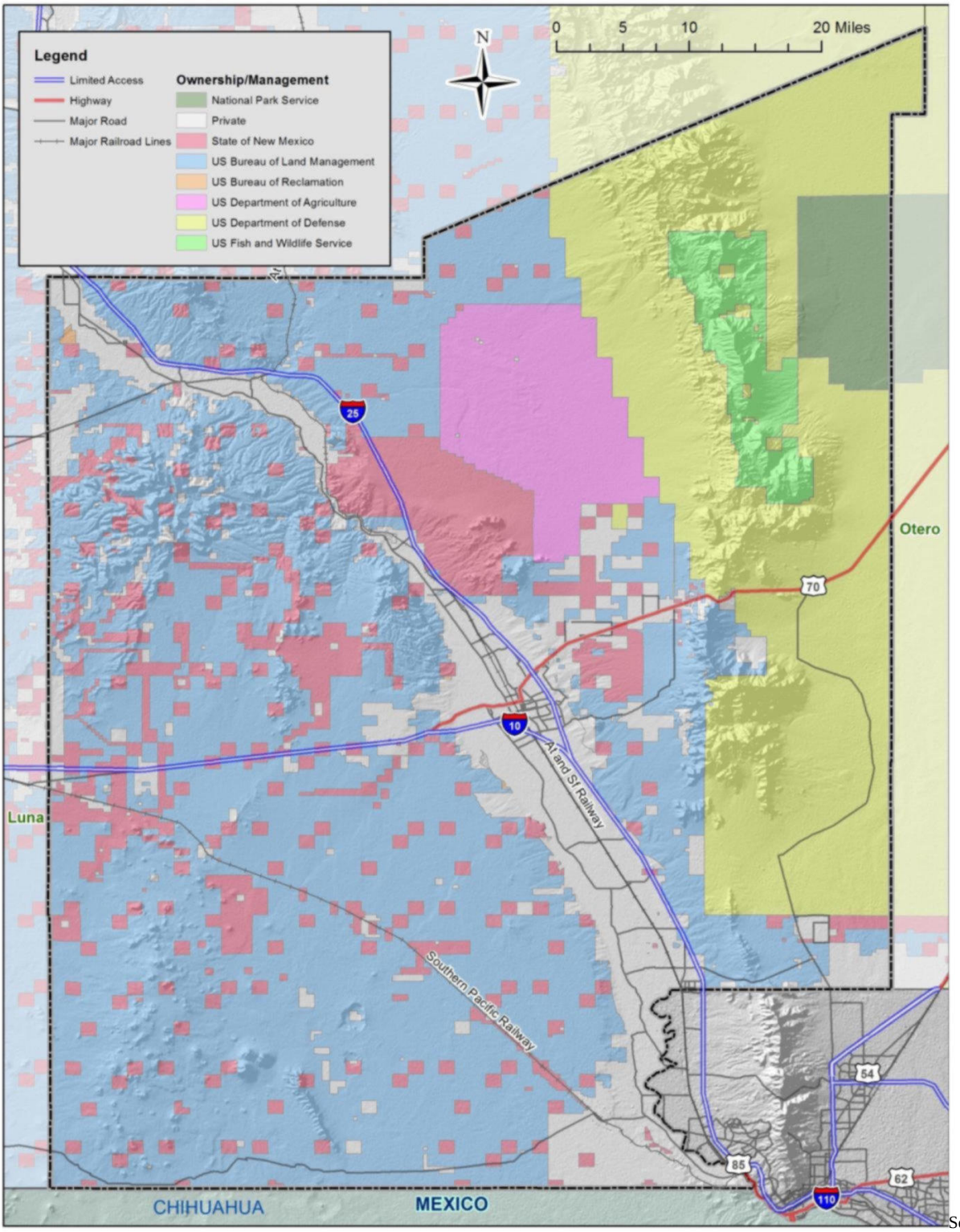
Other federal agencies having minor land ownership footprints within the County include the Fish & Wildlife Service (2.3%), National Parks Service (2.2%), and the U.S. Bureau

of Reclamation (0.03%). Private land ownership of Doña Ana County is estimated at 13.4%, and is mostly located along the Rio Grande and near or within metropolitan areas.

2.1.8 Unincorporated Area Growth Trends

Doña Ana County is a gateway for international trade and a hub of retail transportation – and trade offers opportunities for growth. In 2010 Doña Ana County had a population of 210,000. It can expect to grow by about 85,000 people over the next 25 years. This is a significant, but not an overwhelming rate of growth: about 1.1% per year. It will likely also add about 42,000 jobs in the next 25 years.

Doña Ana County felt the effects of the Great Recession. It lost jobs and job growth. While New Mexico is currently 4.4% below its peak of total jobs in 2007, Doña Ana County has fared slightly better than the State. The County lost fewer jobs during the recession and has seen positive, though slower, job growth since 2010. As of 2014, Doña Ana County has 71,000 full-time equivalent (FTE) jobs. Employment is expected to grow by 42,000 jobs in the next 25 years, resulting in 113,000 full time jobs by 2040. The industries of leisure and hospitality, information, construction, and manufacturing are expected to have the highest rates of growth over the next 25 years.



Source: U.S. Bureau of Land Management, 2012

Figure 2-10
Land Ownership/Management within Doña Ana County

2.2 Jurisdictional Overviews

The following are brief overviews for each of the participating jurisdictions in the Plan.

2.2.1 City of Anthony

History – In 1853, the Gadsden Purchase added a strip of land to the southern U.S., and the eastern most portion included the Mesilla Valley and the land currently occupied by the City of Anthony. According to an article written by Ms. Phyllis Eileen Banks for the SouthernNewMexico.com website, Anthony's "early center of commerce developed around a flour mill located about 1/2 mile north of the state line and slightly east of where the railroad now runs. Farmers would visit and conduct business when they brought grain to the mill to be ground."[8] Anthony was also once called Halfway House, since it was half way between Las Cruces, NM and El Paso, TX. The city is also located on the historic Butterfield Trail and was a regular stop for the Butterfield Stagecoach. When the Atchison, Topeka & Santa Fe Railroad established a station at La Tuna, just south of the New Mexico in 1881, Anthony grew even more. The population of Anthony (as a census CDP) grew by over 325% from 1980 to 2010. Anthony officially incorporated July 1, 2010 and is the newest incorporated community within Doña Ana County.

Geography – The City of Anthony is located at the southeastern end of Doña Ana County. At an elevation of 3,802 feet, the city is located on the New Mexico/Texas state line in the Upper Mesilla Valley. The City occupies approximately 2.7 square miles of land with its geographic centroid at latitude 32.01 degrees north, longitude 106.60 degrees west. Interstate 10 runs north and south through the eastern portion of Anthony and the I-25/I-10 junction is located approximately 20 miles north at Las Cruces. The Burlington Northern Santa Fe Railroad also passes through the City on a north-south alignment through the western edge adjacent to State Road 478. Anthony Wash Arroyo enters and exits the City at the far southeastern corner. The Rio Grande is located west of Anthony at the heart of the Mesilla Valley. No other major watercourses are located in the City. Most of the land within the City boundaries is privately held, except for a few small County and Gadsden School District owned parcels.

Economy – Anthony's location along current and historic trade routes between Las Cruces, NM and El Paso, TX, makes the community an ideal home for service industries and retail sales that are patronized by traffic along I-10 and the local resident population. Based upon the business summary available through the MVEDA, finance, insurance, real estate, and service industries contribute a significant portion to the City's economy. There are also several business parks within the City and Doña Ana Community College has a modern campus in Anthony that provides general education and workforce development for Anthony and the surrounding rural communities.

Growth Trends – Prior to incorporation, the area that is now the City of Anthony was one of several colonias identified for New Mexico. According to the Doña Ana County

[8] URL at: http://southernnewmexico.com/Articles/Southwest/Dona_Ana/Anthony/AnthonySanMiguelLaMesaCha.html

Comprehensive Plan[9], the 1990 housing unit count for the Anthony CDP was 1,362. In 2015, the Mesilla Valley Economic Development Alliance reported the estimated number of housing units for the Anthony CDP is 2,825, which is nearly a doubling of the 1990 estimate.[10]

In 2015, Accent Homes developed a subdivision of 101 homes on the north side of the intersection of Clark and Acosta Road. The subdivision took three years to complete. Future development in the community includes a 14 acre housing development located at the corner of Ruth & Katy Street and a development of approximately 60 homes and condominiums. In addition, the City has purchased the 130 acre former Dos Lagos Golf course for future development. This development is anticipated to be comprised of parks and recreation, economic development, and housing areas.

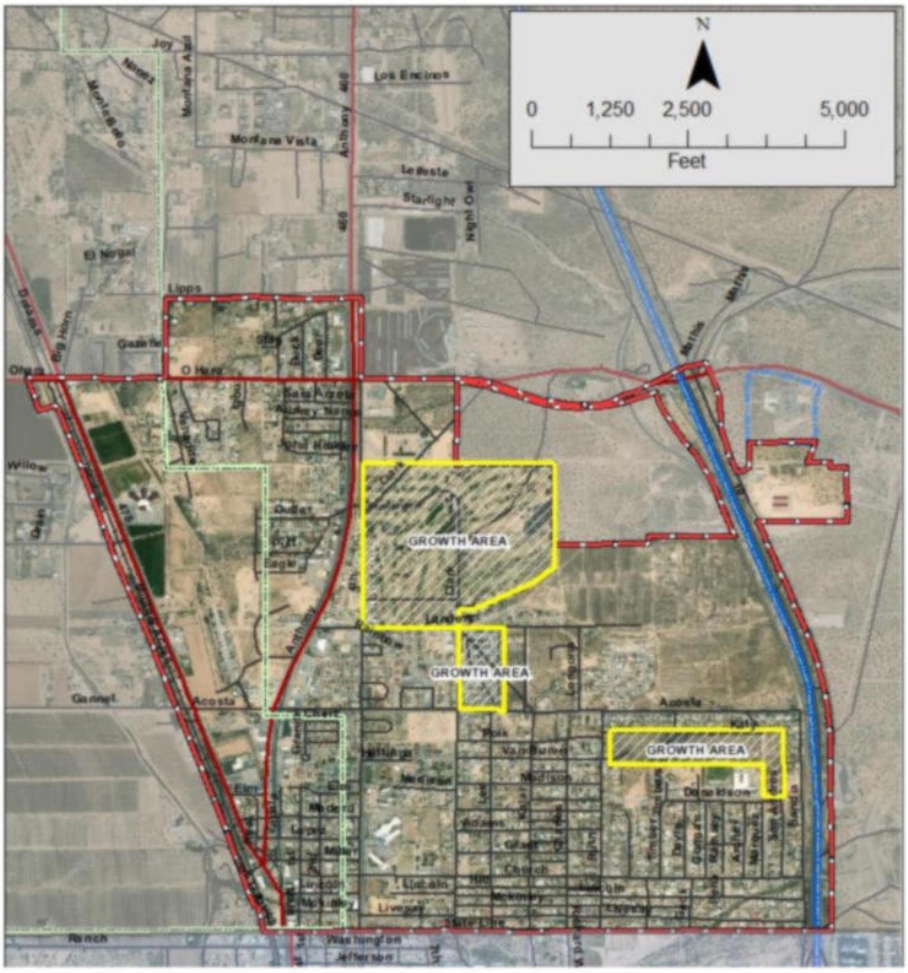


Figure 2-11
Anticipated Future Growth Areas for the City of Anthony

[9] Dona Ana County Comprehensive Plan – Plan 2040 (2015)

[10] Mesilla Valley Economic Development Alliance website, URL at: http://www.mveda.com/html/economic_indicators.html

2.2.2 Elephant Butte Irrigation District

The following descriptions are taken from materials published by the Elephant Butte Irrigation District (EBID) on their website[11].

History – On December 22, 1904, the Elephant Butte Water Users Association was formed to provide for and distribute to the lands of the holders of shares of the association an adequate supply of water for the irrigation of members lands. The Association was formed to enter into any contract with the United States Government to acquire and construct necessary facilities. The ownership of a share of stock in the Association carried with it the right to have delivered a proportionate amount of all stored and developed water. The Rio Grande Project was authorized on February 25, 1905, as a Bureau of Reclamation Project, under the authority of the Reclamation Act of 1902, to construct a dam on the Rio Grande as part of a general system of irrigation. On June 27, 1906, the Elephant Butte Water Users Association and the El Paso Valley Water Users Association entered into a "Construction Contract" with the United States. This contract obligated the individual shareholders to pay for the construction of the irrigation works of the Rio Grande Project, and also to pay the costs of yearly maintenance and operation. The 1906 contract recognized that the rights to the use of water from the proposed irrigation works would be appurtenant to the designated lands owned by the shareholders. On June 15, 1918, Elephant Butte Irrigation District, Elephant Butte Water Users Association, and the United States of America entered into a contract to dissolve the Water Users Association and transfer all of the liabilities, benefits, rights and privileges, and project revenues solely to Elephant Butte Irrigation District (EBID). The initial function of the EBID was to collect revenues from area surface water users to repay the debt owed to the federal government for the construction of the EBID's irrigation and drainage system. In addition, the EBID handled relations between area surface water users and the Bureau of Reclamation. All operation and maintenance remained under the control of the Bureau of Reclamation until the EBID had repaid the construction debt in 1971. Negotiations then began which detailed and resulted in the transfer of the operation and maintenance from the Bureau of Reclamation to the EBID. In 1992 the EBID received a deed turning over title and ownership to the canals, laterals, and drains to the EBID.

Historically, water distributed by the Elephant Butte Irrigation District has been used for agricultural purposes. As irrigated land has been converted to urban development, the water associated with it has been reassigned to other qualified land within the EBID. The EBID has resisted pressure to convert the associated water to nonagricultural uses because the agricultural demand remains. However, the EBID also understands that it must address these water management issues with creative thinking and a willingness to address the demands for regional solutions.

EBID is a quasi-municipal entity of the state of New Mexico. The district operates under New Mexico statutes §73-10-1 through §73-10-47 Irrigation District Cooperating with United States under Reclamation Laws; Formation and Management, and §73-11-1

[11] Website URL at: http://www.ebid-nm.org/general/About_EBID/index.shtml

through §73-11-55 Irrigation Districts Cooperating with United States under Reclamation Laws; Fiscal Affairs; Local Improvements and Special Powers. A nine-member board of directors manages EBID. Each member is elected for a two-year term and represents one of Doña Ana County's nine School District Precincts. The Board of Directors hires a Treasurer/Manager to oversee EBID's daily operations and carry out the board's directives. EBID functions are broken down into eight major departments: Irrigation Systems, Maintenance, SCADA Systems, Groundwater Resources, Engineering, Administration, Human Resources & Safety and Executive.

- Irrigation Systems department is in charge of ordering and scheduling water, maintaining water deliveries during season and assisting with maintenance of canals during the rest of the year.
- Maintenance maintains the canals, laterals and ditches owned and used by EBID to deliver water. In addition, they work on construction projects: box structures, pipeline installations and culvert work. The infrastructure is in the name of EBID and title to all canals, laterals and drains are owned by the District.
- SCADA Systems department monitors and records river flow, on-farm deliveries, main canal diversions, drain and spillway flows, water quality, weather and groundwater levels.
- Groundwater Resources uses test well data to model the aquifers supplying EBIID farmers and monitors groundwater depletion due to drought conditions.
- Engineering is responsible for any issues dealing with water-righted lands including, surface water right classifications, changes in property ownership, water right transfers and special use permits. They work closely with the Maintenance department assisting with construction projects that need engineering specifications. This department works closely with the State Engineers office to help water-righted owners with any water rights under adjudication in the Lower Rio Grande Stream Adjudication.
- Administration follows the board's directives and is responsible for the District financial operations including procurement, tax (billing) and payroll.
- Human Resources and Safety supports all departments throughout the District regarding all personnel matters, including employment, benefits administration, worker's compensation, and compliance with all Federal and State regulations in regard to these matters. Safety is an integral part of the District. Compliance with all OSHA guidelines and maintain a safe work environment for all employees.
- Executive department includes the Treasurer/Manager who is responsible for all Staff Members of the departments, receives directives from the Board of Directors, and maintains all legal matters related to the District.[12]

Geography – In general, the EBID boundaries straddle the Rio Grande from approximately two miles downstream of the Caballo Dam to just north of the New Mexico – Texas state

[12] https://ebid-nm.org/index.php/about-ebid/#departments

line. There are 90,640 acres of land within the EBID boundaries that have authorized water rights, with an estimated 7,900 water users. The Rio Grande Project covers 130 miles of land located in the Lower Rio Grande Basin from Caballo Dam to El Paso, Texas.[13]

There are five dams on the Rio Grande that service the EBID, described as follows:

Elephant Butte Dam, Reservoir, and Power Plant – Elephant Butte Dam and Reservoir (originally called Engle Dam) are located 125 miles north of El Paso, Texas. Elephant Butte Dam is operated and maintained by the U.S. Bureau of Reclamation and can store 2,210,298 acre-feet of water, providing irrigation water and year round power generation. The dam is a concrete gravity structure 301 feet high and 1,674 feet long, including the spillway, and was completed in 1916. The power generation system at Elephant Butte consists of a 24,300-kilowatt hydroelectric power plant. The power system consists of 490 miles of 115-kilowatt transmission and 11 substations with a total of 81,750 kilo-amperes. The power station was developed and operated by the Rio Grande Project until 1977, after which it was sold to a private electric company.

Caballo Dam and Reservoir – Caballo Dam and Reservoir are operated and maintained by the U.S. Bureau of Reclamation and are located on the Rio Grande, 25 miles downstream from Elephant Butte Dam. The dam is an earth fill structure 96 feet high and 4,590 feet long, with a storage capacity of 343,990 acre-feet. Water discharged from Elephant Butte Dam Powerplant during winter power generation is impounded at Caballo Dam for irrigation use during the summer.

Percha Diversion Dam and Canal System – Percha Diversion Dam is 2 miles downstream from Caballo Dam. It diverts water into the Rincon Valley Main Canal. The dam is a concrete ogee weir with embankment wings and two 20-foot river gates. The Rincon Valley Main Canal, which carries water for the irrigation of 16,260 acres in the Rincon Valley, is 28.1 miles long and has an initial capacity of 350 cubic feet per second. The canal crosses under the Rio Grande at the Garfield, Hatch and Rincon Siphons.

Leasburg Diversion Dam and Canal System – The Leasburg Diversion Dam is located 62 miles north of El Paso, Texas, at the head of the Mesilla Valley, and is a concrete ogee weir with embankment wings and three river gates. This structure diverts water into the Leasburg Canal for the upper 31,600 acres of the Mesilla Valley irrigation system. The Leasburg Canal, which conveys irrigation water to the Mesilla Valley, is 13.7 miles long and has an initial capacity of 625 cubic feet per second.

Mesilla Diversion Dam and Canal System – The Mesilla Diversion Dam is located 40 miles north of El Paso, Texas and is a low concrete weir, radial gate structure that is 22 feet high and flanked by levees. This structure diverts water into the East Side and West Side Canals for the lower 53,650 acres of the Mesilla Valley irrigation system. The East Side Canal is 13.5 miles long and has an initial capacity of 300 cubic feet per second. The West Side Canal is 23.5 miles long and has an initial capacity of 650 cubic feet per second. Near its

[13] Ibid

terminus, the West Side Canal system crosses under the Rio Grande in the Montoya Siphon.

Water delivery to constituents from the over 375 miles of canals and laterals is accomplished through eleven irrigation units consisting of two Ditchriders each. An additional 275 miles of drains and wasteways that return surface water flow to the river complete the EBID system. The canals, laterals, drains and wasteways that make up the District's irrigation system are maintained almost entirely by the EBID. A large maintenance section keeps the facilities in working order throughout the water season. During the maintenance season, all major and/or minor structure repairs are made, as well as all new constructions such as turn-out installations and any large construction projects, like pipeline installations and box structures.

The EBID maintains a vast network of radio telemetry units (RTUs) that constantly monitor the Rio Grande Stations, headings, checks, farm turnouts, and irrigation wells. The data for most of the RTUs can be accessed via the Water Resource Information System (WRIS) Data Center on the EBID website. The purpose of the system is primarily for monitoring of the EBID system. Providing public access to the reported data brings transparency to the EBID radio telemetry program and provides useful information to farmers, local and state government officials, and the public at large.

Economy - The EBID Board of Directors sets the yearly charges for water right holders. Assessments are levied on lands that are capable of receiving water through EBID's water delivery system. Assessments are broken down into three basic charges: general, operating and maintenance (O&M) and reservoir fee. There can be additional charges listed on the bill for administrative, reclassification and local improvement district (LID).

Growth Trends – EBID's capacity for growth is strictly limited to the water rights laws and operational limitations set forth in the governance statutes under which the EBID was formed. Accordingly, there is no opportunity for expansion of service areas or growth in a traditional sense. Most of EBID efforts are currently focused on flood control issues relating to storm water management and dam failure protection. In specific, EBID is:

- Regularly maintaining 27 Flood Control dams in EBID boundaries with hope to refurbish and upgrade.
- Installing weather stations in some of the larger watersheds impacting EBID facilities throughout Doña Ana County and instrumenting EBID rain gauges throughout the valley.
- Installing metering devices on selected arroyos to measure flood flows.
- Enlarging EBID drainage system to capture flood flow run off.
- Building drainage retention sites to allow for capture of flood flows for eventual recharge to the aquifer and possibly using water for irrigation purpose.

These efforts are continuing and will be expanded as funds become available within the next five years.

2.2.3 Village of Hatch

History – According to the Village of Hatch Comprehensive Plan[14], the Village of Hatch's beginnings are tied to the completion of the Santa Fe Railroad line between Deming and Rincon around 1880. The Village was presumably named after General Edward Hatch, a U.S. Army officer who had visited the region earlier. In 1911, the official townsite was surveyed and laid out with many additions to the growing community. The construction of Elephant Butte Dam and the formation of EBID in 1917 brought an assured water supply to area farmers and a boost to the economy of Hatch. Huge floods in 1921, 1926 and 1935 caused major damage and devastation to the area, but each time, Hatch would rebuild and continue to grow. The Village of Hatch was incorporated in 1927 with a population of about 300 residents.

Geography – The Village of Hatch is located at the northwest corner of Doña Ana County. At an elevation of 4,057 feet, the Village is located along the west/south bank of the Rio Grande approximately 33 miles northwest of Las Cruces, New Mexico. The Village occupies approximately 3.3 square miles of land with its geographic centroid at latitude 32.66 degrees north, longitude 107.16 degrees west. Interstate 25 is located north of the Village and several state highways pass through the Village including Highways 26, 154, 185, 187, and 543. The Burlington Northern Santa Fe Railroad also passes through the Village running on an east-west alignment through the southern portion.

The majority of Hatch is located within the geologic floodplain of the Rio Grande. Several arroyos and other small ephemeral drainages pass through Hatch on their course to the Rio Grande, including Spring Canyon and Placitas Arroyos. The Rio Grande is located along the north boundary of Hatch.

Most of the land within the Village boundaries is privately held (81%). The next largest land owner is the BLM, which holds a significant portion of the western annex.

Economy – Hatch is known as the "Chile Capital of the World" and agriculture will always be a strong component of the local economy. Other elements include manufacturing with metal fabrication and machining, and tourism. Hatch is the home of the NextEra Energy Resources' Hatch Solar Energy Center I, which generates 5.1 MW of solar derived electrical power. In February 2012, the New Mexico Spaceport Authority announced plans to locate one of two off-site welcome centers in the Village of Hatch. However, no contract award has been made at this time due to a lack of suitable sites. [17]

Growth Trends – Development trends have been primarily limited to the downtown district along Hall Street and Highway 185 with 3 newly constructed commercial buildings. On East Hall Street, a new mobile home development called Villa Del Sol has been constructed with 23 lots and is at capacity. On Highway 187 and Chile Capital Lane, a newly constructed commercial building houses a trucking company. Additional development

[14] Sites Southwest LLC, 2019, *Village of Hatch Comprehensive Plan*

includes the remodel of 2 buildings within the downtown district which were built in the late 1920s.

Anticipated development in Hatch is expected on Chile Capital Lane, where a new lift station will be installed to allow potential development of affordable housing.

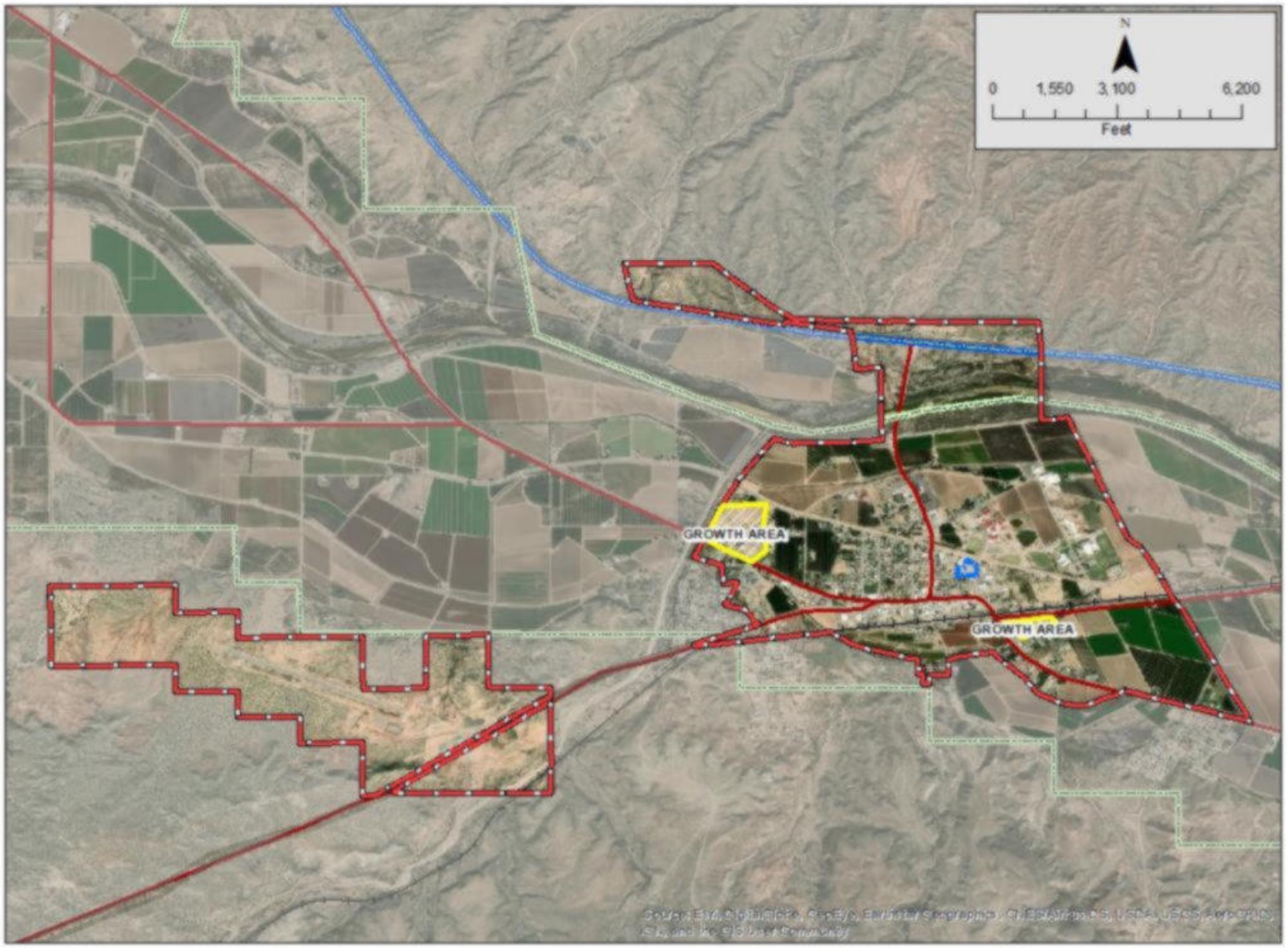


Figure 2-12
Key Growth Areas for the Village of Hatch

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2.2.4 City of Las Cruces

History – Prior to the community's founding in 1849, several Native American groups lived in
the area that became known as the Mesilla Valley. The proximity to the Rio Grande made the area an attractive location to settle. The Camino Real (Royal Road) served as a major trade route linking Mexico City to Santa Fe and crossed through present-day Las Cruces.

Present-day southern New Mexico was the location of several conflicts between Native Americans and Spanish conquistadors in the 1500s to 1800s. In 1848, the U.S.-Mexican War ended, and Americans flocked westward from Texas to California and in 1849, Las Cruces was established. In 1854, the Gadsden Purchase between the United States and Mexico secured the southern portions of present-day New Mexico and Arizona as U.S. territory, including Las
Cruces and Doña Ana County.

In the 1880s, the Atchison Topeka & Santa Fe Railroad (AT&SF) came to southern New Mexico. The AT&SF built tracks and a depot in Las Cruces in 1881. The community grew rapidly after the introduction of the railroad; new homes, churches, and schools were built at the end of the 19th century. In 1888, Las Cruces College opened, which is now New Mexico State University.

Given the proximity to the Rio Grande, agriculture is an important feature of Las Cruces history. The construction of the Elephant Butte Dam allowed for more farmers to be more productive in the Mesilla Valley region. The Great Depression caused crop prices to fall dramatically and many did not recover until New Deal programs were put into place by President Roosevelt. White Sands Missile Range was established in the 1940s after WWII, which is still a major employer for the region today.

Geography – The City of Las Cruces is located at the heart of Doña Ana County in the Mesilla Valley. At an average elevation of 3,908 feet, the City is bisected by the Rio Grande and is situated approximately 42 miles north and a little west of El Paso, Texas. The Organ Mountains rise ruggedly east of the City providing a picturesque vista from any point within the City. The City occupies approximately 77.0 square miles of land with its geographic centroid at latitude 32.32 degrees north, longitude 106.77 degrees west. Interstates 10 and 25 both pass through the City and their interchange is located at the southeastern tip of the City. US Highway 70, which was the primary thoroughfare prior to the construction of the freeways, passes through the heart of Las Cruces. There are also several state highways that pass through the City. The Burlington Northern Santa Fe Railroad also passes through the heart of the City on a general north-south alignment.

Much of the City west of I-25 is located within the geologic floodplain of the Rio Grande. Several arroyos and other ephemeral drainages drain onto or through the City on their course to the Rio Grande, including Alameda, Las Cruces, Nafzinger, North Fork Las Cruces, North Fork Tortugas, North Moreno, Sandhill, South Fork Las Cruces, South Fork Tortugas, South Moreno, and Tortugas Arroyos.

In the City of Las Cruces, 65.5% of the land is privately owned. The State manages 23.4% of the land and the BLM manages 10.9%. Most of the Land managed by the State and BLM are located in the more recent annexations, and on the east side, much of this land has already been master planned for development and is expected to eventually be transferred to private ownership.

Economy – The largest percentage of employed workers in 2017 worked in the educational services, healthcare, and social assistance sector (30.9%). Other significant industries sectors include: arts, entertainment, recreation, accommodations & food services (13.1%); professional, scientific, management, administrative & waste management services (11.6%); retail (10.5%); and public administration (9.8%). According to the Mesilla Valley Economic Development Alliance (MVEDA), entities with at least 500 employees include the following:

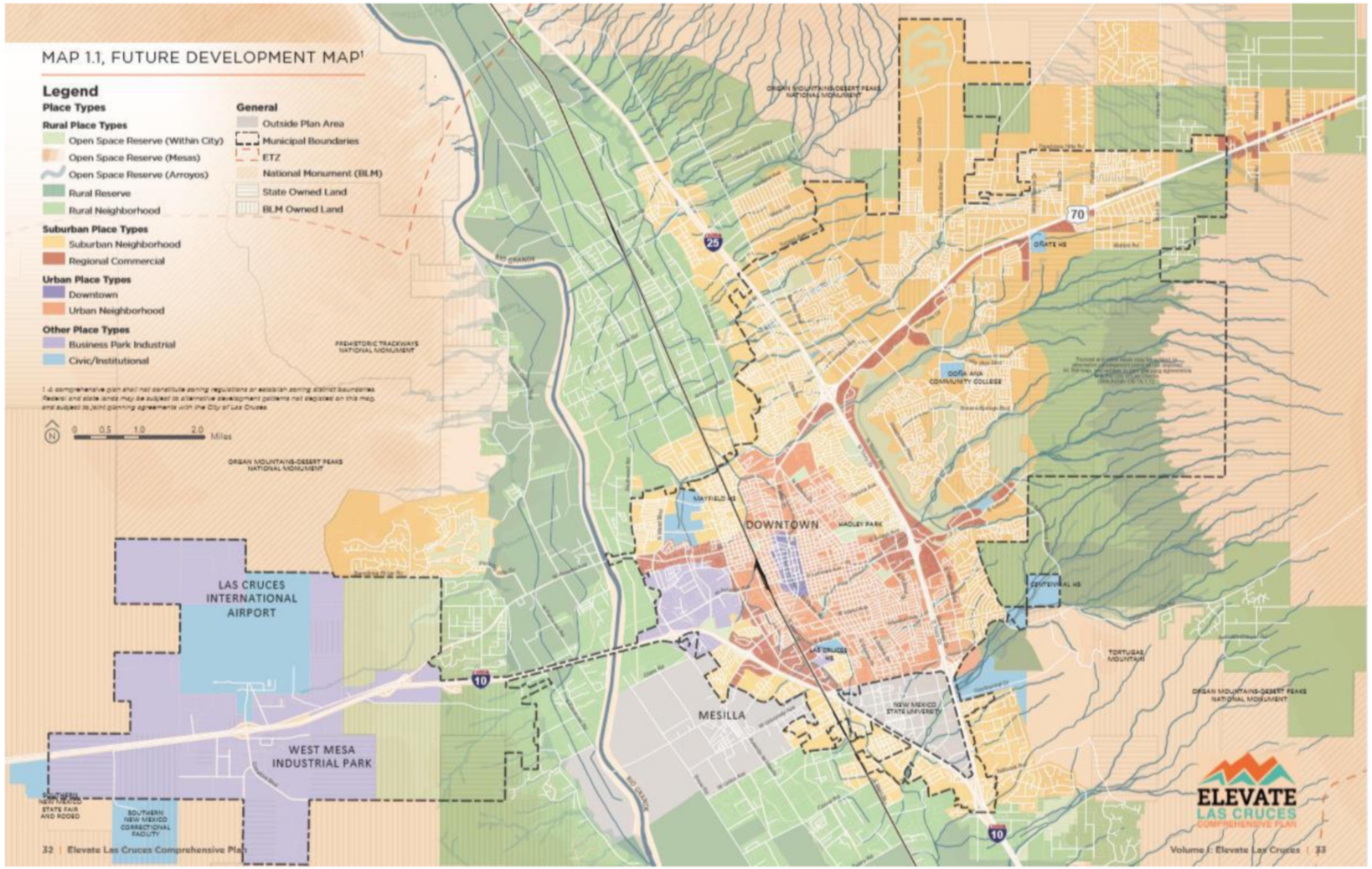
- New Mexico State University
- Las Cruces Public Schools
- City of Las Cruces
- Memorial Medical Center
- Walmart

Located just outside of Las Cruces within Doña Ana County, White Sands Missile Range and NASA collectively employ approximately 5,800 workers. As of March 2019, the unemployment rate for the Las Cruces, NM MSA was 5.7%.

Growth Trends – The population of Las Cruces is predicted to grow over the next 25 years at a rate of about 1.2% per year. The forecasted population for the year 2045 is 141,565, which is roughly 37 percent increase from 2018. Looking forward, the projected growth rate is less than 20 percent each decade from 2010 onward. This is a slower rate than what Las Cruces experienced in the second half of the 1900s and from 2000-2010, but is more consistent with local and nationwide trends since 2010.

Since the Las Cruces Comprehensive Plan 2040 was developed in 1999, the majority of new growth (and corresponding change in land use) has occurred in the eastern and northern parts of Las Cruces, east of I-25 and north of US 70. As the eastern and northern expansion of residential land uses continues in Las Cruces, the number of annual residential building permits being issued for new construction has gradually increased - slowly rebounding from the nationwide housing crisis of 2007-08. Although multi-family building permits declined slightly between 2014 and 2018, Building Permit Trends, indicates that the number of single-family building permits issued by the City increased 77 percent in the same time period. The number of building permits for new commercial uses remained relatively unchanged during the time.

The Future Development Map has been prepared to enable the City to absorb projected growth through the year 2045 as determined by the Consensus Growth Scenario (the "Consensus Scenario"). The Consensus Scenario was developed as part of the Elevate Las Cruces comprehensive planning process and seeks to balance the long-term cost of new development to the public with anticipated revenues while lessening the impact of development on natural areas within and surrounding the City.[2]



Source: City of Las Cruces, 2020

Figure 2-13
2007-2012 Growth Areas for the City of Las Cruces

2.2.5 Town of Mesilla

History – The following is excerpted from the Town's comprehensive plan:[15]

Beginning in the 16th century, nomadic Indians occupied the fertile Mesilla Valley. Once the early European explorers entered the region, travel and trade routes opened. In the 1800's, Mesilla was a stopping off point along the Camino Real and the Butterfield Trail—truly at the crossroads of commerce and activity.

Mesilla plaza played host to dances, bullfights, and other more politicized events, like the trial of Billy the Kid. The courthouse off the plaza still stands to-day, with a plaque describing the events of Billy the Kid in Mesilla.

Activity slowed when Mesilla lost its position as the County Seat with the arrival of the railroad in neighboring Las Cruces. This event, according to some, was a blessing in disguise that resulted in the preservation of the town's unique architectural style and charm.

After losing its position as the County Seat, Mesilla continued to thrive as a cultural hub of southern New Mexico, with the economy remaining based in agriculture, and later, tourism. In that time, the population has grown slowly but has never reached more than about 2,200 people, retaining Mesilla's small town character.

Much of this has been made possible through the Town's efforts to preserve both its cultural and natural resources. The Mesilla Plaza was designated as a National Historic Landmark in 1961. Mesilla's Historic District, encompassing the core blocks of the downtown Plaza Area, was designated as a National Historic District in 1985. Ongoing preservation efforts and policies will continue to make the Town a sought-after destination in southern New Mexico.

Geography – The Town of Mesilla is located in central Doña Ana County. At an elevation of 3,881 feet, the Town is located along the Rio Grande and shares a common boundary with the City of Las Cruces along the Town's northeastern boundary. The Town occupies approximately 5.6 square miles of land with its geographic centroid at latitude 32.27 degrees north, longitude 106.80 degrees west. Interstate 10 is located just north of the Town and the larger north-south roadways include NM State Road 28 (Avenida de Mesilla), NM State Road 292, Snow Road (NM 372), and South Fairacres Road. The larger east west roadways include Glass Road, Calle Del Norte (NM 359), University Avenue (NM 101), Union Avenue (NM 373) and Boutz Road. The Burlington Northern Santa Fe Railroad passes just east of the Town on a general north-south alignment

All of Mesilla is located within the geologic floodplain of the Rio Grande and the Rio Grande corridor is the only major watercourse through the Town. Several small ephemeral arroyos drain into the Town from the mesa area located west of the Town boundary, and are intercepted in basins and irrigation drains and eventually discharged back into the Rio Grande.

[15] Town of Mesilla, 2017, *Town of Mesilla Comprehensive Plan 2017*

According to BLM, all of the land within the Town boundary is privately held except an 180 acre New Mexico State Park parcel.

Economy – Mesilla's primary local business are tour-ism-based businesses located around Mesilla Plaza and in the newer El Mercado commercial development to the north. These two locations are the primary employment centers for the town, which is due in part to the lack of commercial and industrial-zoned land within the community. Both locations contain the primary tourist-based businesses including at least 17 restaurants, dozens of retail shops, and local-serving banks, insurance agencies, and professional service offices.

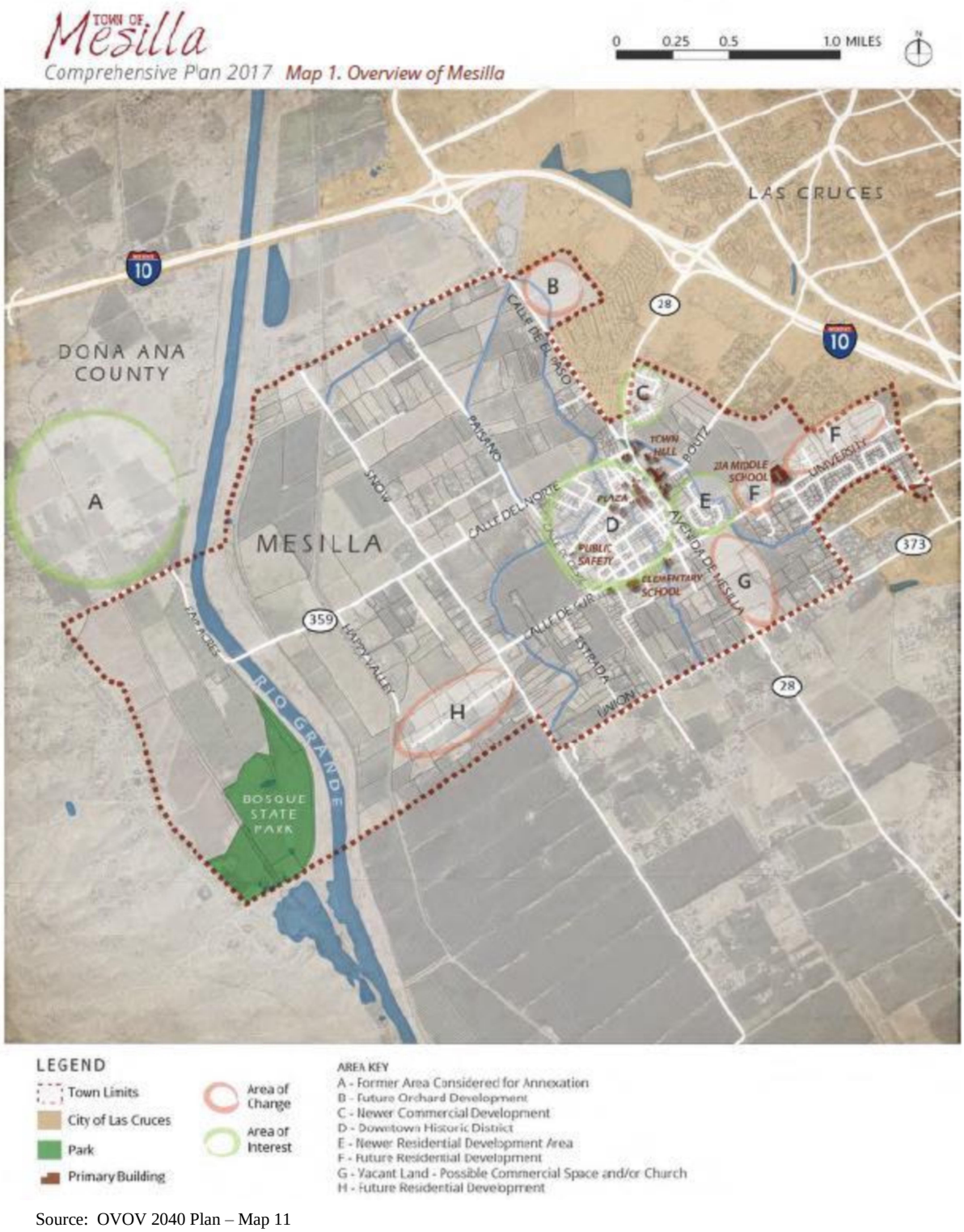
ESRI Business Analyst Data estimates that there are 126 businesses and organizations operating

within Mesilla. The largest sectors by number of employees are restaurants (32% of local jobs), educational services (27% of jobs), retail trade (11%), finance and insurance (6%), and local government (5%). Together these businesses/organizations account for an estimated 1,250 jobs. In addition, as discussed above, agricultural activities continue to provide employment opportunities in Mesilla. There is a possibility that land currently zoned for agriculture could be used to support more cottage industries in the future.

Growth Trends – Mesilla has grown hardly at all in the last 15 years and is not likely to grow significantly (if at all) in the future. Although Doña Ana County is expected to gain 64,000 new residents by 2040, much of this growth is expected to occur in other parts of the County that have the ability and desire to accommodate population growth.2

Considering the Town's aging population, decreasing family sizes, the small amount of land available for new residential development, and strong protections to preserve agricultural land, the town's population may continue to de-cline slowly in the coming decade. If current demographic trends hold, the population could fall below 1,800 people by 2021.

The Town of Mesilla anticipates a continuation of infill residential and commercial development over the next 5 year cycle.



Source: OVOV 2040 Plan – Map 11

Figure 2-14
Trend-Based Growth Projection for the Town of Mesilla

2.2.6 New Mexico State University

History – The following is excerpted from the New Mexico State University (NMSU) website:[16]

The following is excerpted from the New Mexico State University (NMSU) website:22

New Mexico was still a territory when Las Cruces College opened the doors of its two-room building in the fall of 1888. The organizers of Las Cruces College—led by Hiram Hadley, a respected educator from Indiana—had even bigger plans in mind.

In 1889, the New Mexico territorial legislature authorized the creation of an agricultural college and experiment station in or near Las Cruces. The institution, which was designated as the land-grant college for New Mexico under the Morrill Act, was named the New Mexico College of Agriculture and Mechanic Arts.

Las Cruces College merged with N.M.A. & M.A., and the new school opened on January 21, 1890. That first semester there were 35 students in the college level and preparatory classes and six faculty members. Classes met in the old two-room building of Las Cruces College until suitable buildings could be put on the 220-acre campus three miles south of Las Cruces.

By 1960, the school had grown greatly, and its name was changed by state constitutional amendment to New Mexico State University.

Today New Mexico State University sits on a 900-acre campus and enrolls 16,428 students from all 50 states and from 71 nations. Regular faculty members number 694 and staff, 3,113.

Geography – NMSU provides learning opportunities to a diverse population of students and community members at five campuses, a satellite learning center in Albuquerque, cooperative extension offices located in each of New Mexico's 33 counties, 13 research and science centers, and through distance education. Doña Ana Community College (DACC) is also part of NMSU and offers several locations throughout the county. Within Doña Ana County, the primary NMSU campus is located in Las Cruces near the junction of Interstates 10 and 25. Other campuses are located in Anthony, Chaparral, Hatch, Las Cruces, and Sunland Park, as well as research sites and facilities scattered across the County.

The Chihuahuan Desert Rangeland Research Center (CDRRC) is part of NMSU and is located north of Las Cruces and west of the Rio Grande near New Mexico State University which is located in Las Cruces, New Mexico. It is a major source of arid lands research in the Department of Animal and Range Sciences, which is part of the College of Agriculture and Home Economics. Established in 1927 to conduct "educational, demonstrative, and experimental development with livestock, grazing methods, and range forage," the CDRRC is administered by the NMSU Board of Regents.

[16] NMSU website URL at: http://www.nmsu.edu/General/history.html

Figure 2-17 shows the various NMSU and DACC campus and CDRRC locations across the County.

Economy – According to the FY2018-2019 annual financial report23, NMSU had an operational budget of over $605 million. Much of those operational expenses translate into the economy of the Doña Ana County in the form of wages, purchases, and wholesale and retail sales, making NMSU a significant contributor to the economic health of the County.

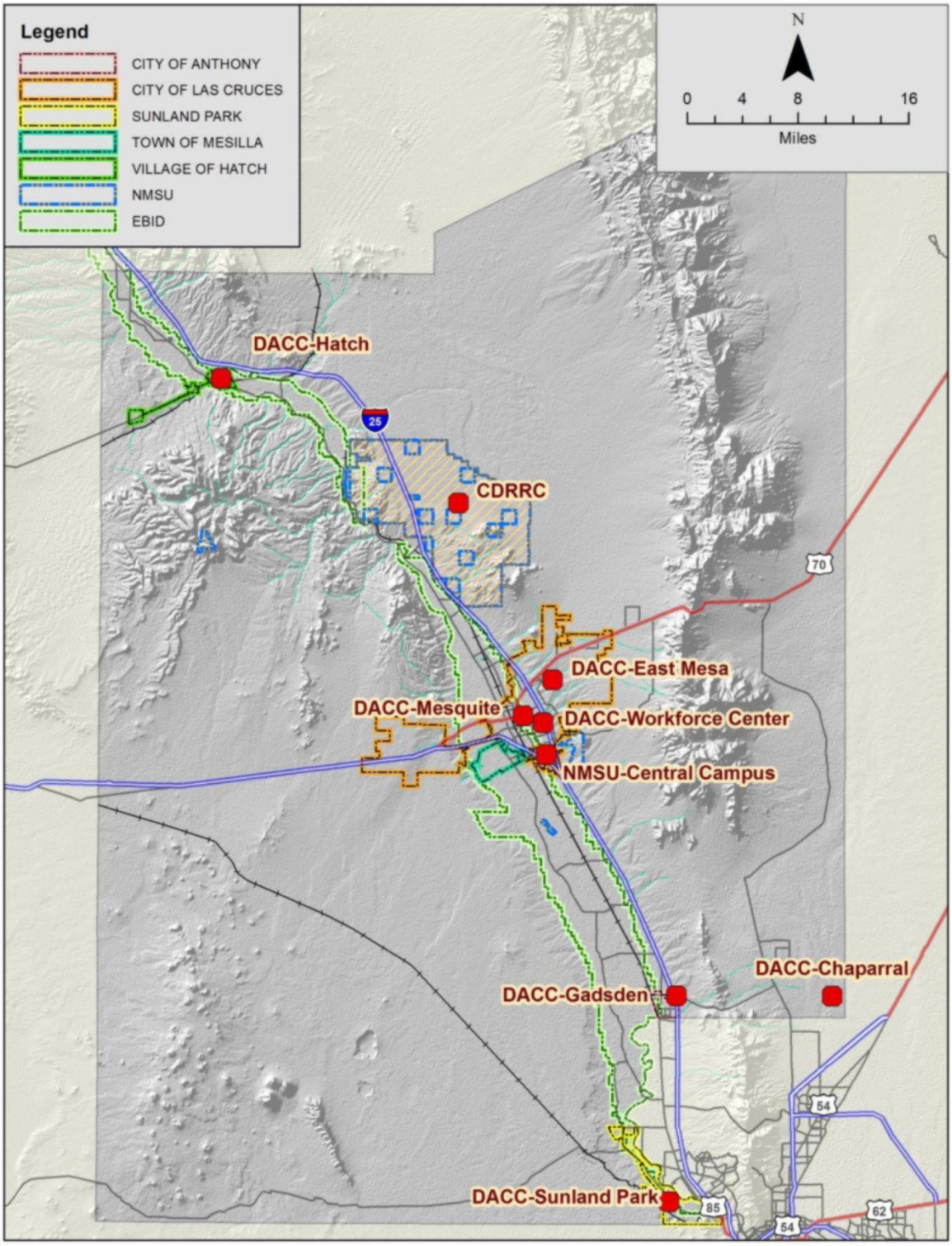


Figure 2-15
NMSU Campus Locations

Growth Trends – NMSU has experienced substantial growth in the past 5 years to include:

- Burrell College of Osteopathic Medicine (2016) located at 3501 Arrowhead Drive;
- Devasthali Hall – (2019) visual arts building and gallery that replaced Williams Hall & Annex art building. Located east of Kent Hall. Physical address is 1308 University Ave.;
- Juniper Hall – (2019) new 300 dorm complex replacing Monagle Hall. Addressed as 1525 International Mall and is located just south of Rhodes, Garrett, Hamiel off Locust;
- Development of Club 27 (2016), a skybox located on the east side of Aggie Memorial Stadium.
- Buildings known as Regents Row was razed from its previous location at Stewart St / Williams St.

NMSU anticipates growth at the following locations in the next 5 years:

- Aggie Uptown, the area located near the north west corner of NMSU golf course;
- Arrowhead Research, area located on Arrowhead Drive south of the Wells Street intersection;
- NMDA Building, new building located west of existing building on Gregg / Espina intersection
- Agricultural modernization project in the area of Knox St.

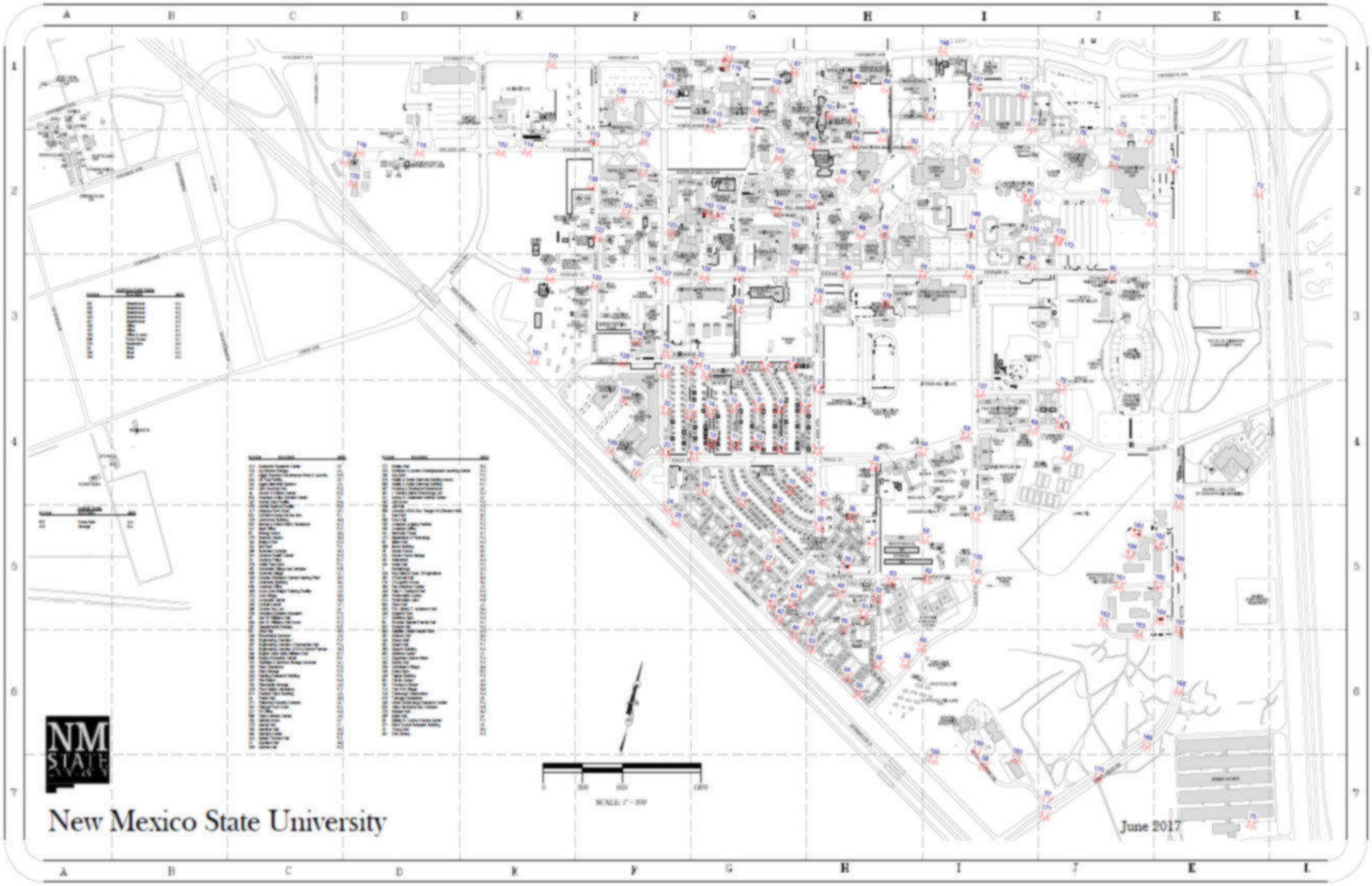


Figure 2-16: NMSU Main Campus Map

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2.2.7 City of Sunland Park

History – The history of Sunland Park originates back to Native American Settlements in the Keystone Heritage Park (near the intersection of Doniphan Road and Frontera Road in El Paso, Texas) on the east bank of the Rio Grande. The remaining ruins within the archeological site indicate some are over 4,000 years old and are believed to be the location of one of the largest and oldest villages in the present-day United States. The early Spanish conquistadors began to colonize the area when they crossed the Rio Grande to develop the El Camino Real Trail, which was the principal trade route between New Mexico and regions of New Spain located to the south.

The City of Sunland Park was formed in 1983 when the nearby unincorporated communities of Anapra and Meadow Vista joined with Sunland Park to incorporate the three communities as one, now the City of Sunland Park. The area had not had much population until the town of Anapra was established by the Southern Pacific Rail Road when they purchased the El Paso and Southwestern Railroad in 1924. At that time, the railroad stopped running its westward route at Anapra. Many employees and their families decided to establish themselves long term in the Anapra area. [24]

Geography – The City of Sunland Park is located at the extreme southern end of Doña Ana County in the Mesilla Valley. The City shares its southern boundary with Chihuahua, Mexico and its eastern boundary with the State of Texas and El Paso. At an average elevation of 3,789 feet, the City is partially bisected by the Rio Grande and is situated approximately 42 miles south and a little east of Las Cruces. Mount Cristo Rey, a prominent landmark that can be seen for several miles, is located at the southern end of the City. The City occupies approximately 13.73 square miles of land with its geographic centroid at latitude 31.81 degrees north, longitude 106.58 degrees west. Interstate 10 is located east of the City and State Highway 273, also known as McNutt Road, passes through then center of the City and terminates at the City's southern end. The Union Pacific Railroad also passes through the southern portion of the City on a general northwest-southeast alignment.

The eastern portion of the City is located within the geologic floodplain of the Rio Grande. Several unnamed arroyos and ephemeral watercourses drain onto or through the City on their course to the Rio Grande.

With the exception of a small parcel of State Trust Land, the entirety of Sunland Park is privately owned.

Economy – As indicated by Table 2-3, the primary economic sectors within the City of Sunland Park are construction, retail trade, health care and social services, utilities, and educational services. The primary economic engine of the City is the Sunland Park Racetrack and Casino. The Santa Teresa Port of Entry and Doña Ana County Airport are other existing economic drivers for the area. The Union Pacific railroad has expanded its operations by building a new multi-mode railroad hub in Santa Teresa, positioning the Santa Teresa/El Paso area as a strategic focal point for rail shipments in the southwestern United States.[25]

Growth Trends – Sunland Park experienced significant population growth over the past two decades. From 1990 to 2000 Sunland Park's population grew by nearly 70%, from 8179 to 13,309 residents. During that decade, young and early middle-aged families moved to Sunland Park in large numbers. In 2000, 22% of the residents lived outside of Sunland Park in 1995, including 5% of the population who came to the city from outside the United States. From 2000 to 2015, the population of Sunland Park increased by another 20%, from 13,309 to 15,940 residents. Over the past 5 years, most development has occurred in the norther portion of Sunland Park, north of County Club Road. The majority of this development has been residential, with limited commercial. Over the next 5 years, development is expected to continue in the northern portions of the city. However, there are several pending annexations to the west of Sunland Park (west of McNutt Road) that will begin to develop during this time frame. These developments are anticipated to be a mix of residential, commercial and industrial uses. In the City's 2018 Comprehensive Plan, a future land use plan was developed to accommodate expected future growth as illustrated in Figure 2-19.

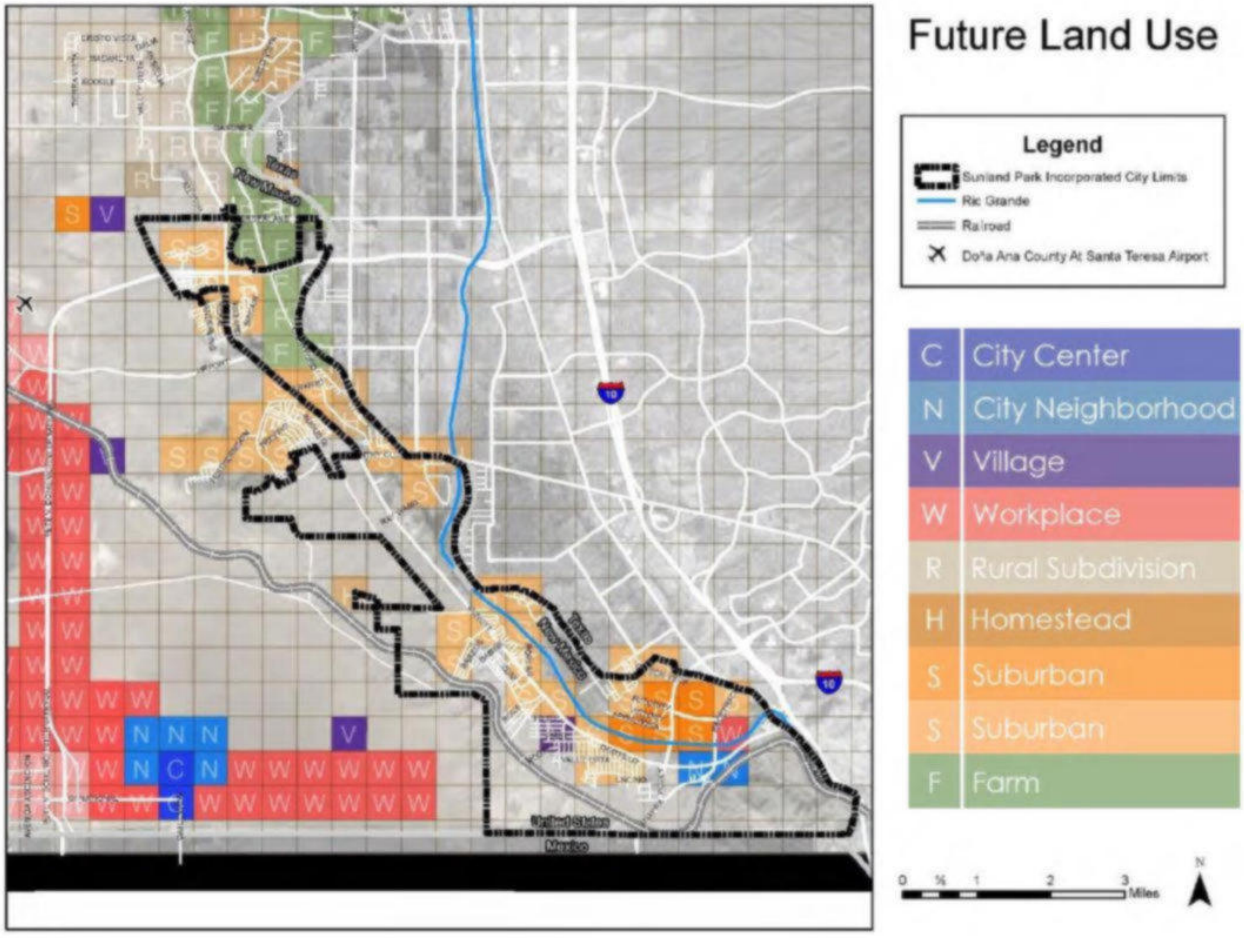


Figure 2-17
Future Residential Growth Areas for the City of Sunland Park

SECTION 3: PLANNING PROCESS

This section includes the delineation of various DMA 2000 regulatory requirements, as well as the identification of Steering Committee members and other invited stakeholders within Doña Ana County. In addition, the necessary public involvement meetings and actions that were applied to this process are also detailed.

3.1 Planning Process Description

Doña Ana County Flood Commission (DACFC) applied for and received PDMC monies, as a sub-grantee to the State of New Mexico. The funding cost share was 75% federal and 25% local and the monies were used to fund a multi-jurisdictional effort to review and completely revise the 2013 Plan. Once the grant was received, the County initiated a Request For Proposal process and selected JE Fuller to work with the participating jurisdictions and guide the planning process. All 2013 participating jurisdictions actively participated in the plan update effort and will officially adopt the Plan. An initial project kick-off meeting between all jurisdictions, NMDHSEM, and JE Fuller was convened in February of 2020 to begin the planning process, outline the plan objectives, outline the anticipated meeting agendas for the planning efforts, and to discuss the new plan format and other administrative tasks. Initial points of contact were also established between the participating jurisdictions and JE Fuller. A total of six Steering Committee meetings were conducted over the period of February 2020 through August 2020, beginning with the first meeting on February 6, 2020. The original update process was proposed to contain a total of 4 in-person Steering Committee meetings, however, the meeting schedule was expanded and virtualized due to the COVID-10 Pandemic that began in early 2020. Throughout that period and for several months afterward, all the work required to collect, process, and document updated data and prepare the draft of the Plan was performed. Details regarding key contact information and promulgation authorities, the Steering Committee selection, participation, and activities, and public involvement are discussed in the following sections.

3.2 Previous Planning Process Assessment

The first task of preparation for this Plan, was to evaluate the process used to develop the 2013 Plan. This was initially discussed by the committee at the first Steering Committee meeting. The previous planning approach was determined to meet the requirements for the update of the Plan and was applied to the current update.

The overall process began in December 2011 and extended for approximately 2 years. A mitigation planning/advisory committee was initially formed and private consultants were hired to assist the planning effort. The committee met regularly for the first four months during the initial development of the 2013 Plan and the contracted consulted carried the update through the final completion phases and post FEMA comment changes. The 2013 Plan elements were developed both during the committee meetings and also through task assignments that were completed by individual participating jurisdictions. The process worked well.

A conclusion of the 2013 Plans process assessment was that the new planning process and approach would again follow DMA 2000 planning procedures and formatted to comport with the FEMA review guidelines.

The previous planning process was presented and discussed at the first multi-jurisdictional Steering Committee meeting and was proposed for the 2020 Plan approach. There were a few veteran planning/advisory committee members that were involved with the development of the 2013 Plan, so there was some institutional knowledge of the prior process represented during the update process.

3.3 Planning Team

3.3.1 General

The process used to update the 2013 Plan included the use of a two-tiered, multi-jurisdictional planning team. The first tier was a multi-jurisdictional Steering Committee (Steering Committee) that is comprised of one or more representatives from each participating jurisdiction, plus other interested and invited agencies and organizations. The second tier was the Local Planning Team, which was comprised of jurisdiction specific individuals involved in assisting their Steering Committee representative to in the completion of task assignment and worksheets.

The role of the Steering Committee was to work with the planning consultant to perform the coordination, research, and planning element activities required to update the 2013 Plan. Attendance by each participating jurisdiction was required for every Steering Committee meeting as the meetings were structured to progress through the planning process. Steps and procedures for updating the 2013 Plan were presented and discussed at each Steering Committee meeting, and task assignments and corresponding worksheets were normally given. Each meeting's content and discussions built on information discussed and assigned at the previous meeting, creating a stepwise and systematic process for preparing the updated Plan. The Steering Committee also had the responsibility of liaison to the Local Planning Team, and was tasked with:

- Conveying information and assignments received at the Steering Committee meetings to the Local Planning Team for discussion and completion.
- Ensuring that all requested assignments and worksheets were completed fully and returned on a timely basis.
- Arranging for review and official adoption of the Plan.

The function and role of the Local Planning Teams were to:

- Provide support and data.
- Assist their Steering Committee representative(s) in completing each assignment and the associated worksheets.
- Make planning decisions regarding Plan components.
- Review the Plan draft documents

3.3.2 Primary Point of Contact

A primary point of contact has been established for each participating jurisdiction. This person or position is normally a Steering Committee member and is the lead contact for information regarding the hazard mitigation planning for their jurisdiction. Table 3-1 summarizes the primary points of contacts identified for each participating jurisdiction.

Table 3-1: List of jurisdictional primary points of contact

Jurisdiction	Name	Department / Position	Address	Phone	Email
Doña Ana County	Michael Garza	Doña Ana County Flood Commission / Flood Engineer	845 North Motel Boulevard, Room 1-250, Las Cruces, NM 88007	575-525-5553	michaelg@donaanacounty.org
City of Anthony	Oscar Dominguez	City Manager	820 Highway 478, Anthony, NM 88021	575-882-2983	odominguez@cityofanthonynm.org
Elephant Butte Irrigation District	Delyce Maciel	Human Resources Department / HR Manager and District Safety Director	530 South Melendres Street, Las Cruces, NM 88005	575-933-2490	dmaciel@ebid-nm.org
Village of Hatch	Dave Sment	Planning & Zoning / P&Z Director	133 N. Franklin Street P.O. Box 220 Hatch, NM 87937	575-343-7662	dsment@villageofhatch.org
City of Las Cruces	Jacob Kidd	Community Development / Environmental Compliance	700 North Main Street, Las Cruces, NM 88001	575-541-2008	jkidd@las-cruces.org
Town of Mesilla	Rod McGillivray	Public Works / Director	2231 Avenida de Mesilla P.O. Box 10 Mesilla, NM 88046	575-524-8244	rodm@mesillanm.gov
New Mexico State University	Johnny Carillo	Fire Department / Chief	MSC-3545, P.O. Box 30001, 1510 Wells Street Las Cruces, NM 88003	575-646-5219	jcarr622@nmsu.edu
City of Sunland Park	Danielle Villegas	Community & Economic Development / City Planner	1000 McNutt Road, Sunland Park, NM 88063	575-589-3631 Ext. 2070	danielle.villegas@cityofsunlandpark-nm.org

3.3.3 Steering Committee Assembly

At the beginning of the planning process, Doña Ana County organized and identified members for the Steering Committee by initiating contact with, and extending invitations to, all incorporated municipalities, the Elephant Butte Irrigation District, and New Mexico State University as the intended Plan participants. Other key local, state and federal agencies and entities were also invited, as well as the JE Fuller consultant team. Further discussion of invitations extended to other agencies and entities with potential interest in hazard mitigation for Doña Ana County are discussed in Section 2.3.4. The participating members of the Steering Committee are summarized in Table 3-2. Returning or veteran planning/advisory team members from the 2013 Plan effort are highlighted.

Table 3-2: Multi-jurisdictional Steering Committee participants

Name	Jurisdiction / Organization	Department / Position	Steering Committee Role
Sara Gerlitz	DHSEM	Mitigation / Mitigation Specialist	Steering Committee participant Plan Review for State of New Mexico
Rod McGillivray	Town of Mesilla	Public Works / Director	Jurisdictional Point of Contact Lead coordinator for Local Planning Team Steering Committee participant
Michael Garza	Doña Ana County Flood Commission	Flood Commission / Flood Engineer	MHP Update Primary Point of Contact Jurisdictional Point of Contact Lead coordinator for Local Planning Team Steering Committee participant
Louis Huber	New Mexico State University Fire Department	Fire / Deputy Chief	Steering Committee participant Local Planning Team Resource
Carl Lukesh	Doña Ana County Flood Commission	Flood Commission / Planner	Steering Committee participant Local Planning Team Resource
Dave Sment	Village of Hatch	Planning & Zoning / P&Z Director	Jurisdictional Point of Contact Lead coordinator for Local Planning Team Steering Committee participant
Dennis Schoen Jr.	Sunland Park Fire Department	Fire Department / Captain	Steering Committee participant Local Planning Team Resource
Ramiro Rios	Sunland Park Fire Department	Fire Department / Interim Fire Chief	Steering Committee participant Local Planning Team Resource
Dennis McCarville	Elephant Butte Irrigation District	Engineering / GIS Analyst	Steering Committee participant Local Planning Team Resource
Johnny Carillo	State of New Mexico University	Fire Department / Chief	Jurisdictional Point of Contact Lead coordinator for Local Planning Team Steering Committee participant
Geremy Barela	City of Las Cruces	Community Development / Associate Engineer	Steering Committee participant Local Planning Team Resource
Diana M. Trujillo	City of Anthony	Executive / Mayor	Jurisdictional Point of Contact Lead coordinator for Local Planning Team Steering Committee participant
Christina Ainsworth	Dona Ana County	Community Development / Director	Steering Committee participant Local Planning Team Resource
Lorenzo Espinoza	New Mexico Department of Homeland Security & Emergency Management	Preparedness / LPC	Steering Committee participant Plan Review for State of New Mexico
Delyce Maciel	Elephant Butte Irrigation District	HR & Safety / HR/Safety Director	Jurisdictional Point of Contact Lead coordinator for Local Planning Steering Committee participant
John Gwynne	Doña Ana County Flood Commission	Flood Commission / Director	Steering Committee participant Local Planning Team Resource
Tim Pitts	City of Las Cruces	Community Development / Deputy Director	Steering Committee participant Local Planning Team Resource
Tiffany Goolsby	South Central Council of Governments	Senior Planner	Steering Committee participant Local Planning Team Resource
Cullen Combs	DAC/CLC Office of Emergency Management	Office of Emergency Management / Emergency Management	Steering Committee participant Local Planning Team Resource
Dwaine Solana	City of Sunland Park	Building / Chief Building Official	Steering Committee participant Local Planning Team Resource

Table 3-2: Multi-jurisdictional Steering Committee participants

Name	Jurisdiction / Organization	Department / Position	Steering Committee Role
Danielle Villegas	City of Sunland Park	Community & Economic Development / City Planner	Jurisdictional Point of Contact Lead coordinator for Local Planning Team Steering Committee participant
Peter Bennett	City of Las Cruces	Public Works / Engineering Tech. Sr.	Steering Committee participant Local Planning Team Resource
Jacob Kidd	City of Las Cruces	Community Development / Environmental Compliance	Jurisdictional Point of Contact Lead coordinator for Local Planning Team Steering Committee participant
Andrew Guerra	Doña Ana County Flood Commission	SCADA – Hydrology – Water Quality / Supervisor	Steering Committee participant Local Planning Team Resource
Mary Evans	JE Fuller	Consultant / Project Principal	Planning Consultant
Scott Ogden	JE Fuller	Consultant / Project Principal	Planning Consultant

Lists of Local Planning Team members and their respective roles, for each jurisdiction, are provided in Appendix C.

3.3.4 Steering Committee Activities

The Steering Committee met for the first time on February 6, 2020 to begin the planning process. The original planning process proposed an additional 3 meeting at approximate 4-week intervals, however, due to the COVID-19 pandemic, the schedule was altered to accommodate shorter virtual meetings at a more regulate interval. Five more meetings were convened on about a bi-weekly basis to step through the plan review and update process. Steering Committee members used copies of the 2013 Plan for review and reference during each meeting. Table 3-3 summarizes the Steering Committee meetings along with a brief list of the agenda items discussed. Detailed meeting notes for all of the Steering Committee meetings are provided in Appendix C. Action item status reports are also included with meeting notes as well as a final status report. The sign-in sheets in Appendix C document the attendance at the first and subsequent meetings.

Following each Steering Committee meeting, the Point of Contact for each jurisdiction coordinated with their Local Planning Team as needed to work through the assignments and generate the necessary Plan elements pertinent to that jurisdiction.

Table 3-3: Summary of planning meeting dates, places and agendas convened as part of the plan update process

Meeting Type, Date, and Location	Meeting Agenda
Steering Committee Meeting No. 1 February 6, 2020 1:00PM-4:30PM Doña Ana County Government Center, Room 1-117 (Multi-Purpose Conf. Rm.) 845 N. Motel Blvd, Las Cruces, NM	1. INITIAL INTRODUCTIONS 2. DISCUSSION OF SCOPE AND PROJECT SCHEDULE 3. DMA2K OVERVIEW AND UPDATE REQUIREMENTS a. General DMA2K Overview b. Update Requirements c. Proposed Outline for New Plan 4. PLANNING PROCESS a. Discussion of Last Planning Process b. Planning Team Roles and Responsibilities 5. PUBLIC INVOLVEMENT a. Discuss Past Strategy b. Formulate New Strategy 6. RISK ASSESSMENT a. Hazard List Identification b. Existing Plans, Studies, Reports and Technical Information 7. SCHEDULE NEXT MEETING(S)

Table 3-3: Summary of planning meeting dates, places and agendas convened as part of the plan update process

Meeting Type, Date, and Location	Meeting Agenda
Steering Committee Meeting No. 2 June 18, 2020 1:00PM-1:30PM Zoom Virtual Meeting	1. COMMUNITY PROFILES 2. RISK ASSESSMENT TOPICS: a. Hazard Profile Data Review i. Mapping / Maps ii. Historic Hazard Database Overview b. Critical Priority Risk Index (CPRI) c. Critical Facilities And Infrastructure d. Development Trend Discussion i. Past Plan Cycle (last 5 years) ii. Future Development (5-year horizon) 3. CLOSING ITEMS a. Schedule Next Meeting b. Summarize Action Items / Task Assignments
Steering Committee Meeting No. 3a July 2,2020 1:00PM-1:30PM Zoom Virtual Meeting	1. TASK ASSIGNMENT STATUS REVIEW 2. MITIGATION STRATEGY TOPICS a. NFIP Statistics and Compliance b. Repetitive Loss Properties c. Capability Assessment i. Legal and Regulatory (Codes / Ordinances / Plans / Manuals / Guidelines) ii. Administrative and Technical Staff Resources iii. Fiscal Capabilities 3. MITIGATION STRATEGY TOPICS a. Previous cycle A/P evaluation 4. CLOSING ITEMS a. Schedule Next Meeting b. Summarize Action Items / Task Assignments
Steering Committee Meeting No. 3b July 16, 2020 1:00PM-2:12PM Zoom Virtual Meeting	1. TASK ASSIGNMENT STATUS REVIEW 2. MITIGATION STRATEGY TOPICS a. Goals i. Review current plan goals ii. Formulate goals for updated plan 3. PLANNING PROCESS TOPICS a. Plan Integration and Incorporation i. Past Plan Cycle ii. Future Strategy 4. PLAN MAINTENANCE STRATEGY a. Review/Discuss maintenance and monitoring over the last plan cycle b. Develop New Monitoring Schedule c. Plan Update Schedule 5. PROMULGATION PROCESS 6. CLOSING ITEMS a. Schedule Next Meeting b. Summarize Action Items / Task Assignments

Table 3-3: Summary of planning meeting dates, places and agendas convened as part of the plan update process

Meeting Type, Date, and Location	Meeting Agenda
Steering Committee Meeting No. 4a August 6, 2020 1:00PM-2:00PM Zoom Virtual Meeting	1. *OPTIONAL COMMUNITY ASSISTANCE TIME*: (JE Fuller worked with jurisdictions needing assistance to complete any of the task assignments)
Steering Committee Meeting No. 4b August 20, 2020 1:00PM – 2:10PM Zoom Virtual Meeting	1. TASK ASSIGNMENT STATUS REVIEW 2. PLAN MAINTENANCE STRATEGY a. Continued Public Involvement 3. MITIGATION STRATEGY TOPICS a. Mitigation Activities / Projects b. Implementation Strategy 4. PROMULGATION PROCESS 5. CLOSING ITEMS a. Summary of Task Assignments

3.3.5 Agency/Organizational Participation

The planning process used to develop the 2013 Plan included participation from several agencies and organizations which operate within or have jurisdiction over small and large areas of Doña Ana County. At the start of the Plan update, a list of known and/or potential stakeholders was compiled. Some were chosen due to past history in the development of the 2013 Plan, to provide continuity and institutional knowledge to the Steering Committee. Invitations were extended via emails and copies are provided in Appendix C. Personal invitations by Doña Ana County Flood Commission personnel were also extended to the El Paso Electric Company (EPEC) and International Boundary and Water Commission (IBWC) to participate in the planning meetings. The following list includes all entities that were either directly invited or were invited via public invitations.

Agency / Organization	Contact Position	Role
City of Anthony	• City Council – City Trustee • Executive - Mayor	Local Participating Jurisdiction
City of Las Cruces	• Community Development – Deputy Director • Community Development - Senior Engineer Technician • Community Development – Environmental Compliance Officer • Community Development – Engineer Technician	Local Participating Jurisdiction with hazard mitigation planning and development regulation responsibilities within the jurisdiction
City of Sunland Park	• Community Development – Director and Building Inspector	Local Participating Jurisdiction with hazard mitigation planning and development regulation responsibilities within the jurisdiction
Doña Ana County	• Office of Emergency Management – Emergency Manager • Office of Flood Commission – Director, Engineer Supervisor, CRS Coordinator, GIS Analyst • Community Development – Community Development Director • Fire Department – Fire Chief	Local Participating Jurisdiction with hazard mitigation planning and development regulation responsibilities within the jurisdiction
El Paso Electric Company	• Distribution and Operations - Manager	Regional Power Company-Critical Infrastructure Development
Elephant Butte Irrigation District	• Human Resources - HR Manager and District Safety Coordinator • District Engineer	Local Participating Jurisdiction with hazard mitigation planning and development regulation responsibilities within the jurisdiction
International Boundary and Water Commission	• Engineering Department – Principal Engineer	Federal Agency providing guidance and solutions regarding flood control along the Rio Grande in the border region
JE Fuller/ Hydrology & Geomorphology, Inc.	• Consultant – Engineer	Consultant assisting with Hazard Mitigation Plan update

La Clinica de Familia	• Director of Health Services	Local private health care center (Public)
Las Cruces Public Schools	• Safety and Security – Coordinator • Technical Support Services - Director	Local agency with responsibility for hazard mitigation activities within the School District.
New Mexico Commission for Deaf and Hard of Hearing	• Las Cruces Office – Assistant Interpreter	State agency providing resources for deaf and hard of hearing New Mexicans (Public)
New Mexico Department of Homeland Security and Emergency Management	• Mitigation – Hazard Mitigation Officer, Mitigation Specialist • Preparedness – Local Preparedness Coordinator	State Agency with oversite of local Hazard Mitigation Planning efforts
New Mexico State University	• Co-Chair Emergency Planning Committee & Fire Chief • Environmental Health/Safety – Assistant Director • Project Development & Engineering – Assistant Director • University Engineering • Risk Management • Fire Department • Geography Department – Director and GIS Analyst	Local Participating Jurisdiction with hazard mitigation planning and development regulation responsibilities within the jurisdiction
South Central Council of Governments	• Regional Planning – Senior Planner	Regional planning body with development regulation responsibilities
The Ability Center for Independent Living	• Social Security Payee Advocate	Private organization providing support to individuals with disabilities within Dona Ana County (Public)
Town of Mesilla	• Fire Department – Fire Chief • Public Works Department - Director	Local Participating Jurisdiction with hazard mitigation planning and development regulation responsibilities within the jurisdiction
Village of Hatch	• Administration – Village Clerk • Board of Trustees – Mayor and Trustee • Public Works Department - Director	Local Participating Jurisdiction with hazard mitigation planning and development regulation responsibilities within the jurisdiction
Luna County	• Office of Emergency Management – Emergency Management Coordinator • Floodplain Administrator	Neighboring jurisdiction with Emergency Management and Floodplain Management Responsibilities
Sierra County	• Office of Emergency Management – Emergency Services Coordinator • Floodplain Administrator	Neighboring jurisdiction with Emergency Management and Floodplain Management Responsibilities
Otero County	• Office of Emergency Management – Emergency Services/Floodplain Administrator	Neighboring jurisdiction with Emergency Management and Floodplain Management Responsibilities

Office of the State Engineer	• Engineer	State Agency having jurisdiction over dam construction, operation, and maintenance

An integral part of the planning process included coordination with agencies and organizations outside of the participating jurisdiction's governance to obtain information and data for inclusion into the Plan or to provide more public exposure to the planning process. Much of the information and data that is used in the risk assessment is developed by agencies or organizations other than the participating jurisdictions. In some cases, the jurisdictions may be members of a larger organization that has jointly conducted a study or planning effort like the development of a community wildfire protection plan or participation in an area association of governments. Examples of those data sets include the FEMA floodplain mapping, community wildfire protection plans, severe weather statistics, hazard incident reports, and regional comprehensive plans. The resources obtained, reviewed and compiled into the risk assessment are summarized in Section 2.5 and at the end of each subsection of Section 3.3 of this Plan. Jurisdictions needing these data sets obtained them by either requesting them directly from the host agency or organization, downloading information posted to website locations, or engaging consultants.

3.4 Public Involvement

3.4.1 Previous Plan Assessment

The pre- and post-draft public involvement strategy for the 2013 Plan considered the fact that all of the participating jurisdictions represented by the Steering Committee regularly used press releases, newspaper articles and/or website announcements to communicate jurisdictional news and activities, and post agendas for council/committee/board action. The Steering Committee chose to use these venues to make the public aware of the planning effort and provide an opportunity for public input and participation. Also, since any formal council/committee/board action has a built-in public notification and comment opportunity, the Steering Committee chose to continue using this process as one of the post-draft mechanisms for getting the Plan before the public.

The Steering Committee discussed the prior public involvement actions and concluded that the was sufficient for the current effort. All participating jurisdictions committed to providing announcements of the Plan update process on their individual websites and a link to the Plan on the County website. Instead of providing notices within local newspapers, the Steering Committee elected to provide press releases through the County's Media and Public Communications Department, increasing the visibility of the announcement through social media, radio, local news, etc. In addition to these efforts, the Steering Committee chose to incorporate a short hazard survey for the public to complete and submit to the Primary Point of Contact. This survey was posted electronically on the County's website and provided to EBID customers in hard copy with their monthly account statements.

3.4.2 Plan Update Strategy

Public involvement and input to the planning process was encouraged cooperatively among all of the participating jurisdictions using several venues throughout the course of the pre-draft planning. Public notification for county-wide activities within Doña Ana County is typically accomplished through the County's website and through the Media and Public Communications Department. Citizens within the County are accustomed to looking to these two sources for news and announcements of public events and government activities that include all Doña Ana jurisdictions.

At the start of the planning process, a web page notice was developed for the Doña Ana County website and reference to that website. In addition, Elephant Butte Irrigation District, the City of Las Cruces, and New Mexico State University also either duplicated the County's website notice or provided a text announcement with a link to the County website. On the County website, email and phone contact information were provided. As previously stated, the Steering Committee opted to provide a short hazard survey for the public to complete and submit to the Primary Point of Contact. This survey was posted electronically on the County's website and provided to EBID customers in hard copy with their monthly account statements. In all, the Committee received over 115 responses from the public using this questionnaire.

The responses received were compiled and evaluated for incorporation into this document. The detailed results are included within Appendix D, the following summary provides overall conclusions drawn from this information and how it has been incorporated into the Plan.

Question 1: Which of the following types of natural disasters have you or someone in your household experienced in the past 20 years within Dona Ana County? Respondents to this question overwhelmingly identified Drought (70%), Extreme Temperature (61%), Severe Winds (63%), and Flash Floods (37%) as having been experienced by members of their household over the past 20 years. This information was used by the Steering Committee in evaluating hazards to be profiled and the priority rankings given to mitigation actions and projects.

Question 2: Please select a level for the following hazards that represents your opinion of likelihood that the hazard will cause damage to buildings and property or harm to residents in your community. Questionnaire respondents indicated that the highest risk of damage was associated with Drought (Very High Risk{42}, High Risk {36}), followed by Severe Wind (High {48}, Medium {31}), Extreme Temperatures (High {34}, Medium {24}), Flash Flood (Medium {34}), and Dam Failure (Medium {18}). This data was also used in identification of hazards to be profiled and the selection and ranking of mitigation actions and projects.

Question 3: Are you aware that your community has a multi-jurisdictional hazard mitigation plan? 75 percent of respondents to this question indicated that they were not aware of the existing Hazard Mitigation Plan. This response indicates that there is a need for additional public outreach about the Plan and why it is important. The Steering

Committee used this data point to inform their decisions on how best to increase the Continued Public Outreach once the Plan is approved and adopted, and ensure that the public is aware of the Plan and informed about its contents.

Question 4: Is your home or business located in or near a (FEMA) designated flood zone? The majority of respondents (38%) indicated that there home or business was not within a FEMA designated flood zone with the next largest percentage (34%) indicated that they did not know if it was. This information indicates that greater emphasis needs to placed on providing outreach to the public regarding FEMA designated flood zones, and the risks associated with owning a home or business within these areas. As a result, the participating jurisdictions considered ways to affect this change through mitigation actions/projects and Continued Public Outreach efforts.

Question 5: Do you carry flood insurance (for your home or your business)? 70 percent of all respondents indicated that they do not carry flood insurance on their property (home or business). Here again, the data indicates a need for continued public outreach to inform the public of the risk of flood damage, even outside of FEMA designated flood zones, and the availability of low-cost flood insurance, especially to those outside of a designated flood zone. This information was incorporated into the Continued Public Outreach efforts and mitigation action/project development and prioritization process.

Question 6: What types of projects should participants focus on to reduce hazard impacts? (Please rank each option with 1 being least favorable and 5 being the most favorable) Respondents overwhelming identified Structure/Infrastructure improvements (50% ranked as 4 or 5) and Critical Facilities Upgrades (50% ranked as 4 or 5) as the type of projects participants should focus on in the update process. Respondents indicated that Public Education and Outreach, Environmental Protection of Natural Buffers, and Regulatory Standards & Strategic Plans were somewhat less favorable, however approximately 50% of respondents ranked these types of projects as a 3 or higher. This response was used by the Steering Committee members in assessment and ranking of proposed mitigation actions and projects.

Question 7: What is the most effective way for you to receive information about how to protect your family and prepare your home for hazard events? Respondents indicated that the most effective ways for them to receive information included TV, mail, and email, with smaller groups indicating radio, websites, social media and public meetings were somewhat effective means of disseminating information. Based upon this result, the Steering Committee opted to use email and jurisdictional websites in future updates and outreach efforts during the planning process.

Question 8: What else do you think we should know? Responses to this question varied significantly. Many respondents reiterated their concerns about flooding and maintenance of drainage infrastructure, while others indicated their concerns regarding drought and irrigation waters. The comments received under this question generally reinforced the several of the hazards identified by the Steering Committee, while others pertained to issues lying outside of the realm of natural hazard mitigation and the scope of this plan. The full record of received responses can be found in Appendix D.

Question 9: Do you want to be notified of upcoming mitigation public events? 56 of the 115 respondents indicated that they would like to be notified of upcoming events and provided contact information. This list of contacts was compiled for direct notification of availability of the draft Hazard Mitigation Plan to solicit public input.

Question 10: Do you have any additional comments? Most respondents did not provide additional comment. Additional comments that were applicable to the current effort reiterated the need for floodplain management and infrastructure maintenance. A full record of the responses received can be found in Appendix D.

The post-draft public involvement strategy included the following actions:

- Update of the County website to announce the availability of the draft Plan at the County's website. A digital copy of the draft Plan was posted to the County website. Participating Jurisdictions provided announcement of availability of the draft Plan on there individual websites, linking to the plan on the County website. No public comments were received on the draft Plan.
- The contact information compiled through the public questionnaire was used to inform members of the public of the availability of the draft Plan via email and solicit public input. No public comments were received from the questionnaire contacts.
- Standard board/council/commission meetings wherein the Plan was presented and formally adopted via resolution by each of the governing bodies for each participating jurisdiction. Depending upon the jurisdiction, the adoption process may have included a public meeting and/or a formal public hearing prior to formal action by the board/council/commission.

Copies of the pre- and post-draft public notices, and web pages are provided in Appendix D.

3.5 Reference Documents and Technical Resources

Over the course of the update planning process, numerous other plans, studies, reports, and technical information were obtained and reviewed for incorporation or reference purposes. The majority of sources referenced and researched pertain to the risk assessment and the capabilities assessment. To a lesser extent, the community descriptions and mitigation strategy also included some document or technical information research. Table 3-4 provides a reference listing of the primary documents and technical resources reviewed and used in the Plan. Detailed bibliographic references for the risk assessment are provided at the end of each hazard risk profile in Section 3.3. Other bibliographic references are provided as footnotes throughout the Plan.

Table 3-4: List of resource documents and references reviewed and incorporated in the plan update process

Referenced Document or Technical Source	Resource Type	Description of Reference and Its Use
American Society of Civil Engineers	Technical Reference	Source for design wind speed data.
Bureau Net (2011)	Website Database	Source for NFIP statistics.
Doña Ana County, City Of Las Cruces, City of Sunland Park, Town Of Mesilla, Village Of Hatch, New Mexico All Hazard Mitigation Plan (2013)	Hazard Mitigation Plan	FEMA approved hazard mitigation plan that formed the starting point for the update process.
Doña Ana County Community Wildfire Protection Plan (Draft 2012)	CWPP	Source for wildfire history and risk data
Plan 2040 Comprehensive Plan (2015)	County Comprehensive Plan	Source for past and future growth descriptions and projections. Some hazard data also compiled with this plan.
Doña Ana Historical Society (2020)	Website Database	Source for historic records.
InciWeb – Incident Information System (2011)	Wildfire Data	Source wildfire incident information for historical hazard and profile information, specifically for Horseshoe 2 and Monument Fire..
Environmental Working Group's Farm Subsidy Database (2020)	Website Database	Source of disaster related agricultural subsidies. Used in the risk assessment.
Federal Emergency Management Agency	Technical and Planning Resource	Resource for HMP guidance (How-To series), floodplain and flooding related NFIP data (mapping, repetitive loss, NFIP statistics), and historic hazard incidents. Used in the risk assessment and mitigation strategy.
HAZUS-MH	Technical Resource	Based data sets within the program were used in the vulnerability analysis.
Interpreting the Elephant Butte Irrigation District for Water Users	Jurisdictional Data Resource	Source of history and operational background for EBID.
Mesilla Valley Economic Development Alliance	Demographic and Economic Data Resource	Source of data for demographic and economic information for the County and jurisdictions.
National Climatic Data Center	Technical Resource	Online resource for weather related data and historic hazard event data. Used in the risk assessment.
National Integrated Drought Information System (2016)	Technical Resource	Source for drought related projections and conditions. Used in the risk assessment.
National Weather Service	Technical Resource	Source for hazard information, data sets, and historic event records. Used in the risk assessment.
New Mexico Department of Workforce Solutions (2020)	Website Resource	Source for labor statistics and building permit information.
New Mexico Natural Hazard Mitigation Plan (2018)	Hazard Mitigation Plan	The state plan was used a source of hazard information and the state identified hazards were used as a starting point in the development of the risk assessment. The State Plan mitigation goals were also referenced.
New Mexico Taxation and Revenue Department	Website Data	Source of economic data for the County and communities.
One Valley, One Vision 2040 Regional Plan	Regional Comprehensive Plan	Source for past and future growth descriptions and projections. Some hazard data also compiled with this plan.
Standard on Disaster/Emergency Management and Business Continuity Programs (2000)	Standards Document	Used to establish the classification and definitions for the asset inventory. Used in the risk assessment.
Town of Mesilla Comprehensive Plan (2017)	Jurisdictional Comprehensive Plan	Source for past and future growth descriptions and projections. Some hazard data also compiled with this plan.

Table 3-4: List of resource documents and references reviewed and incorporated in the plan update process

Referenced Document or Technical Source	Resource Type	Description of Reference and Its Use
U.S. Army Corps of Engineers	Dam Inventory	Source for dam locations and characteristics
U.S. Bureau of Land Management	GIS Data	Source for land ownership data
U.S. Bureau of Reclamation	Rio Grande Project Data	Source for data associated with the Rio Grande Project features including dam failure limits for Caballo Dam.
U.S. Census Bureau	Technical Data	TIGER/Line shapefile for County census block data was used to obtain block boundaries, population, and housing units
U.S. Forest Service	Technical Data	Source for local wildfire data. Used in the risk assessment.
U.S. Geological Survey	Technical Data	Source for geological hazard data and incident data. Used in the risk assessment.
Village of Hatch Comprehensive Plan (2003)	Jurisdictional Comprehensive Plan	Source for past and future growth descriptions and projections. Some hazard data also compiled with this plan.
City of Sunland Park Comprehensive Plan (2018)	Jurisdictional Comprehensive Plan	Source for past and future growth descriptions and projections. Some hazard data also compiled with this plan.
Western Regional Climate Center	Website Data	Online resource for climate data used in climate discussion of Section 4
Wikipedia (2020)	Website Reference	Source of information about various communities.
Zillow Real Estate Values	Website Reference	Obtained home value indexes for incorporated and unincorporated areas of Doña Ana County to use for residential values in vulnerability assessment.

3.6 Plan Integration Into Other Planning Mechanisms

Incorporation and/or integration of the Plan into other planning mechanisms, either by content or reference, enhances a community's ability to perform hazard mitigation by expanding the scope of the Plan's influence. It also helps a community to capitalize on all available mechanisms at their disposal to accomplish hazard mitigation and reduce risk.

3.6.1 Past Plan Incorporation/Integration Assessment

Discussion with the participating jurisdictions revealed that success of incorporating the 2013 Plan elements into other planning programs, has varied over the past planning cycle. Ways in which the 2013 Plan has been successfully incorporated or referenced into other planning mechanisms are summarized below for each jurisdiction

Doña Ana County

- Community Development completed Comprehensive Plan Updates in 2015 to incorporate sustainability measures and smart growth strategies in the County.
- Unified Development Code Updates are being made on an annual basis to best serve the goals of Dona Ana County. All previously applicable codes and regulations are grouped together in this Code.

- CIP Updates are based off of Drainage Master Plan recommendations. The 2013 plan serves as a basis for establishing the goals that are being accomplished by completing these DMPs.
- 11 Drainage Master Plans were completed to identify capital projects for the County to reduce impacts of flooding.

Village of Hatch:

- Floodplain Damage Prevention Ordinance Update
- General Master Planning (Comprehensive Plan)
- ICIP Updates
- Village Master Drainage Plan 2019
- Flood Hazard Mitigation Project on the Placitas Arroyo (Completion Fall 2020)

City of Las Cruces:

- Floodplain Damage Prevention Ordinance Update – July, 15th 2016
- Comprehensive Plan Updates – Elevate Las Cruces – February, 18th 2020
- OVOV 2040 Plan – April 2012

Town of Mesilla:

- Comprehensive Plan Update
- Floodplain Damage Prevention Ordinance
- Stormwater Drainage Planning

City of Anthony:

- City Stormwater Drainage Report (Draft 2017)

City of Sunland Park:

- Floodplain Damage Prevention Ordinance Update – annually
- City of Sunland Park Comprehensive Plan – June 2018

New Mexico State University:

- Master Plan updated in 2019
- Parking and Transportation Plan Updates in 2011 and 2018
- Internal NMSU All Hazards EOP – 2 year reviews, latest completed 2018
- Utility Tunnel Survey -continually ongoing
- Unified Mapping effort

Elephant Butte Irrigation District:

- Stormwater Management Plan
- General Master Planning
- Drought Management Plan
- Emergency Action Plan update
- Emergency Action Plans for Jurisdictional Structures – Pending adoption from the Office of the State Engineer, Dam Safety Bureau

In all of the above instances, the 2013 Plan was found to be beneficial, and especially with regard to the risk assessment and mitigation strategy information. Other benefits of incorporating the 2013 Plan identified by the Steering Committee included:

- FEMA mitigation grant funding eligibility.
- Better CRS ratings.

Challenges to incorporating the 2013 Plan discussed and identified by the Steering Committee included:

- Lack of outreach.
- Staff turnover and lack continuity to original steering committee.
- Lack of communicating planning responsibilities to successors.
- Lack of an effective Continuity of Operations Plan (COOP).

3.6.2 Five Year Plan Integration/Incorporation Strategy

With the efficacy of integrating the 2013 Plan during the last cycle in view, the Steering Committee identified typical ways to use and incorporate the Plan over the next five-year planning cycle, as follows:

- Use of, or reference to, Plan elements in updates/revisions to codes, ordinances, general and/or comprehensive planning documents, and other long-term strategic plans.
- Integration of defined mitigation A/Ps into capital improvement plans and programming.
- Reference to Plan risk assessments during updates or revisions to land use planning and zoning maps.
- Resource for developing and/or updating emergency operations plans, community wildfire protection plans, emergency response plans, etc.
- Reference during grant application processes.
- Use of the Plan as a resource during LEPC meetings.

Specific opportunities for integrating and/or referencing the Plan into other planning mechanisms over the next five years are summarized below for each participating jurisdiction. The jurisdiction' Steering Committee representative will take responsibility

to ensure that the Plan, risk assessment, goals and mitigation A/Ps are integrated and/or incorporated into the listed planning mechanism by participating in those efforts as they occur.

Doña Ana County:

- Floodplain Damage Prevention Ordinance Update – annually
- CIP Updates
- Drainage Studies and Plans – 1 or 2 every year
- Community Master Plans – as funding is available
- Emergency Action Plans

City of Anthony:

- Community Master Planning Reports
- Stormwater Drainage Planning

Village of Hatch:

- Floodplain Damage Prevention Ordinance Update – annually
- Village Comprehensive Plan Update

City of Las Cruces:

- Floodplain Damage Prevention Ordinance Update – annually
- Elevate Las Cruces Comprehensive Plan
- Metropolitan Planning Organization Core Documents

Town of Mesilla:

- Floodplain Damage Prevention Ordinance Update – annually
- Stormwater Drainage Planning

City of Sunland Park:

- Floodplain Damage Prevention Ordinance Update – annually
- Zoning Ordinance
- Subdivision Ordinance
- Trails Master Plan

Elephant Butte Irrigation District:

- Stormwater Management Plan
- Drought Management Plan
- Emergency Action Plan

New Mexico State University:

- Master Plan Update
- Parking and Transportation Update – Reviews
- Internal NMSU All Hazards EOP – 2 year reviews
- Utility Tunnel Survey
- Unified Mapping effort

3.6.3 Plan Incorporation Process

Each jurisdiction has particular processes that are followed for officially incorporating and adopting planning documents and tools. Many of the processes and procedures are similar for jurisdictions with comparable government structures.

In general, planning documents prepared by the various departments or divisions of a particular jurisdiction are developed using an appropriate planning process that is overseen and carried out by staff, with the occasional aide of consultants. Each planning process is unique to the plan being developed, but all usually involve the formation of a steering committee, have some level of interagency/stakeholder coordination within the plan's effective area. Public involvement may also be incorporated depending on the type of plan when appropriate. New or updated plans are usually developed to a draft stage wherein they are presented to the respective governing body for initial review and comment. Upon resolution and address of all comments, which may take several iterations, the plans are then presented to the governing body for final approval and official adoption.

Integration or reference to the Doña Ana County All Hazard Mitigation Plan into these various processes will be accomplished by the active participation of the Steering Committee representative(s) from each jurisdiction, in the other planning teams or committees to ensure that the Plan risk assessment, goals, and mitigation A/Ps are integrated and/or incorporated into the planning mechanism as appropriate.

Table 3-5 provides a summary of standard operating procedures that each of the participating jurisdictions follow when considering and incorporating official planning mechanisms, and how they apply to integration of the Plan.

Table 3-5: Jurisdictional standard operating procedures for integration of planning mechanisms

Jurisdiction	Description of Plan Integration Standard Operating Procedures
Doña Ana County	General planning documents prepared by all departments for Doña Ana County are developed by staff to a final draft stage and presented to the Board of County Commissioners in a study work session for review and comment. Final approval and official adoption of any planning document or mechanism is normally done using a formal resolution process through the Board of County Commissioners. The Doña Ana County All Hazard Mitigation Plan will be reviewed and as appropriate, incorporated into future planning documents and mechanism by the active participation of members of the Doña Ana County Mitigation Planning Team members in the development or update of those plans and mechanisms. Drainage Master Plans are completed with mitigation efforts in mind, and identify capital improvements for mitigation efforts. Legislative appropriations allow us to complete capital projects.
Anthony, City of	General planning documents prepared by all departments for City of Anthony are developed by staff and or a contract consulting firm, to a final draft stage and presented to the Board of Trustees (BOT). Once approved by the BOT, the plan is submitted to Dona Ana County for inclusion into their plan, which is presented to the Board of County Commissioners in a study work session for review and comment. Final approval and official adoption of any planning document or mechanism is normally done using a formal resolution process through the Board of Trustees. The Doña Ana County All Hazard Mitigation Plan will be reviewed and as appropriate, incorporated into future planning documents and mechanisms by the active participation by the City of Anthony.
Elephant Butte Irrigation District	General planning documents are developed by all departments for the Elephant Butte Irrigation District, are reviewed by Staff to a final draft stage and presented to the Treasurer/Manager for review and comment. Final approval and official adoption of any planning document or mechanism is normally done using a formal resolution process through the Board of Directors.
Hatch, Village of	General planning documents prepared by all departments for the Village of Hatch are developed by staff to a final draft stage and presented to the Board of Trustees in a study work session for review and comment. Final approval and official adoption of any planning document or mechanism is normally done using a formal resolution process through the Board of Trustees. The Village of Hatch All Hazard Mitigation Plan will be reviewed and as appropriate, incorporated into future planning documents and mechanism by the active participation of the Board of Trustees of the Village of Hatch Mitigation Planning Team members in the development or update of those plans and mechanisms.
Las Cruces, City of	General planning documents prepared by all departments for the City of Las Cruces are developed by staff to a final draft stage and presented to the City Council in a study work session for review and comment. Final approval and official adoption of any planning document or mechanism is normally done using a formal resolution process through the City Council. The Doña Ana County All Hazard Mitigation Plan will be reviewed and as appropriate, incorporated into future planning documents and mechanism by the active participation of members of the Doña Ana County Mitigation Planning Team members in the development or update of those plans and mechanisms.

Table 3-5: Jurisdictional standard operating procedures for integration of planning mechanisms

Jurisdiction	Description of Plan Integration Standard Operating Procedures
Mesilla, Town of	General planning documents prepared by all departments for the Town of Mesilla are developed by staff to a final draft stage and presented to the Mayor and Board of Trustees in a study work session for review and comment. Final approval and official adoption of any planning document or mechanism is normally done using a formal resolution process through the Board of Trustees. The Dona Ana County Multi-Jurisdictional Hazard Mitigation Plan will be reviewed and as appropriate, incorporated into future planning documents and mechanism by the active participation of members of the Dona Ana County Mitigation Planning Team members in the development or update of those plans and mechanisms.
New Mexico State University	**New Mexico State University established a University Board named Emergency Planning Committee** whose general purpose is to study, recommend, and implement coordinated emergency preparedness and response activities for the NMSU System. The committee will plan and coordinate for potential emergent conditions brought on by both natural and manmade situations that potentially place university system personnel or assets in harm's way. Such incidents consist of, but are not limited to weather, fire, criminal acts, and hazardous materials. The Emergency Planning Committee strives to hold standing meetings once per month. **In relation to hazard mitigation planning, the Emergency Planning Committee specifically:** 1) serves in an advisory capacity to NMSU System President regarding potential emergent situations, including, but not limited to, review and recommendations regarding the content and administration of the university's All Hazards Operations Plans, as well as the distinct, multi-agency, Doña Ana County All Hazard Mitigation Plan; 2) serves in an advisory capacity to the NMSU System President regarding administration of Policy 16.10 – Emergency Preparedness and Response protocols. Acts collectively, or through its individual members, to coordinate with other NM agencies, municipalities, local public bodies and the community on issues involving public safety, including but not limited to emergency preparedness training, risk and loss mitigation, and emergency response to catastrophic events; 3) acts collectively, or through its individual members, to coordinate with administrative bodies on campus charged with responsibility for university health and safety, including but not limited to the 1)Communicable Disease Preparedness Committee, 2)University Safety Committee, 3)Institutional Biosafety Committee, 4) University Radiation Safety Committee, 5) Institutional Review Board; as well as with each NMSU component or department/unit, as requested, regarding its emergency plans required by Policy 2.25. 4) Develops and recommends the adoption, or revision, of university policies and/or protocols.
Sunland Park, City of	General planning documents prepared by all departments for the City of Sunland Park are developed by staff to a final draft stage and presented to the City of Sunland Park in a study work session for review and comment. Final approval and official adoption of any planning document or mechanism is normally done using a formal resolution process through the City of Sunland Park. The Doña Ana County All Hazard Mitigation Plan will be reviewed and as appropriate, incorporated into future planning documents and mechanism by the active participation of members of the Doña Ana County Mitigation Planning Team members in the development or update of those plans and mechanisms.

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SECTION 4: RISK ASSESSMENT

One of the key elements to the hazard mitigation planning process is the risk assessment. In performing a risk assessment, a community determines "what" can occur, "when" (how often) it is likely to occur, and "how bad" the effects could be[17]. According to DMA 2000, the primary components of a risk assessment that answer these questions are generally categorized into the following measures:

- **Hazard Identification and Screening**
- **Hazard Profiling**
- **Assessing Vulnerability to Hazards**

The risk assessment for Doña Ana County and participating jurisdictions was performed using a county-wide, multi-jurisdictional perspective, with much of the information gathering and development being accomplished by the Steering Committee. This integrated approach was employed because many hazard events are likely to affect numerous jurisdictions within the County, and are not often relegated to a single jurisdictional boundary. The vulnerability analysis was performed in a way such that the results reflect vulnerability at an individual jurisdictional level, and at a countywide level.

4.1 Hazard Identification and Screening

Hazard identification is the process of answering the question; *"What hazards can and do occur in my community or jurisdiction?"* For this Plan, the list of hazards identified in the 2013 Plan were reviewed by the Steering Committee with the goal of refining the list to reflect the hazards that pose the greatest risk to the jurisdictions represented by this Plan. The Steering Committee also compared and contrasted the 2013 Plan list to the comprehensive hazard list summarized in the 2018 State Plan[18] to ensure compatibility with the State Plan. Table 4-1 summarizes the 2013 Plan and 2018 State Plan hazard lists.

The review included an initial screening process to evaluate each of the listed hazards based on the following considerations:

- Experiential knowledge on behalf of the Steering Committee with regard to the relative risk associated with the hazard.
- Documented historic context for damages and losses associated with past events with a focus on events that have occurred during the last plan cycle.
- The ability/desire of the jurisdictions represented by the Steering Committee to develop effective mitigation actions/projects for the hazard under current DMA 2000 criteria.
- Consideration of and compatibility with the 2018 State Plan hazards.
- Duplication of effects attributed to each hazard.
- Focus on natural hazards.

[17] National Fire Protection Association, 2000, *Standard on Disaster/Emergency Management and Business Continuity Programs*, NFPA 1600.

[18] NMDHSEM, 2018, *New Mexico Natural Hazard Mitigation Plan*

Table 4-1: Initial hazard identification lists

2013 Plan Hazard List	2018 State Plan Hazard List	
• **Dam Failure** • **Flooding** • **Drought** • Extreme Cold • **Severe Winds** • **Wildfire** ***Hazards Considered but not profiled and assessed for vulnerability:*** • **Earthquake** • **Expansive Soils** • **Extreme Heat** • **Land Subsidence** • **Landslides** • **Severe Winter Storms** • **Thunderstorms** • **Volcanoes**	• **Dam Failure** • **Drought** • **Earthquakes** • **Extreme Heat** • **Expansive Soils** • **Flood/Flash Floods** • **High Wind** • **Landslide** • **Land Subsidence**	• **Severe Winter Storms** • **Thunderstorms (including Lightning and Hail)** • **Tornadoes** • **Volcanoes** • **Wildland/Wildland-Urban interface Fire**

One tool used in the initial screening process was a historic hazard database prepared as a part of the plan update. Historic data compiled into this database includes both declared and undeclared events. Sources for declared events included: Doña Ana County Flood Commission (DACFC), Doña Ana County Office of Emergency Management (DACOEM), New Mexico Department of Homeland Security & Emergency Management (NMDHSEM), Federal Emergency Management Agency (FEMA), and United States Department of Agriculture (USDA). Non-declared sources include: Local Jurisdictions, New Mexico Energy, Minerals, and Natural Resources Department (NMEMNRD), National Weather Service (NWS), National Oceanic and Atmospheric Administration (NOAA), National Climatic Data Center (NCDC), United States Geological Survey (USGS), and United States Forest Service (USFS), National Wildfire Coordination Group (NWCG), and others. The database represents a period of 1956 to 2019, with the majority of events being post 1990.

Table 4-2 summarizes the compilation of historic events. If a hazard is not listed, then no documentation of a historic event was found. Detailed historic hazard records are provided as digital files on the Plan CD as well as in Appendix E. During the previous planning cycle, consideration was given to inclusion of Earthquake, Expansive Soils, Land Subsidence, Landslides, Severe/Extreme Heat, Winter Storms, and Levee Failure Hazards in the Plan. These hazards were ultimately dropped from the list of identified hazards. The justification for not including these hazards was as follows:

- **Earthquake** was given serious consideration by the Steering Committee in 2012 and was discussed at length in their planning meetings. Risk based maps and data developed by the USGS were reviewed and were found to show that the seismic risk for the whole county is very low and there is a lack of any significant historic and damage causing seismic events. Based on these finding, the Steering Committee at that time chose to focus energies on mor prominent hazards and drop Earthquake from the list.

- **Expansive Soils, Land Subsidence, Landslides, Severe/Extreme Heat, Winter Storms** – The 2012 Steering Committee chose to drop this hazard from further consideration due to lack of historic damages and perceived risk.
- **Levee Failure** – This hazard was discontinued due to the fact that all levees within the County are owned and maintained by federal entities and the risk due to failure was considered to be minor.

The 2020 Steering Committee reviewed these justifications and the historical hazard data presented in Table 4-2 and determined that the exclusion of these hazards was justified and opted not to include them in the current update.

The culmination of the review and screening process by the Steering Committee resulted in a revised list of hazards that will be carried forward with this Plan. Rationale for the addition of Thunderstorm hazard profile is summarized as follows:

- **Thunderstorms** was given serious consideration by the Steering Committee and was discussed at length in Meeting No. 1. Compiled historic hazard data indicated that both lightening and hail events resulting in damages and injuries have occurred within the County in recent history. Based on these findings, the Steering Committee chose to add a Thunderstorm Hazard profile to the Plan, with specific emphasis on mitigating hazards associated with lightening and hail.

Table 4-2: Doña Ana County Historic Hazard Events – 1956 to 2019

Hazard	No. of Records	Recorded Losses		
		Fatalities	Injuries	Damage Costs ($)
Drought	119	0	0	$280,000
Dam Failure	1	0	0	$0
Earthquake	4	0	0	$0
Extreme Heat/Cold	3	0	0	$585,870
Flood	85	0	1	$16,741,467
Hail	105	0	0	$17,260,743
Heavy Snow	8	0	0	$0
Lightning	4	0	6	$19,669
Severe Wind	197	0	3	$2,991,197
Wildfire	5	0	1	$0

Notes:
- SEVERE WIND category includes all events with damaging winds (High Wind, Tornado, Microburst, Macroburst, Gustnadoes, etc.)
- Damage Costs include property and crop/livestock losses and are reported as is with no attempt to adjust costs to current dollar values. Furthermore, wildfire damage cost do not include the cost of suppression which can be quite substantial.
- Sources: NCDC, NWCG, NWS, USFS, DAC, NMDHSEM

The Steering Committee has selected the following list of hazards for profiling and updating based on the above explanations and screening process:

- **Dam Failure**
- **Drought**
- **Extreme Cold**
- **Thunderstorm (Lightening & Hail)**
- **Flooding**
- **Severe Winds**
- **Wildfire**

4.2 Vulnerability Analysis Methodology

4.2.1 General

The following sections summarize the methodologies used to perform the vulnerability analysis portion of the risk assessment. For this Plan, the entire 2013 Plan vulnerability analysis was either revised or updated to reflect the new hazard categories, the availability of new data, or differing loss estimation methodology. Specific changes are noted below and/or in Section 3.3, as appropriate.

For the purposes of this vulnerability analysis, hazard profile maps were developed, as appropriate, to map the geographic variability of the risk posed by the Plan hazards selected by the Steering Committee. For some hazards, profile categories of EXTREME, HIGH, MEDIUM, and/or LOW were used and were subjectively assigned based on the factors discussed in the Probability and Magnitude sections of each hazard. Within the context of the county limits, the other hazards do not exhibit significant geographic variability and will not be categorized as such.

Unless otherwise specified in this Plan, the general cutoff date for new hazard profile data and jurisdictional corporate limits is the end of June 2019.

4.2.2 Calculated Priority Risk Index (CPRI) Evaluation

The first step in the vulnerability analysis (VA) is to assess the perceived overall risk for each of the plan hazards using a tool developed by the State of Arizona called the Calculated Priority Risk Index[19] (CPRI). The CPRI value is obtained by assigning varying degrees of risk to four (4) categories for each hazard, and then calculating an index value based on a weighting scheme. Table 4-3 summarizes the CPRI risk categories and provides guidance regarding the assignment of values and weighting factors for each category.

As an example, assume that the project team is assessing the hazard of flooding, and has decided that the following assignments best describe the flooding hazard for their community:

- Probability = Likely

[19] ADEM, 2003, *Arizona Model Local Hazard Mitigation Plan*, prepared by JE Fuller/ Hydrology & Geomorphology, Inc.

- Magnitude/Severity = Critical
- Warning Time = 12 to 24 hours
- Duration = Less than 6 hours

The CPRI for the flooding hazard would then be:

CPRI = [(3*0.45) + (3*0.30) + (2*0.15) + (1*0.10)]
CPRI = 2.65

Table 4-3: Calculated Priority Risk Index (CPRI) categories and risk levels

CPRI Category	Degree of Risk			Assigned Weighting Factor
	Level ID	Description	Index Value	
Probability	Unlikely	▪ Extremely rare with no documented history of occurrences or events. ▪ Annual probability of less than 0.001.	1	45%
	Possible	▪ Rare occurrences with at least one documented or anecdotal historic event. ▪ Annual probability that is between 0.01 and 0.001.	2	
	Likely	▪ Occasional occurrences with at least two or more documented historic events. ▪ Annual probability that is between 0.1 and 0.01.	3	
	Highly Likely	▪ Frequent events with a well documented history of occurrence. ▪ Annual probability that is 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 (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure). ▪ Injuries or 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 1 day and less than 1 week.	2	
	Critical	▪ Moderate property damages (greater than 25% and less than 50% of critical and non-critical facilities and infrastructure). ▪ Injuries or illnesses result in permanent disability and at least one death. ▪ Shut down of critical facilities for more than 1 week and less than 1 month.	3	
	Catastrophic	▪ Severe property damages (greater than 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 1 month.	4	
Warning Time	Less than 6 hours	Self explanatory.	4	15%
	6 to 12 hours	Self explanatory.	3	
	12 to 24 hours	Self explanatory.	2	
	More than 24 hours	Self explanatory.	1	
Duration	Less than 6 hours	Self explanatory.	1	10%
	Less than 24 hours	Self explanatory.	2	
	Less than one week	Self explanatory.	3	
	More than one week	Self explanatory.	4	

4.2.3 Critical Facilities and Infrastructure

During the 2013 Plan Update process, the Steering Committee developed a new CFI data base for the mitigation planning process and vulnerability assessment. The 2013 CFI database was reviewed and update by all participating jurisdiction for use in this Plan Update. This database update followed the 2013 definitions and criteria for Critical Infrastructure as outlined below.

Critical Facility or Infrastructure: Any systems, structures and/or infrastructure within a community whose incapacity or destruction would:

- *Have a debilitating impact on the defense or economic security of that community.*
- *Significantly hinder a community's ability to recover following a disaster.*

Following the criteria set forth by the Critical Infrastructure Assurance Office (CIAO), the following eight general categories[20] are used by the Steering Committee to classify CFI:

1. **Communications Infrastructure:** Telephone, cell phone, data services, radio towers, and internet communications, which have become essential to continuity of business, industry, government, and military operations.
2. **Electrical Power Systems:** Generation stations and transmission and distribution networks that create and supply electricity to end-users.
3. **Gas and Oil Facilities:** Production and holding facilities for natural gas, crude and refined petroleum, and petroleum-derived fuels, as well as the refining and processing facilities for these fuels.
4. **Banking and Finance Institutions:** Banks, financial service companies, payment systems, investment companies, and securities/commodities exchanges.
5. **Transportation Networks:** Highways, railroads, ports and inland waterways, pipelines, and airports and airways that facilitate the efficient movement of goods and people.
6. **Water Supply Systems:** Sources of water; reservoirs and holding facilities; aqueducts and other transport systems; filtration, cleaning, and treatment systems; pipelines; cooling systems; and other delivery mechanisms that provide for domestic and industrial applications, including systems for dealing with water runoff, wastewater, and firefighting.
7. **Government Services:** Capabilities at the federal, state, and local levels of government required to meet the needs for essential services to the public.
8. **Emergency Services:** Medical, police, fire, and rescue systems.

Other CFI such as public libraries, schools, businesses, museums, parks, recreational facilities, historic buildings or sites, churches, residential and/or commercial structures,

[20] Instituted via Executive Order 13010, which was signed by President Clinton in 1996.

apartment complexes, and so forth, are typically not classified as CFI unless they serve a secondary function to the community during a disaster emergency (e.g. - emergency housing or evacuation centers). Ultimately, complete discretion was given to each community to determine what qualified as CFI in their community using the working definition as a basis for their decision. For example, a local business that employs a major segment of the community's workforce might be considered as a CFI to that community. Accordingly, each community made the final decision regarding what is, or is not a CFI for their jurisdiction.

Most of the CFI identified by the Steering Committee jurisdictions are adequately represented by a point on a map and are compiled into a point based GIS file. Each facility is attributed with a descriptive name, facility description, physical address, geospatial position (longitude and latitude), and an estimated replacement cost for the building/structure and contents. The exceptions to this are the irrigation system facilities identified by the Elephant Butte Irrigation District (EBID), which are linear in shape and represented by line features (canals, laterals, wasteways, and drains) within GIS. Those data sets are attributed with type descriptor and length. Tools used to compile the CFI database and attributes included: GIS data sets, on-line mapping utilities, insurance pool information, county assessors data, and manual data acquisition. Table 4-4 summarizes the CFI counts for facilities that can be represented by a point on a map, as provided by each of the participating jurisdictions in this Plan. The Steering Committee chose to not include the detailed CFI data with this Plan. Instead, they are secured and on file at Doña Ana County for use by the County and Steering Committee members in their respective hazard mitigation planning efforts.

Table 4-4: Critical facility and infrastructure counts by category and jurisdiction as of April 2019

Jurisdiction	Communications Infrastructure	Electrical Power Systems	Gas and Oil Facilities	Banking and Finance Institutions	Transportation Networks	Water Supply Systems	Government Services	Emergency Services	Educational [a]	Shelter and Evacuation Facilities	Business [a]	Flood Control [a]
County-Wide Totals	**26**	**31**	**5**	**0**	**20**	**56**	**21**	**62**	**12**	**16**	**6**	**2**
Anthony	3	3	0	0	1	0	1	3	0	0	0	0
Hatch	0	1	0	0	1	0	3	5	1	0	0	0
Las Cruces	11	17	0	0	7	40	8	27	2	10	0	0
Mesilla	0	0	0	0	1	4	1	1	3	1	0	2
NMSU	4	4	5	0	0	9	0	3	5	5	5	0
Sunland Park	0	1	0	0	0	1	2	3	1	0	0	0
Unincorporated Doña Ana County	8	5	0	0	10	2	6	20	0	0	1	0

Table 4-4: Critical facility and infrastructure counts by category and jurisdiction as of April 2019

Jurisdiction	Communications Infrastructure	Electrical Power Systems	Gas and Oil Facilities	Banking and Finance Institutions	Transportation Networks	Water Supply Systems	Government Services	Emergency Services	Educational [a]	Shelter and Evacuation Facilities	Business [a]	Flood Control [a]

NOTES: a – CFI listed under these categories have been determined to be critical per the definition of this Plan by the corresponding jurisdiction .

It should be noted that the facility counts summarized in Table 4-4 do not represent a comprehensive inventory of all the category facilities that exist within the County. They do represent the facilities inventoried to-date by each jurisdiction and are considered to be a work-in-progress that is anticipated to be expanded and augmented with each Plan cycle.

The EBID provided a GIS dataset that delineates all of the water delivery and removal system elements. Per that dataset, EBID has approximately 373.7 miles of canal/laterals and approximately 250 miles of drains/wasteways.

4.2.4 Loss Estimations

In the 2013 Plan, losses were estimated by either quantitative or qualitative methods. Quantitative loss estimates were derived using estimated exposure counts and the application of an assumed loss to exposure ratio. Loss estimates for this Plan will be similar in scope and detail to the 2013 Plan, but will reflect current hazard map layers, an updated CFI database. It should be noted that this update used Census 2010 block level data as the best available data for estimating the human and residential structure impacts wherever possible. No industrial or commercial unit estimates are made, due to the lack of data at this time. The procedures for developing loss estimates are discussed below.

Economic loss and human exposure estimates for each of the final hazards identified in Section 3.1 begins with an assessment of the potential exposure of critical infrastructure, human populations, and residential structures to those hazards. Estimates of critical assets identified by each jurisdiction (see Table 4-4) are accomplished by intersecting the CFI inventory with the hazard profiles in Section 3.3. Human or population exposures are estimated by intersecting the same hazards with the 2010 Census block data population statistics.

Additional exposure and loss estimates for general residential buildings within the County were made using the residential housing counts reported in the 2010 Census data. Structure replacement costs for the residential housing counts were geographically assigned for two general areas within the County, the Las Cruces metropolitan area and the remainder of the County. An average housing unit value was estimated for each geographic region using

data from the Doña Ana County Assessor's database and 2017 mean home values published online by City-Data.com. Average replacement costs for a residential home were estimated at $182,137 for the Las Cruces metropolitan area and $90,000 for the remainder of the County. Content value for these buildings were assumed to equal 50% of the replacement cost.

Combining the exposure and/or loss results from the CFI and 2010 Census database provides a comprehensive depiction of the overall exposure of critical facilities, human population, and residential building stock and the two datasets are considered complimentary and not redundant.

For EBID facilities, replacement costs for delivery canals and laterals were estimated to be $40 per lineal foot. Drain and wasteway replacement costs were estimated at $25 per lineal foot.

Economic losses to structures and facilities are estimated by multiplying the exposed facility replacement cost estimates by an assumed loss to exposure ratio for the hazard. The loss to exposure ratios used in this Plan are summarized by hazard in Section 3.3. It is important to note the following when reviewing the loss estimate results:

- The loss to exposure ratios are subjective and the estimates are solely intended to provide an understanding of relative risk from the hazards and potential magnitude of losses.
- Potential losses reported in this Plan represent an inherent assumption that the hazard occurs county-wide to the magnitude shown on the hazard profile map. The results are intended to present a county-wide loss potential. Any single hazard event will likely only impact a portion of the county and the actual losses would be some fraction of those estimated herein.
- No attempt has been made at developing annualized loss estimates, unless otherwise noted in Section 3.3

It is also noted that uncertainties are inherent in any loss estimation methodology due to:

- Incomplete scientific knowledge concerning hazards and our ability to predict their effects on the built environment;
- Approximations and simplifications that are necessary to perform a comprehensive analysis economically; and,
- Lack of detailed data necessary to implement a viable statistical approach to loss estimations.

Several of the hazards profiled in this Plan will not include quantitative exposure and loss estimates. The vulnerability of people and assets associated with some hazards are nearly impossible to evaluate given the uncertainty associated with attempting to specify a geospatial correlation of the hazard event and loss potential without sufficient data to justify the estimation of geographically varied damages. Instead, a qualitative review of vulnerability will be discussed to provide insight to the nature of losses that are associated

with the hazard. For subsequent updates of this Plan, the data needed to evaluate these unpredictable hazards may become refined such that comprehensive vulnerability statements and thorough loss estimates can be made

4.2.5 Development Trend Analysis

The 2013 Plan development trend analysis will require updating to reflect growth and changes in Doña Ana County and jurisdiction boundaries over the last planning cycle. The updated analysis will focus on the potential risk associated with projected growth patterns and their intersection with the Plan identified hazards. Refer to Section 1.6 for general growth and development trend discussions for each jurisdiction.

4.3 Hazard Risk Profiles

The following sections summarize the risk profiles for each of the Plan hazards identified in Section 3.1. For each hazard, the following elements are addressed to present the overall risk profile:

- **Description**
- **History**
- **Probability**
- **Extent/Magnitude**
- **Vulnerability**
- **Sources**
- **Profile Maps (if applicable)**

Much of the 2013 Plan data has been updated, incorporated and/or revised to reflect current conditions and Steering Committee changes. County-wide and jurisdiction specific profile maps are provided at the end of the section (as applicable) to enhance the understanding of geographic limits to hazard impacts. It is also noted that the maps are not included in the page count of this document.

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4.3.1 Dam Failure

Description

A dam is defined as a barrier constructed across a watercourse for the purpose of storage, control, or diversion of water. Dams typically are constructed of earth, rock, concrete, or mine tailings. A dam impounds water in the upstream area, or reservoir, and the volume of storage is usually measured in acre-feet (the volume of water that covers an acre of land to a depth of 1 foot).

The primary risk associated with dam failure in Doña Ana County is the inundation of downstream facilities and population by the resulting flood wave. Dams within or impacting Doña Ana County can generally be divided into two groups: (1) storage reservoirs designed to impound and store water, provide flood protection, and possibly generate power, and (2) single purpose flood retarding structures (FRS) designed to attenuate or reduce flooding by impounding stormwater for relatively short durations of time during flood events. Most dams are equipped with an emergency spillway, which provides a designed and protected outlet to convey runoff volumes exceeding the dam's storage capacity during extreme or back-to-back storm events. Dam failures may be caused by a variety of reasons including: seismic events, extreme wave action, leakage and piping, overtopping, material fatigue and spillway erosion.

Federal dam owners are required to obtain a permit for a new dam; however, the Office of the State Engineer by law does not regulate federal dams. Dams storing less than 15 acre feet of water, dams less than 25 feet in height and storing less than 50 acre feet of water, and dams less than 6 feet in height are generally not regulated and are considered non-jurisdictional dams. However, if a non-jurisdictional dam threatens life and property due to an unsafe condition, the state engineer can issue a safety order to the owner requiring action to remove the threat.

History

Dam failures are relatively uncommon in Dona Ana County, however one recent event occurred September 12th of 2013, in the Colonia of La Union, NM. An uncommonly heavy rainfall event in the contributing watershed of the La Union Dam resulted in overtopping and failure of the decades old earthen structure. Subsequent downstream flooding necessitated evacuation of many residents, and resulted in several flooded homes, washed out roads and utility outages.



Probability

The probability dam failures is difficult to quantify due to numerous factors that may cause a dam to fail. The magnitude of a dam failure is normally an estimate of discharge and can vary greatly with each dam. Factors impacting the probability and magnitude of dam

failure are directly influenced by the type and age of the dam, its operational purpose, storage capacity and height, downstream conditions, hydrologic conditions as the time of failure, and many other factors. There are two sources of data that publish hazard ratings for dams impacting Doña Ana County. The first is the New Mexico Office of the State Engineer Dam Safety Bureau (OSEDSB) and the second is the National Inventory of Dams (NID). Hazard ratings from each source are based on an assessment of the consequence of failure and/or dam safety considerations, and they are not tied to probability of occurrence.

The OSEDSB ensures that dams in New Mexico are designed, constructed, operated, and maintained safely to prevent dam failures. Dams that equal or exceed 25 feet in height and 15 acre-feet of storage, or dams that equal or exceed 50 acre-feet storage and six (6) feet in height, are under the jurisdiction of the State Engineer. In addition, a permit is required from the State Engineer for the construction of any dam that exceeds 10 feet in height and/or 10 acre-feet of water storage.

The OSEDSB assigns a hazard potential classification to each jurisdictional dam. The rating is based on the potential consequences of failure and the corresponding loss of life, damage to property and environmental damage that is likely to occur in the event of dam failure. No allowances for evacuation or other emergency actions by the population are considered and the hazard potential classification is not a reflection of the condition of the dam. The three hazard ratings used are:

- **LOW**: Dams assigned the low hazard potential classification are those dams where failure or improper operation results in no probable loss of life and low economic or environmental losses. Losses are principally limited to the dam owner's property.
- **SIGNIFICANT**: Dams assigned the significant hazard potential classification are those dams where failure or improper 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 located in populated areas with significant infrastructure.
- **HIGH**: Dams assigned the high hazard potential classification are those dams where failure or improper operation will probably cause loss of human life.

The responsibilities of the OSEDSB include inspecting existing dams to verify they are operated and maintained in a safe condition. The bureau reviews plans and specifications for new dams, and modifications and repairs to existing dams, to ensure compliance with State Engineer design criteria. The bureau also inspects construction to verify the dams are built or repaired in accordance with the plans on file with the State Engineer. The State Engineer classifies all regulatory dams in the state into one of the following dam safety categories:

- **SATISFACTORY** – No existing or potential dam safety deficiencies are recognized. Acceptable performance is expected under all loading conditions in accordance with state engineer's rules and regulations for dams or tolerable risk guidelines.

- **FAIR** – No existing dam safety deficiencies are recognized for normal loading conditions. Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency. Risk may be in the range to take further action.
- **POOR** – A dam safety deficiency is recognized for loading conditions, which may realistically occur. Remedial action is necessary. A POOR condition is used when uncertainties exist as to critical analysis parameters, which identify a potential dam safety deficiency. Further investigations and studies are necessary.
- **UNSATISFACTORY** – A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution.

Dona Ana County has 14 dams that are under the jurisdiction of the NMOSE Dam Safety Bureau. Of these 14 dams, 13 are classified as being in POOR condition and 1 is classified as being in UNSATISFACTORY condition.

It is important to note that the hazard potential classification is an assessment of the *consequences* of failure, but not an evaluation of the *probability* of failure or improper operation. As of May 2020, there are currently 43 dams within Doña Ana County that are jurisdictional and regulated by the OSEDSB. Of those 43 dams, 26 are classified as HIGH hazard potential, 13 are classified as SIGNIFICANT, and the rest are LOW. The location and classification type of these dams within Doña Ana County are shown on Maps 1A through 1F.

The NID database contains information on approximately 77,000 dams in the 50 states and Puerto Rico, with approximately 30 characteristics reported for each dam, such as: name, owner, river, nearest community, length, height, average storage, max storage, hazard rating, Emergency Action Plan (EAP), latitude, and longitude. Each dam in the NID database is classified as either low, significant, or high hazard based on substantially the same criteria used by OSEDSB.

Federal dams are generally not regulated by the OSEDSB, but are maintained and inspected by the constructing agency. The two federal dams impacting Doña Ana County are Elephant Butte and Caballo Dams. Both are constructed on and impound waters of the Rio Grande and both are located north of the County, with Caballo Dam being the nearest. Both dams are owned, maintained and operated by the U.S. Bureau of Reclamation (USBR), and are classified as HIGH hazard dams. The USBR has also developed emergency action plans for both dams.

Doña Ana County Flood Commission maintains a database of 71 dams located within the County. All are flood retarding structures that are specifically designed to control flooding and sediment, and some are jurisdictional per OSEDSB. Of all the dams in the DACFC database, only 8 have emergency action plans and not all have been approved by the OSEDSB.

Extent/Magnitude

The extent magnitude of impacts due to dam failure are usually depicted by mapping the estimated downstream inundation limits and performing an assessment that is based on a

combination of flow depth and velocity. The dam failure inundation limits prepared for Caballo Dam (USBR, 1999) were scanned and digitized into a GIS shapefile for use in the vulnerability analysis. Inundation mapping for the Dona Ana, Mesquite, Lauson, Breedlove, North Salem, Garfield, Rodey, Tortugas, Gardner, Placitas, and Crow Canyon dams was provided in GIS format by DACFC. This data was generated from a combination of Emergency Action Plans, Drainage Master Plans, and, in the case of Gardner Dam, from a Breach Plan. Nondisclosure agreements between the County and USBR prohibit the production of maps showing the Caballo Dam failure inundation limits within this document, however maps are on file at the Doña Ana County Office of Emergency Management. The Caballo Dam failure inundation limits generally follow the Rio Grande geologic floodplain while the inundation extents of the dams noted above are localized to smaller areas along the Rio Grande Valley. Areas within the dam failure inundation boundary are classified herein as a HIGH hazard area. All other areas are classified as a LOW hazard. Workmaps of the inundation limits were prepared and reviewed by the Steering Committee to assess vulnerability and exposure of CFI and population centers. It is also clearly understood by the Steering Committee that there are potentially HIGH hazard inundation limits downstream of all 71 dams currently in the DACFC database. Not all of those limits have been delineated at this time, however, they are being considered as a potential mitigation action item.

Maps 1A through 1F depict the location of all 71 dams included in the DACFC database, within the County, to provide a perspective of the potential areas downstream that may be impacted by a dam failure. Dam symbols are attributed to indicate their OSEDSB hazard classification and jurisdictional status.

The extent of dam failure is represented by the inundation mapping previously discussed. The magnitude of depths and velocities are usually determined through a combination of hydrologic and hydraulic evaluations and plotted on maps that are typically used for emergency action planning and development planning. As previously discussed, the only dam failure inundation mapping currently available in the county were prepared for Caballo, Dona Ana, Mesquite, Lauson, Breedlove, North Salem, Garfield, Rodey, Tortugas, Gardner, Placitas, Crow Canyon, and Las Cruces Flood Control Dam. Depths of flooding within those inundation areas vary with distance from the dam and geometry of the conveyance corridor. In general, depths and velocities are greatest in the reaches immediately downstream of the dam, and gradually dissipate with attenuation as the floodwave progresses downstream. The volume of stored flows greatly impacts the extent and duration of the floodwave as well. For example, the floodwave released from a failure of Caballo Dam is much longer in duration than the floodwave for the LCFCD. The following is a summary of the range of maximum flooding depths predicted for communities impacted by a Caballo Dam failure. In general, the maximum flow depths are estimates at the upstream and downstream limits of the jurisdiction, and are measured from the regular water surface elevation of the Rio Grande depicted on the USGS quadrangle maps. For the EBID and unincorporated county, the range of depths varies greatly due to the large geographic variability. The reader is referred to the original USBR inundation mapping (USBR, 1999) for greater detail:

Participating Jurisdiction	Range of Maximum Depths, in feet
Anthony	N/A
EBID	5 to 42
Hatch	17 to 18
Las Cruces	9 to 10
Mesilla	9
NMSU (Hatch Campus Only)	17 to 18
Sunland Park	10 to 15
Unincorporated Doña Ana County	5 to 42

Inundation boundaries associated with several dams within Dona Ana County and for the Las Cruces Dam were also incorporated into the risk assessment for dam failure.

In summary, all jurisdictions contain, or are located downstream of, either a flood retarding structure or the Caballo Dam and are therefore at least partially exposed to potential inundation by a dam failure event. Nearly all of the flood retarding structures do not have defined inundation limits, so it is not possible at this time to estimate the percentage of exposure.

Vulnerability – CPRI Results

Dam failure CPRI results for each jurisdiction are summarized in Table 4-5.

Table 4-5: CPRI results by jurisdiction for dam failure

Participating Jurisdiction	Probability	Magnitude / Severity	Warning Time	Duration	CPRI Score
Anthony	Unlikely	Negligible	< 6 hours	< 6 hours	1.45
EBID (Elephant Butte and Caballo Dams)	Unlikely	Catastrophic	6-12 hours	> 1 week	2.50
EBID (Flood Control Dams)	Likely	Critical	< 6 hours	< 1 week	3.15
Hatch	Unlikely	Critical	< 6 hours	< 1 week	2.25
Las Cruces	Unlikely	Negligible	< 6 hours	< 24 hours	1.55
Mesilla	Unlikely	Catastrophic	6-12 hours	< 6 hours	2.20
NMSU	Unlikely	Critical	6-12 hours	> 1week	2.20
Sunland Park	Unlikely	Catastrophic	>24 hours	>1 week	2.20
Unincorporated Doña Ana County	Unlikely	Limited	6-12 hours	< 24 hours	1.70

Vulnerability – Loss Estimations

The estimation of potential losses due to inundation from a dam failure was accomplished by intersecting the human and facility assets with the inundation limits for the Caballo Dam failure and approximate limits developed for other smaller dams within the County. As stated previously, delineated dam failure inundation limits were not available for all 71 dams located in the County. Therefore, the results of this analysis are expected to

underestimate the exposure of people and infrastructure to dam failure within Doña Ana County.

Since no common methodology is available for obtaining losses from the exposure values, estimates of the loss-to-exposure ratios were assumed based on the perceived potential for damage. Any storm event, or series of storm events of sufficient magnitude to cause a dam failure scenario, would have potentially catastrophic consequences in the inundation area. Floodwaves from these types of events travel very fast and possess tremendous destructive energy. Accordingly, an average event-based loss-to-exposure ratio for the inundation areas with a HIGH hazard rating are estimated to be 0.50 or a 50% loss. Low rated areas are zero. Table 4-2 summarizes exposure and loss estimations for dam failure. In summary, $14.8 million in CFI related losses are estimated for dam failure inundation for all the participating jurisdictions in Doña Ana County. An additional $570 million in losses to Census 2010 estimated residential structures is estimated for all participating Doña Ana County jurisdictions. Regarding human vulnerability, a total population of 21,194 people, or 10.13% of the total Doña Ana County population, is potentially exposed to a dam failure inundation event. The potential for deaths and injuries are directly related to the warning time and type of event. Given the magnitude of such an event(s), it is realistic to anticipate at least one death and several injuries. There is also a high probability of population displacement for most of the inhabitants within the inundation limits downstream of the dam(s). For EBID facilities, Table 4-3 summarizes the length of exposed facilities and estimated losses for dam failure, flooding, and wildfire hazards. Flooding and wildfire hazards will be discussed in later sections.

Table 4-6: Doña Ana County jurisdictional exposure and loss estimates due to dam failure

DAM FAILURE HAZARD EXPOSURE / LOSS	Anthony	Hatch	Las Cruces	Mesilla	NMSU	Sunland Park	Uninc. Doña Ana County	Total
Total Critical Facilities and Infrastructure	**10**	**11**	**122**	**13**	**40**	**9**	**52**	**257**
Estimated Replacement Cost (x $1,000)	**$17,805**	**$14,250**	**$835,525**	**$124,520**	**$811,777**	**$36,950**	**$1,406,806**	**$3,247,633**
Facilities Exposed to HIGH Hazard	3	10	70	10	18	4	19	134
Percentage of Total Facilities	30.00%	90.91%	57.38%	76.92%	45%	44.44%	36.54%	52.14%
Estimated Replacement Cost (x $1,000)	$5,650	$11,250	$360,989	$122,520	$244,703	$24,900	$70,050	$840,062
Estimated Structure Loss (x $1,000)	$2,825	$5,625	$180,495	$61,260	$122,352	$12,450	$35,025	$420,031
Total Population	**9,403**	**1,679**	**97,571**	**1,944**	**4,542**	**14,274**	**79,815**	**209,229**
Population Exposed to HIGH Hazard	1,246	1,677	40,749	237	1609	2270	29,462	77,250
Percent Exposed	13.25%	99.91%	41.76%	12.19%	35.42%	15.9%	36.91%	36.92%
Population Over 65	**801**	**168**	**13,316**	**439**	**58**	**1,254**	**9,844**	**25,881**
Population Over 65 Exposed to HIGH Hazard	101	168	5,568	55	17	201	4,083	10,193
Percent Exposed	12.61%	100.00%	41.81%	12.53%	29.31%	16.03%	41.48%	39.38%
Residential Building Count Totals)	**2,803**	**566**	**42,352**	**950**	**1,356**	**4,109**	**29,354**	**81,490**
Estimated Replacement Cost (x $1,000)	**$378,421**	**$76,437**	**$10,261,950**	**$228,050**	**$324,498**	**$554,713**	**$5,422,534**	**$17,148,181**
Residences Exposed to HIGH Hazard	373	566	17,281	105	714	729	11,258	31,026
Percentage of Total Facilities	13.31%	99.97%	40.80%	11.05%	52.65%	17.74%	38.35%	38.07%
Estimated Replacement Cost (x $1,000)	$50,306	$76,411	$4,147,363	$25,203	$169,727	$98,381	$3,474,574	$8,041,965
Estimated Structure Loss (x $1,000)	$25,153	$38,206	$2,073,681	$12,602	$84,864	$49,190	$1,737,287	$4,020,983

Table 4-7: EBID critical facilities and infrastructure exposure and loss estimates

EBID Facility Type	Total System Length (miles)	Impacted Length (miles)	Percent Impacted (%)	Estimated Unit Loss ($ per mile)	Total Estimated Loss (x $1,000)
Dam Failure - HIGH Hazard					
Canal / Lateral	373.7	311.5	83.36	$105,600	$32,894
Drains / Wasteways	275.0	253.6	92.22	$66,000	$16,738
Flood - HIGH Hazard					
Canal / Lateral	373.7	22.5	6.02	$105,600	$2,376
Drains / Wasteways	275.0	38.1	13.85	$66,000	$2,138
Flood - MEDIUM Hazard					
Canal / Lateral	373.7	104.5	27.96	$42,240	$4,414
Drains / Wasteways	275.0	100.2	36.44	$26,400	$2,645
Wildfire - HIGH Hazard					
Canal / Lateral	373.7	0.8	0.22	$42,240	$35
Drains / Wasteways	275.0	1.1	0.40	$26,400	$29
Wildfire - MEDIUM Hazard					
Canal / Lateral	373.7	158.0	42.27	$10,560	$1,668
Drains / Wasteways	275.0	116.8	42.47	$6,600	$771

Assumptions:
- Canal / Lateral Average Replacement Cost = $40 per foot
- Drain / Wastewater Average Replacement Cost = $25 per foot
- Dam Failure and HIGH Hazard Flood losses estimated to be 50% of replacement cost
- MEDIUM Hazard Flood and HIGH Hazard Wildfire losses estimated to be 20% of replacement cost
- MEDIUM Hazard Wildfire losses estimated to be 5% of replacement cost
- No significant losses from Wildfire except in the form of increased runoff from adjacent watersheds

Vulnerability – Development Trend Analysis

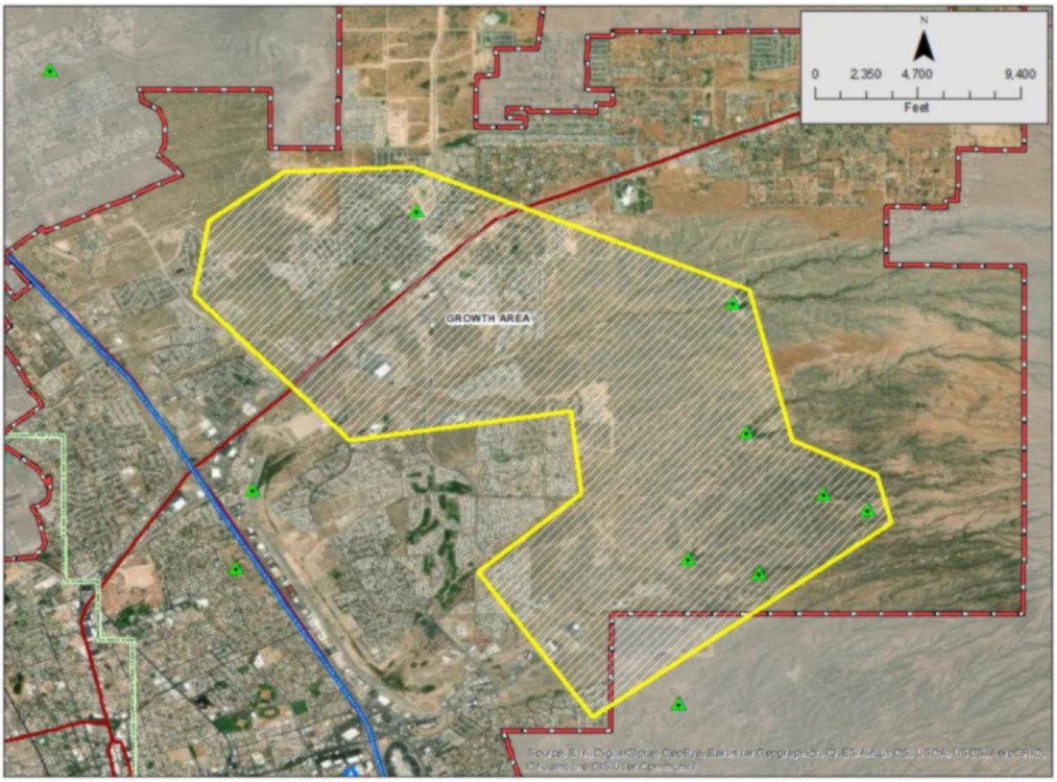
In general, new development within known dam failure inundation zones should be carefully evaluated by each jurisdiction to ensure that overland pathways are maintained through developments for potential breach flows or emergency spillway releases. It is not unusual for development to encroach downstream of flood retarding structures due to the reduction in flood flows and the perception that no protection is needed. Specific trend analysis for each jurisdiction are summarized below:

Anthony – The City has two small flood retarding dams located upstream of its boundaries that may impact the City should they fail (see Map 1E), and is generally not located within the Caballo Dam failure inundation limits except for the extreme western edge along State Highway 478. A failure of the Breedlove structure could exasperate flooding along the northern end of the City and possibly impact the commercial growth area identified in Figure 2-11.

EBID – A major portion of EBID's facilities and service area are located within the Caballo Dam failure inundation limits. In addition, many of the arroyos draining to the Rio Grande geologic floodplain cross EBID facilities. The District is working to maintain 27 flood retarding structures that are located within the EBID boundaries and is hoping to begin rehabilitation of many of the aging structures.

Hatch – The majority of Hatch is located within the dam failure inundation limits of Caballo Dam and any future development will need to take into account the potential limits.

Additionally , the Dona Ana County Flood Commission and the United States Army Corps of Engineers are in the process of designing and constructing a dam in the Lower Spring Canyon to protect the Village of Hatch, with the design to be completed the winter of 2021 and construction to begin in 2022.



Las Cruces – Several of the City's projected growth areas are situated downstream of flood retarding structures, and in particular the area east of I-25 as shown in the following illustration.

The hatched area represents areas identified for future development that may also be impacted potential dam failure issues with the several dams located in the area.

Mesilla – Little growth is anticipated for Mesilla over the next five years. Much of the Town is located within the Caballo Dam failure inundation limits and any future development should at least be made aware of the hazard.

NMSU – The main campus of NMSU is situated directly downstream of the high hazard Tortuga Site 1 Dam, which has sizeable emergency spillway and tributary watershed. The potential path of a dam failure or emergency spillway discharge would carry the flows through the middle of the main campus on the northern edge of the Arrowhead Park industrial development area as indicated in the following illustration. Any future designs of that area should include provisions for ensuring a pathway for the potential emergency spillway discharges.



Sunland Park – The City's growth areas identified in Figure 2-17 are not subject to any identifiable dam failure hazards.

Unincorporated County – As with the other communities, the identified growth areas for the unincorporated areas of the County may intersect or lie within potential dam failure inundation limits. Future development should consider maintaining pathways for flows exceeding the capacity of the flood retarding structures. Also, the County is actively working towards mapping the downstream dam failure inundation limits for the dams within its jurisdiction, to provide guidance and tools in better understanding the potential risks.

Vulnerability – Jurisdictional Summary

The following crosswalk presents an overall summary of each jurisdiction's vulnerability to Dam Failure.

Jurisdiction	Vulnerability Rating	Mitigation Priority?	Notes
Anthony	Moderate	Yes	Anthony is located downstream of two flood retarding structures that could potentially impact the City should they fail. There is negligible exposure to a Caballo Dam failure. The probability of a failure of the flood retarding structures is low, but should an event occur, it could have a moderate impact on the City. Inundation mapping for the structures is now available and can be used going forward to evaluate and mitigate risk.
EBID	High	Yes	Nearly all of EBID facilities are located within a delineated dam failure inundation zone or are protected by small flood retarding dams. A single failure of any of these structures could have a devastating impact on the EBID facilities.
Hatch	High	Yes	Nearly all of Hatch population and buildings are located within a delineated dam failure inundation zone or are protected by small flood retarding dams. A single failure of any of these structures could have a devastating impact on the Town.
Las Cruces	Moderate	Yes	Most of the City's exposure to dam failure is in areas downstream of earthen flood retarding structures (e.g. – Las Cruces Flood Control Dam), which only impacts a fraction of the City's population and assets. Since these structures only store water during flood events, their probability of catastrophic failure is relatively low.
Mesilla	Moderate	Yes	All of the Town's exposure to dam failure is within the Caballo Dam failure inundation limits, and is mostly agricultural areas, the Calle del Norte bridge, and approximately 11% of the residential structures. Given the low probability of a failure event at Elephant Butte or Caballo Dams, the vulnerability is only moderate.
NMSU	Moderate	Yes	The majority of NMSU population and assets are located on the main campus in Las Cruces which is downstream of Tortugas Site 1 Dam, which is a flood retarding structure. A failure would directly impact the southern portion of the campus the industrial complex.
Sunland Park	Moderate	Yes	The Rio Grande floodplain area is the only part of the City that is located within the Caballo Dam failure inundation limits. The City's municipal buildings and wastewater treatment plant are located within the dam failure hazard area, as well as approximately 17% of residential structures. Given the low probability of a failure event at Elephant Butte or Caballo Dams, and the City's location being almost 90 river miles downstream of Caballo Dam, the vulnerability is considered to be only moderate.

Jurisdiction	Vulnerability Rating	Mitigation Priority?	Notes
Uninc. Doña Ana County	Moderate	Yes	The majority of population and facilities within the unincorporated county area are located near the incorporated jurisdictions or along the Rio Grande valley. There are numerous flood retarding structures as well as the impact from Caballo Dam that could result in exposure to dam failure. Over 20% of the county's residential structures and 9 critical facilities including 3 fire departments, 4 major bridges, and electrical substation, and a sheriff's substation are located within the Caballo Dam failure inundation limits. The exposure to failure of the flood retarding structures is unknown at this time due to the lack of EAPs.

Sources

New Mexico Office of the State Engineer, Dam Safety Bureau, 2010, *Rules And Regulations Governing Dam Design, Construction And Dam Safety*. Accessed via the web at: http://www.ose.state.nm.us/PDF/DamSafety/19-25-12-NMAC-2010.pdf

New Mexico Office of the State Engineer, Dam Safety Bureau, 2010, *Condition Classifications for Dams*. Accessed via the web at: http://www.ose.state.nm.us/doing-business/DamSafety/DamConditionClassifications.pdf

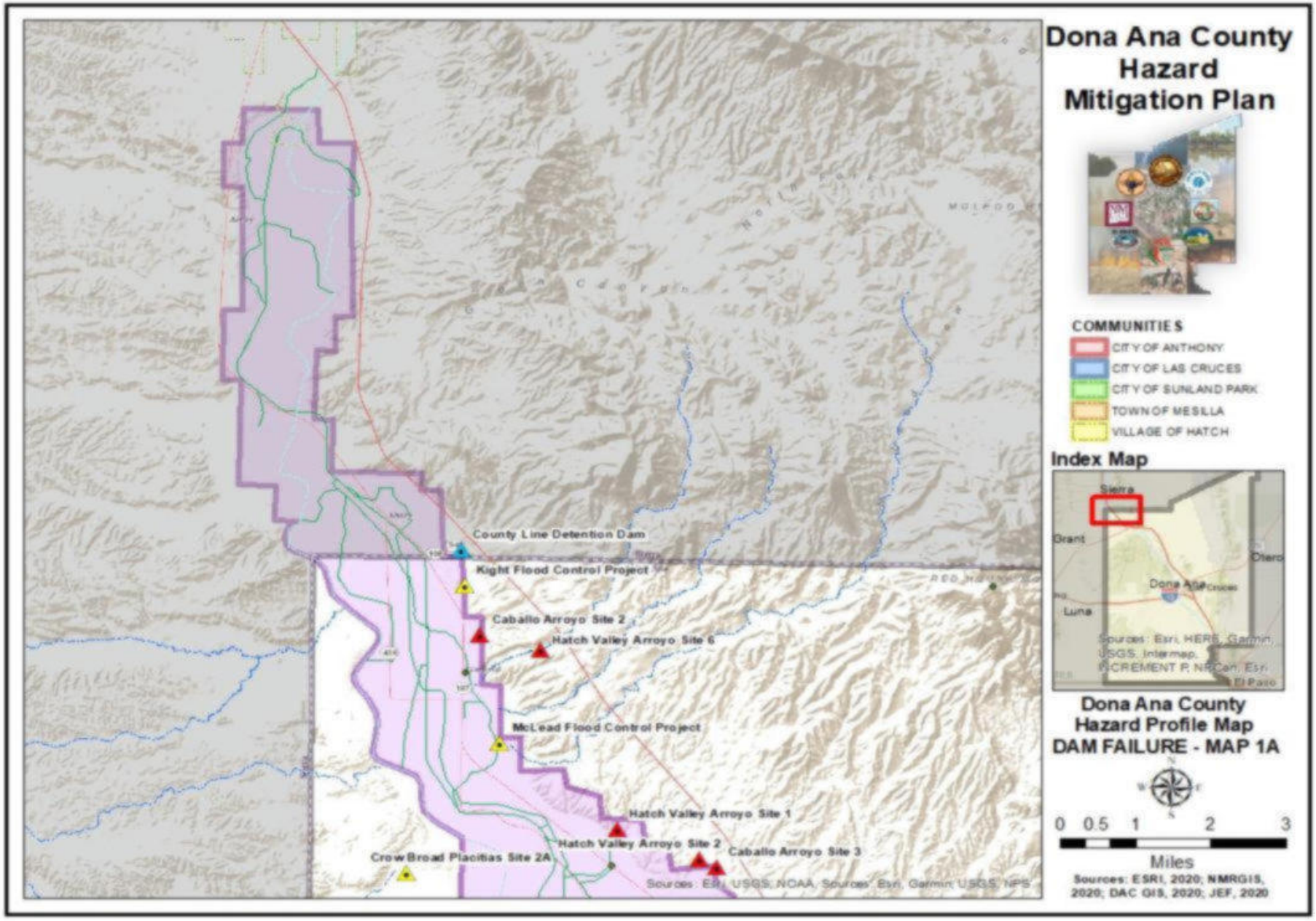
U.S. Army Corps of Engineers, National Inventory of Dams, 2009, https://nid.usace.army.mil/

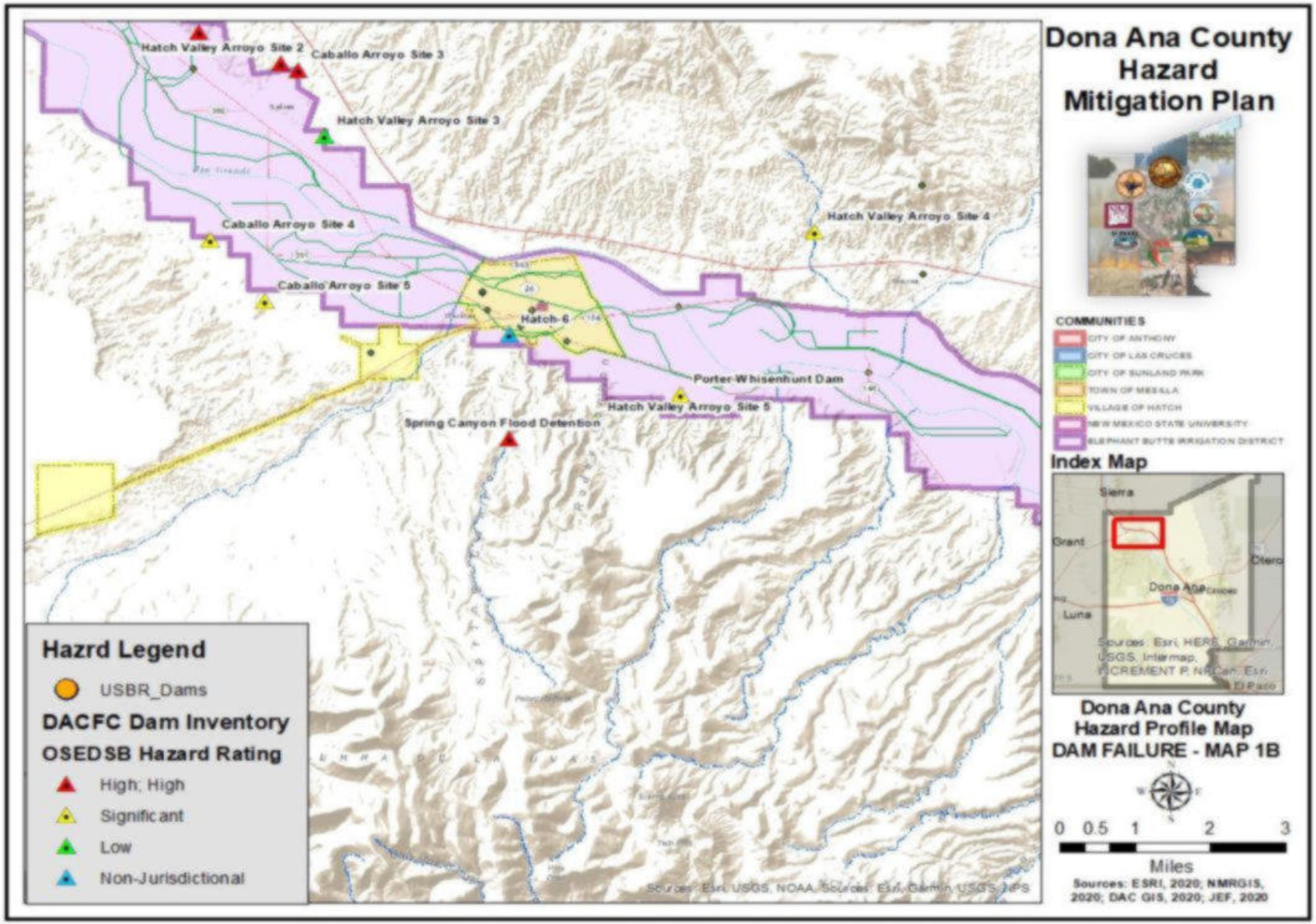
U.S. Bureau of Reclamation, 1999, *Rio Grande Project, NM, Caballo Dam Inundation Map*, 51 sheets.

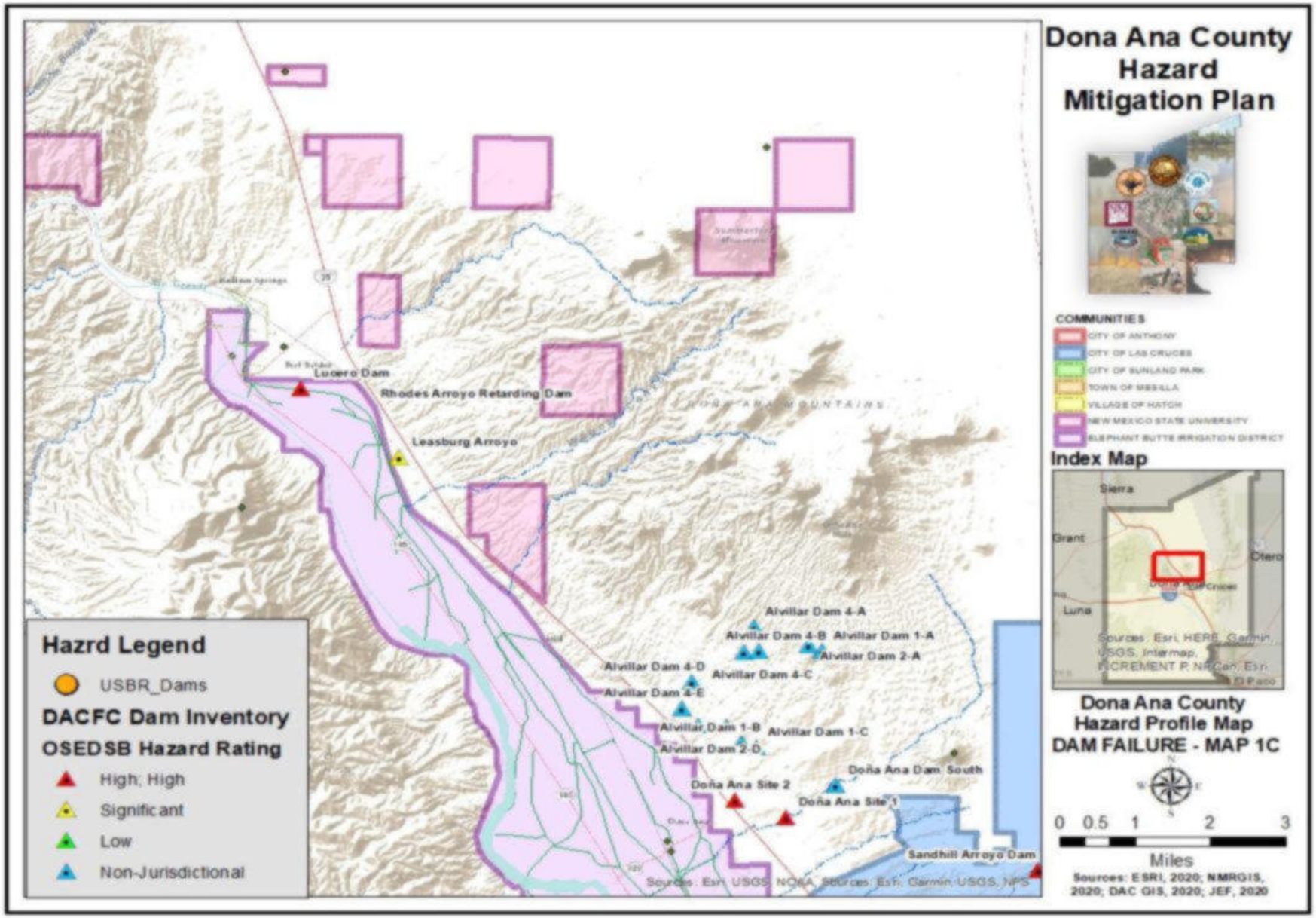
Profile Maps

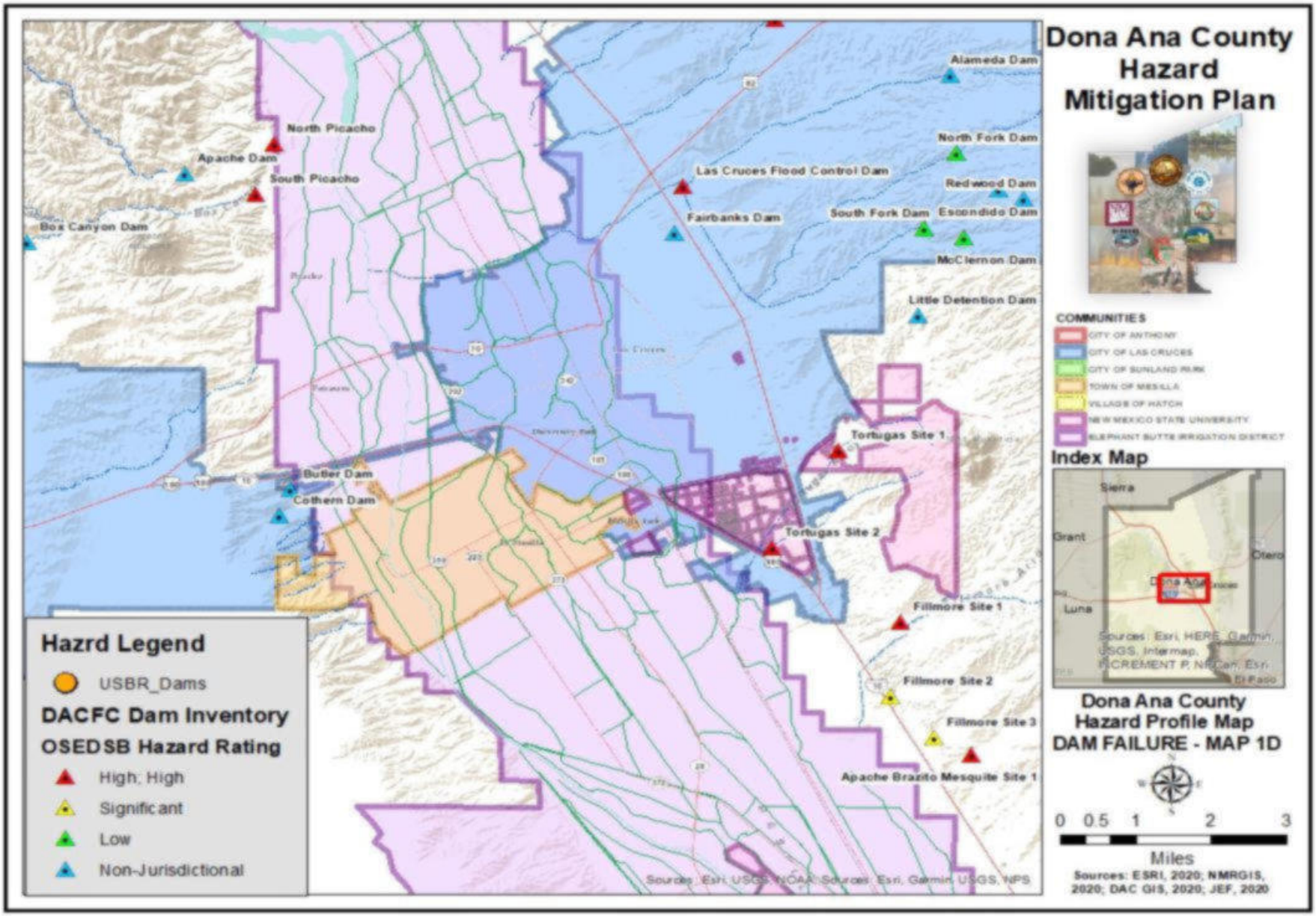
Maps 1A through 1F –Dam Location Maps-Countywide

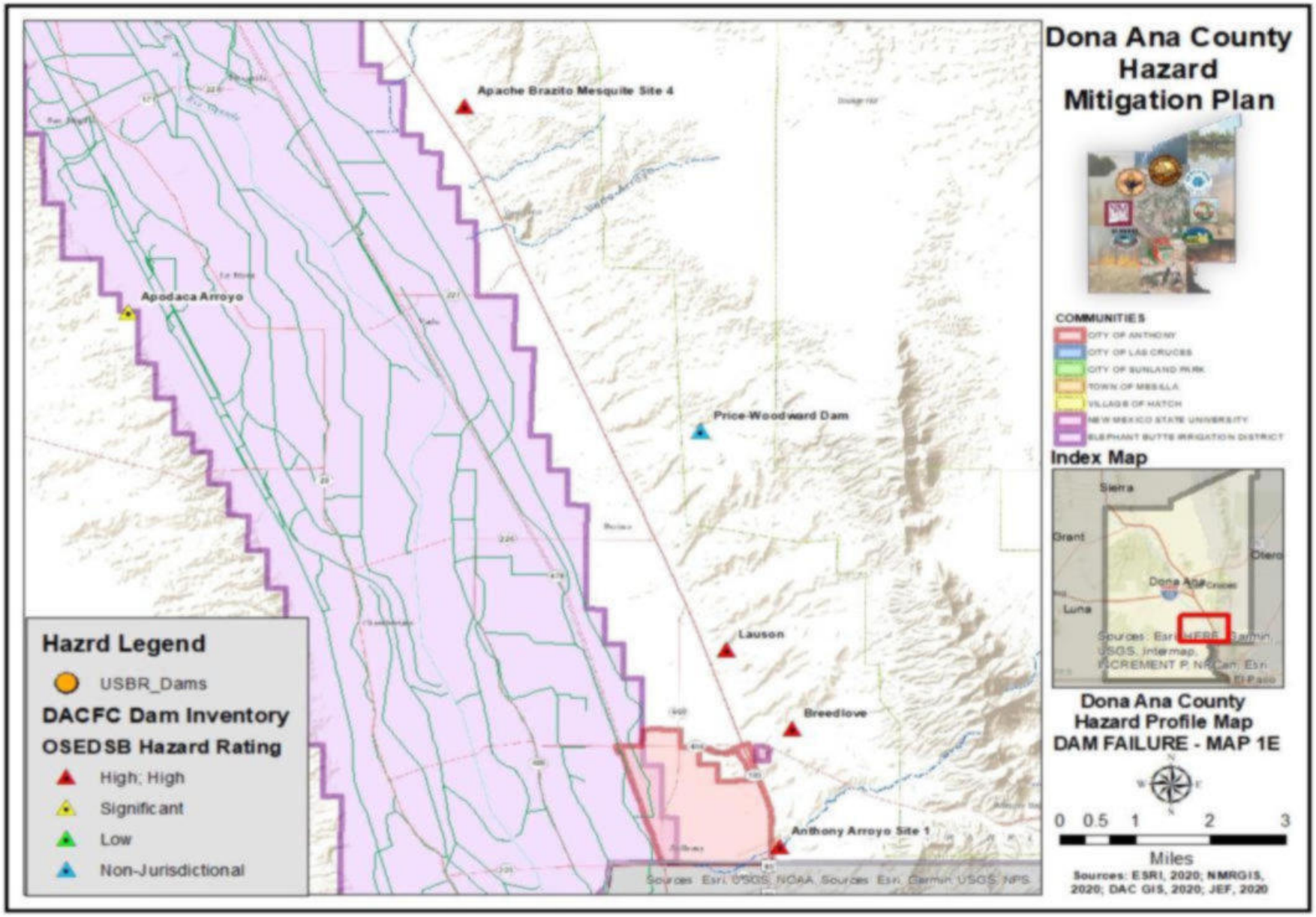
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Dona Ana County Hazard Mitigation Plan
COMMUNITIES
CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
Index Map
Sierra
Grant
Luna
Otero
El Paso
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri
County Line Detention Dam
Kight Flood Control Project
Caballo Arroyo Site 2
Hatch Valley Arroyo Site 6
McLead Flood Control Project
Hatch Valley Arroyo Site 1
Hatch Valley Arroyo Site 2
Caballo Arroyo Site 3
Crow Broad Placitas Site 2A
Sources: Esri, USGS, NOAA
Dona Ana County Hazard Profile Map
DAM FAILURE - MAP 1A
0 0.5 1 2 3
Miles
Sources: ESRI, 2020; NMRGIS, 2020; DAC GIS, 2020; JEF, 2020


Hatch Valley Arroyo Site 2
Caballo Arroyo Site 3
Hatch Valley Arroyo Site 3
Caballo Arroyo Site 4
Caballo Arroyo Site 5
Hatch-6
Hatch Valley Arroyo Site 4
Porter Whisenhunt Dam
Hatch Valley Arroyo Site 5
Spring Canyon Flood Detention
Hazrd Legend
USBR_Dams
DACFC Dam Inventory
OSEDSB Hazard Rating
High: High
Significant
Low
Non-Jurisdictional
Dona Ana County Hazard Mitigation Plan
COMMUNITIES
CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
ELEPHANT BUTTE IRRIGATION DISTRICT
Index Map
Sierra
Grant
Otero
Luna
Dona Ana
Dona Ana County Hazard Profile Map
DAM FAILURE - MAP 1B
0 0.5 1 2 3
Miles
Sources: ESRI, 2020; NMRGIS, 2020; DAC GIS, 2020; JEF, 2020


Dona Ana County Hazard Mitigation Plan
COMMUNITIES
CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
ELEPHANT BUTTE IRRIGATION DISTRICT
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Sierra
Grant
Otero
Luna
Hazrd Legend
USBR_Dams
DACFC Dam Inventory
OSEDSB Hazard Rating
High; High
Significant
Low
Non-Jurisdictional
Lucero Dam
Rhodes Arroyo Retarding Dam
Leasburg Arroyo
Alvillar Dam 4-A
Alvillar Dam 4-B
Alvillar Dam 1-A
Alvillar Dam 2-A
Alvillar Dam 4-D
Alvillar Dam 4-C
Alvillar Dam 4-E
Alvillar Dam 1-B
Alvillar Dam 1-C
Alvillar Dam 2-D
Doña Ana Dam South
Doña Ana Site 2
Doña Ana Site 1
Sandhill Arroyo Dam
Dona Ana County Hazard Profile Map
DAM FAILURE - MAP 1C
0 0.5 1 2 3
Miles
Sources: ESRI, 2020; NMRGIS, 2020; DAC GIS, 2020; JEF, 2020


Dona Ana County Hazard Mitigation Plan
Alameda Dam
North Picacho
Apache Dam
South Picacho
Box Canyon Dam
Las Cruces Flood Control Dam
North Fork Dam
Redwood Dam
Fairbanks Dam
South Fork Dam
Escondido Dam
McClernon Dam
Little Detention Dam
Tortugas Site 1
Butler Dam
Cothern Dam
Tortugas Site 2
Fillmore Site 1
Fillmore Site 2
Fillmore Site 3
Apache Brazito Mesquite Site 1
Hazrd Legend
USBR_Dams
DACFC Dam Inventory
OSEDSB Hazard Rating
High; High
Significant
Low
Non-Jurisdictional
Sources: Esri, USGS, NOAA
Sources: Esri, Garmin, USGS, NPS
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CITY OF ANTHONY
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Otero
Luna
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri, El Paso
Dona Ana County Hazard Profile Map
DAM FAILURE - MAP 1D
0 0.5 1 2 3
Miles
Sources: ESRI, 2020; NMRGIS, 2020; DAC GIS, 2020; JEF, 2020


Dona Ana County Hazard Mitigation Plan
Apache Brazito Mesquite Site 4
Apodaca Arroyo
Price-Woodward Dam
Lauson
Breedlove
Anthony Arroyo Site 1
Hazrd Legend
USBR_Dams
DACFC Dam Inventory
OSEDSB Hazard Rating
High; High
Significant
Low
Non-Jurisdictional
COMMUNITIES
CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
ELEPHANT BUTTE IRRIGATION DISTRICT
Index Map
Sierra
Grant
Otero
Luna
Dona Ana County
Hazard Profile Map
DAM FAILURE - MAP 1E
0 0.5 1 2 3
Miles
Sources: ESRI, 2020; NMRGIS, 2020; DAC GIS, 2020; JEF, 2020

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4.3.2 Drought

Description

Drought is a normal part of virtually every climate on the planet, including areas of high and low rainfall. It is different from normal aridity, which is a permanent characteristic of the climate in areas of low rainfall. Drought is the result of a natural decline in the expected precipitation over an extended period of time, typically one or more seasons in length. The severity of drought can be aggravated by other climatic factors, such as prolonged high winds and low relative humidity (FEMA, 1997).

Drought is a complex natural hazard impacting many facets of our life and environment, as reflected in the following four definitions commonly used to describe it (NMDHSEM, 2018):

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

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

Drought differs from other natural hazards in three ways. First, the onset and end of a drought are difficult to determine due to the slow accumulation and lingering effects of an event after its apparent end. Second, the lack of an exact and universally accepted definition adds to the confusion of its existence and severity. Third, in contrast with other natural hazards, the impact of drought is less obvious and may be spread over a larger geographic area. These characteristics have hindered the preparation of drought contingency or mitigation plans by many governments.

Droughts may cause a shortage of water for human and industrial consumption, hydroelectric power, recreation, aquatic habitat and navigation. Water quality may also decline and the number and severity of wildfires may increase. Severe droughts may result

in the loss of agricultural crops, forest products and aquatic habitat, undernourished wildlife and livestock, lower land values, and higher unemployment.

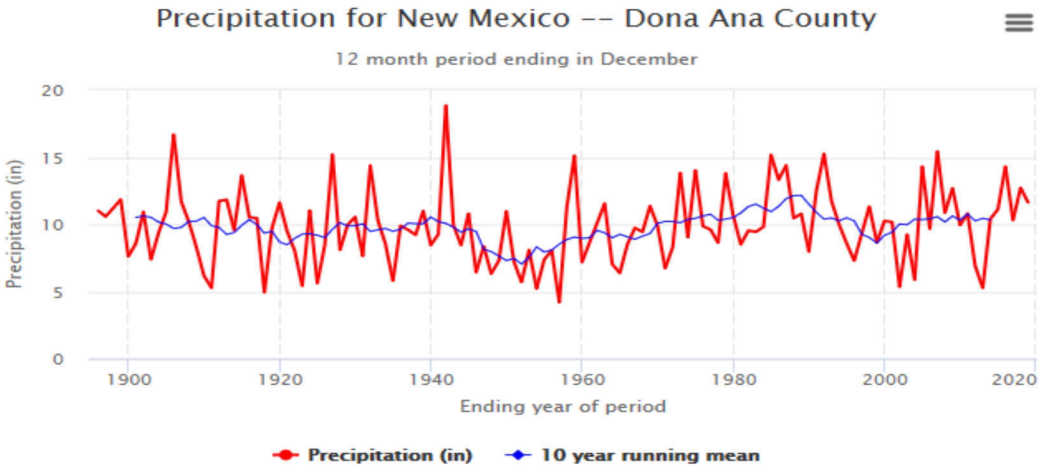
History

Between 1995 and 2007, there were four state declared disasters for effects related to drought (NMDHSEM, 2010). The declarations, made in May 1996, May 2000, June 2002, and March 2006, were primarily for loss/conservation of domestic drinking water. The total direct cost incurred by the State for that time period was $279,459, however, indirect costs were estimated to be between $50-100 Million. In May 2012, the Governor issued the fifth drought state of emergency declaration, which authorized the continuation of the New Mexico Drought Task Force (NMDTF) for an additional two years and directed the State Engineer to convene the NMDTF to perform drought related assessments and make recommendation for intermediate and long-term strategies to mitigate drought conditions and impacts in the state. In July of 2018, the Governor issued the sixth drought state of emergency declaration, which directed the State Engineer to convene the NMDTF to perform drought related assessments and make recommendation for intermediate and long-term strategies to mitigate drought conditions and impacts in the state. Doña Ana County was also included in USDA natural disaster declarations for drought and high winds in May 2005, August 2008, August 2009, August 2011, October 2012, November 2012, January 2013, April 2013, February 2014, July 2014, January 2015, January 2018, March 2018, and April 2018. For the period of 1995 to 2019, Doña Ana County farmers and ranchers received approximately $9.36 million in USDA disaster payments and subsidies (EWG, 2020). Of those, approximately $3.2 million were for livestock assistance and the rest for crop assistance. There is no data to directly correlate the disaster assistance to drought, however, given the USDA declarations previously listed, and the fact that County farmers and ranchers were also eligible for assistance under several other USDA declarations wherein the County was contiguous with another declared county, it seems reasonable to assume that at least a portion of the funds were for drought related impacts.

Figures 4-1 and 4-2 depict precipitation data from the Western Regional Climate Center (WRCC), WestMap Application showing annual statewide precipitation variances from normal and a running mean, for a period of 1895 to 2019. A significant period of below normal precipitation for the County occurred between 1945 and 1972. Over the last 10 years of data, the above and below precipitation months seem to be somewhat balanced.

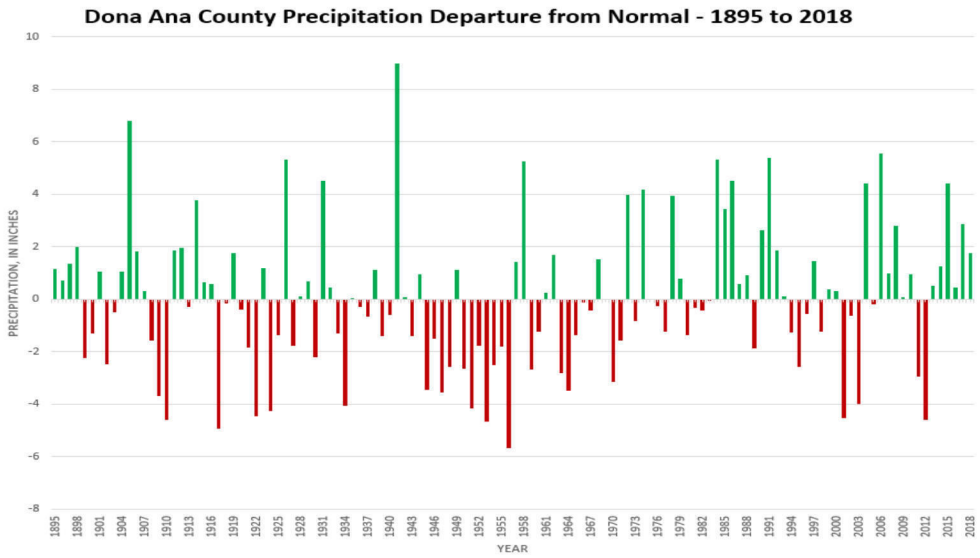
Governor Bill Richardson created the current New Mexico Drought Task Force by Executive Order 2003-019 in the spring of 2003 (NMDTF) to oversee the implementation of drought- related activities in the State of New Mexico. The twelve-member Task Force is chaired by the State Engineer and includes the Interstate Stream Commission, Environment Department, Economic Development Department, Department of Health, Tourism Department, Department of Agriculture, Finance Authority, Department of Finance and Administration, Homeland Security and Emergency Management, Energy Minerals and Natural Resources Department, and the Office of the Governor. The history of the Drought Task force goes back to 1996, when Governor Gary Johnson created the NMDTF by Executive Order, with an original five-member Task Force chaired by the Cabinet Secretary of Energy, Minerals and Natural Resources and further comprise of three

Cabinet Secretaries, the State Engineer, and a representative from the Office of the Governor. The New Mexico Drought Plan, Volumes I and II, were published in 2002 under Governor Johnson's leadership. This Task Force acts as a liaison between the drought work groups and the Office of the Governor. The NMDTF also assumes the lead role in intergovernmental drought response coordination and media information releases. The last update to the New Mexico Drought Plan was in 2018.



Source: WRCC, 2019, URL at: http://www.cefa.dri.edu/Westmap/Westmap_home.php?page=timeseries.php

Figure 4-1: Annual precipitation variances from average and running mean based on 1895-2018 period.



Data Source: WRCC, 2019, URL at: http://www.cefa.dri.edu/Westmap/Westmap_home.php?page=timeseries.php

Figure 4-2: Average annual precipitation variances from a normal based on 1895 to 2018 period

Probability

There is no commonly accepted return period or non-exceedance probability for defining the risk from drought (such as the 100-year or 1% annual chance of flood). There are, however, several sources for presenting indices of drought severity, that do use historic data and projected atmospheric conditions to estimate severity and potential future changes. Several of these are discussed in the following section. Additionally, the past occurrence of drought within the planning area can be used to predict the future probability of occurrence. As previously noted, Dona Ana County was included in federally declared disasters due to drought in six of the past ten years, indicating a high probability of recurrence. In referencing the New Mexico State Plan, the probability of future drought across the State is determined to be 100%, which can be assumed for the Dona Ana County planning area as well.

Extent/Magnitude

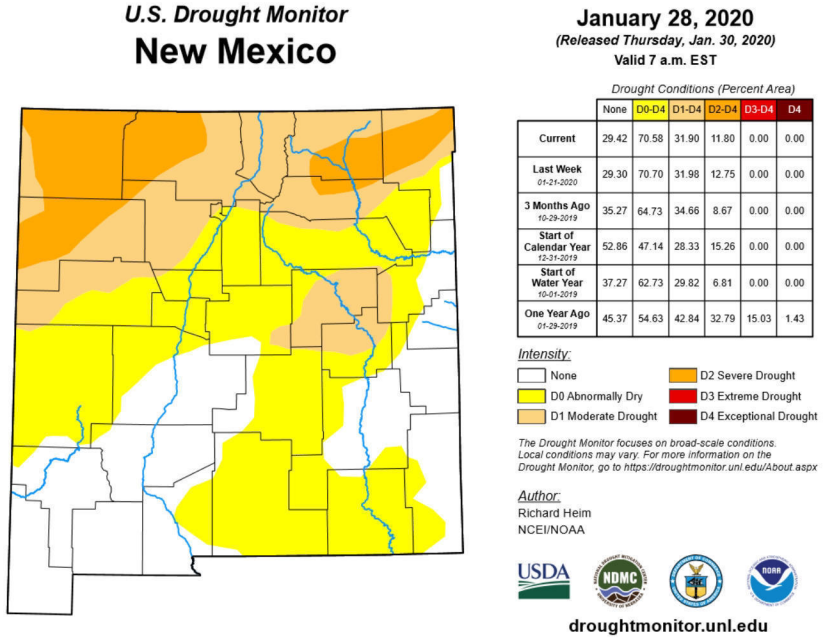
The extent or magnitude of drought is usually measured in time and the severity of the hydrologic deficit. There are several resources available to evaluate drought status and even project expected conditions for the very near future.

The National Integrated Drought Information System (NIDIS) Act of 2006 (Public Law 109-430) prescribes an interagency approach for drought monitoring, forecasting, and early warning planning and preparedness to help states and local communities cope with the impacts of drought (NIDIS, 2016). The NIDIS maintains the U.S. Drought Portal[31] which is a centralized, web-based access point to several drought related resources including the U.S. Drought Monitor (USDM) and the U.S. Seasonal Drought Outlook (USSDO). The USDM, shown in Figure 4-3, is a weekly map depicting the current status of drought and is developed and maintained by the National Drought Mitigation Center. The January 28, 2020 drought intensity for the majority of the County is estimated to be in the D0 and D1 or Abnormally Dry and Moderate Drought range, respectively. The majority of the county is shown to have no drought conditions. The table in Figure 4-3 would also indicate that on a statewide basis, the drought conditions have become more intense over the last year.

The USSDO, shown in Figure 4-4, is a three month projection of potential drought conditions developed by the National Weather Service's Climate Prediction Center. The USSDO generally anticipates persistence for areas around the County and no drought for the majority of the county. Accordingly, the County can expect a USDM intensity of D0 or no drought at all through April 2020. The jurisdictions or entities of Las Cruces, Hatch, Mesilla, Anthony, Sunland Park, Elephant Butte Irrigation District and New Mexico State University do not lie within a designated drought intensity area.

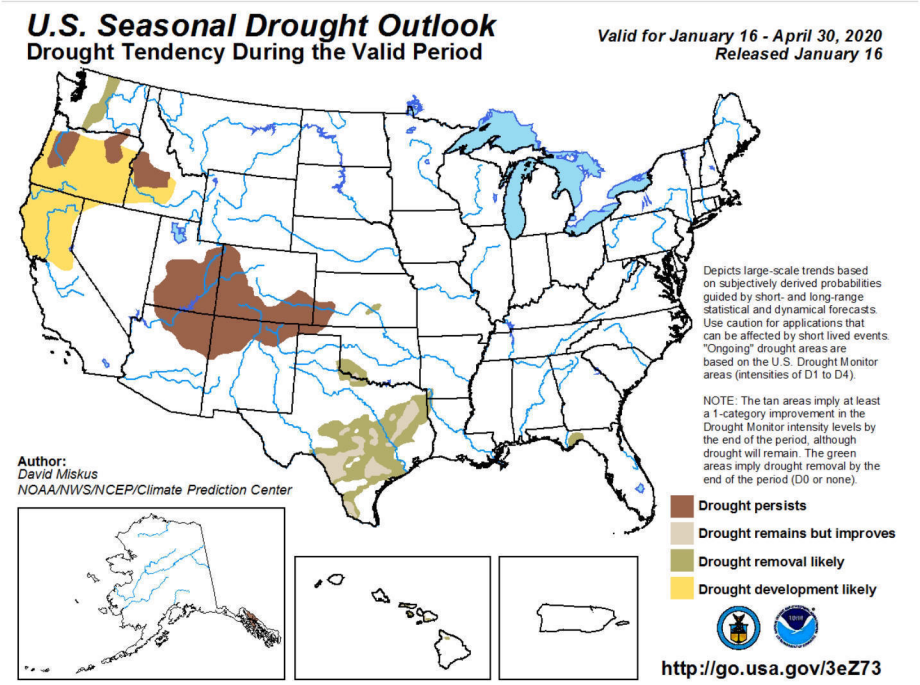
The Palmer Drought Severity Index (PDSI) is a commonly used index that measures the severity of drought for agriculture and water resource management. It is calculated from observed temperature and precipitation values and estimates soil moisture. However, the Palmer Index is not considered to be consistent enough to characterize the risk of drought on a nationwide basis (FEMA, 1997) and neither of the Palmer indices are well suited to the dry, mountainous western United States.

[31] NIDIS U.S. Drought Portal website is located at:
http://www.drought.gov/portal/server.pt/community/drought.gov/202



Source: https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?NM

Figure 4-3: U.S. Drought Monitor Map



Source: http://www.cpc.ncep.noaa.gov/products/expert_assessment/sdo_summary.html

Figure 4-4: U.S. Seasonal Drought Outlook Map

Water sources for Doña Ana County include the surface waters of the Lower Rio Grande and groundwater stored in several regional basin aquifers. The Lower Rio Grande surface water is completely dedicated for agricultural use and is primarily delivered through storage and diversion facilities owned and operated by the USBR and the delivery and waste capture facilities of the EBID. The groundwater and surface water supplies within the Lower Rio Grande area are highly connected, wherein high use of groundwater can cause surface water to enter the groundwater system and reduce the amount of surface water available for irrigation. Since all of the surface water in the Rio Grande is legally allotted to users with surface water rights and since the full amount of the users' surface water allotment is usually not available, people have been arguing that the use of groundwater in the area is infringing upon the legal rights of users with surface water rights (PJS&C, 2009). In times of drought, this condition is only exasperated as thirsty users indirectly compete for water via the surface/groundwater connection. This condition extends into the general economy in for form of increased food prices, potential job loss, and increased litigation.

In summary, current drought conditions for the majority of the County are estimated to be abnormally dry with some expected improvements possible over the next 3 months. Sunland Park and the extreme southern strip of the County are currently reporting no drought. All of the County and jurisdictions are anticipated to see some improvement of conditions over the next three months.

Vulnerability – CPRI Results

Drought CPRI results for each community are summarized in Table 4-8 below.

Table 4-8: CPRI results by jurisdiction for drought

Participating Jurisdiction	Probability	Magnitude / Severity	Warning Time	Duration	CPRI Score
Anthony	Possible	Limited	> 24 hours	> 1 week	2.05
EBID	Highly Likely	Limited	> 24 hours	> 1 week	2.95
Hatch	Highly Likely	Limited	> 24 hours	> 1 week	2.95
Las Cruces	Likely	Limited	> 24 hours	> 1 week	2.50
Mesilla	Highly Likely	Limited	> 24 hours	> 1 week	2.95
NMSU	Highly Likely	Negligible	> 24 hours	> 1 week	2.65
Sunland Park	Likely	Limited	> 24 hours	> 1 week	2.50
Unincorporated Doña Ana County	Likely	Negligible	> 24 hours	> 1 week	2.20

Vulnerability – Loss Estimations

No standardized methodology exists for estimating losses due to drought and drought does not generally have a direct impact on critical facilities and building stock. A direct correlation to loss of human life due to drought is improbable for Doña Ana County. Instead, drought vulnerability is primarily measured by its potential impact to certain sectors of the County economy and natural resources including:

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

- Wildlife and wildlife habitat

Sustained drought conditions will also have secondary impacts to other hazards such as fissures, flooding, subsidence and wildfire. Extended drought may weaken and dry the grasses, shrubs, and trees of wildfire 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.

Other direct costs such as increased pumping costs due to lowering of groundwater levels and costs to expand water infrastructure to compensate for reduced yields or to develop alternative water sources, are a significant factor but very difficult to estimate due to a lack of documentation. There are also the intangible costs associated with lost tourism revenues, and impacts to wildlife habitat and animals. Typically, these impacts are translated into the general economy in the form of higher food and agricultural goods prices and increased utility costs.

Vulnerability – Development Trends

Population growth in Doña Ana County will also require additional water to meet the thirsty demands of potable, landscape, and industrial uses. Water rights and adjudication within the Lower Rio Grande area, both for surface and groundwater, are such that there are no unclaimed sources of water to augment current supplies. That means that in order to provide additional water for domestic use to meet the demands of a growing population, existing water rights will have to re-allocated or water sources outside of the Rio Grande must be sought. Sustained drought conditions will only make this exercise more difficult and should be carefully considered with any planned growth.

Vulnerability – Jurisdictional Summary

There are minor geographic variations in the severity of drought conditions across the County and the overall drought intensity ranges between moderate to high. However, the overall vulnerability to drought is essentially the same county-wide and is considered moderate due to the sustaining delivery of water via the Bureau of Reclamation's Elephant Butte and Caballo Dams in connection with EBID's operations and distribution systems. During times of drought, additional pumping is required to draw groundwater stored in the Rio Grande Valley aquifers. These are rapidly recharged during times of surface water abundance. The economic impacts of drought may directly impact certain sectors such as agriculture and potable water production due to increased pumping costs and the ripple effect of those impacts will ultimately touch every sector of the County. Secondary effects include increased wildfire hazard. Accordingly, the mitigation of Drought is equally a priority for all participating jurisdictions.

Sources

New Mexico Department of Homeland Security and Emergency Management, 2018, *New Mexico Natural Hazard Mitigation Plan,* approved July of 2018, updated September 2018.

Environmental Working Group's Farm Subsidy Database, 2020, http://farm.ewg.org/progdetail.php?fips=35013&progcode=total_dis&regionname=DonaAnaCounty,NewMexico

Federal Emergency Management Agency,1997, *Multi-Hazard Identification and Risk Assessment – A Cornerstone of the National Mitigation Strategy.*

National Integrated Drought Information System, 2007, *National Integrated Drought Information System Implementation Plan*, NOAA.

NIDIS U.S. Drought Portal website is located at: https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?NM

NOAA, NWS, Climate Prediction Center, 2012, website located at: https://www.cpc.ncep.noaa.gov/products/expert_assessment/sdo_summary.php

Western Regional Climate Center, WestMap Application, URL at: http://www.cefa.dri.edu/Westmap/Westmap_home.php?page=timeseries.php

Profile Maps

See Figures 4-3 and 4-4 for depictions of the current and anticipated drought conditions for the county.

4.3.3 Extreme Cold

Description

Extreme temperatures on either the cold or hot side of the thermometer can occur within any area and can often have adverse impacts on the health and welfare of a community or region. These extreme temperatures can impact people, pets, plants and infrastructure such as power lines and above and below-ground utility lines throughout the area.

What constitutes extreme cold is relative to what is considered normal cold temperatures for a region. In Doña Ana County, sustained, below freezing temperatures can prove to be dangerous and damaging, and especially when the thermometer starts dipping into the sub- zero range. For example, economic losses due to frozen crops, downed power lines, or burst pipelines can be significant. Sustained conditions of freezing temperatures can also pose a dangerous health risk to people and their animals, and especially when overtaxed utility service providers go offline. Exposure to cold can cause frostbite or hypothermia and become life-threatening. Infants and elderly people are most susceptible.

History

Extreme cold events occur infrequently in the County and normally around the December- February time of year. According to WRCC data, the December-February low temperatures Range between 30 and -10 degrees Fahrenheit for the 59 year period of 1960 to 2019. During that period, temperatures dipped below zero degrees only 3 times; January 1962, November 1976, and February 2011. Articles in the Las Cruces Las Cruces Sun-News indicated that the extreme cold temperatures for the 1962 and 1976 events caused school and business closures, icing of roadways, frozen water pipes, and gas and electricity delivery failures due to the overwhelming demand.

On February 2 through 4, 2011, the entire southwest area of the U.S. experienced record breaking cold temperatures that were also accompanied by snow in many areas as a strong upper low dropped down the Northern Rockies and pushed a back door arctic cold front through the region. Temperatures in Doña Ana County ranged from the mid teens to as low

-15 degrees Fahrenheit during that three day cold snap. Numerous frozen and broken pipes were reported, natural gas pressure was at all-time lows and schools were closed for 4 days due to all the problems caused by the cold. Numerous areas also experienced rolling power outages due to the high power demand.

The prolonged severe cold had a substantial economic impact on NMSU Las Cruces and also at other NMSU campuses across the state. The campuses closed on February 2, 2011 because of the snow packed roads and dangerous driving conditions. The closure of the Las Cruces campuses was prolonged an additional two days because natural gas pressure problems across Texas and New Mexico plagued El Paso Electric's efforts to import electricity. Approximately 60% of the NMSU campus receives power from El Paso Electric. As a result, there was little power available in the system and rolling blackouts and reduced usage were required to maintain essential services. The electrical power

outages created network problems in addition to the heating system issues at NMSU. Only essential personnel and critical functions continued to operate. With a focus on the NMSU Las Cruces campuses to determine the economic loss, it is estimated that about $190,000 in property damage was incurred as a result of frozen water lines and natural gas outages. In addition, there was about $2.7 million in salary cost to pay employees who did not work during the closure period.

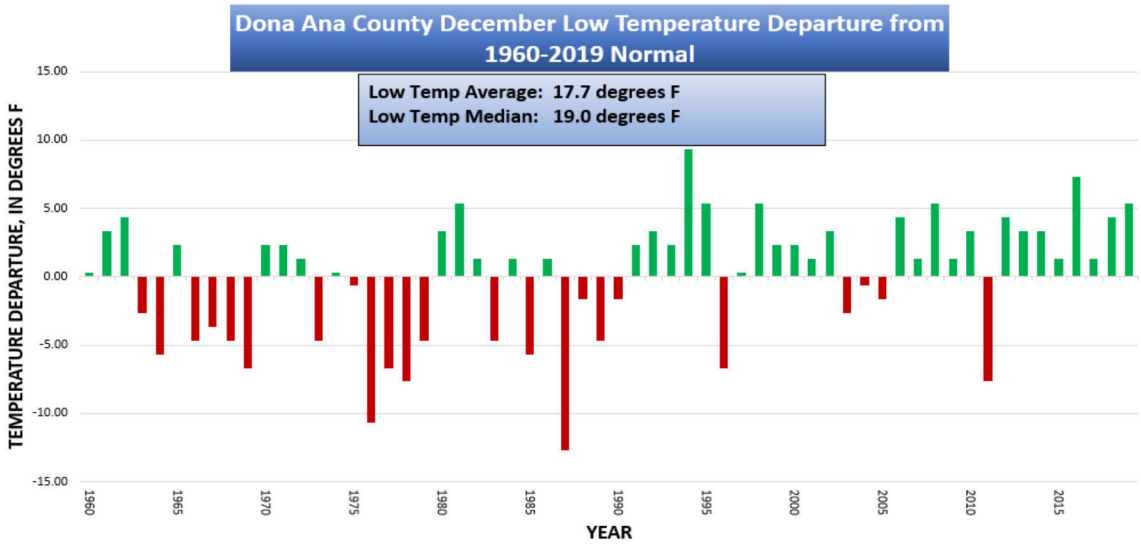
Officials from the Doña Ana County Office of Emergency Management (DACOEM), provided the following preliminary damage estimates reported to their office:

- City Sunland Park - $100,726.55
- Doña Ana County - $12,333.39
- Garfield Mutual Water - $10,000.00
- Town of Mesilla - $8,271.36
- Las Cruces Public Schools - $150,000 to $250,000
- Preliminary estimated total - $281,333.30 to $381,331.30

The State of New Mexico declared a State of Emergency and requested a major disaster declaration on February 22, 2011. On March 24, 2011, President Obama issued a disaster declaration for several counties in the state, however, Doña Ana County did not meet the threshold to be included in the declaration.

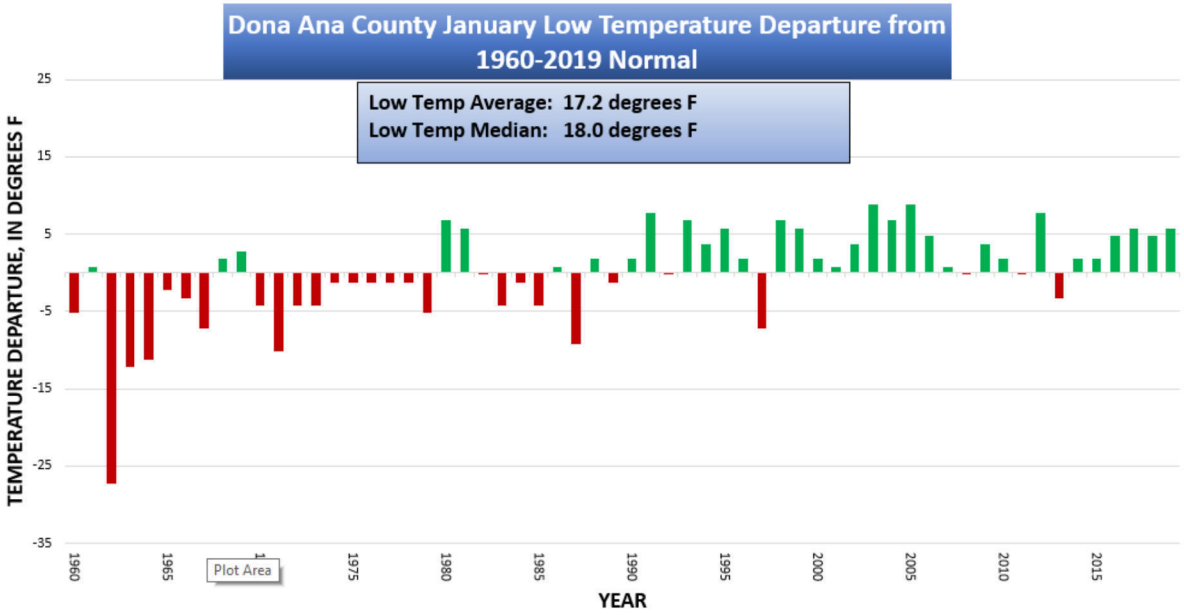
Probability

There are no readily available probability statistics for Extreme Low temperatures for Doña Ana County. However, historic temperature data is available for an assessment of the potential for future extreme cold events. Figures 4-5, 4-6, and 4-7 present extreme low temperature evaluations for the months of December, January, and February. The data sets were developed using WRCC data from the State University, New Mexico (COOP No. 298535) weather station for the period of 1960 to 2019.



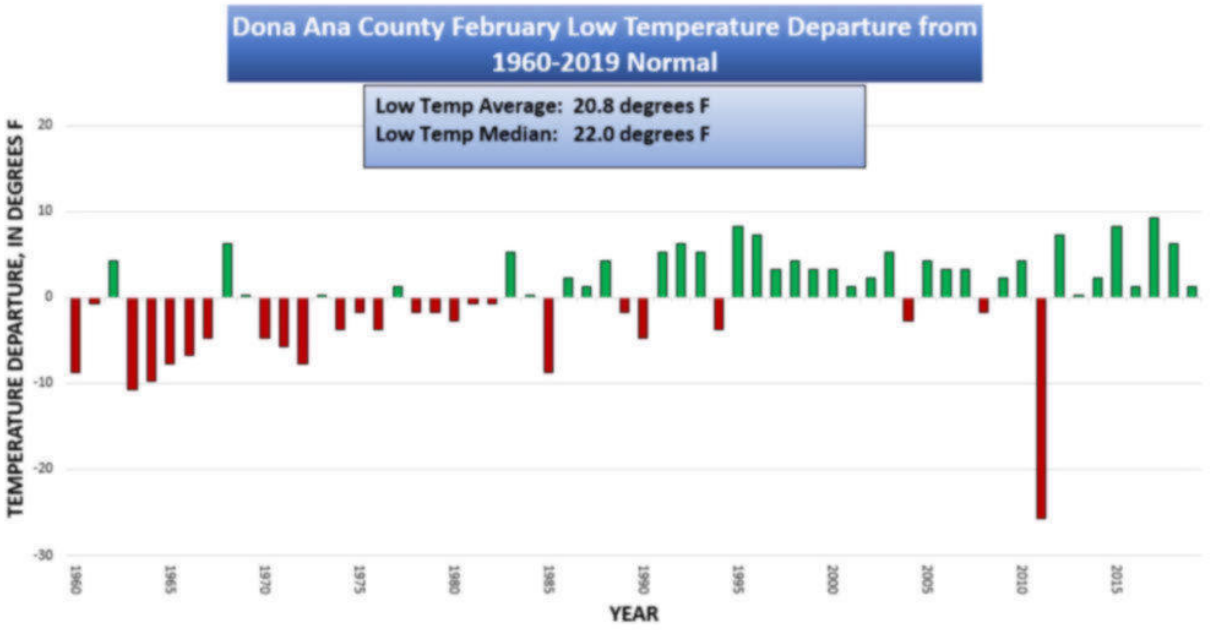
Data Source: WRCC, 2019

Figure 4-5: Low Temperature variances from a December normal based on 1960 to 2019 period



Data Source: WRCC, 2019

Figure 4-6: Low Temperature variances from a January normal based on 1960 to 2019 period



Data Source: WRCC, 2019

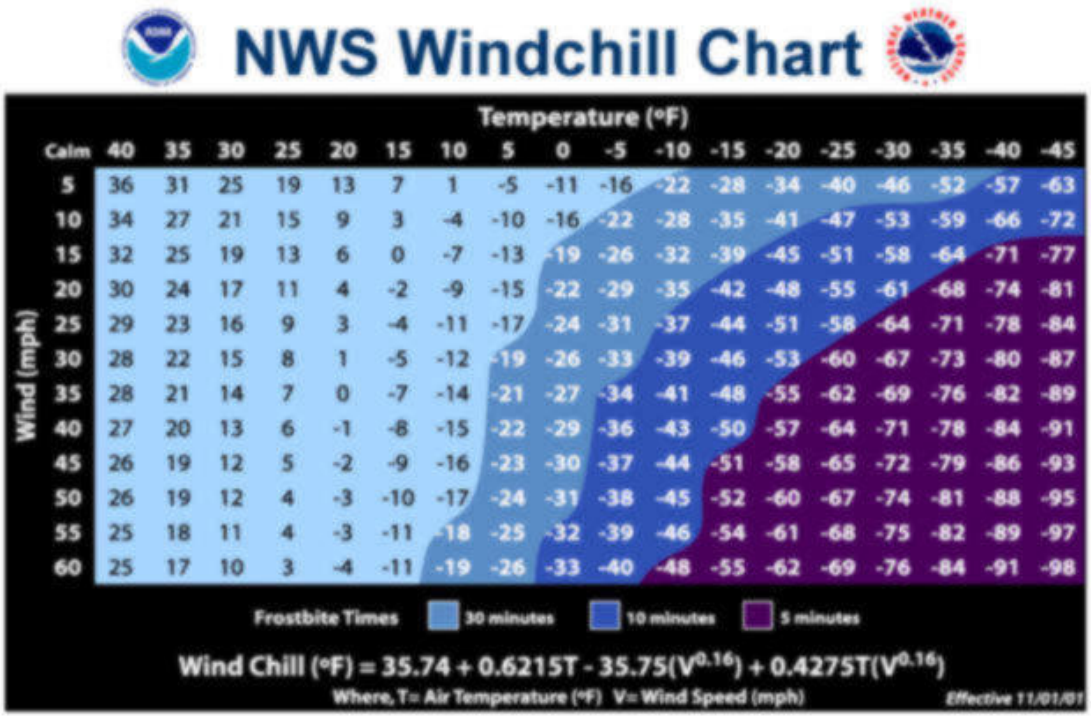
Figure 4-7: Low Temperature variances from a February normal based on 1960 to 2019 period

A review of Figures 4-6 and 4-7 show that the 1962 and 2011 events represent a significant departure from the median temperature for the period of record, and are fairly rare events. It can be concluded that future events are probable, but likely to be low in frequency.

Extent/Magnitude

Part of the significance of the February 2011 event was the extended duration (3 days), which exacted a major toll on utility service providers and local resources. Based on the historic record, it is probable that extreme cold temperatures of 0° to -15° have and can occur during the months of December, January and February for all of the County. Durations of 1 to 3 or more days are also probable.

Wind that accompanies low temperatures also serves to exasperate the extent. The following chart, provided by the NWS, provides a way to adjust cold temperatures for the effects of wind chill:



In summary, there is no discernible division or variance of exposure to extreme cold temperatures throughout the county. All jurisdictions are considered to be equally exposed to the low probability potential for extreme cold events.

Vulnerability – CPRI Results

Extreme Cold CPRI results for each community are summarized in Table 4-9 below.

Table 4-9: CPRI results by jurisdiction for extreme cold

Participating Jurisdiction	Probability	Magnitude / Severity	Warning Time	Duration	CPRI Score
Anthony	Possible	Limited	> 24 hours	< 24 hours	1.85
EBID	Possible	Negligible	> 24 hours	< 1 week	1.65
Hatch	Possible	Limited	6-12 hours	< 1 week	2.25
Las Cruces	Possible	Limited	> 24 hours	< 24 hours	1.85
Mesilla	Likely	Limited	> 24 hours	< 1 week	2.40
NMSU	Possible	Limited	12-24 hours	< 1 week	2.10
Sunland Park	Unlikely	Limited	> 24 hours	< 1 week	1.50
Unincorporated Doña Ana County	Possible	Limited	> 24 hours	< 1 week	1.95

Vulnerability – Loss Estimations

Losses due to extreme cold primarily occur in the form of infrastructure and crop damages, and lost revenues due to operational shut downs. Human and animal death and injury may also result in extreme cases with extended durations, although none have been documented to date.

No direct estimates of losses will be made for this Plan, however, past events would indicate that multiple days of extreme cold within the county can quickly add up to multiple hundreds of the thousands of dollars.

Vulnerability – Development Trends

Growth within Doña Ana County and the participating jurisdictions will only increase the exposure to the extreme cold events. Practical use and enforcement of modern building codes and will go a long way towards providing effective mitigation for extreme cold events. Organizations with greater exposure and resources, may look at installing surplus natural gas storage tanks and backup power generation equipment.

Vulnerability – Jurisdictional Summary

As demonstrated in the previous discussions, there is little significant deviation in expected low temperature extremes for the populated areas of the County. Accordingly, all of the participating jurisdictions are considered to be equally exposed to the hazard of Extreme Cold. Given the infrequent recurrence of the extreme cold events and the relatively minor losses associated with the two events that have occurred in the last 42 years, the overall vulnerability is considered to be low. New Mexico State University sustained substantial damages and closures in the February 2011 event, and has chosen to make Extreme Cold a priority in their mitigation strategy. Doña Ana County, Las Cruces and Mesilla also have mitigation actions that include Extreme Cold with a list of other hazards, as part of a comprehensive multi-hazard strategy that involves building codes and building modernization (See Section 4.3.2). Anthony, Hatch, and Sunland Park do not consider Extreme Cold to be a mitigation priority and EBID vulnerability is at a nuisance level only.

Sources

FEMA, 1997, *Multi-Hazard Identification & Risk Assessment – A Cornerstone of the Nat'l Mitigation Strategy*.

National Weather Service, URL: http://www.nws.noaa.gov/om/windchill/

Western Regional Climate Center, URL: http://www.wrcc.dri.edu/cgibin/cliMAIN.pl?nm8535

Profile Maps

No profile maps are provided. All populated areas of the County are equally exposed to extreme cold temperatures and there is no significant geographical variability between the participating jurisdictional areas.

4.3.4 Flooding

Description

For the purpose of this Plan, the hazard of flooding addressed in this section will pertain to floods that result from precipitation/runoff related events. Other flooding due to dam or levee failures are addressed separately. The two seasonal atmospheric events that tend to trigger floods in Doña Ana County are:

- *Tropical Storm Remnants*: Some of the worst flooding tends to occur when the remnants of a hurricane that has been downgraded to a tropical storm or tropical depression enter the State. These events occur infrequently and mostly in the early autumn, and usually bring heavy and intense precipitation over large regions causing severe flooding.
- *Summer Monsoons*: In mid to late summer the monsoon winds bring humid subtropical air into the State. Solar heating triggers afternoon and evening thunderstorms that can produce extremely intense, short duration bursts of rainfall. The thunderstorm rains are mostly translated into runoff and in some instances, the accumulation of runoff occurs very quickly resulting in a rapidly moving flood wave referred to as a flash flood. Flash floods tend to be very localized and cause significant flooding of local watercourses.

Most of the storms that produce large amounts of runoff occur in the months of June through September. Fall, winter and spring are the dry seasons because much of the moisture in eastward circulation from the Pacific Ocean is removed as the air is passed over the mountains west of New Mexico. In the summer, moisture-laden air from the Gulf of Mexico enters southern New Mexico. Strong surface heating and upslope flow of the air cause brief and often heavy showers.

Damaging floods in the county include riverine, sheet, alluvial fan, and local area flooding. Riverine flooding occurs along established watercourses when the bankfull capacity of a watercourse is exceeded by storm runoff or snowmelt and the overbank areas become inundated. Sheet flooding occurs in regionally low areas with little topographic relief that generate floodplains over a mile wide. Alluvial fan flooding is generally located on piedmont areas near the base of the local mountains and are characterized by multiple, highly unstable flowpaths that can rapidly change during flooding events. Local area flooding is often the result of poorly designed or planned development wherein natural flowpaths are altered, blocked or obliterated, and localized ponding and conveyance problems result. Erosion is also often associated with damages due to flooding.

In the Chaparral area, the flooding is generally very shallow due to the lack of well-defined flood paths. Flooding on streams on the West Mesa (west of the City of Las Cruces) is characterized by high-velocity flows heavily charged with sediment and debris; it generally results from brief, intense thunderstorms. Flood hazards are further aggravated as these high-velocity sediment flows enter the Rio Grande Valley. Upon reaching the escarpment these flows spread out to form alluvial fans or cones of sediment at the base of the escarpment deposited by floods. The areas with alluvial fans are characterized by

high- velocity flows, large amounts of sediment deposition, and unpredictable flow paths that may change during the same flood event.

Another major flood hazard comes as a secondary impact of wildfires in the form of dramatically increased runoff from ordinary rainfall events that occur on newly burned watersheds. Denuding of the vegetative canopy and forest floor vegetation, and development of hydrophobic soils are the primary factors that contribute to the increased runoff. Canopy and floor level brushes and grasses intercept and store significant volumes of rainfall during a storm event. They also add to the overall watershed roughness which generally attenuates the ultimate peak discharges. Soils in a wildfire burn area can be rendered hydrophobic, which according the Natural Resource Conservation Service (NRCS) is the development of a thin layer of nearly impervious soil at or below the mineral soil surface that is the result of a waxy substance derived from plant material burned during a hot fire. The waxy substance penetrates into the soil as a gas and solidifies after it cools, forming a waxy coating around soil particles. Hydrophobic soils, in combination with a denuded watershed, will significantly increase the runoff potential, turning a routine annual rainfall event into a raging flood with drastically increased potential for soil erosion and mud and debris flows.

History

Flooding is clearly a major hazard in Doña Ana County as shown in Table 4-2. Doña Ana County has been a declared county in four flood related presidential disaster declarations as follows:

Disaster	Declaration Date	Incident Type	Incident Period
FEMA-DR-353	September 20, 1972	Heavy Rains, Flooding	September 20, 1972
FEMA-DR-1301	September 22, 1999	Severe Storms and Flooding	July 16, 1999 to August 7, 1999
FEMA-DR-1659	August 30, 2006	Severe Storms and Flooding	July 26, 2006 to September 18, 2006
FEMA-DR-4152	October 29, 2013	Severe Storms, Flooding, and Mudslides	September 09, 2013 to September 22, 2013

Descriptions of significant past flood events are summarized below:

- In June 2004, thunderstorms repeatedly moved over southern and central Doña Ana County, dropping more than three inches of rain between Las Cruces and northeast El Paso. Though most areas experienced nuisance flooding, the town of Vado, which lies in a somewhat sunken basin, received run-off from most of the surrounding area, resulting in the evacuation of 14 houses. Most of the town was under two to three feet of water, with a few spots under six feet. Damages in the

town were reported to exceed $500,000. Governor Richardson later declared Vado a disaster area. (NCDC, 2012)

- In September 2005, major flooding occurred across most of the Las Cruces area as a thunderstorm complex dropped heavy rain during a three hour time frame. Rainfall reports were widespread two to three inches with isolated amounts around four inches. All major roads were flooded with a few intersections under four feet of water. Sandbags were put up until resources were exhausted. The rainfall amounts were not extremely unusual, just the areal coverage. Damages were estimated to exceed $1 million. (NCDC, 2012)
- In August-September 2006, a series of summer storms caused significant flooding throughout Doña Ana County and much of the rest of New Mexico, resulting in federal disaster declaration (FEMA-DR-1659) for most of the state.
    - It began August 1st, with a cluster of slow moving thunderstorms that dropped 1.5 to 3 inches of rain over the southern portion of Doña Ana County, especially near the Rio Grande. Even higher amounts fell over the nearby Franklin Mountains which added to severe runoff problems. Interstate 10 south of Las Cruces was closed for several hours. Hardest hit with damage to roads and structures was Sunland Park, followed by Anthony, Chaparral and La Union. About 1200 residents in Sunland Park were forced to evacuate as the Rio Grande reached a stage of 9.3 feet, the highest in 50 years. Property and crop damages were estimated at over $3 million. (NCDC, 2012)
    - On August 3rd, A line of rapidly moving thunderstorms dropped up to an inch and a half of rain in less than 30 minutes during the early morning hours. This was only 36 hours after the extensive flash flooding on August 1st, so runoff was excessive. Roads were impassable in Chaparral, and erosion exposed gas pipes in Vado and Sunland Park. Damages were estimated to exceed $20,000. (NCDC, 2012)
    - On August 4th, flash flooding occurred in an area which included Organ, Doña Ana and the east mesa of Las Cruces. Roads were covered by up to two feet of water with some closures. Water also flooded backyards and entered homes as retention walls collapsed from water swollen arroyos. Damages were estimated to exceed $50,000. (NCDC, 2012)
    - On August 15th, runoff from heavy rains over the nearby Sierra De Las Uvas Mountains caused the Placitas Arroyo to breach, which sent a wall of water into the town of Hatch. Up to four feet of water entered business and residences. Mandatory evacuations of several hundred residents took place, including 150 people from an apartment complex which eventually had to be condemned. All roads into and within Hatch were closed. Losses to property and crops were estimated to exceed $4.5 million. (NCDC, 2012)
    - On August 21st, another heavy rain in the Hatch area caused a breach in the Placitas Arroyo. Most of the water flowed north of the village, but about eight residences were evacuated as a precaution. Highway 187 was covered with

water and most of the damage was to crops and were estimated to exceed $50,000. (NCDC, 2012).

- On August 28th-29th, A large cluster of thunderstorms dropped three to five inches of rain on much of the triangle between Las Cruces, Hatch and Deming, which is an unusually large area for such rainfall amounts in the desert southwest. The Placitas Arroyo near Hatch breached for the third time in 3 weeks, flooding mainly farm land. A flood wave resulted in minor flooding of the Rio Grande downstream into the El Paso area, which was the third time this month. On the north side of the Sierra De La Uvas Mountains, a huge amount of runoff flooded the desert and led to the closure of Interstate 10 between Deming and Las Cruces for several hours. Closing the interstate along this stretch is not uncommon during dust storms, but extremely rare for flooding. The flooding also did damage to structures in this sparsely populated area. Property and crop damages were estimated to exceed $170,000. (NCDC, 2012)
- In September 1st-4th, four days of moderate to heavy rainfall due to tropical moisture influx from Hurricane John (which was moving up the Baja Peninsula) led to widespread flooding across much of southern New Mexico. Many roads were flooded in the area with law enforcement agencies reporting numerous closures. In Sunland Park, excessive runoff overwhelmed a drain pipe and resulted in a mudslide wherein several homes were flooded and a storage shed and part of a driveway washed away at one residence. Damages were estimated to exceed $70,000. (NCDC, 2012).

- In July 2008, two storms dumped heavy rain over a period of three days. On July 8th, a skywarn spotter reported three inches of rain within an hour in Chaparral, and the surrounding neighborhood was flooded. A couple of days later, a large cluster of thunderstorms moved over an area already saturated from heavy rain. Arroyos overflowed and low water crossings were flooded. Highways that were closed included Highway 9 between Columbus and Hachita, Highway 26 between Deming and Hatch, and Highway 27 south of Hillsboro. Property and crop damages were estimated to exceed $90,000. (NCDC, 2012).
- In September 2009, homes were flooded near Peachtree Hill northeast of Las Cruces. The U.S. 70 frontage road in this area was covered by up to three feet of water, and all major streets on the east mesa of Las Cruces were under water. Damages were estimated to exceed $70,000. (NCDC, 2012).
- In July 2010, very heavy rain over Las Cruces flooded many buildings and streets across town. New Mexico State University recorded 3.36 inches of rain. At least six buildings on the campus had water damage with several roads closed. Several water rescues from stalled vehicles were performed on campus. Stormwide damages were estimated to exceed $50,000 and NMSU reported over $12,000 in campus losses alone. (NCDC, 2012; NMSU, 2012).
- In September 2013, much of the County and the State experienced heavy rainfall events that caused extensive flooding and record stream flows and resulted in two

Presidential Disaster Declarations. The flooding took place in two pulses. During the first round, the region received between 2 and 4" of rain by Thursday, 12 September. The main effects were to saturate the ground. Flooding occurred in Vado, NM, where several mobile homes located in an arroyo were flooded, affecting 25-30 people. Flooding also occurred in Sunland Park, where 3-4 homes and an apartment complex were affected by flooding, and some flooding occurred in La Union, NM. More damage was caused by rainfall that continued to fall on already saturated soils all day Thursday into Friday, 13 September. In Dona Ana County, a 50-year-old earthen agricultural dam was breached, washing out roads and leaving some 300 residents without water and natural gas. At leas seven homes were damaged, although not were destroyed. Statewide damage totaled more than 18 million dollars. (RGIS, 2020, USACE, 2020)

- In July 2014, Over an inch of rain fell quickly in Hill, NM which caused the closing of Dona Road which was underwater. Several houses were inundated, plus damage to truck and a horse trailer were also reported. Water made it into the basement of the historic St. Mary's at Hill Anglican Church. One resident said that the water was higher than any other time in the 50 years he lived there. Stormwide damages were estimated to be $30,000. (NCDC, 2020)
- In August 2014, very heavy rain caused flooding in and near Las Cruces. The NMDOT reported mudslides and debris on Frontage Roads 1037 and 1035 between Las Cruces and Vado from overnight rains. Several buildings on the New Mexico State University Campus reported water inside of them, including two rooms in the Health and Social Sciences Building, heavy water in the east gymnasium of the Activity Center and several Engineering Complex buildings. Stormdwide damages were estimated to be $25,000. (NCDC, 2020)

Several other flood related incidents are summarized in the historic hazard database provided in Appendix E and on the enclosed CD.

Probability

For the purposes of this Plan, the probability of flood hazards in Doña Ana County jurisdictions are primarily based on the 1% (100-year) and 0.2% (500-year) probability floodplains delineated on FEMA Flood Insurance Rate Maps (FIRMs), plus any provisional floodplain delineations used for in-house purposes by participating jurisdictions or Steering Committee delineated areas. FEMA has recently completed a map modification program to

update the FIRMs for the County into a digital FIRM (DFIRM) format. The new DFIRM maps have been adopted for all Communities in Dona Ana County, and became effective in July 2016. For the purposes of this Plan, the DFIRM floodplains were used to depict the flood hazard within all jurisdictions. DFIRM GIS base files were provided by the Dona Ana County Flood Commission.

Extent/Magnitude

As previously mentioned, the 100-year and 500-year floodplains delineated on the FEMA DFIRMS are the basis for estimation of the extent of flood hazards for the county. For the purposes of this Plan, two designations of flood hazard are used. Any FEMA "A" zone (otherwise known as a Special Flood Hazard Area or SFHA) is designated as a HIGH hazard area. MEDIUM flood hazard areas are all "Shaded X" zones. All "A" zones (e.g. – A, A1-99, AE, AH, AO, etc.) represent areas with a 1% probability of being flooded at a depth of one- foot or greater in any given year. All "Shaded X" zones represent areas with a 0.2% probability of being flooded at a depth of one-foot or greater in any given year. These two storms are often referred to as the 100-year and 500-year storm, respectively.

Maps 2A through 2D show the flood hazard areas for the entire county. Maps 2E through 2O show the flood hazard areas for Anthony, EBID, Hatch, Las Cruces, Mesilla, NMSU, and Sunland Park.

Actual depths of flooding within each of these hazard areas vary and are dependent on the geometry, roughness, and slope of the particular conveyance, and the estimated peak discharges being conveyed. Flood-depth grids have not been developed for any of the FEMA mapped SFHAs in the county. In general, flood depths range from 1 to 10 feet depending on the watercourse and the relationship of the ground surface elevation to the predicted water surface elevation, with most overbank or sheet flood depths ranging from 1 to 2 feet. This variance applies county-wide. Duration of most flooding events for the County are usually limited to short duration, high intensity storms and last for only a few hours and predominately less than 1 day.

Vulnerability – CPRI Results

Flooding CPRI results for each community are summarized in Table 4-10 below.

Table 4-10: CPRI results by jurisdiction for flood

Participating Jurisdiction	Probability	Magnitude / Severity	Warning Time	Duration	CPRI Score
Anthony	Highly Likely	Catastrophic	> 24 hours	< 24 hours	3.35
EBID	Highly Likely	Catastrophic	< 6 hours	< 24 hours	3.80
Hatch	Likely	Critical	< 6 hours	< 1 week	3.15
Las Cruces	Highly Likely	Critical	< 6 hours	< 1 week	3.60
Mesilla	Likely	Critical	12-24 hours	< 24 hours	2.75
NMSU	Likely	Critical	< 6 hours	< 1 week	3.15
Sunland Park	Likely	Limited	< 6 hours	< 24 hours	2.75
Unincorporated Doña Ana County	Highly Likely	Critical	< 6 hours	< 24 hours	3.50

Vulnerability – Loss Estimations

The estimation of potential exposure to HIGH and MEDIUM flood hazards was accomplished by intersecting the human and facility assets with the flood hazard limits depicted on the profile maps. Loss estimates to all facilities located within the HIGH and MEDIUM flood hazard areas were made based on the loss estimation tables published by

FEMA (FEMA, 2001). Most of the assets located within HIGH hazard flood areas will be subject to three feet or less of flooding. Using the FEMA tables, it is assumed that all structural assets located within the HIGH hazard areas will have a loss-to-exposure ratio of 0.20 (or 20%). A loss to exposure ratio of 0.05 (5%) is assumed for assets located in the MEDIUM hazard areas. Table 4-11 summarizes the critical facility, population, and residential housing unit exposure and loss estimates for the HIGH and MEDIUM flood hazards. Estimates are reported by jurisdiction and county-wide.

In summary, $80.0 million and $0.5 million in critical facility related losses are estimated for HIGH and MEDIUM flood hazards, for all the participating jurisdictions in Doña Ana County. An additional $306.2 million and $44.2 million in HIGH and MEDIUM flood losses to 2010 Census residential housing units is estimated for all participating Doña Ana County jurisdictions. For EBID facilities, Table 3-7 indicates a total exposure of 20.8 and 32.4 miles of canal/laterals and drains/wasteways to HIGH hazard flooding. Losses to these facilities are estimated at $4.2 million.

Regarding human vulnerability, a total population of 18,583 people, or 8.88% of the total population, is potentially exposed to a HIGH hazard flood event. A total population of 13,308 people, or 6.36% of the total population, is potentially exposed to a MEDIUM hazard flood event. Based on the historic record, multiple deaths and injuries are plausible and a substantial portion of the exposed population is subject to displacement depending on the event magnitude.

It is duly noted that the loss and exposure numbers presented above represent a comprehensive evaluation of the County as a whole. It is unlikely that a storm event would occur that would flood all of the delineated HIGH and MEDIUM flood hazard areas at the same time. Accordingly, actual event based losses and exposure are likely to be only a fraction of those summarized above. Furthermore, it should be noted that all MEDIUM flood exposure and loss numbers reported herein are incremental to the numbers reported for the HIGH hazard flood (e.g. – should a full 500 year event occur, the anticipated losses would be approximated by the HIGH plus MEDIUM values.) That is, the 100-year floodplain would be entirely inundated during a 500-year flood.

Table 4-11: Doña Ana County jurisdictional exposure and loss estimates due to flooding

FLOODING HAZARD EXPOSURE / LOSS	Anthony	Hatch	Las Cruces	Mesilla	NMSU	Sunland Park	Uninc. Doña Ana County	Total
Total Critical Facilities and Infrastructure	**10**	**11**	**122**	**13**	**40**	**9**	**52**	**257**
Estimated Replacement Cost (x $1,000)	**$17,805**	**$14,250**	**$835,525**	**$124,520**	**$811,777**	**$36,950**	**$1,406,806**	**$3,247,633**
Facilities Exposed to HIGH Hazard	1	10	14	1	5	0	8	39
Percentage of Total Facilities	10.00%	91.82%	11.48%	7.69%	12.50%	0.00%	15.38%	15.18%
Estimated Replacement Cost (x $1,000)	$4,000	$11,250	$48,110	$3,000	$60,823	$0	$217,500	$344,683
Estimated Structure Loss (x $1,000)	$800	$2,250	$9,622	$600	$12,165	$0	$43,500	$68,937
Facilities Exposed to MEDIUM Hazard	0	0	1	2	2	0	2	7
Percentage of Total Facilities	0.00%	0.00%	0.82%	15.38%	5.00%	0.00%	3.85%	2.72%
Estimated Replacement Cost (x $1,000)	$0	$0	$5,000	$3,100	$51,461	$0	$1,800	$9,900
Estimated Structure Loss (x $1,000)	$0	$0	$250	$155	$25,731	$0	$90	$495
Total Population	**9,403**	**1,679**	**97,571**	**1,944**	**4,542**	**14,274**	**79,815**	**209,229**
Population Exposed to HIGH Hazard	435	1,557	7,891	43	70	1121	4,986	16,103
Percent Exposed	4.63%	92.30%	8.09%	2.21%	1.54%	7.85%	6.25%	7.70%
Population Exposed to MEDIUM Hazard	220	0	1,390	583	32	102	12,476	14,803
Percent Exposed	2.34%	0.00%	1.42%	29.99%	0.70%	0.07%	15.63%	7.08%
Population Over 65	**801**	**168**	**13,316**	**439**	**58**	**1,254**	**9,844**	**25,881**
Population Over 65 Exposed to HIGH Hazard	48	161	1,070	9	10	94	557	1940
Percent Exposed	5.99%	95.83%	8.04%	2.05%	17.24%	7.5%	5.66%	7.50%
Population Over 65 Exposed to MEDIUM Hazard	18	0	168	132	4	7	1,528	1,857
Percent Exposed	2.25%	0.00%	1.26%	30.07%	6.90%	0.56%	15.52%	7.18%
Residential Building Count Totals	**2,803**	**566**	**42,352**	**950**	**1,356**	**4,109**	**29,354**	**81,490**
Estimated Replacement Cost (x $1,000)	**$378,421**	**$76,437**	**$10,163,529**	**$228,050**	**$324,498**	**$554,713**	**$5,422,534**	**$17,148,181**
Residences Exposed to HIGH Hazard	142	521	3,625	20	32	351	1816	6,507
Percentage of Total Facilities	5.07%	92.05%	8.56%	2.11%	2.36%	8.54%	6.19%	7.99%
Estimated Replacement Cost (x $1,000)	$19,115	$70,442	$870,115	$4,718	$7,401	$47,417	$316,605	$1,320,580
Estimated Structure Loss (x $1,000)	$3,823	$14,088	$174,023	$944	$1,480	$9,483	$63,321	$261,116
Residences Exposed to MEDIUM Hazard	67	0	951	286	5	26	4,315	5,650
Percentage of Total Facilities	2.39%	0.00%	2.25%	30.11%	0.37%	0.63%	14.7%	6.93%
Estimated Replacement Cost (x $1,000)	$9,083	$0	$228,329	$68,837	$1,139	$3,511	$685,841	$996,740
Estimated Structure Loss (x $1,000)	$454	$0	$11,416	$3,442	$57	$176	$137,168	$199,348

Vulnerability – Repetitive Loss Properties

Repetitive Loss (RL) properties are those NFIP-insured properties that since 1978, have experienced multiple flood losses. FEMA tracks RL property statistics, and in particular to identify Severe RL (SRL) properties. RL and SRL properties demonstrate a track record of repeated flooding for a certain location and are one element of the vulnerability analysis. RL properties are also important to the NFIP, since structures that flood frequently put a strain on the National Flood Insurance Fund. Based upon the information provided within the 2018 NM State Hazard Mitigation Plan, as of December 2017 there were 4 RL properties within Doña Ana County with a total of nine loss incidents between them and a total of $198,153 paid in claims. It should be noted that all 4 RL properties reported are within the Unincorporated areas of Dona Ana County. The remaining jurisdictions reported no RL properties. None of the participating jurisdictions have identified Severe Repetitive Loss (SRL) properties.

Vulnerability – Development Trends

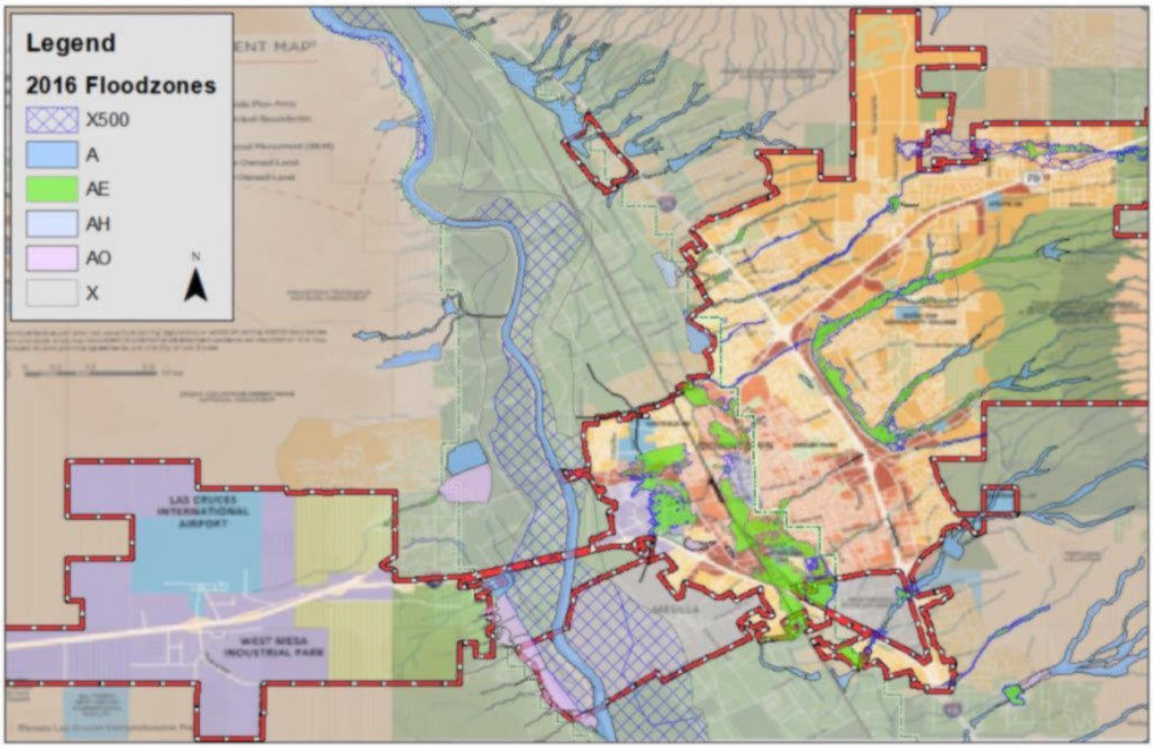
Most of the floodprone properties in Doña Ana County pre-date the planning jurisdictions' entry into the NFIP and were constructed prior to current floodplain management practices. The development of new properties or substantial re-development of existing structures is now subject to regulatory review procedures implemented by each jurisdiction throughout the entire county. For most of the jurisdictions, management of new growth generally involves enforcing current floodplain ordinance requirements and maintaining NFIP compliant practice and procedures. Challenges to the management of new growth include the need for converting approximate floodplain delineations into detailed delineations to better mitigate against flood risks, or to establish additional floodplain delineations to identify and map the flood hazards within the growth areas where no mapping currently exists. Jurisdiction specific growth area vulnerabilities are discussed below.

Anthony – The City's proposed growth areas do not lie within a delineated flood hazard area, however, the City also actively developed a master drainage plan that will better delineate flood related impacts and problem areas within the City limits, and recommend strategies for mitigating the flooding.

EBID – As with dam failure, many of EBID's facilities are located within or perpendicular to HIGH hazard flood areas. EBID is actively working to reduce the exposure of their facilities to these cross drainages and their impacts.

Hatch – As shown on Map 2I, a significant portion of the main Village is located within a HIGH hazard flood area, and this flooding will provide a challenge to any new development. The commercial and industrial expansion annexes located west of the main village are much less vulnerable to flooding. The primary flood source for the Village is the Placitas Arroyo, which was a major contributor to all of the damage incurred during the 2006 storms. The Village of Hatch, in cooperation with the DACFC, completed the Placitas Arroyo Drainage Master Plan in 2018 which provided mitigation alternatives to address flooding in Hatch.

Las Cruces – Las Cruces has a very active floodplain management strategy that is an integral part of the City's development services. For most of the projected growth areas, watercourse corridors have been identified with the land planning to preserve a functional area for conveying flood flows through the growth areas. Several of these corridors, designated as open space reserves and indicated on the figure below by dark blue lines, may require delineation of flood hazard areas, or extension of existing delineations, to better plan for the space needed for the preserve areas.



Mesilla – Given that little growth is anticipated for Mesilla over the next five years, growth in HIGH flood hazard areas will not be an issue.

NMSU – The main campus of NMSU is partially delineated by HIGH hazard flood areas. Development or expansion of the Arrowhead Park industrial area will need to address the outlflow channel from the Tortugas Site 1 dam as well as the inflow arroyo into the Tortugas Site 2 dam. There are also several large watercourses within the CDRRC and other areas that should be evaluated with any development of those areas that is near those watercourses.

Sunland Park – Only the small growth area located north of Country Club and west of State Road 260 is shown to intersect with a known HIGH hazard flood area. Any development of this area should address the floodplain issues and be in compliance with the NFIP regulations and local floodplain ordinance.

Unincorporated County – Growth in the unincorporated areas of Doña Ana County is expected to be focused in and around existing population centers, with the majority of growth expected within the ETZ and the southern portions of the County near Anthony and Sunland Park. There are several HIGH hazard flood areas delineated for these growth areas and several may require extensions to accommodate new growth.

Vulnerability – Jurisdictional Summary

All of the participating jurisdictions have varying levels of vulnerability to Flood hazards. All jurisdictions have designated Flood as a mitigation priority.

Sources

New Mexico Department of Homeland Security and Emergency Management, 2010, *New Mexico Natural Hazard Mitigation Plan,* approved October 2007, updated September 2010.

FEMA, 2001, Understanding Your Risks; Identifying Hazards and Estimating Losses, FEMA Document No. 386-2.

U.S. Dept of Commerce, National Climatic Data Center, 2012, Storm Events Database, accessed via the following URL: http://www.ncdc.noaa.gov/stormevents/

Dona Ana County Flood Commission, 2016 Flood Zone Shapefile.

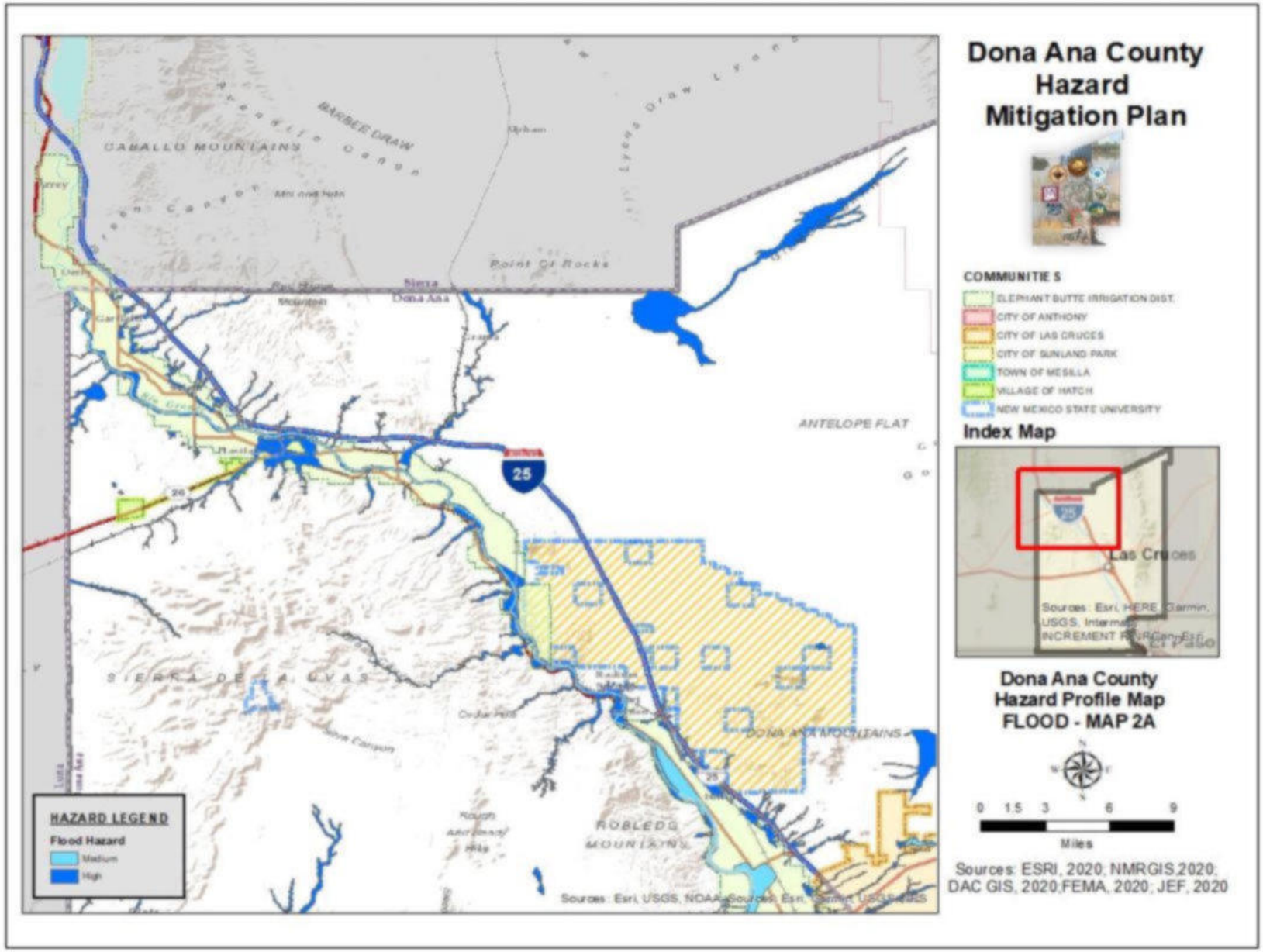
US Army Corps of Engineers, 2014, *Post Flood Report: Record Rainfall and Flooding Events During September 2013 in New Mexico, Southeastern Colorado and Far West Texas.*

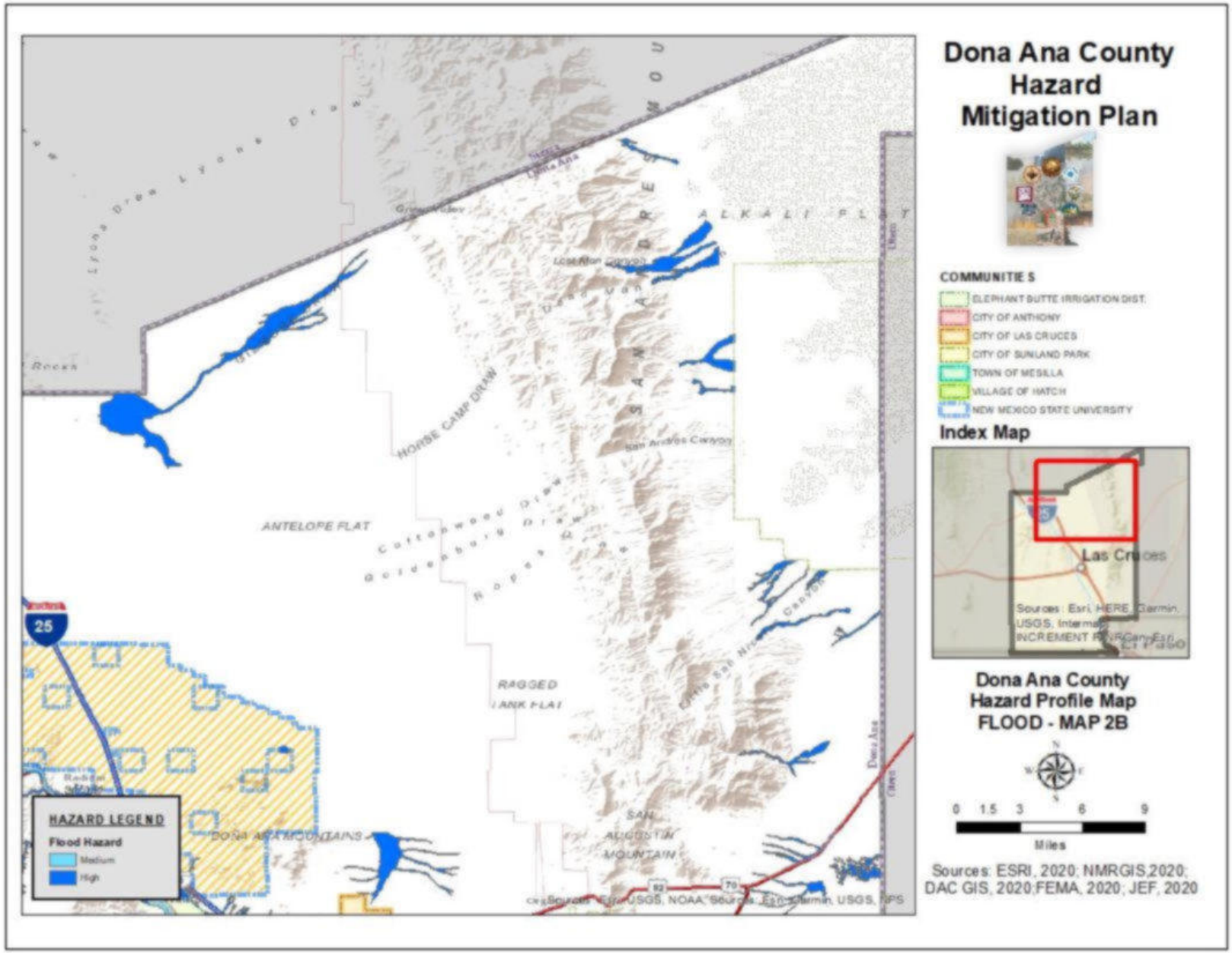
Earth Data Analysis Center, 2015, *Impacts of September 2013 Flooding in New Mexico – A Story Map.*

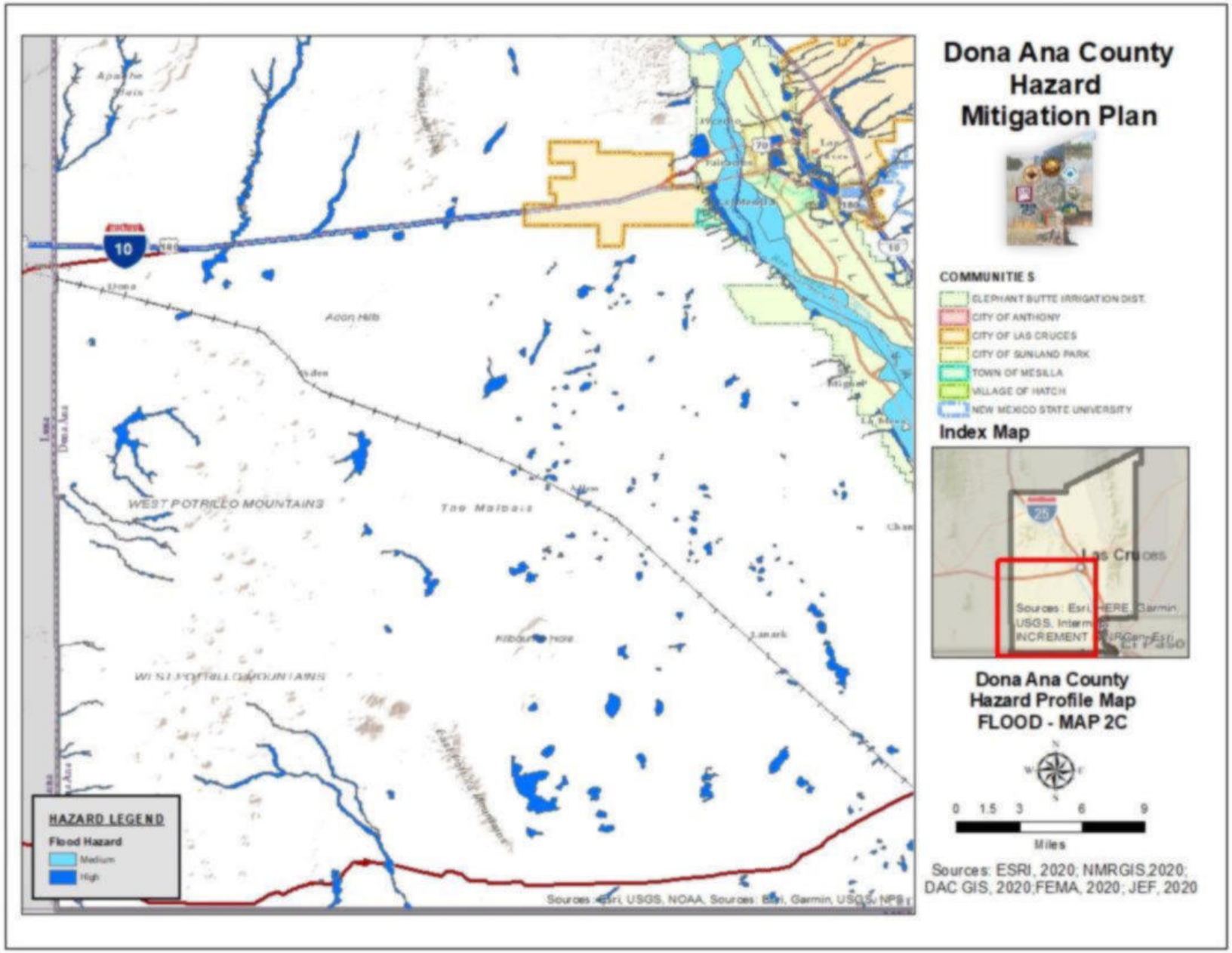
Profile Maps

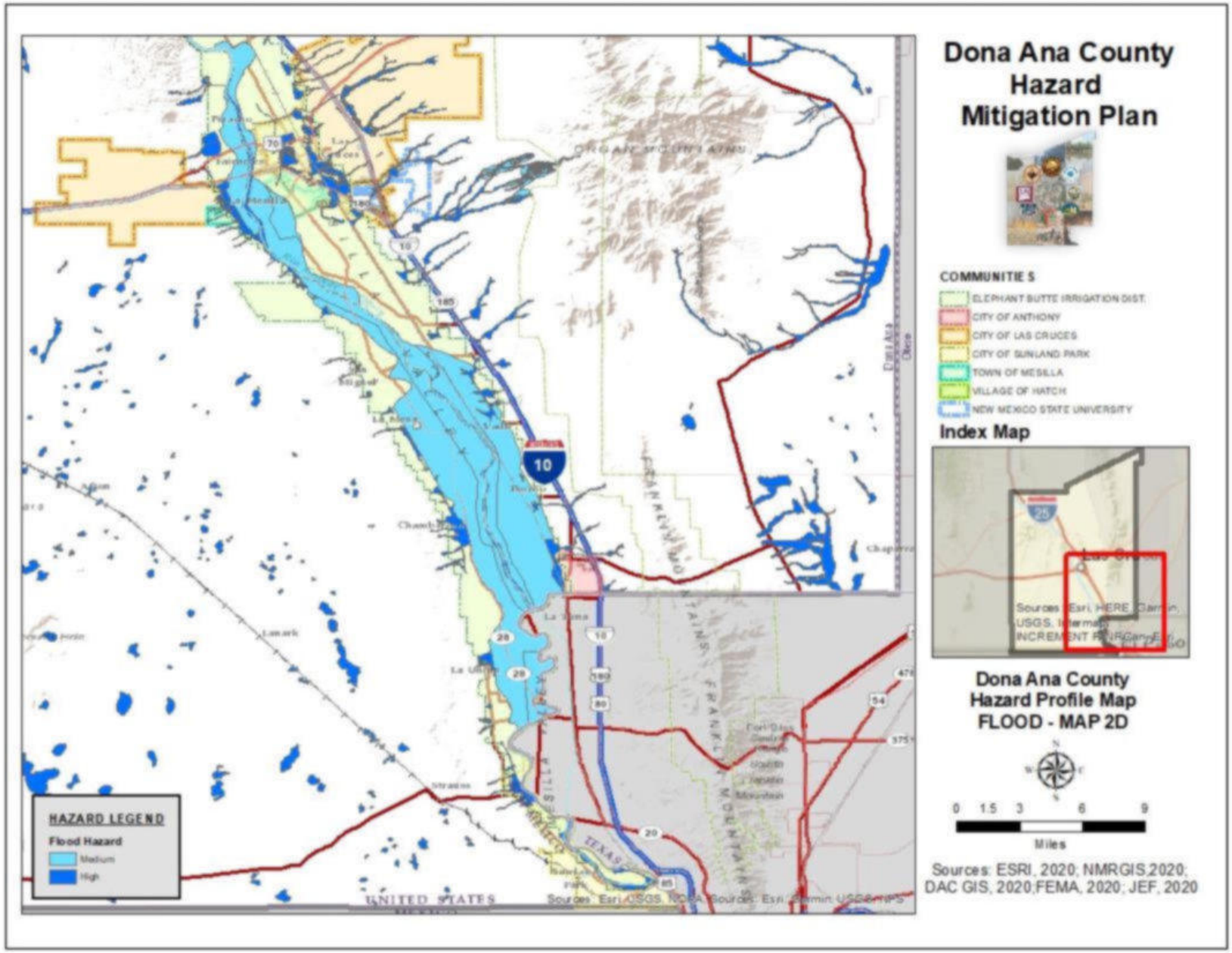
Maps 2A through 2D – County-Wide Flood Hazard Maps

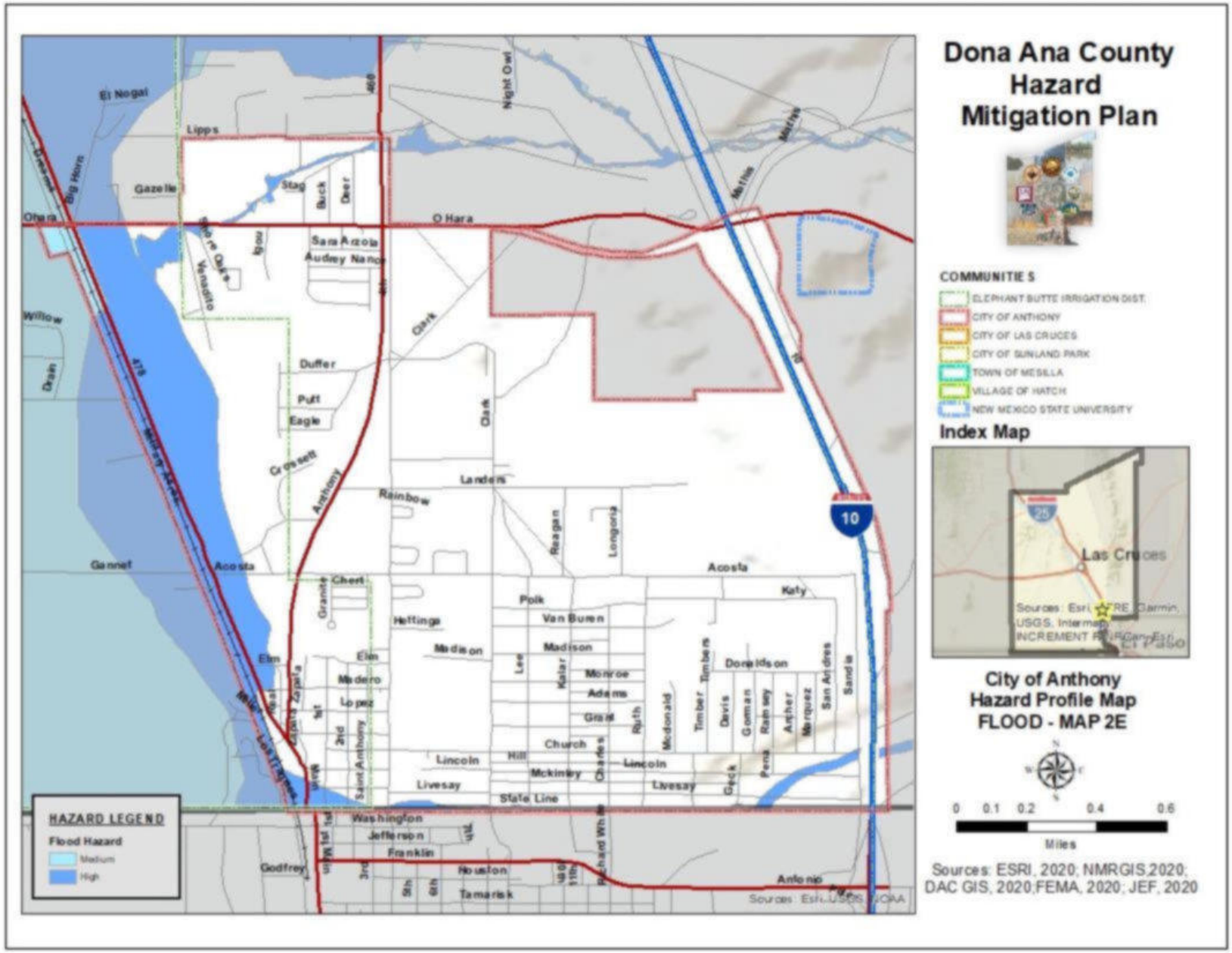
Maps 2E through 2O– Anthony, EBID, Hatch, Las Cruces, Mesilla, NMSU, and Sunland Park Flood Hazard Maps

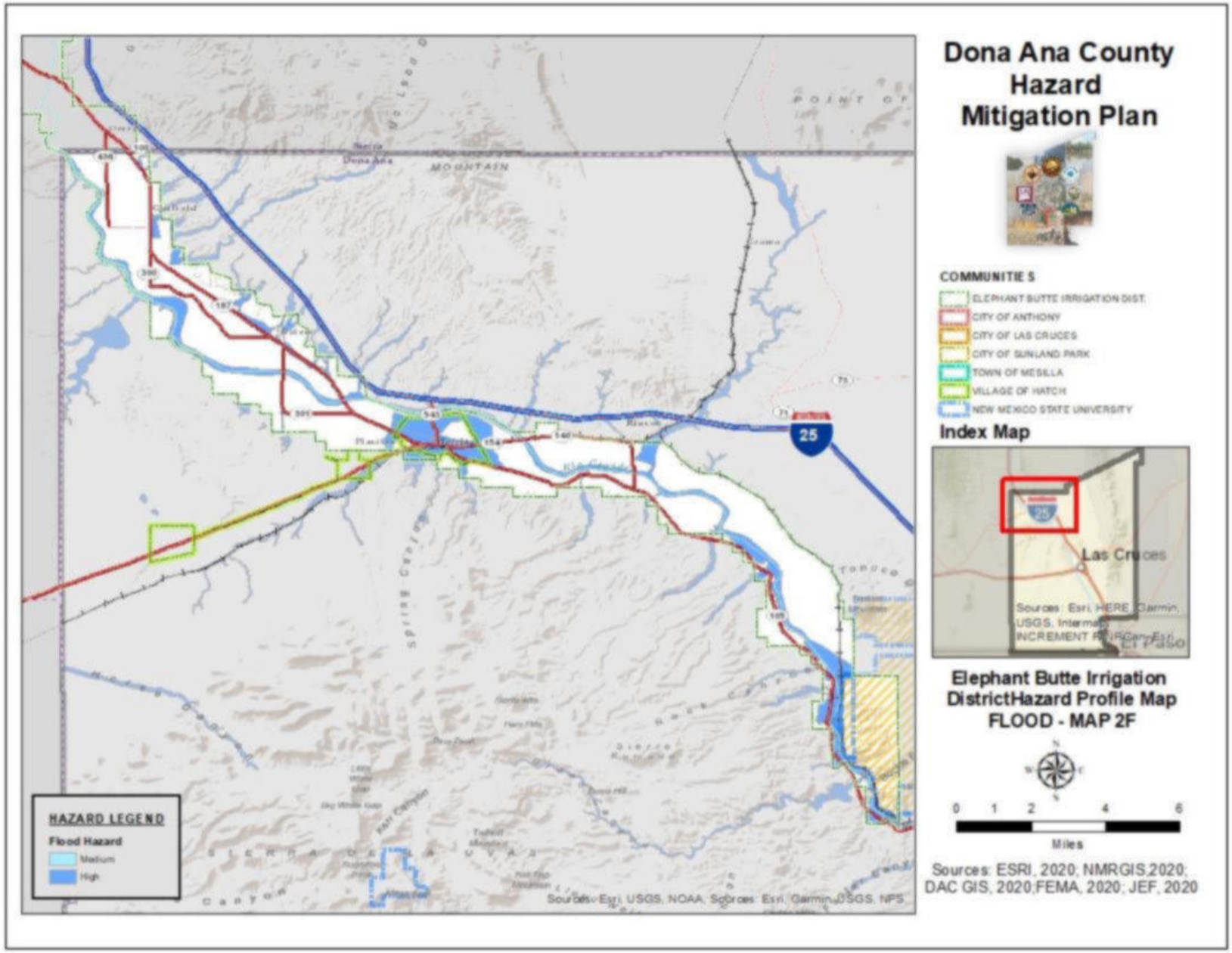

Dona Ana County
Hazard
Mitigation Plan
COMMUNITIES
ELEPHANT BUTTE IRRIGATION DIST.
CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
Las Cruces
El Paso
Dona Ana County
Hazard Profile Map
FLOOD - MAP 2A
0 1.5 3 6 9
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020;FEMA, 2020; JEF, 2020
HAZARD LEGEND
Flood Hazard
Medium
High
CABALLO MOUNTAINS
Point Of Rocks
ANTELOPE FLAT
SIERRA DE LAS UVAS
DONA ANA MOUNTAINS
ROBLEDO
MOUNTAINS
25
Sources: Esri, USGS, NOAA

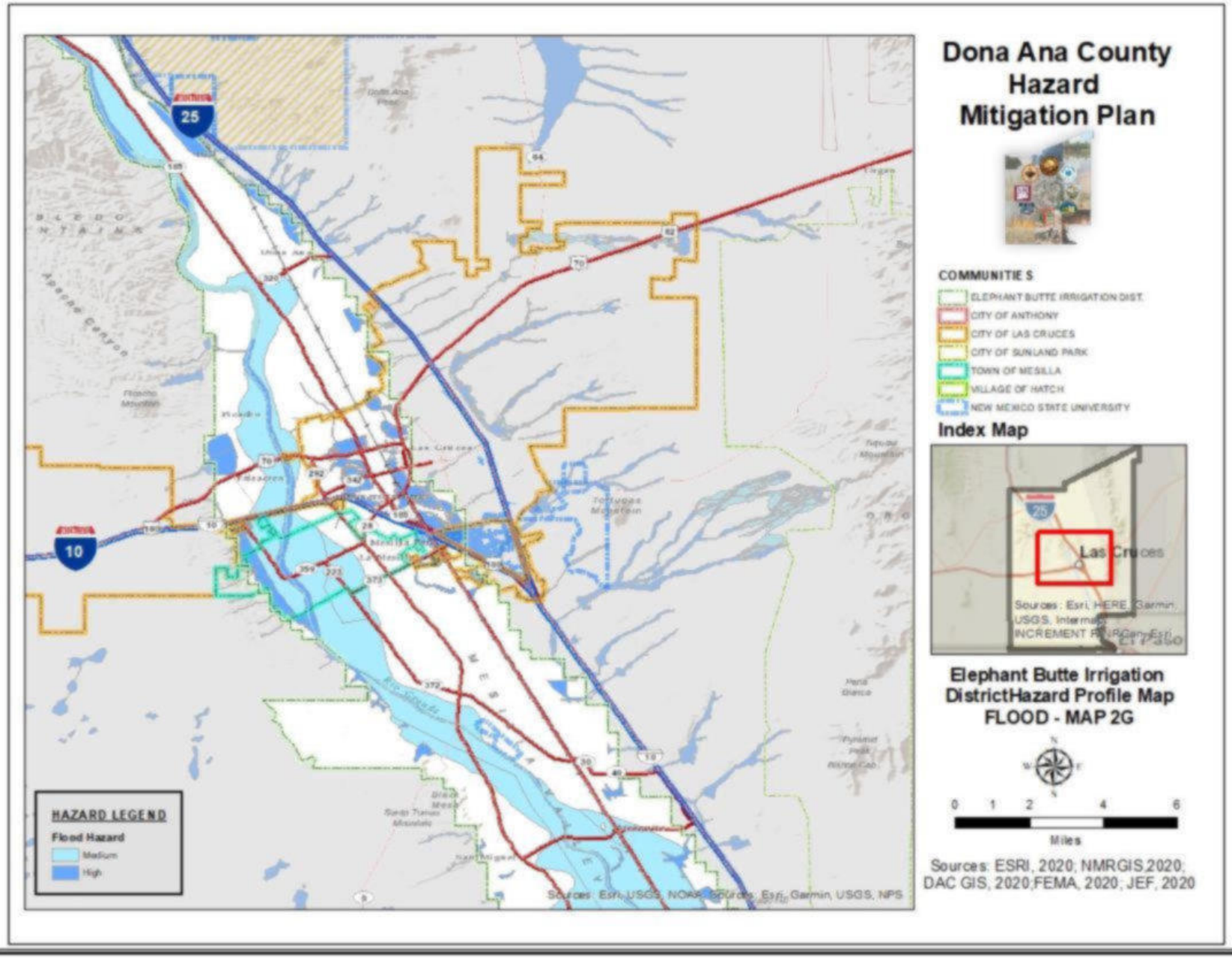

Dona Ana County
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0 1.5 3 6 9
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020;FEMA, 2020; JEF, 2020
HAZARD LEGEND
Flood Hazard
Medium
High
ANTELOPE FLAT
RAGGED
SAN
AUGUSTIN
MOUNTAIN
HORSE CAMP DRAW
ALKALI FLAT
25
70
82

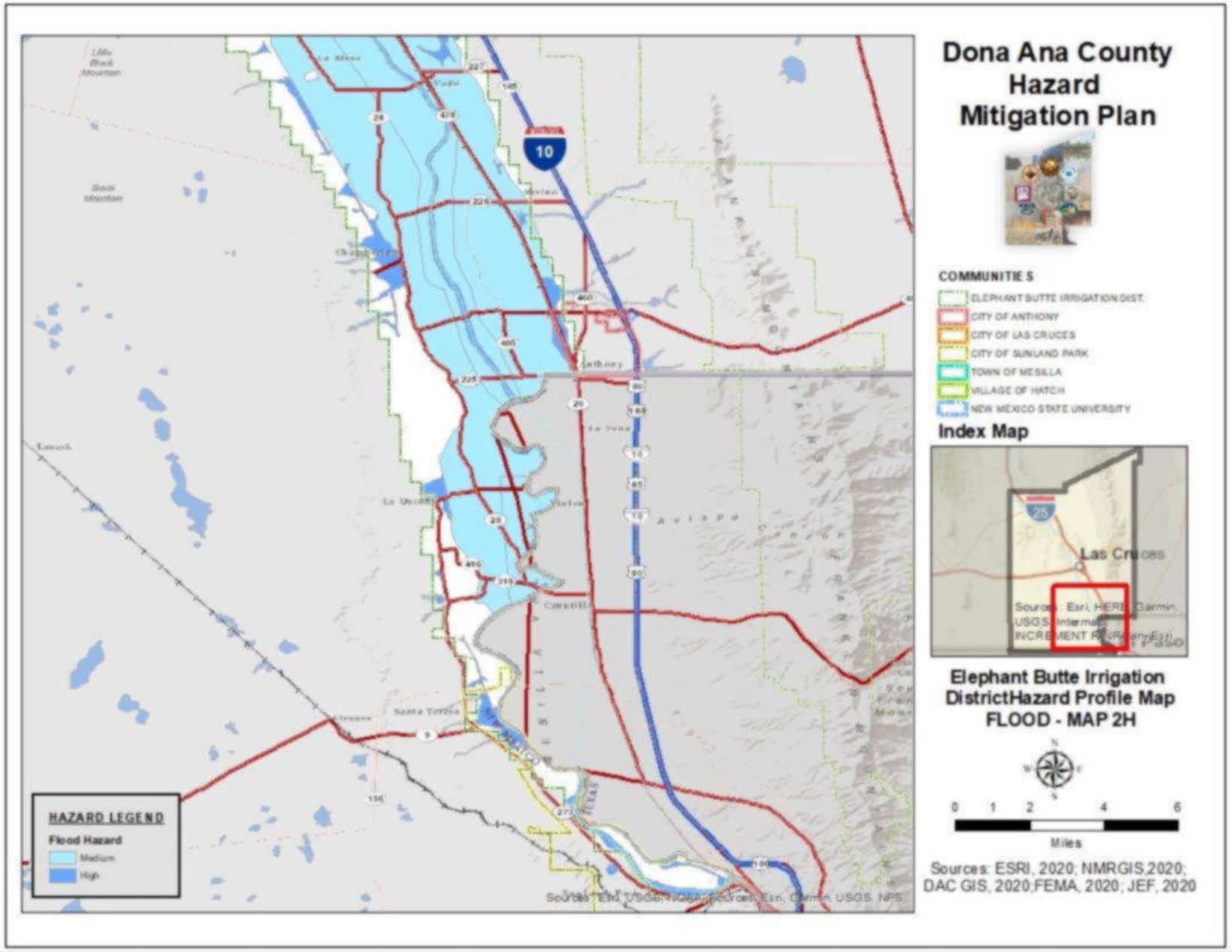

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CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
Las Cruces
Dona Ana County
Hazard Profile Map
FLOOD - MAP 2C
0 1.5 3 6 9
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020;FEMA, 2020; JEF, 2020
HAZARD LEGEND
Flood Hazard
Medium
High
WEST POTRILLO MOUNTAINS
Tres Maidas
Aden Hills
Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

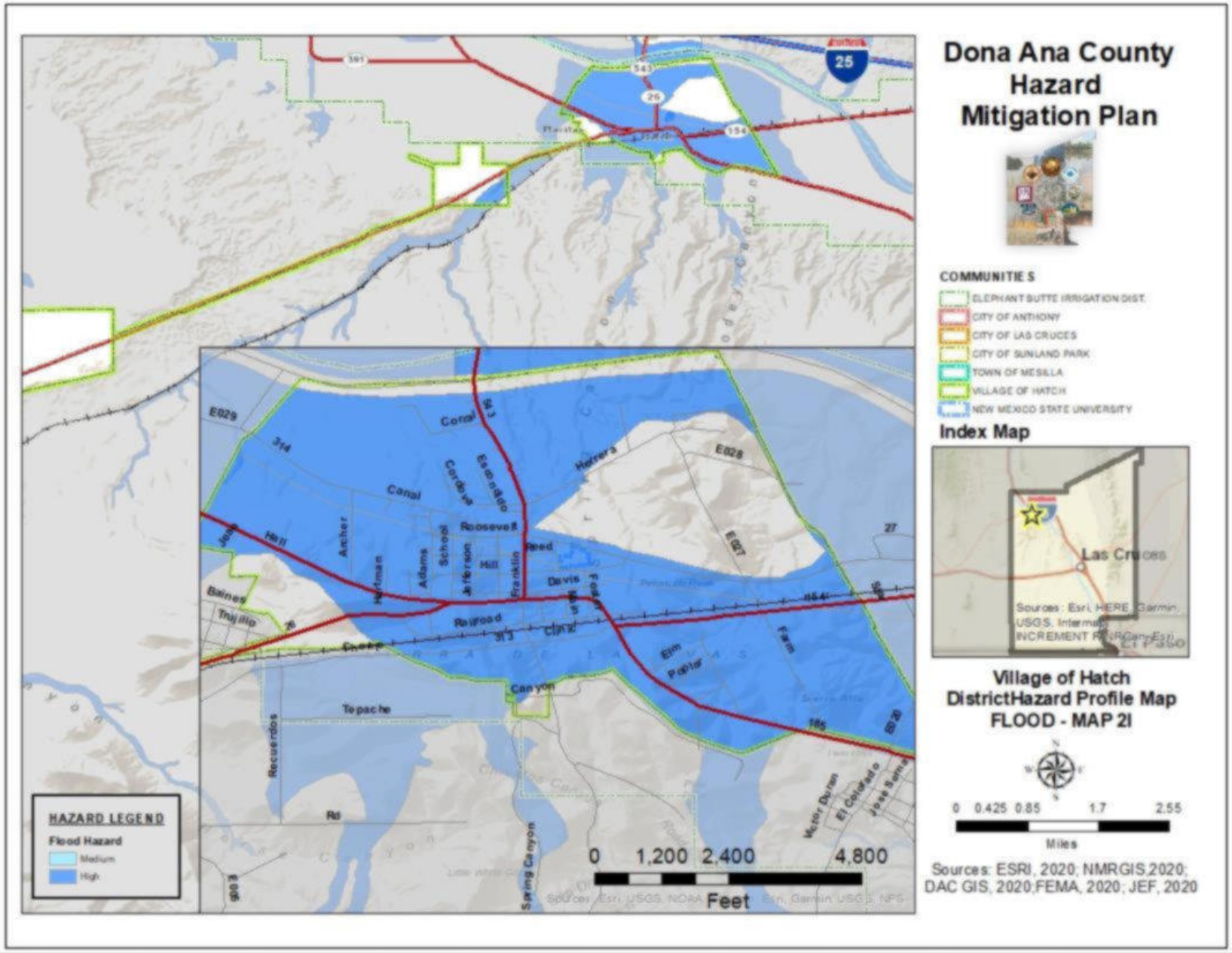

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FLOOD - MAP 2D
0 1.5 3 6 9
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020;FEMA, 2020; JEF, 2020
HAZARD LEGEND
Flood Hazard
Medium
High
UNITED STATES
Sources: Esri, USGS, NOAA

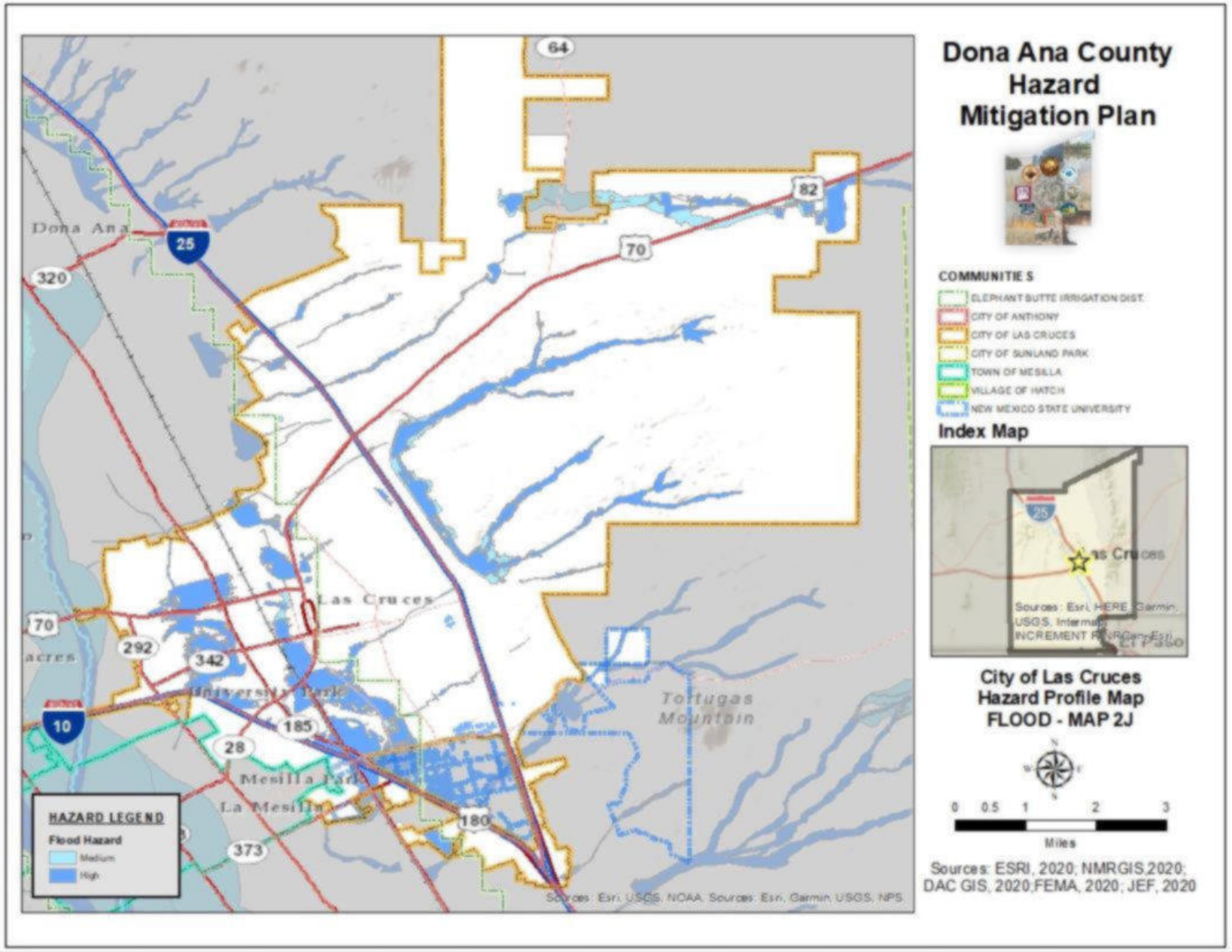

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Las Cruces
City of Anthony
Hazard Profile Map
FLOOD - MAP 2E
0 0.1 0.2 0.4 0.6
Miles
Sources: ESRI, 2020; NMRGIS,2020; DAC GIS, 2020;FEMA, 2020; JEF, 2020
HAZARD LEGEND
Flood Hazard
Medium
High
El Nogal
Lipps
Gazelle
Ohara
O Hara
Willow
Duffer
Putt
Eagle
Crossett
Anthony
Rainbow
Landers
Gannet
Acosta
Granite
Chert
Elm
Madero
Lopez
Helfinga
Madison
Polk
Van Buren
Lincoln
Livesay
Church
Hill
Mckinley
State Line
Washington
Jefferson
Franklin
Houston
Tamarisk
Godfrey
Antonio
Katy
Donaldson
Monroe
Adams
Grant
Ruth
Davis
Gorman
Ramsey
Archer
Marquez
San Andres
Sandia
Reagan
Longoria
Lee
Kolar
Timber
Timbers
Mcdonald
Charles
Richard White
Gack
Pena
10
25

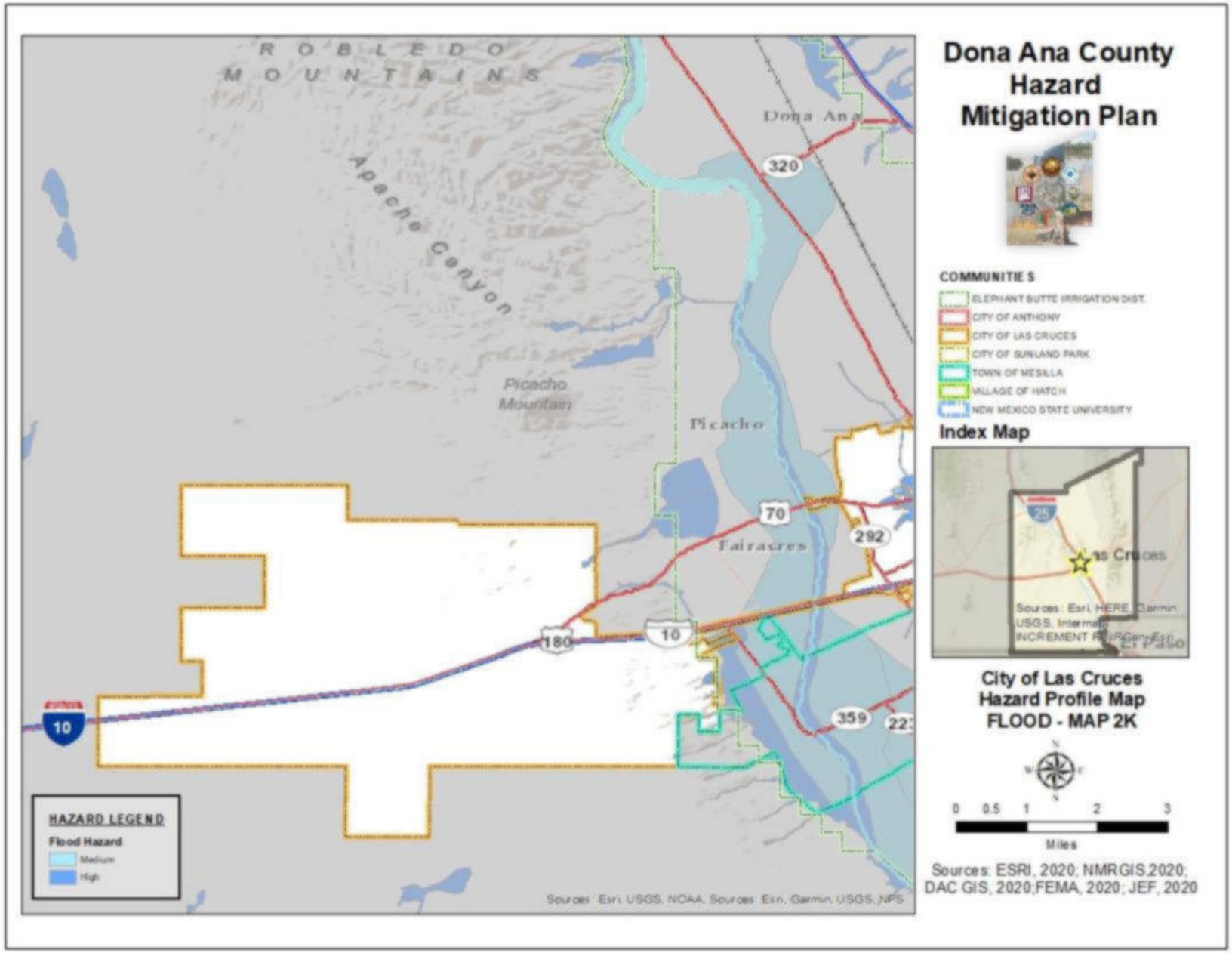

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NEW MEXICO STATE UNIVERSITY
Index Map
Las Cruces
Elephant Butte Irrigation DistrictHazard Profile Map
FLOOD - MAP 2F
0 1 2 4 6
Miles
Sources: ESRI, 2020; NMRGIS,2020; DAC GIS, 2020;FEMA, 2020; JEF, 2020
HAZARD LEGEND
Flood Hazard
Medium
High
Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS
MOUNTAIN
25

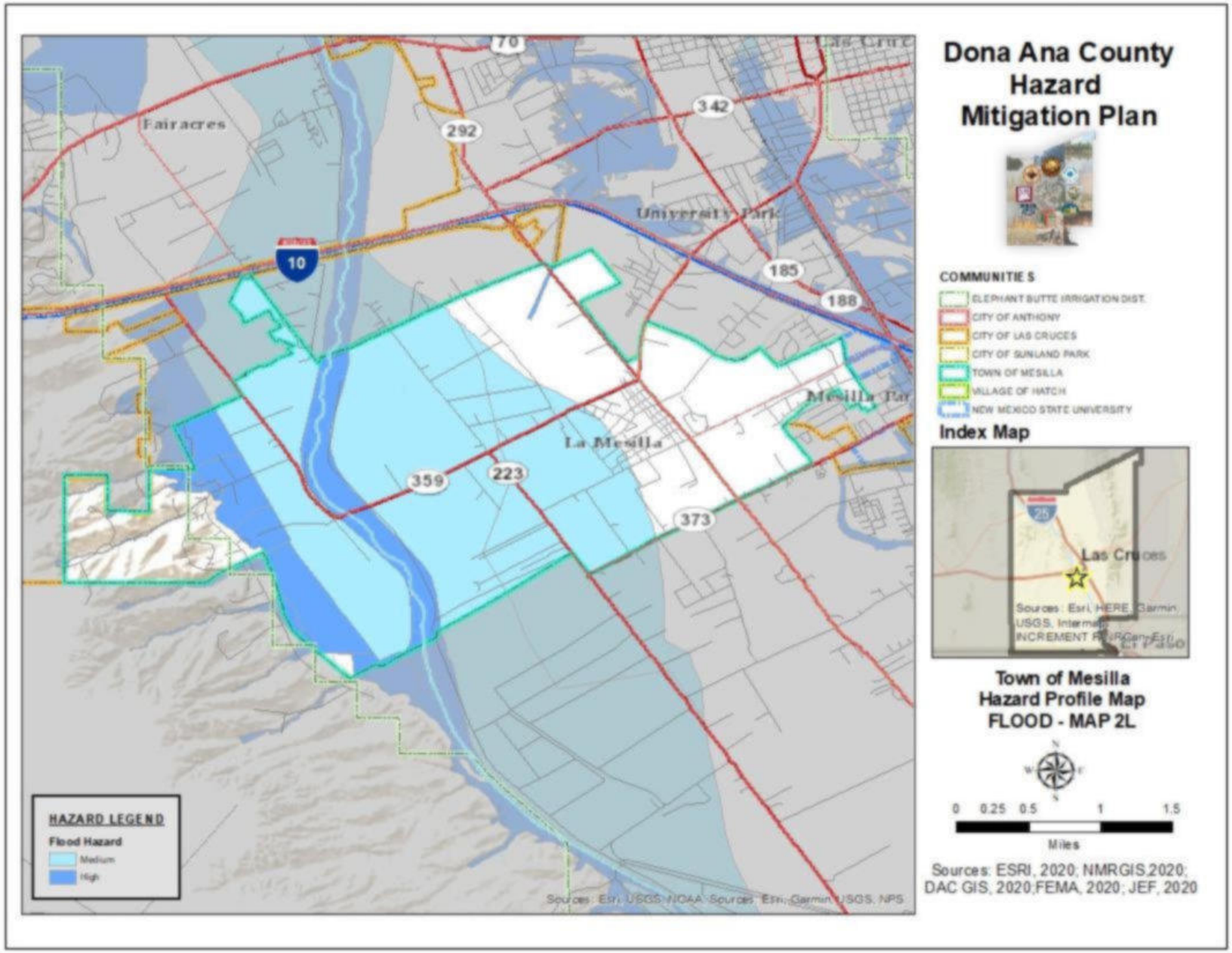

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CITY OF SUNLAND PARK
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Las Cruces
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, Esri
Elephant Butte Irrigation DistrictHazard Profile Map
FLOOD - MAP 2G
0 1 2 4 6
Miles
Sources: ESRI, 2020; NMRGIS,2020; DAC GIS, 2020;FEMA, 2020; JEF, 2020
HAZARD LEGEND
Flood Hazard
Medium
High
Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS
25
10

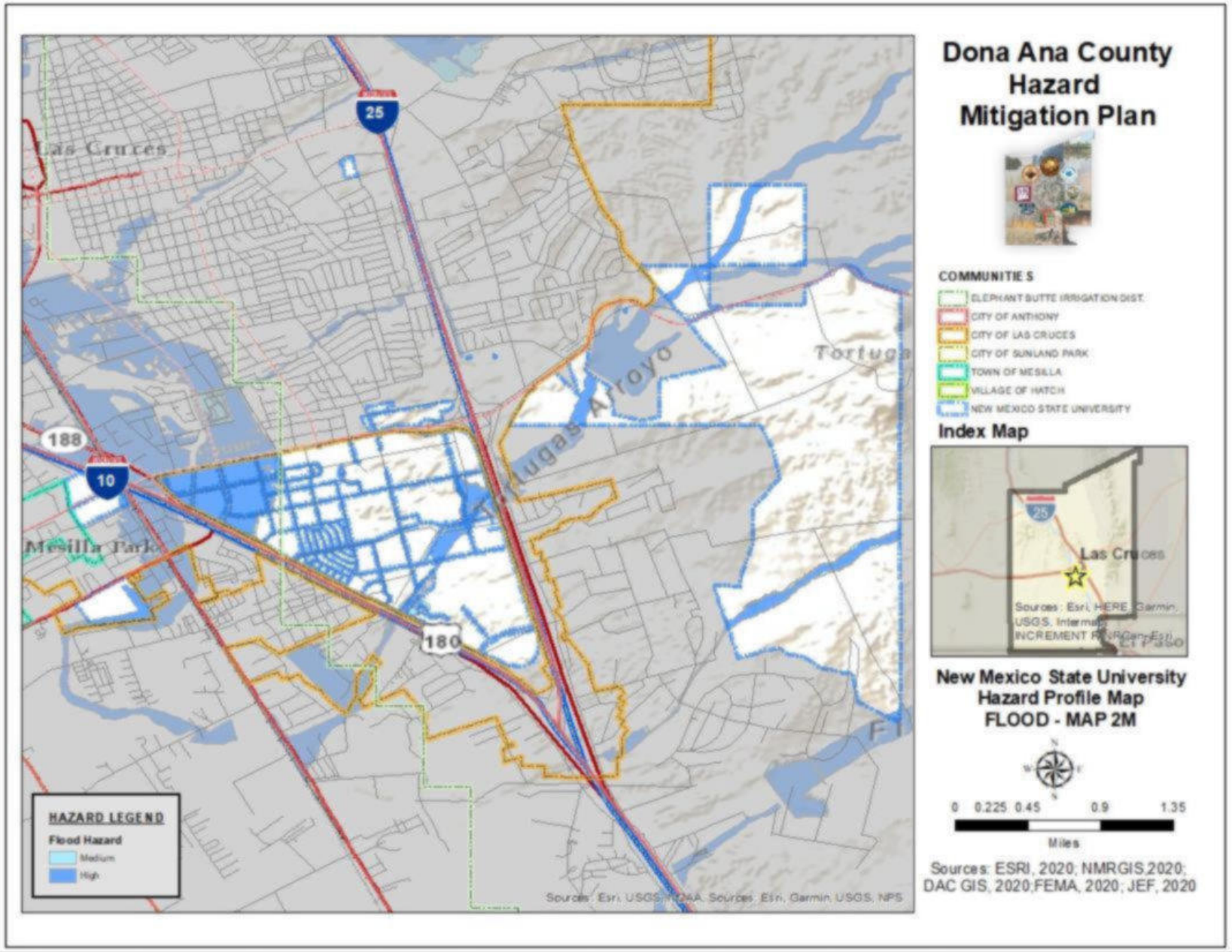

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FLOOD - MAP 2H
0 1 2 4 6
Miles
Sources: ESRI, 2020; NMRGIS,2020; DAC GIS, 2020;FEMA, 2020; JEF, 2020
HAZARD LEGEND
Flood Hazard
Medium
High
Anthony
Santa Teresa
Sources: Esri, USGS, NOAA, Esri, Garmin, USGS, NPS

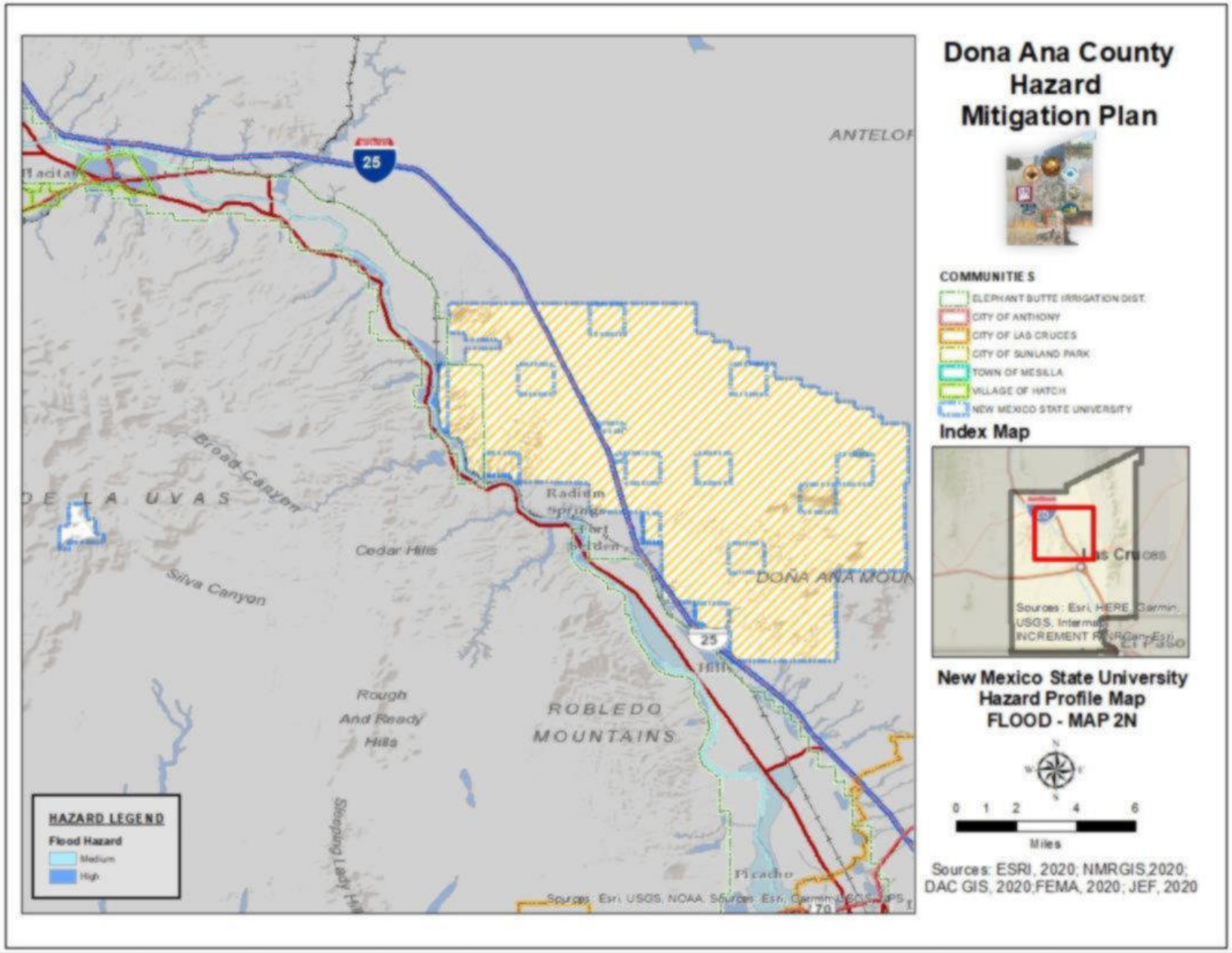

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Las Cruces
Village of Hatch
DistrictHazard Profile Map
FLOOD - MAP 2I
HAZARD LEGEND
Flood Hazard
Medium
High
0 1,200 2,400 4,800
Feet
0 0.425 0.85 1.7 2.55
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020;FEMA, 2020; JEF, 2020

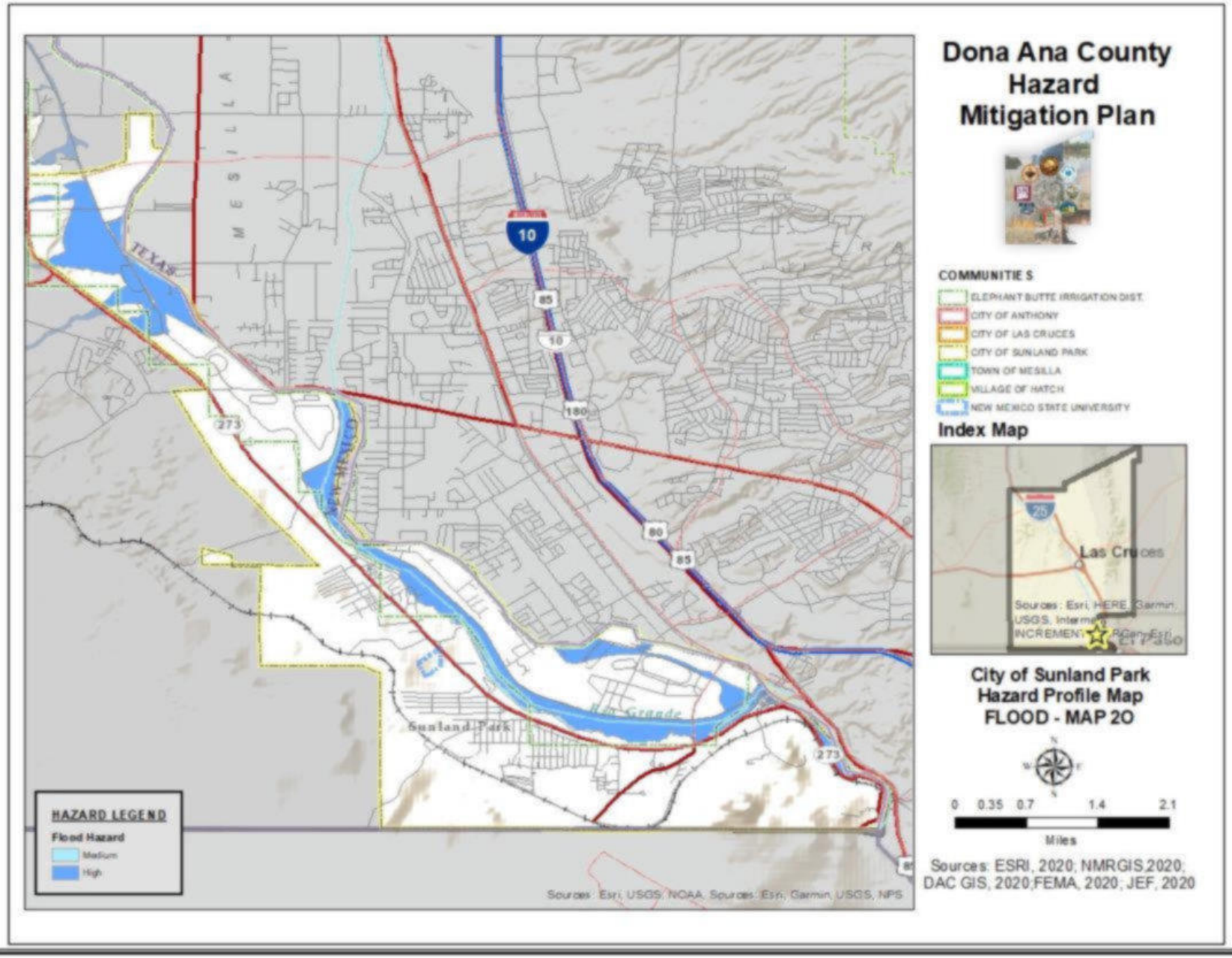

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City of Las Cruces Hazard Profile Map FLOOD - MAP 2J
HAZARD LEGEND
Flood Hazard
Medium
High
Las Cruces
Mesilla Park
La Mesilla
Tortugas Mountain
Dona Ana
0 0.5 1 2 3
Miles
Sources: ESRI, 2020; NMRGIS,2020; DAC GIS, 2020;FEMA, 2020; JEF, 2020


ROBLEDO MOUNTAINS
Apache Canyon
Picacho Mountain
Picacho
Fairacres
Dona Ana
320
70
292
180
10
359
HAZARD LEGEND
Flood Hazard
Medium
High
Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS
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CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri, El Paso
City of Las Cruces Hazard Profile Map FLOOD - MAP 2K
0 0.5 1 2 3
Miles
Sources: ESRI, 2020; NMRGIS,2020; DAC GIS, 2020;FEMA, 2020; JEF, 2020


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Index Map
Las Cruces
Town of Mesilla
Hazard Profile Map
FLOOD - MAP 2L
0 0.25 0.5 1 1.5
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020;FEMA, 2020; JEF, 2020
HAZARD LEGEND
Flood Hazard
Medium
High
Fairacres
University Park
La Mesilla
Mesilla Par
Las Cruc
70
342
292
10
185
188
359
223
373
Sources: Esri, USGS, NOAA Sources: Esri, Garmin, USGS, NPS


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TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
Las Cruces
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, Esri
El Paso
New Mexico State University
Hazard Profile Map
FLOOD - MAP 2M
0 0.225 0.45 0.9 1.35
Miles
Sources: ESRI, 2020; NMRGIS,2020; DAC GIS, 2020;FEMA, 2020; JEF, 2020
Las Cruces
Mesilla Park
Tortuga
Arroyo
25
10
188
180
HAZARD LEGEND
Flood Hazard
Medium
High
Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS


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CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
New Mexico State University
Hazard Profile Map
FLOOD - MAP 2N
0 1 2 4 6
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020;FEMA, 2020; JEF, 2020
HAZARD LEGEND
Flood Hazard
Medium
High
25
Broad Canyon
Cedar Hills
Silva Canyon
Rough
And Ready
Hills
ROBLEDO
MOUNTAINS
Picacho
Las Cruces
Sources: Esri, USGS, NOAA


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CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
Las Cruces
City of Sunland Park
Hazard Profile Map
FLOOD - MAP 20
0 0.35 0.7 1.4 2.1
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020;FEMA, 2020; JEF, 2020
HAZARD LEGEND
Flood Hazard
Medium
High
Sunland Park
Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

4.3.5 Severe Wind

Description

The hazard of severe wind encompasses all climatic events that produce damaging winds. For Doña Ana County, severe winds usually result from either extreme pressure gradients that can occur at any time of year, but are most common during the late fall, early winter and spring. The other primary sources of damaging winds are those that accompany thunderstorms. Thunderstorms can occur year-round and are usually associated with cold fronts in the winter, monsoon activity in the summer, and tropical storms in the late summer or early fall.

Three types of damaging wind related features typically accompany a thunderstorm; 1) downbursts, 2) straight line winds, and infrequently, 3) tornadoes.

Downbursts are columns of air moving rapidly downward through a thunderstorm. When the air reaches the ground, it spreads out in all directions, creating horizontal wind gusts of 80 mph or higher. Downburst winds have been measured as high as 140 mph. Some of the air curls back upward with the potential to generate a new thunderstorm cell. Downbursts are called macrobursts when the diameter is greater than 2.5 miles, and microbursts when the diameter is 2.5 miles or less. They can be either dry or wet downbursts, where the wet downburst contains precipitation that continues all the way down to the ground, while the precipitation in a dry downburst evaporates on the way to the ground, decreasing the air temperature and increasing the air speed. In a microburst the wind speeds are highest near the location where the downdraft reached the surface, and are reduced as they move outward due to the friction of objects at the surface. Typical damage from downbursts includes uprooted trees, downed power lines, mobile homes knocked off their foundations, block walls and fences blown down, and porches and awnings blown off homes.

Straight line winds are developed similar to downbursts, but are usually sustained for greater periods as a thunderstorms reaches the mature stage, traveling parallel to the ground surface at speeds of 75 mph or higher. These winds are frequently responsible for generating dust storms and sand storms, reducing visibility and creating hazardous driving conditions.

A tornado is a rapidly rotating funnel (or vortex) of air that extends toward the ground from a cumulonimbus cloud. Most funnel clouds do not touch the ground, but when the lower tip of the funnel cloud touches the earth, it becomes a tornado and can cause extensive damage. For Doña Ana County, tornadoes are the least common severe wind to accompany a thunderstorm.

History

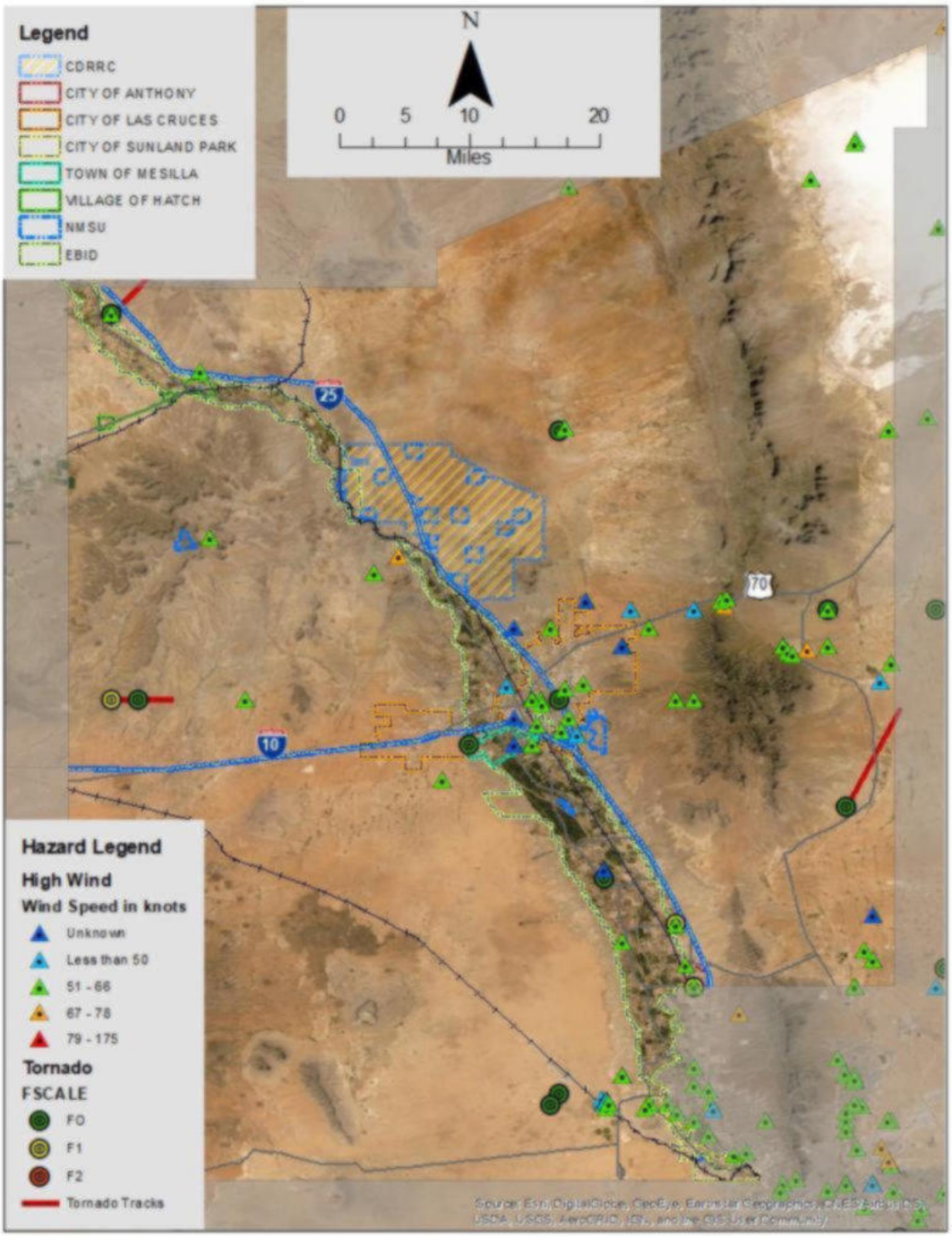
According to Table 4-2, between 1956 and 2019 there have been over 197 severe wind events documented for Doña Ana County with at least 2 associated injuries and almost $3.0 million in reported damages. In reality, strong winds are a way of life for most areas

of the County and severe wind events occur on a regular basis and especially during the spring and early summer months. These events do not always have reported damages however.

The following are examples of documented severe wind events that have occurred in the last five years:

- In July of 2014, A back door cold front moved into the region with east winds bringing in deep moisture up to about the Rio Grande Valley. Upper level flow was out of the northwest providing sufficient shear for some severe thunderstorms to develop and some isolated flash flooding. Wind gusts up to 66 mph and hail up to an inch and a half in diameter were reported. A trailer on Paloma Blanca in Chaparral, NM had its roof removed as a result of the severe wind event. This was reported on Twitter. Estimated damages were estimated to be $2,000. (NCDC, 2020)
- In November 2015, wind gusts up to 76 mph were reported about 5 miles south of Organ. Other reports across the zone included 60 mph at Dripping Springs and 58 mph at the Las Cruces Airport. A sign at Big 5 Sporting Goods was damaged by the wind as well and a piece landed on a customer's head which lead to that person being transported to the hospital. Damages were estimated to be $2,000. (NCDC, 2020)
- In June 2016, isolated thunderstorms developed in response to a weak upper trough moving through the Rio Grande Valley. One of these storms dropped a microburst in the Berino area which caused some structural damage, based upon pictures circulated on Facebook which indicated roof damage in Berino. Damages were estimated to be $3,000. (NCDC, 2020)
- In August 2016, thunderstorm winds blew off a 190 foot long horse barn roof in Anthony, NM. Damages were estimated to be $20,000. (NCDC, 2020)

Figure 4-8 presents a depiction of historic severe wind incident locations as reported by the NCDC for the period of record up to 2018. It is noted that this map is only intended to provide a visual view of incident locations, as provided in the NCDC database and is not intended to represent a predictive tool. There is insufficient data to establish any significant patterns or areas of increased risk due to high wind events.



Source: NCDC, 2020

Figure 4-8: Map of Severe Wind events for Doña Ana County

Probability

Many severe wind events are associated with thunderstorms. The probability of a severe thunderstorm occurring with high velocity winds increases as the average duration and number of thunderstorm events increases. The average duration of thunderstorms in Doña Ana County ranges from 30 to 60 minutes with approximately 40 events per year and most concentrated during the May to August timeframe.

To determine the probability of the planning area experiencing future high wind occurrences, the probability of occurrence was calculated based on historical data identified in the NCDC database from a period of 1956 to 2019. Probability was determined by dividing the number of events observed by the number of years and multiplying by 100. This gives a 100 % chance of the event happening in any given year.

Extent/Magnitude

The NWS issues a severe thunderstorm watch when conditions are favorable for the development of severe thunderstorms. The local NWS office considers a thunderstorm severe if it produces hail at least 3/4-inch in diameter, wind of 58 mph or higher, or tornadoes. When a watch is issued for a region, residents are encouraged to continue normal activities but should remain alert for signs of approaching storms, and continue to listen for weather forecasts and statements from the local NWS office. When a severe thunderstorm has been detected by weather radar or one has been reported by trained storm spotters, the local NWS office will issue a severe thunderstorm warning. A severe thunderstorm warning is an urgent message to the affected counties that a severe thunderstorm is imminent. The warning time provided by a severe thunderstorm watch may be on the order of hours, while a severe thunderstorm warning typically provides an hour or less warning time.

The American Society of Civil Engineers (ASCE) has identified a 3-second wind gust speed as the most accurate measure for identifying the potential for damage to structures, and is recommended as a design standard for wind loading. Most of Doña Ana County is designated with a design 3-second gust wind speed of 90 mph, indicating relatively low levels of risk from severe winds (ASCE, 1999). Likewise, FEMA identifies two design wind speed zones, Zone I and Zone II, as illustrated in Figure 4-9. In this zone, a design wind speed of 130 mph is recommended for the design and construction of community shelters in the western half of the county and 160 mph in the eastern half.

The Beaufort Wind Scale, shown below, provides a measure of wind magnitude versus expected damages. The Beaufort scale, indicated by Table 4-12 [32], is useful because it specifically addresses wind effects on land based on wind speed.

[32] Scale as depicted in the NM Natural Hazard Mitigation Plan, page 55.

Based on the historic record, the possibility of tornados occurring in Doña Ana County is probable. Tornado damage severity is measured by the Fujita Tornado Scale, which assigns a numerical value of 0 to 5 based on wind speeds, as shown in Table 4-13, with the letter F preceding the number (e.g., FO, F1, F2). Most tornadoes last less than 30 minutes, but some last for over an hour. The path of a tornado can range from a few hundred feet to miles. The width of a tornado may range from tens of yards to more than a quarter of a mile.

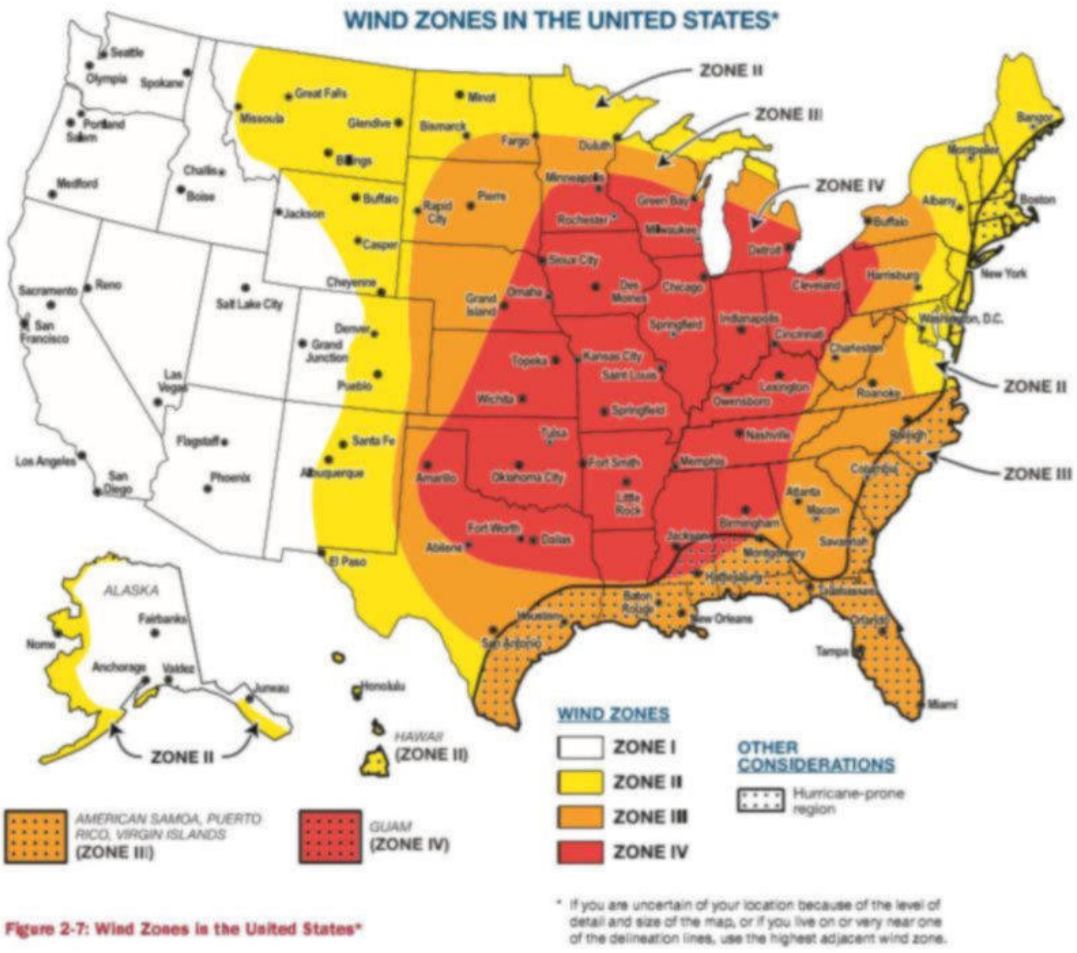


Figure 2-7: Wind Zones in the United States*

Source: Taking Shelter from the Storm, FEMA P-320, Fourth Edition, 2014, available at: https://www.fema.gov/media-library-data/1418837471752920f09bb8187ee15436712a3e82ce709/FEMA_P-320_2014_508.pdf
INSET: NMDHSEM, 2018

**Figure 4-9
Illustration of FEMA Wind Zones**

Table 4-12: Beaufort Scale

Beaufort Wind Scale			
Beaufort Number	**Wind Speed mph**	**Description**	**Land Conditions**
0	0	Calm	Calm. Smoke rises vertically.
1	1-3	Light air	Wind motion visible in smoke.
2	4-7	Light breeze	Wind felt on exposed skin. Leaves rustle.
3	8-12	Gentle breeze	Leaves and smaller twigs in constant motion.
4	13-18	Moderate breeze	Dust and loose paper rises. Small branches begin to move.
5	19-24	Fresh breeze	Smaller trees sway.
6	25-31	Strong breeze	Large branches in motion. Whistling heard in overhead wires. Umbrella use becomes difficult.
7	32-38	Near gale	Whole trees in motion. Effort needed to walk against the wind.
8	39-46	Gale	Twigs broken from trees. Cars veer on road.
9	47-54	Strong gale	Light structure damage.
10	55-63	Storm	Trees uprooted. Considerable structural damage.
11	64-73	Violent storm	Widespread structural damage.
12	73-95	Hurricane	Considerable and widespread damage to structures.

Table 4-13: Fujita Tornado Scale

Category	Wind Speed	Description of Damage
F0	40-72 mph	Light damage. Some damage to chimneys; break branches off trees; push over shallow-rooted trees; damage to sign boards.
F1	73-112 mph	Moderate damage. The lower limit is the beginning of hurricane speed. Roof surfaces peeled off; mobile homes pushed off foundations or overturned; moving autos pushed off roads.
F2	113-157 mph	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.
F3	158-206 mph	Severe damage. Roofs and some walls torn off well constructed houses; trains overturned; most trees in forest uprooted; cars lifted off ground and thrown.
F4	207-260 mph	Devastating damage. Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
F5	261-318 mph	Incredible damage. Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 100-yards; trees debarked.

Source: FEMA, 1997.

In summary, all jurisdictions within county are considered to be equally exposed to severe wind events. Based on historic records, the predominant tornado threat is occasional F0 category tornadoes and a moderate probability of Beaufort Number 10 and 11 category wind storms.

Vulnerability – CPRI Results

Severe Wind CPRI results for each community are summarized in Table 4-14 below.

Table 4-14: CPRI results by jurisdiction for severe wind

Participating Jurisdiction	Probability	Magnitude / Severity	Warning Time	Duration	CPRI Score
Anthony	Highly Likely	Critical	6-12 hours	< 24 hours	3.35
EBID	Highly Likely	Critical	> 24 hours	< 24 hours	3.05
Hatch	Possible	Limited	< 6 hours	< 1 week	2.40
Las Cruces	Highly Likely	Limited	6-12 hours	< 24 hours	3.05
Mesilla	Highly Likely	Negligible	> 24 hours	< 6 hours	2.35
NMSU	Highly Likely	Limited	< 6 hours	< 24 hours	3.20
Sunland Park	Likely	Limited	12-24 hours	< 24 hours	2.45
Unincorporated Doña Ana County	Highly Likely	Limited	12-24 hours	< 6 hours	2.80

Vulnerability – Loss Estimations

The entire county is assumed to be equally exposed to the damage risks associated with severe winds. Incidents are typically localized and damages associated with individual events are usually minor unless the event occurs within a densely populated area. Doña Ana County jurisdictions have experienced nearly $3.0 million in documented damages between 1956 and 2019, and a total of $2.52 million in damages from 90 events occurring since 2006 with one event causing over $2 million in damages. It is therefore reasonable to believe that an average annual county-wide loss of over $400,000 is possible. No estimates of losses for individual jurisdictions are made due to the lack of discrete data.

Vulnerability – Development Trend Analysis

Future development will expand the exposure of life and property to the damaging effects of severe wind events. Enforcement and/or implementation of modern building codes to regulate new developments in conjunction with public education on how to respond to severe wind conditions are arguably the best way to mitigate against losses. There is no geographical significance in the available data and no individual jurisdiction assessments are provided in this Plan.

Vulnerability – Jurisdictional Summary

As demonstrated in the previous discussions, there is little geographic difference in the severity of exposure to Severe Wind within the County and especially within the populated areas of the County. Accordingly, all of the participating jurisdictions except EBID are considered to be equally vulnerable to the hazard of Severe Wind, as summarized by the following crosswalk.

For the most part, EBID facilities and infrastructure are not greatly impacted by Severe Wind events, and therefore, EBID's vulnerability is considered to be at a nuisance level. For the rest of the participating jurisdictions, the given history of Severe Wind events and associated damages would indicate a county-wide vulnerability that is considered to be moderate. Accordingly, Severe Wind is a mitigation priority for all participating jurisdictions except EBID.

Jurisdiction	Vulnerability Rating	Mitigation Priority?	Notes
Anthony, Hatch, Las Cruces, Mesilla, NMSU, Sunland Park, Uninc. Doña Ana County	Moderate	Yes	There is no significant geographic variability in the severity or probability of Severe Wind events within the populated areas of the County. Since Severe Wind events primarily impact buildings and above ground structures, all of the listed jurisdictions are considered to be equally vulnerable.
EBID	Nuisance	No	EBID facilities are only vulnerable to Severe Wind events at a nuisance level and EBID does not consider this hazard to be a mitigation priority.

Sources

American Society of Civil Engineers, 1999, *ASCE 7-98: Minimum Design Loads for Buildings and Other Structures*.

Federal Emergency Management Agency, 1997, *Multi-Hazard Identification and Risk Assessment – A Cornerstone of the National Mitigation Strategy*.

U.S. Dept of Commerce, National Climatic Data Center, 2010, Storm Events Database, accessed via the following URL: http://www.ncdc.noaa.gov/stormevents/

U.S. Dept of Commerce, NOAA National Weather Service, Storm Prediction Center, SVRGIS database, accessed at the following URL: http://www.spc.noaa.gov/gis/svrgis/

Profile Maps

See Figure 4-8

4.3.6 Thunderstorms (Lightning & Hail)

Description

Thunderstorms is actually a grouping of two weather related hazards that are known to impact Dona Ana County and pose varying degrees of risk to the County's population and infrastructure. The hazards within this category are not severe enough to warrant an independent evaluation and assessment, but collectively are considered by the Planning Team to warrant attention and some level of profiling. The individual hazards considered under the overarching Thunderstorm Hazard include Hail and Lightening.

Hail ranks as one of the most frequent type of severe weather events in the county and is responsible for a considerable percentage of property and crop damage. Damaging or severe hail (0.75 inches and larger) is most common in May and June, although a significant number of hail reports also occur from July through September.

Lightning usually occurs as a result of thunderstorms that move through the area during the summer months, with peak lightning strikes occurring in July and August. Lightning does not normally cause significant damage to property; however, it is responsible for numerous power outages and is also the leading cause of weather-related injuries and fatalities in New Mexico. It is also a major source of wildfire ignitions.

History

Descriptions of significant Thunderstorm events that have occurred over the past 15 years are summarized below:

- On June 3, 2004, a merger of two severe thunderstorms resulted in a right-moving supercell affecting an area mainly west and north of Las Cruces, producing damaging winds and hail as large as golf balls. Hardest hit was the Las Cruces Airport, where a wind gust was measured at 62 mph and a tower was knocked down. Golf ball size hail caused extensive damage to some of the aircraft, especially helicopters owned by Southwest Air Ambulance. There was damage to the runway lighting system, and Southwest Aviation had roof damage. Numerous windows and windshields were shattered at a nearby prison facility. Property damage was estimated at $1.2 million. (NCDC, 2020) On September 13, 2006, A heavy precipitation supercell thunderstorm tracked from far eastern Luna County eastward along Interstate 10 through Las Cruces. This storm dropped golf ball size hail throughout most of its lifetime, resulting in a 4 car collision on Interstate 10 in far eastern Luna County, and hundreds of damaged roofs and automobiles and destroyed skylights in Mesilla and south Las Cruces. The US Border Patrol Checkpoint was evacuated. This was the costliest hailstorm in the history of the NWS El Paso county warning area, totaling more than $10 million in damage from large hail driven by strong winds. (NCDC, 2020)
- On August 19, 2014, six people, including several middle school football players were injured from the initial lightning strike from a nearby thunderstorm. No fatalities occurred with this lightning strike, but one student who was closest to the

strike suffered significant injuries and was in the hospital for over a week.

Probability

Thunderstorm events and the associated hazards addressed in this section typically occur multiple times during any given year and impact the entire County, although the frequency of damaging events may not be as often.

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Extent/Magnitude

Hail – According to the 2018 State Plan, hail usually occurs during severe thunderstorms, and may also be accompanied by frequent lightning, flash flooding, strong winds, and potentially tornadoes. Hail size ranges from smaller than a pea to as large as a softball, and can be very destructive to buildings, vehicles and crops. Even small hail can cause significant damage to young and tender plants. Hail usually lasts an average of 10 to 20 minutes but may last much longer in some storms. The following table is a combination of NOAA and the Tornado and Storm Research Organization (TORRO) size and damage intensity classifications for hail.

Combined NOAA/TORRO Hailstorm Intensity Scales					
	Intensity Category	Typical Hail Diameter (mm)*	Probable Kinetic Energy, J-m^2	Description	Typical Damage Impacts
H0	Hard Hail	5	0-20	Pea	No damage
H1	Potentially Damaging	5-15	>20	Mothball	Slight general damage to plants, crops
H2	Significant	10-20	>100	Marble, grape	Significant damage to fruit, crops, vegetation
H3	Severe	20-30	>300	Walnut	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scoured
H4	Severe	25-40	>500	Pigeon's Egg > Squash ball	Widespread glass damage, vehicle bodywork damage
H5	Destructive	30-50	>800	Golf ball > Pullet's egg	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40-60		Hen's egg	Bodywork of grounded aircraft dented, brick walls pitted
H7	Destructive	50-75		Tennis ball > cricket ball	Severe roof damage, risk of serious injuries
H8	Destructive	60-90		Large orange > Softball	Severe damage to aircraft bodywork
H9	Super Hailstorms	75-100		Grapefruit	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	>100		Melon	Extensive structural

Source: 2018 State Plan, Figure 4-188, pages 258-259

Figure 4-10 depicts past historic locations of hailstorms and their severity for Dona Ana County. Data for this map covers a period of 1956-2019 and there are 105 incidents reported for Dona Ana County, of which, a total of 98 occurred during 1990-2019.

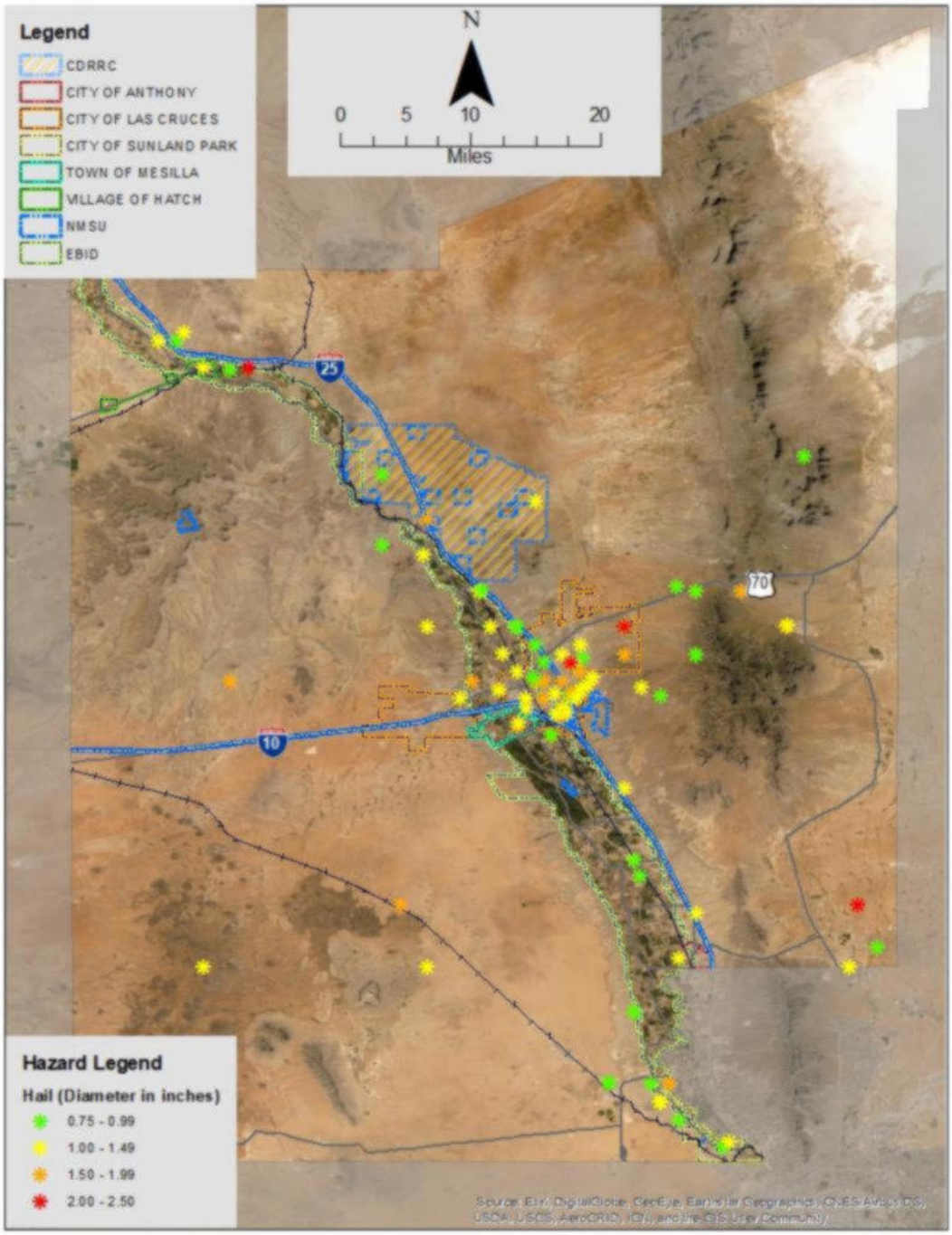


Figure 4-10: Historic Hail Incident Map

Lightning – According to Table 4-2, there have been four (4) reported incidents of lightning strike with at least 6 injuries. Lightning strikes, however, occur routinely throughout the thunderstorm season and less frequently throughout the rest of the year, with an annual recurrence probability of 1.0 (100%). For the period of 2015-2019, Figure 4-11 depicts the mean annual flash density (reported in flashes per square mile per year) for Southern New Mexico (Weather.gov, 2020). Most of the County and especially along the Rio Grande valley, the flash densities are around 16 to 32 flashes per square mile per year. Small portions, mostly in the eastern and western areas of the County, have flash densities ranging from 32 to 64 flashed per square mile per year.

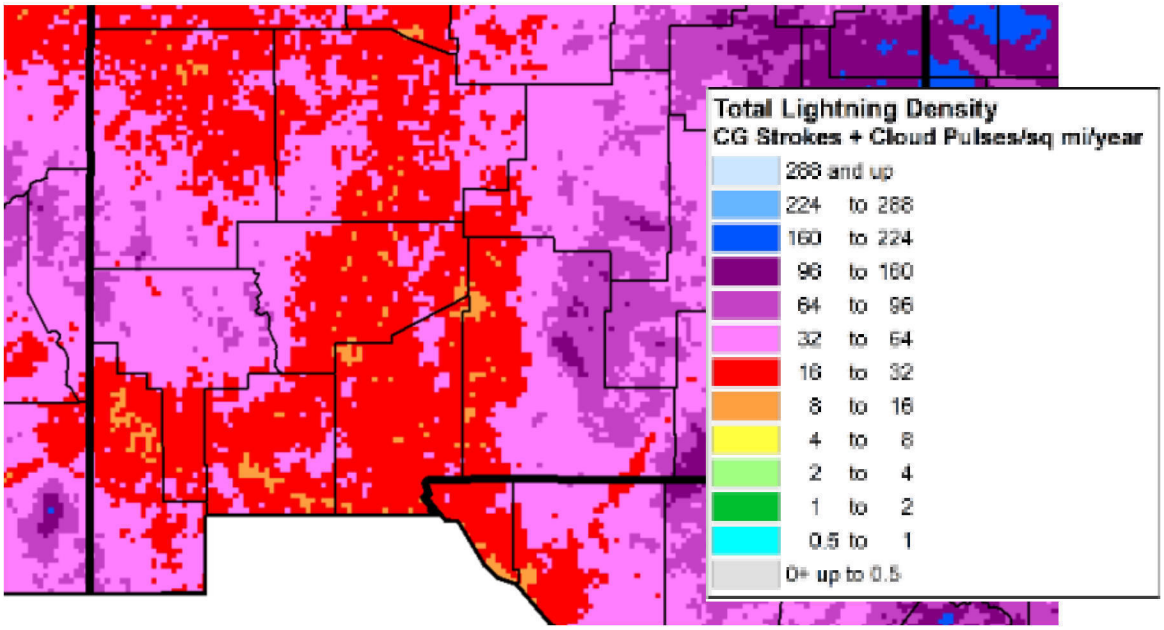


Figure 4-11: Lightning Flash Density Map

Vulnerability – CPRI Results

Severe Weather CPRI results for each community are summarized in Tables 4-15 and 4-16 below.

Table 4-15: CPRI results by jurisdiction for Severe Weather – Hail

Participating Jurisdiction	Probability	Magnitude/ Severity	Warning Time	Duration	CPRI Score
Anthony	Possible	Negligible	< 6 hours	< 6 hours	1.90
EBID	Highly Likely	Limited	< 6 hours	< 6 hours	3.10
Hatch	Possible	Negligible	< 6 hours	< 6 hours	1.90
Las Cruces	Possible	Limited	< 6 hours	< 6 hours	2.20
Mesilla	Likely	Limited	6-12 hours	< 6 hours	2.50
NMSU	Possible	Limited	< 6 hours	< 6 hours	2.20
Sunland Park	Likely	Limited	< 6 hours	< 6 hours	2.65
Unincorporated Doña Ana County	Possible	Negligible	< 6 hours	< 6 hours	1.90

Table 4-16: CPRI results by jurisdiction for Severe Weather – Lightning					
Participating Jurisdiction	**Probability**	**Magnitude/ Severity**	**Warning Time**	**Duration**	**CPRI Score**
Anthony	Possible	Negligible	< 6 hours	< 6 hours	1.90
EBID	Highly Likely	Limited	< 6 hours	< 6 hours	3.10
Hatch	Unlikely	Negligible	< 6 hours	< 6 hours	1.45
Las Cruces	Possible	Limited	< 6 hours	< 6 hours	2.20
Mesilla	Unlikely	Catastrophic	6-12 hours	< 6 hours	2.50
NMSU	Possible	Limited	< 6 hours	< 6 hours	2.20
Sunland Park	Likely	Limited	< 6 hours	< 6 hours	2.65
Unincorporated Doña Ana County	Unlikely	Negligible	< 6 hours	< 6 hours	1.45

Vulnerability – Loss Estimations

In general, no quantitative estimations of potential losses will be made for Thunderstorm events in this Plan. Instead, the following paragraphs are general qualitative discussions of loss potential for each of the sub-hazards.

Hail – As previously stated, economic impacts and losses due to hail damage are significant both in Dona Ana County and statewide. Deaths or injuries associated with hailstorms in the Dona Ana County area are rare. Accordingly, any hail incident with quarter size or larger hailstones can cause significant damages with multi-million dollar losses, and especially within populated areas or sub-standard housing areas. Deaths or injuries are possible, but not probable.

Lightning – Facility and infrastructure losses due to lightning strikes are typically isolated to a single structures and can sometimes be significant depending on the systems impacted and damages caused. Often, lightning strikes on structures result in significant damages to the electrical systems and electronics, and occasionally ignite structure fires. The greater impacts are the human losses in the forms of injury and death. Historically, there have been six lightning caused injuries in the County. It is probable that future death and/or injuries may result from lightning strikes.

Vulnerability – Development Trends

Growth within Dona Ana County and the participating jurisdictions will increase the exposure to Severe Weather events. Practical use and enforcement of modern building codes and continuous public education regarding the dangers of the Thunderstorm hazards and protection from the hazards will go a long ways towards providing effective mitigation for Thunderstorm events. Organizations with greater exposure and resources, may look at installing surplus fuel storage tanks and backup power generation equipment.

Vulnerability – Jurisdictional Summary

As discussed in the sections above, there are geographical variations of exposure to the Severe Weather hazards evaluated in this Plan. A crosswalk providing a brief summary of the Severe Weather hazards by jurisdiction is provided below.

Jurisdiction	Vulnerability Rating	Mitigation Priority?	Notes
Anthony, Hatch, Sunland Park, Las Cruces, Mesilla, NMSU, Unic. Doña Ana County	Moderate	Yes	The exposure to Thunderstorm hazards county-wide varies geographically, however, the villages, towns, cities, and populated areas of Unincorporated Dona Ana County and the are primarily considered to be, on average, at a moderate level of vulnerability.
EBID	Nuisance	No	Very few EBID facilities are vulnerable to damage or loss due to Severe Weather events except from an operational perspective, and then only at a nuisance vulnerability.

Sources

National Weather Service, Lightning Science, 2020, Cloud-to Ground Lightning Flashes By State: 2009-2018, as accessed at: https://www.weather.gov/images/safety/lightning/15-19_5yrAvgTotalLightningDensity_2mi.png

FEMA, 1997, Multi-Hazard Identification & Risk Assessment – A Cornerstone of the Nat'l Mitigation Strategy.

National Weather Service, URL: http://www.nws.noaa.gov/om/windchill/

New Mexico Department of Homeland Security and Emergency Management, 2018, New Mexico Natural Hazard Mitigation Plan.

Western Regional Climate Center, URL: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?nm8535

Profile Maps

See the preceding figures and maps for hazard profile information. No additional mapping is provided.

4.3.7 Wildfire

Description

A wildfire is an uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures. They often begin unnoticed, spread quickly, and are usually signaled by dense smoke. Wildfires can be human-caused through acts such as arson, unattended campfires, or the improper burning of debris, or even an errant cigarette butt. Naturally sparked wildfires are usually caused by 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 urban-wildland interface 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.

The following three factors contribute significantly to wildfire behavior and, as detailed more fully later, 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 greater solar radiation, making them drier and thereby intensifying wildfire behavior. However, ridgetops may mark the end of wildfire spread, since 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. Each fuel is assigned a burn index (the estimated amount of potential energy released during a fire), an estimate of the effort required to contain a wildfire, and an expected flame length.
- ***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 frequency and severity of wildfires is also impacted by other hazards, such as lightning, drought, and infestations (e.g., Pine Bark Beetle, Salt Cedar and Buffelgrass). These hazards combine with the three other wildfire contributors noted above (topography, fuel, weather) to present an on-going and significant hazard across much of New Mexico.

If not promptly controlled, wildfires may grow into an emergency or disaster. Even small grass fires can threaten lives, resources, and destroy improved properties. It is also important to note that in addition to affecting people, wildfires may severely affect livestock, pets, wildland animals, and aquatic habitat. Such events may require the emergency watering/feeding, shelter, evacuation, and increased event-caused deaths and burying of animals.

The indirect effects of wildfires can also 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 capacity to absorb moisture and support life. Exposed soils erode quickly and the resulting siltation of rivers and streams only enhances flood potential, harms aquatic life and degrades water quality. Steep lands stripped of vegetation are also subject to increased landslide hazards.

History

According to the 2012 Community Wildfire Protection Plan for Doña Ana County (SWCA, 2012), there have been 817 fires in the County from 1981 to 2011. Most of these fires were under 100 acres in size and were quickly controlled and put out. The National Wildfire Coordination Group (NWCG, 2020) has archived the ICS 209 reports for wildfires greater than 100 acres for the period of 2002 to 2013. Additional historical fire data is provided for Federal Wildland Fire Occurrences through the United State Geologic Survey from 1982 to 2016. Based upon this data, an additional 4 fires over 100 acres in size occurred between 2013 and 2016. Fires greater than 1,000 acres that have occurred in the last ten years are described below in chronological order:

- On June 15, 2010, the Fort Bliss 2 Fire was ignited by human causes and burned an area south of Soledad Canyon, New Mexico. The fire was contained June 25, 2010 and burned a total of 5,160 acres. Fire suppression costs were estimated at over $900,000. (NWCG, 2011).
- On June 20, 2010, the Long Canyon Fire was ignited by human causes and burned an area four miles east of Las Cruces, New Mexico in the Organ Mountains. The fire was contained June 24, 2010 and burned a total of 2,582 acres. Fire suppression costs were estimated at over $850,000.
- On April 3, 2011, the Green Chile Fire was ignited by human causes and burned an area approximately 9 miles southwest of Hatch, New Mexico near the county line. The fire was contained on April 3, 2011 and burned a total of 1,400 acres. Fire suppression costs were estimated at $30,000. (NWCG, 2020).
- On April 20, 2011, the Range 66B Fire was ignited by human causes and burned an area approximately 11 miles east of Las Cruces, New Mexico on the east side of the

Organ Mountains. The fire was contained the same day and burned a total of 1,100 acres. (USGS, 2020).

- On June 10, 2011, the Augustine Fire was ignited by human causes and burned an area approximately 6 miles east of Las Cruces, New Mexico in the Organ Mountains. The was contained June 15, 2011 and burned a total of 1,472 acres. Fire suppression costs were estimated at $60,000.00. (NWCG, 2020).
- Maps 3A through 3D provide a graphical depiction of the 100 acre plus wildfires for the 2002-2011 period (NWGC, 2011).

As noted in the above discussions and Maps 3A through 3D, there have only been nine wildfires exceeding 100 acres recorded in the NWGC database and USGS Wildland Fire Occurrence database for the period of 2002-2016. All nine occurred within remote areas of the unincorporated county and the 1,050 acre River Fire occurred within the EBID boundaries south of the Village of Hatch.

Probability

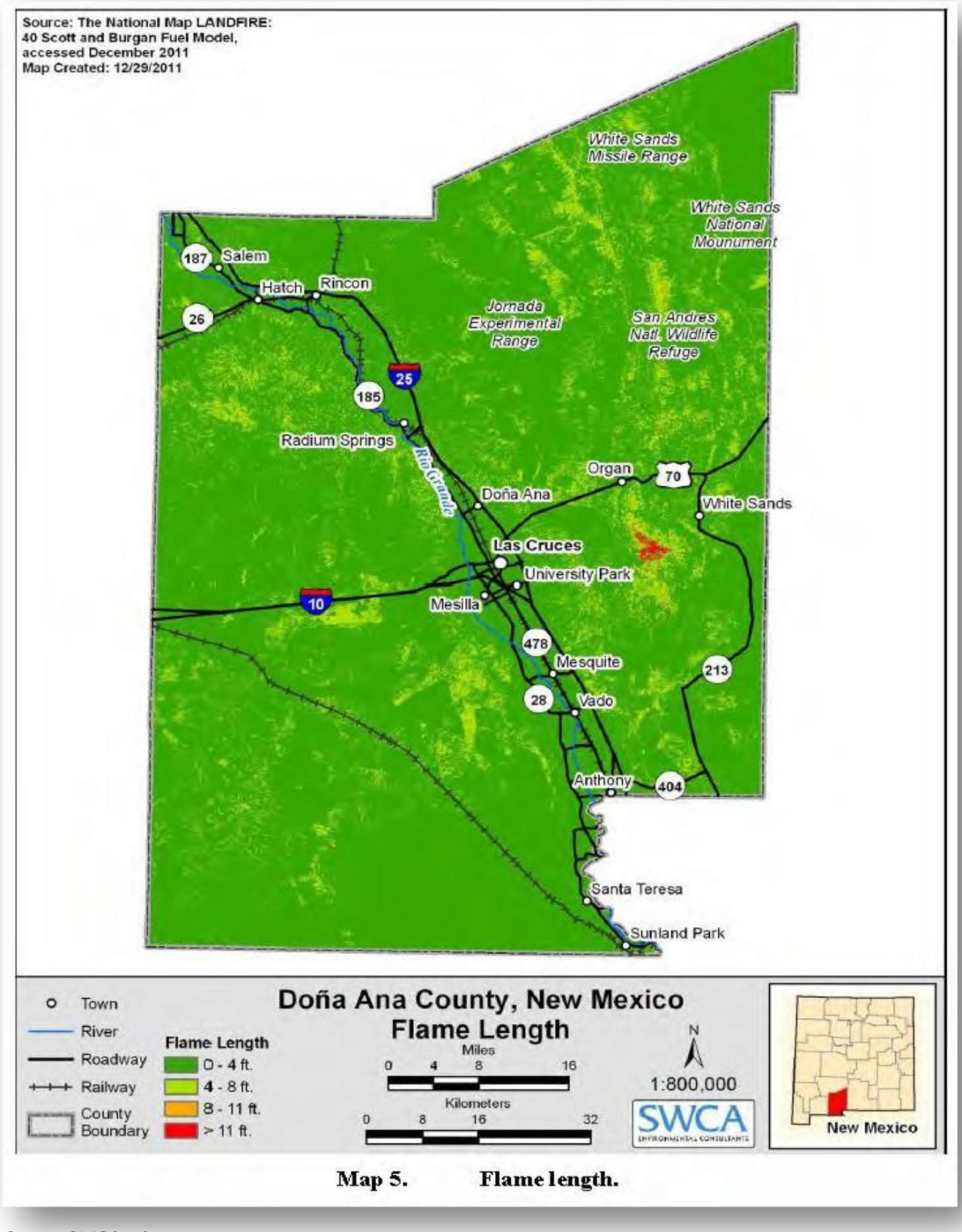
There are no readily available probability statistics for wildfire occurrence in the County. Based upon the historic record however, the probability of the occurrence of at least one wildfire within the County limits is nearly 100%.

Extent/Magnitude

The extent and magnitude of wildfire incidents for Doña Ana County are influenced by numerous factors including vegetation densities, previous burn history, hydrologic conditions, climatic conditions such as temperature, humidity, and wind, ignition source (human or natural), topographic aspect and slope, and remoteness of area.

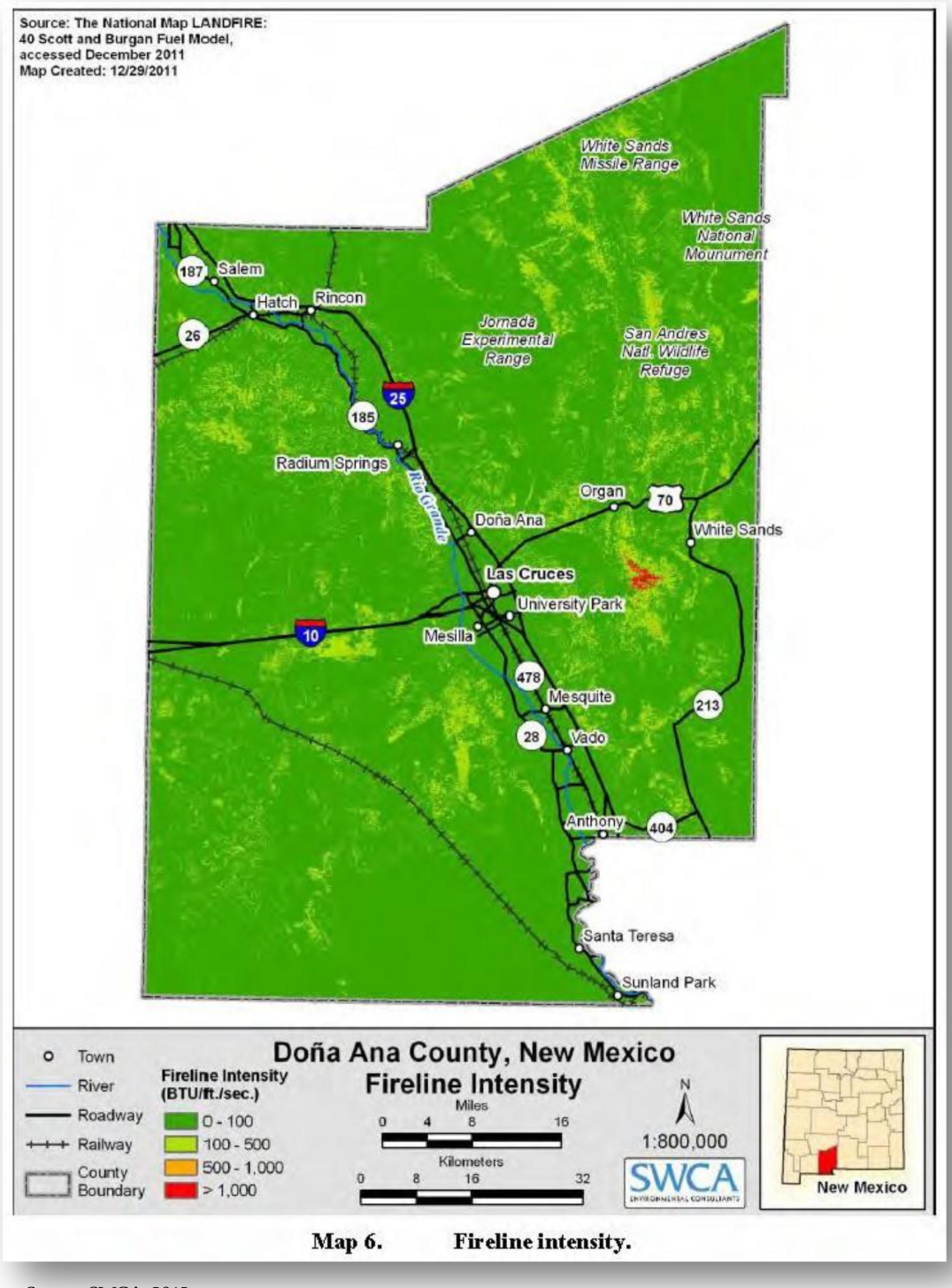
Doña Ana County and various cooperating stakeholders have collaborated to prepare the Doña Ana County CWPP (SWCA, 2012), which establishes the Wildland Urban Interface (WUI) areas for the county and maps various wildfire risk elements such as vegetative fuels and densities, topographical slope and aspect, previous burn areas and ignition points, and prior treatment areas, rate of spread, crown speed, etc. Maps from the CWPP depicting estimates for Flame Length, Fireline Intensity, Rate of Spread, and Crown Fire Activity are presented in Figures 4-13 through 4-15. Each map provides both a geographic extent and overall range of intensity for each of these wildfire characteristics. In general, the more severe areas tend to be located in the mountainous and plateau areas of the county where vegetation densities are higher and slopes are steeper. The majority of the Rio Grande valley area is generally classified in the less severe ranges of these characteristics and is generally where most of the population is located.

Wildfire sizes in the county have historically ranged from 1 acre to over 5,000 acres, with the majority being less than 100 acres. For the more populace areas of the county, it is expected that the majority of fire sizes will be limited to 100 acres or less, primarily due to the less severe nature of the fires and a faster response time. Larger fires are expected to be limited to the unpopulated plateau and mountainous areas, with limited frequency.



Source: SWCA, 2012

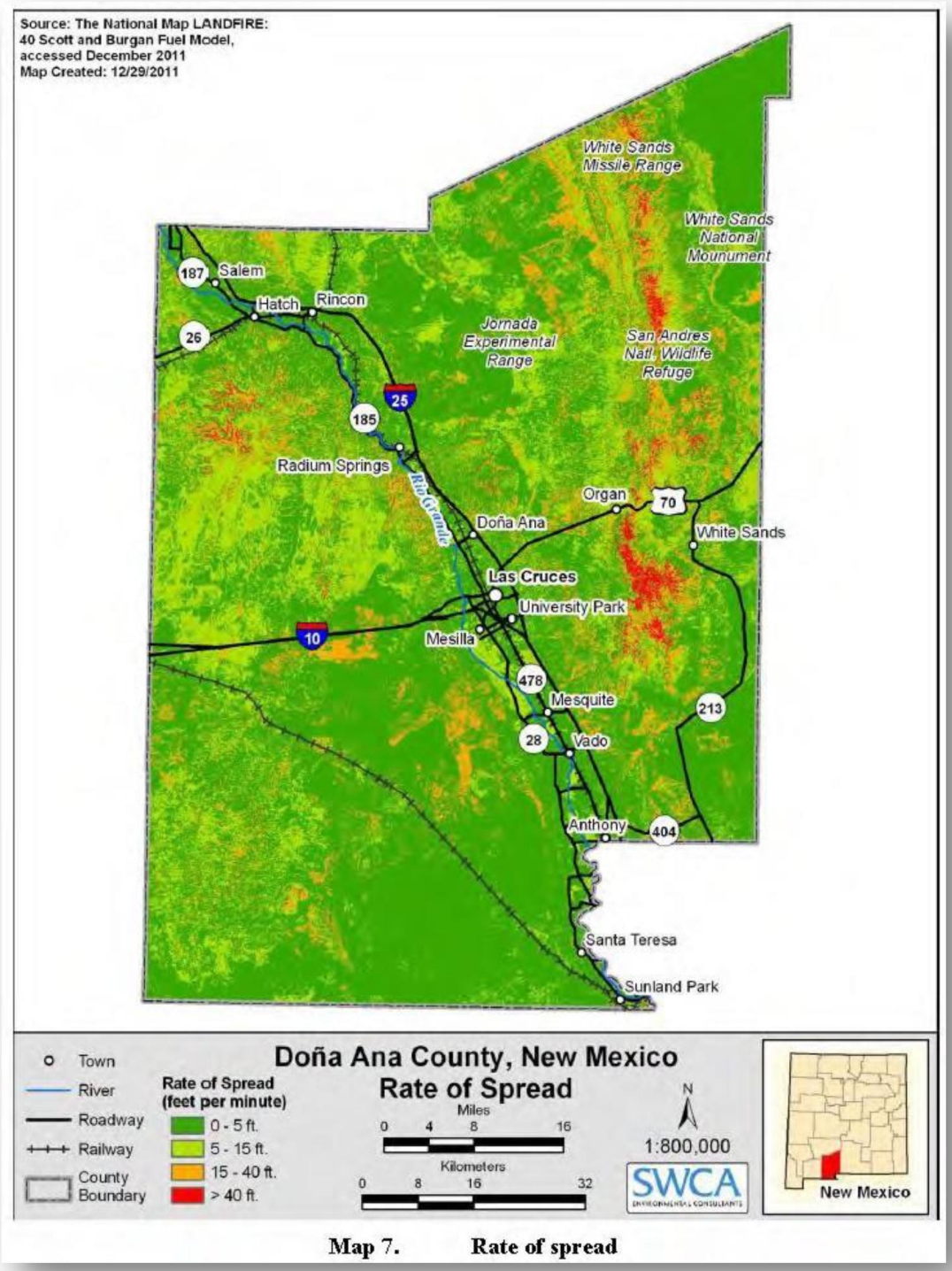
**Figure 4-12
CWWP wildfire flame length map**



Map 6. Fireline intensity.

Source: SWCA, 2012

Figure 4-13
CWWP fireline intensity map



Map 7. Rate of spread

Source: SWCA, 2012

Figure 4-14
CWWP wildfire rate of spread map



Map 8. Crown fire activity.

Source: SWCA, 2012

Figure 4-15
CWWP crown fire activity map

The CWPP documents the procedure used by the CWPP planning team for developing a county-wide wildfire risk coverage using GIS and various data sets and fire models, which is graphically illustrated by Figure 4-16 below. The resultant composite risk coverage is used in this Plan to represent the wildfire risk for the County. The wildfire composite risk coverage is a 30-meter (98 foot) raster grid, with raster values that range from 1-4 to represent a graduated scale of fire risk where: 1 = LOW, 2 = MEDIUM 3 = HIGH, and 4 = EXTREME. Each of these hazard classifications represent a range of severity and inherently include considerations for extent and magnitude. Each of these classifications are adopted for this Plan.

Maps 3A through 3D show the wildfire hazard areas for the entire county. Maps 3E through 3O show the wildfire hazard areas for Anthony, EBID, Hatch, Las Cruces, Mesilla, NMSU, and Sunland Park.

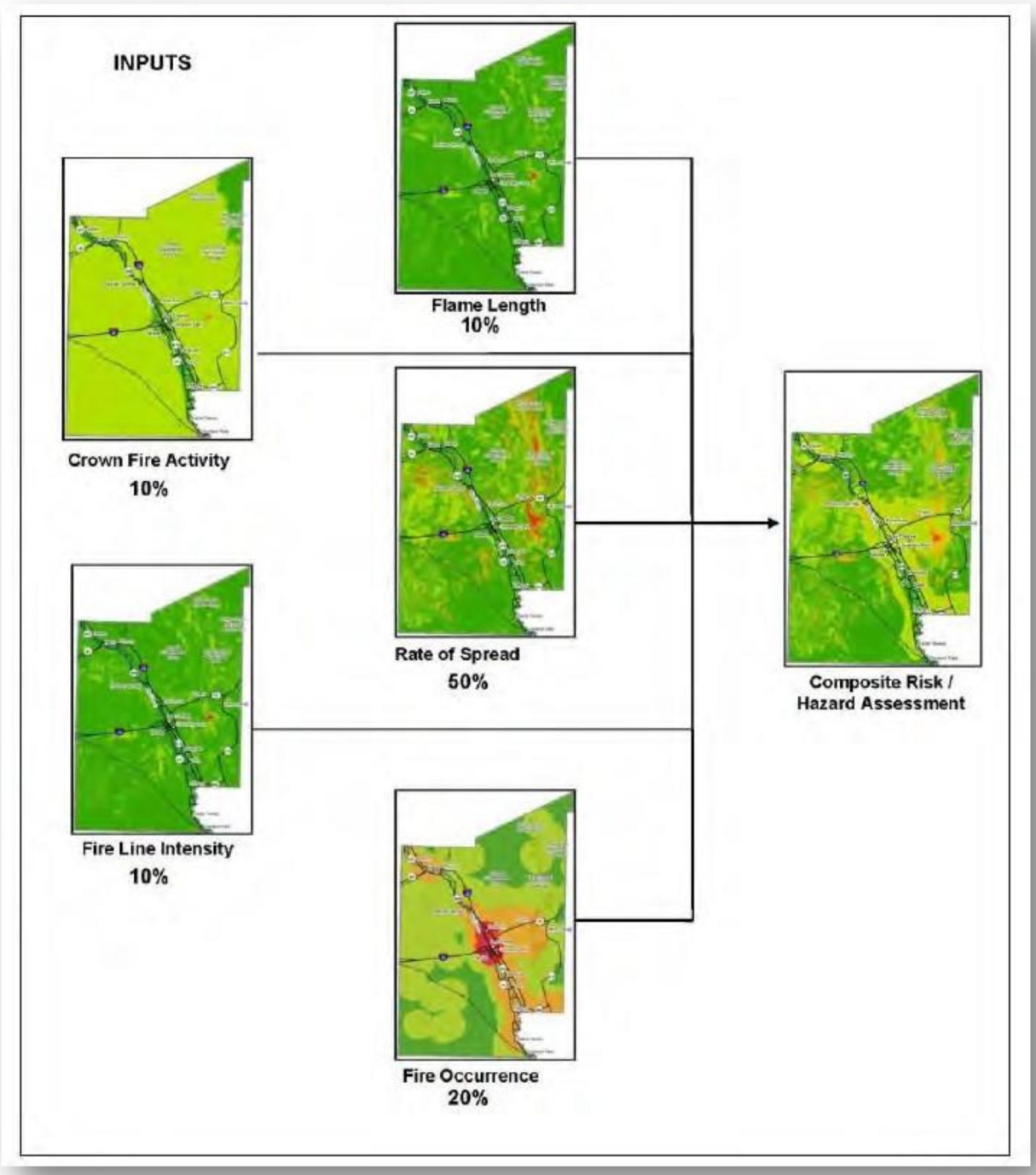
In summary, there are only very small pockets of EXTREME wildfire hazard and they are mostly found in the Organ Mountains around the Organ Peak area of the Unincorporated County. There is also a very small patch of EXTREME wildfire area within Sunland Park in a dense mesquite bosque area adjacent to the Rio Grande just south of the river's entrance into the city. Most of Anthony, EBID, Hatch, and Sunland Park are characterized by LOW and MEDIUM wildfire areas. Small areas of HIGH wildfire risk are scattered throughout the jurisdictional limits and mostly occur in areas of increased vegetation and slope. Las Cruces and NMSU properties are mostly indicated to be within a MEDIUM wildfire risk with small patches of HIGH wildfire risk along the steeper arroyo canyons and areas of increased fuel loads. Mesilla is almost entirely within a MEDIUM wildfire hazard area with a few small patches of High-Risk areas that correspond to heavier vegetative densities.

Vulnerability – CPRI Results

Wildfire CPRI results for each community is summarized in Table 4-17 below.

Table 4-17: CPRI results by jurisdiction for wildfire

Participating Jurisdiction	Probability	Magnitude / Severity	Warning Time	Duration	CPRI Score
Anthony	Unlikely	Negligible	< 6 hours	< 6 hours	1.45
EBID	Likely	Limited	< 6 hours	< 1 week	2.85
Hatch	Unlikely	Negligible	< 6 hours	< 6 hours	1.45
Las Cruces	Unlikely	Negligible	< 6 hours	< 6 hours	1.45
Mesilla	Likely	Limited	6-12 hours	< 1 week	2.70
NMSU	Unlikely	Limited	< 6 hours	> 1 week	2.05
Sunland Park	Unlikely	Negligible	< 6 hours	< 6 hours	1.45
Unincorporated Doña Ana County	Likely	Limited	< 6 hours	< 24 hours	2.75



Source: SWCA, 2012 – Figure 4.1, page 45

Figure 4-16

CWPP wildfire composite risk model schematic

Vulnerability – Loss Estimations

The estimation of potential exposure to EXTREME, HIGH, and MEDIUM wildfire hazards was accomplished by intersecting the human and facility assets with the wildfire hazard limits depicted on Maps 3A – 3O. Loss to exposure ratios of 0.50 (50%), 0.20 (20%) and 0.05 (5%) were assumed to estimate losses for all facilities located within the EXTREME, HIGH, and MEDIUM wildfire hazard areas, respectively. Table 4-18 summarizes the critical facility, population, and residential housing unit exposure estimates for the HIGH and MEDIUM wildfire hazard limits. No facilities or human population were estimated to be located within and EXTREME wildfire hazard area. Estimates are reported by jurisdiction and county-wide.

In summary, $203.2 and $87.7 million in critical facility related losses are estimated for high and medium wildfire hazards, for all the participating jurisdictions in Doña Ana County. An additional $121 and $730 million in high and medium hazard wildfire losses to 2010 Census defined residential housing units are estimated for all Doña Ana County jurisdictions. It should be noted that these exposure dollar amounts do not include the cost of wildfire suppression, which can be substantial. For example, deployment of a Type 1 wildland firefight crew costs about $1 million per day. Regarding human vulnerability, a county-wide population of 7,221 and 161,566 people, or 3.45% and 77.22% of the total, are potentially exposed to a HIGH and MEDIUM hazard wildfire events, respectively. Typically, deaths and injuries not related to firefighting activities are rare. However, it is feasible to assume that at least one death and/or injury may be plausible. There is also a high probability of population displacement during a wildfire event, and especially in the urban wildland interface areas.

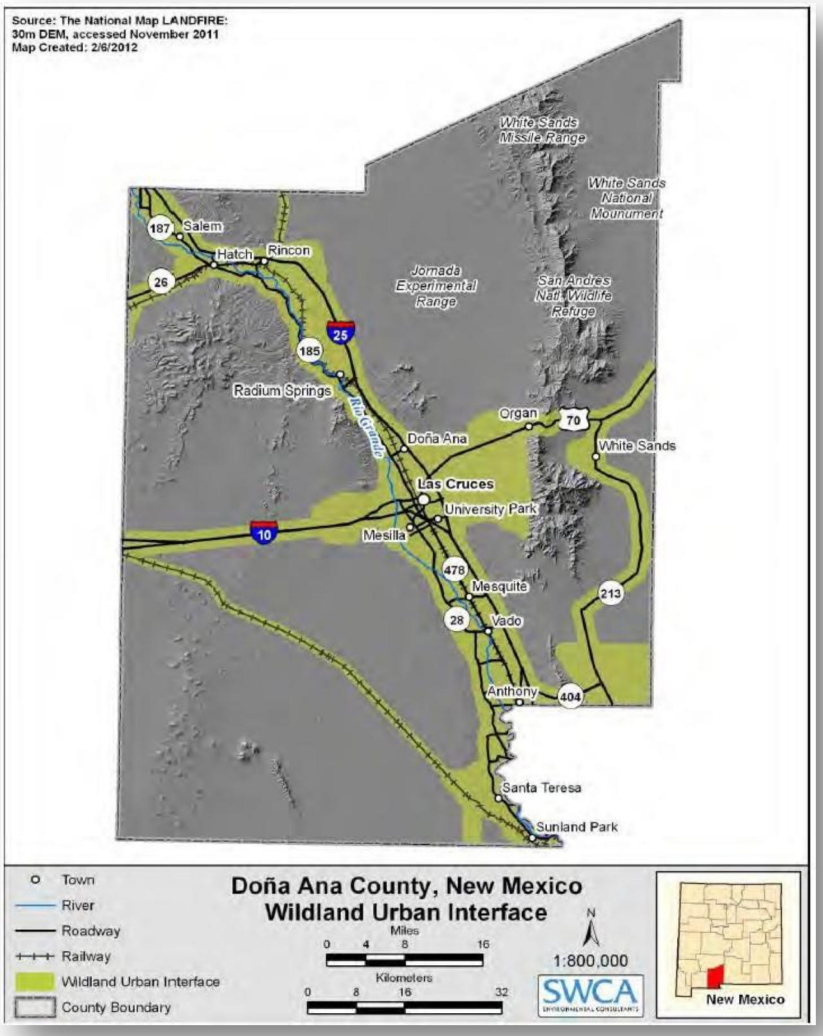
It is duly noted that the loss and exposure numbers presented above represent a comprehensive evaluation of the County as a whole. It is unlikely that a wildfire event would impact all of the HIGH and MEDIUM wildfire hazard areas at the same time. Accordingly, actual event-based losses and exposure are likely to be only a fraction of those summarized above.

Table 4-18: Doña Ana County jurisdictional exposure and loss estimates due to wildfire

WILDFIRE HAZARD EXPOSURE / LOSS	Anthony	Hatch	Las Cruces	Mesilla	NMSU	Sunland Park	Uninc. Doña Ana County	Total
Total Critical Facilities and Infrastructure	**10**	**11**	**122**	**13**	**40**	**9**	**52**	**257**
Estimated Replacement Cost (x $1,000)	**$17,805**	**$14,250**	**$835,525**	**$124,520**	**$811,777**	**$36,950**	**$1,406,806**	**$3,247,633**
Facilities Exposed to High Hazard	0	1	7	0	0	0	5	13
Percentage of Total Facilities	0.00%	9.09%	5.79%	0.00%	0.00%	0.00%	10.00%	5.14%
Estimated Replacement Cost (x $1,000)	$0	$3,000	$5,800	$0	$0	$0	$1,007,105	$1,015,905
Estimated Structure Loss (x $1,000)	$0	$600	$1,160	$0	$0	$0	$201,421	$203,181
Facilities Exposed to Medium Hazard	7	6	104	13	36	2	30	198
Percentage of Total Facilities	70.00%	54.55%	85.12%	100.00%	90.00%	25.00%	57.69%	77.04%
Estimated Replacement Cost (x $1,000)	$16,005	$7,800	$675,489	$124,520	$811,355	$3,950	$122,500	$1,753,319
Estimated Structure Loss (x $1,000)	$800	$390	$33,774	$6,226	$40,568	$198	$6,125	$87,666
Total Population	**9,403**	**1,679**	**97,571**	**1,944**	**4,542**	**14,274**	**79,815**	**209,229**
Population Exposed to High Hazard	1	2	2,271	0	41	469	4,437	7,221
Percent Exposed	0.01%	0.12%	2.33%	0.00%	0.91%	3.28%	5.56%	3.45%
Population Exposed to Medium Hazard	3,093	1,257	93,365	1,944	4,194	2,911	54,800	161,566
Percent Exposed	32.90%	74.89%	95.69%	100.00%	92.34%	20.40%	68.66%	77.22%
Population Over 65	**801**	**168**	**13,316**	**439**	**58**	**1,254**	**9,844**	**25,881**
Population Over 65 Exposed to High Hazard	0	0	365	0	5	20	429	819
Percent Exposed	0.00%	0.00%	2.74%	0.00%	9.03%	1.61%	4.36%	3.17%
Population Over 65 Exposed to Medium Hazard	274	125	12,798	439	15	271	7,106	21,029
Percent Exposed	34.20%	74.62%	96.11%	100.00%	25.76%	21.61%	72.19%	81.25%
Residential Building Count Totals)	**2,803**	**566**	**42,352**	**950**	**1,356**	**4,109**	**29,354**	**81,490**
Estimated Replacement Cost (x $1,000)	**$378,421**	**$76,437**	**$10,163,529**	**$228,050**	**$324,498**	**$554,713**	**$5,422,534**	**$17,148,181**
Residences Exposed to High Hazard	0	0	1,043	0	15	123	1,588	2,768
Percentage of Total Facilities	0.01%	0.05%	2.46%	0.00%	1.12%	2.99%	5.41%	3.40%
Estimated Replacement Cost (x $1,000)	$22	$39	$250,200	$0	$3,540	$16,561	$334,993	$605,356
Estimated Structure Loss (x $1,000)	$4	$8	$50,040	$0	$708	$3,312	$66,999	$121,071
Residences Exposed to Medium Hazard	867	417	40,587	950	1,231	918	20,552	65,522
Percentage of Total Facilities	30.91%	73.65%	95.83%	100.00%	90.80%	22.34%	70.02%	10.82%
Estimated Replacement Cost (x $1,000)	$116,988	$56,295	$9,740,021	$228,049	$295,495	$123,910	$4,040,587	$14,601,345
Estimated Structure Loss (x $1,000)	$5,849	$2,815	$487,001	$11,402	$14,775	$6,195	$202,029	$730,067

Vulnerability – Development Trend Analysis

By its very definition, the WUI represents the fringe of urban development as it intersects with the natural environment. Future development that occurs at the WUI interface will only increase the WUI areas and expand the potential exposure of structures to wildfire hazards. Figure 4-17 presents a graphic of the WUI identified by the CWPP. Each growth area identified by the participating jurisdictions, should take into account the interface that may be created and take the necessary precautions to reduce the exposure to wildland fires that may burn up to the developing perimeter. Further discussions regarding particular areas within the County are documented in the CWPP and will not be discussed further herein.



Source: SWCA, 2012 – Figure 3.2, page

Figure 4-17
CWPP Wildfire urban interface for Doña Ana County

Vulnerability – Jurisdictional Summary

The following crosswalk presents an overall summary of each jurisdiction's vulnerability to Wildfire.

Jurisdiction	Vulnerability Rating	Mitigation Priority?	Notes
Anthony, Hatch, and Sunland Park	Low	No	According the CWPP, the predominant wildfire hazard rating for these jurisdictions is LOW to MEDIUM, with a few small trace areas of HIGH. When studied in greater detail, it is apparent that for the majority of the urbanized areas within these jurisdictions, the actual vulnerability is low due to a lack of connective vegetation. For Hatch, the majority of the village is urban development with agricultural land buffering wildland fuels and considerable separation between structures. The single mesquite bosque in Sunland Park is relatively isolated from any other structures and a wildfire in this area would not pose a substantial threat to the surrounding developments.
EBID	Nuisance	No	Nearly all of EBID facilities are located within agricultural areas and are only vulnerable to wildfire at a nuisance level.
Las Cruces and Mesilla	Moderate	Yes	According the CWPP, the predominant wildfire hazard rating for these jurisdictions is MEDIUM with a few scarce pockets of HIGH. Wildfire hazard is primarily attributed to vegetation build up on vacant lots and irrigation ditches and denser vegetation along watercourses in the upper terrace areas, coupled with their proximity to occupied structures. Overall the wildfire vulnerability is considered to be moderate.
NMSU	Moderate	Yes	The majority of NMSU wildfire risk is associated with facilities within the CDRRC, which is comprised of a mix of MEDIUM and HIGH wildfire hazard areas. The wildfire vulnerability at the main campus is considered to be low. The CDRRC area is considered to be moderate.
Uninc. Doña Ana County	Moderate	Yes	The majority of population and facilities within the unincorporated county area are within MEDIUM to HIGH wildfire hazard areas. Overall the unincorporated county area is considered to have a moderate vulnerability.

Sources

ENMRD Forestry Division, 2010, *New Mexico Statewide Natural Resource Assessment & Strategy and Response Plans*. State of New Mexico, Energy, Minerals, and Natural Resources Department, Forestry Division. 1220 So. St. Francis Dr., Santa Fe, NM 87105. 147 pp.

ENMRD Forestry Division, 2020, *Draft New Mexico Forest Action Plan*. State of New Mexico, Energy, Minerals, and Natural Resources Department, Forestry Division. 1220 SO. St. Francis Dr., Santa Fe, NM 87105. 129 pp.

National Wildfire Coordination Group, 2010, Historical ICS 209 reports at: http://fam.nwcg.gov/fam-web/hist_209/report_list_209

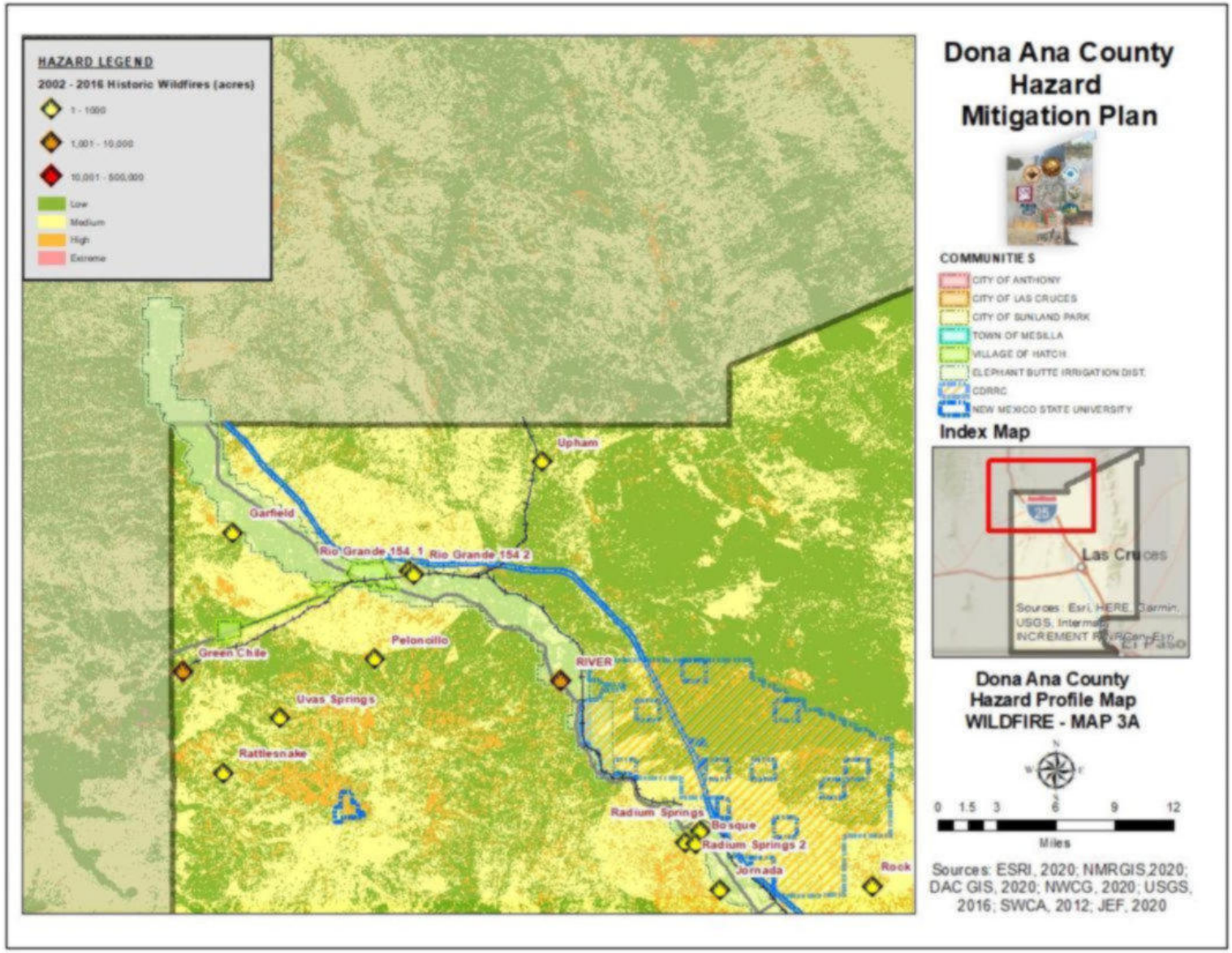
United States Geologic Survey, 2020, Federal Wildland Occurrence Data at: https://wildfire.cr.usgs.gov/firehistory/data.html

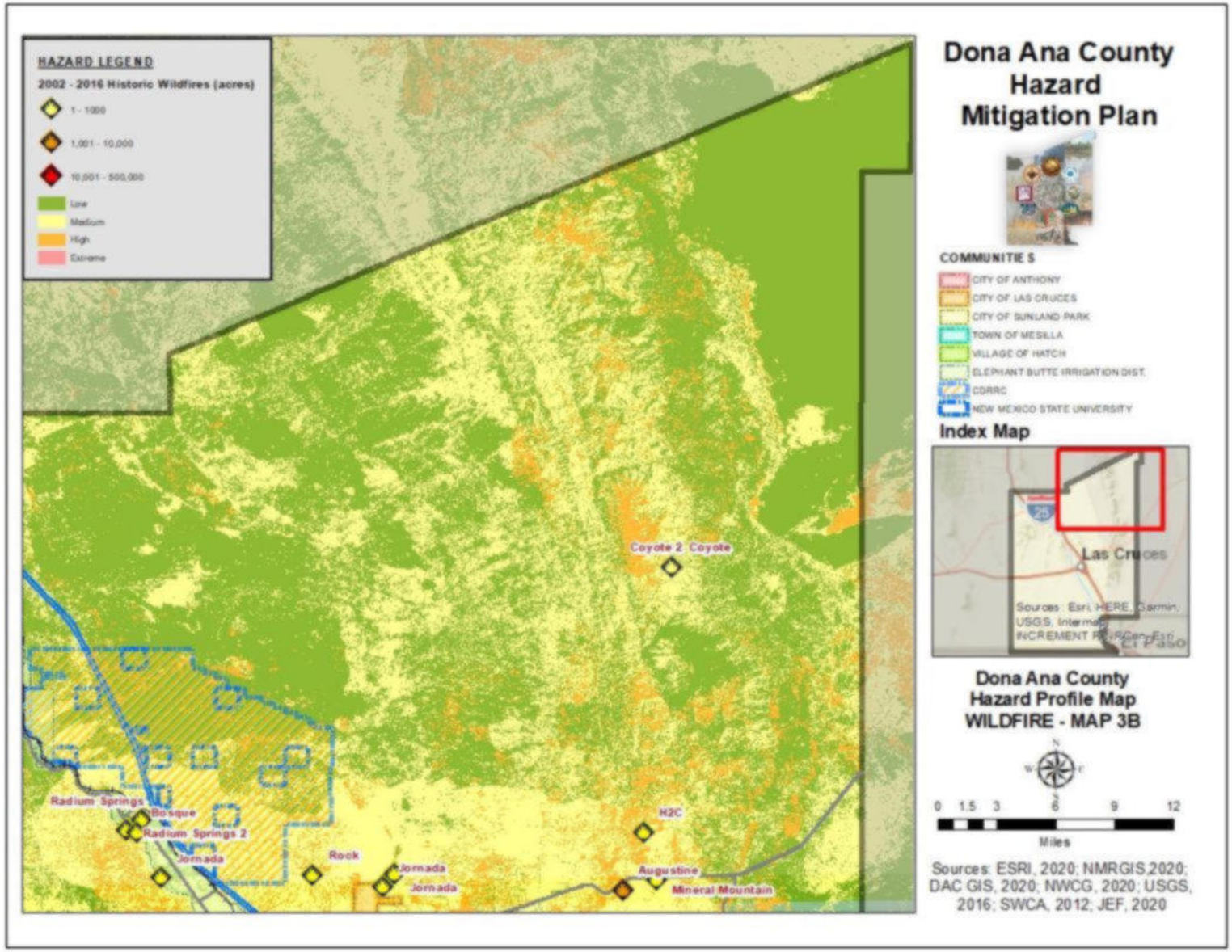
SWCA Environmental Consultants, Inc., 2012, *Doña Ana County Community Wildfire Protection Plan*, dated May 2012.

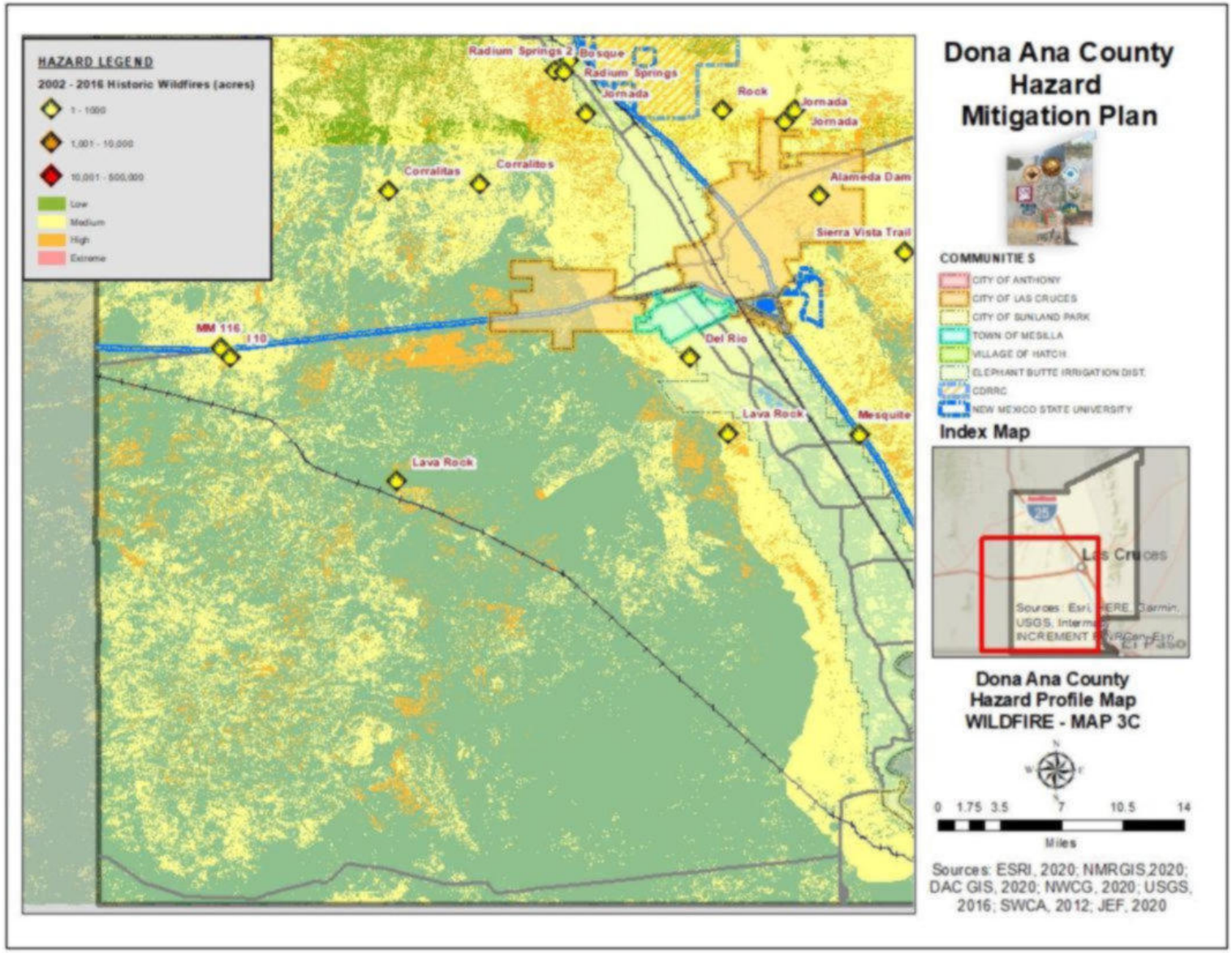
Profile Maps

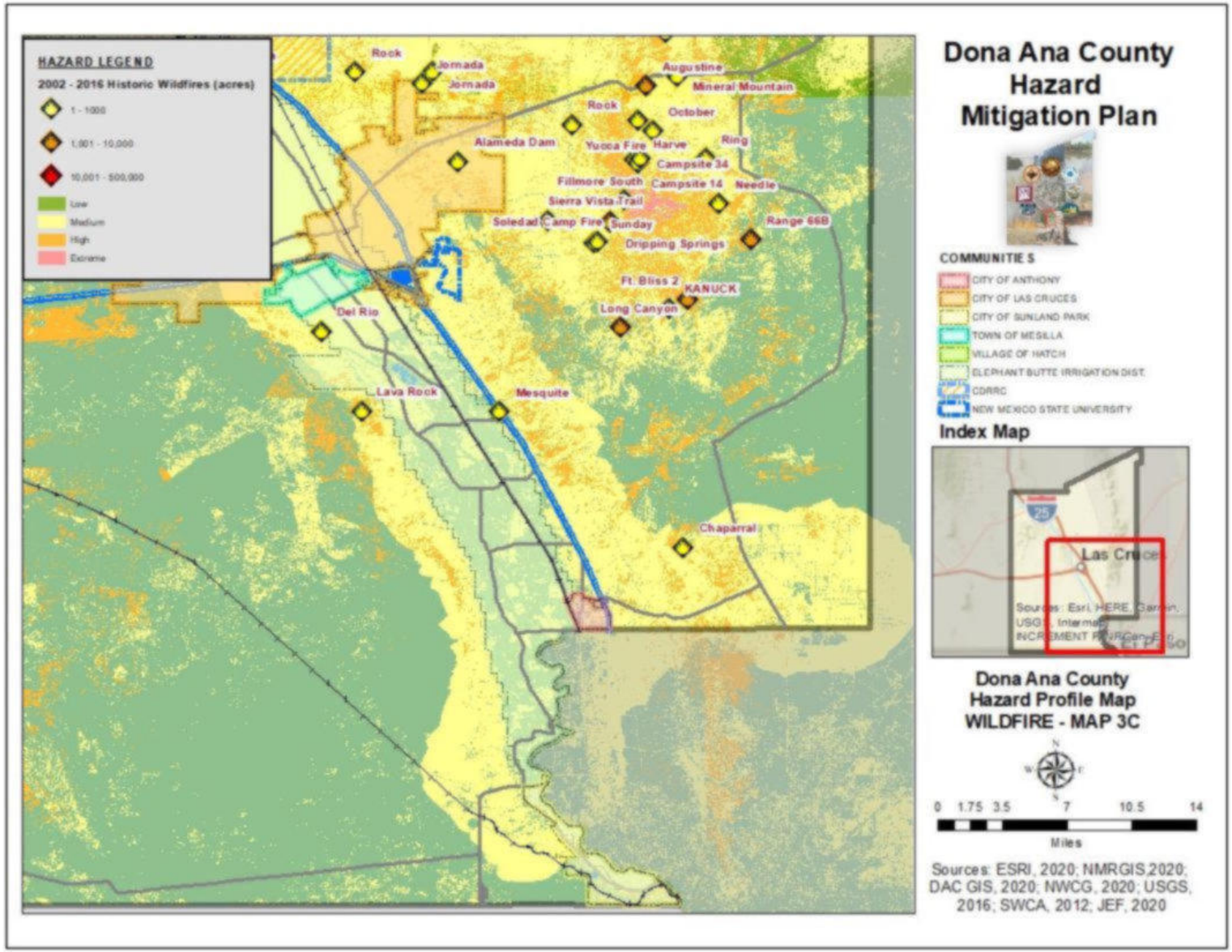
Maps 3A through 3D – County-Wide Wildfire Hazard Maps

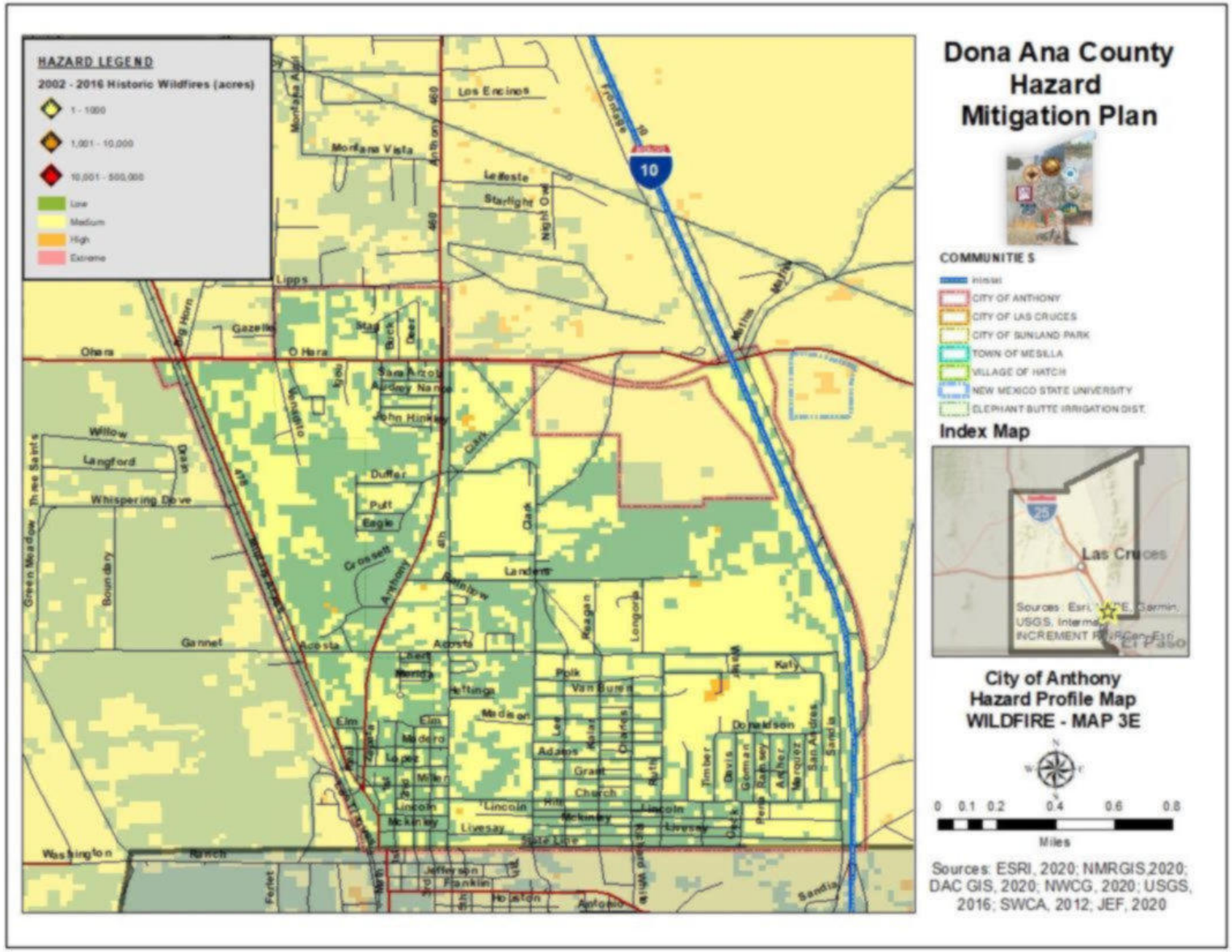
Maps 3E through 3O– Anthony, EBID, Hatch, Las Cruces, Mesilla, NMSU, and Sunland Park Wildfire Hazard Maps

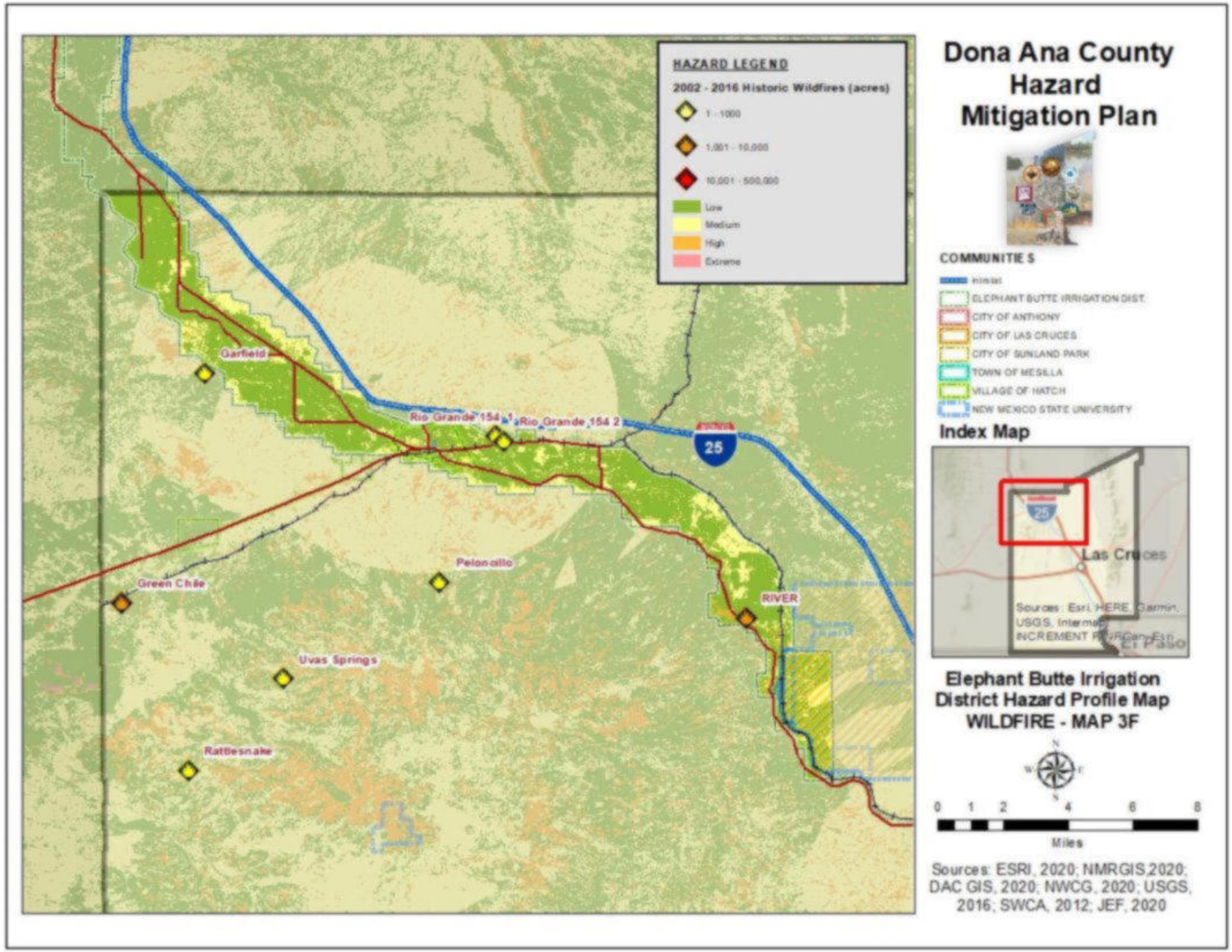

HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
Upham
Garfield
Rio Grande 154 1
Rio Grande 154 2
Peloncillo
Green Chile
RIVER
Uvas Springs
Rattlesnake
Radium Springs
Bosque
Radium Springs 2
Jornada
Rock
Dona Ana County
Hazard
Mitigation Plan
COMMUNITIES
CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
ELEPHANT BUTTE IRRIGATION DIST.
CDRRC
NEW MEXICO STATE UNIVERSITY
Index Map
Las Cruces
Dona Ana County
Hazard Profile Map
WILDFIRE - MAP 3A
0 1.5 3 6 9 12
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020; NWCG, 2020; USGS,
2016; SWCA, 2012; JEF, 2020

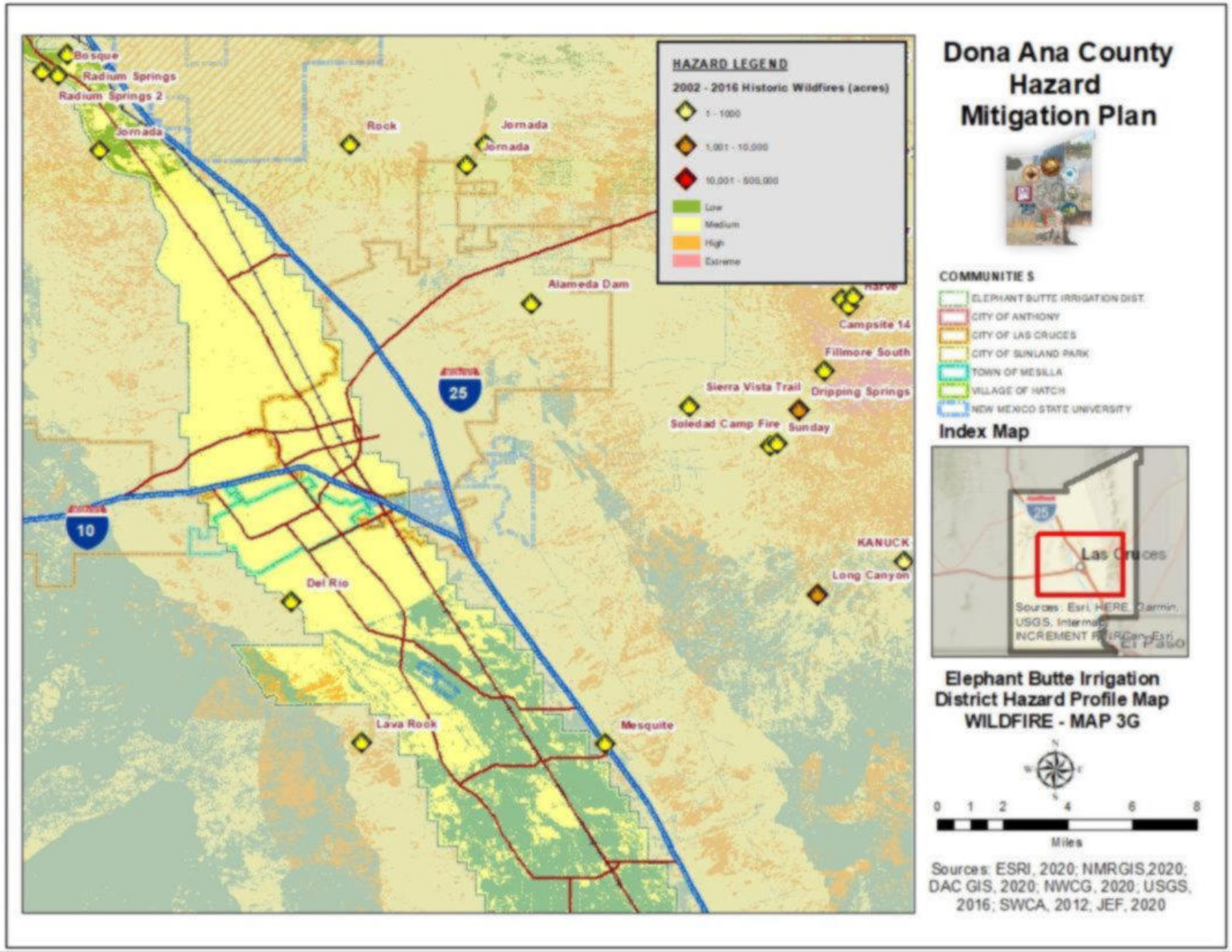

HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
Coyote 2
Coyote
Radium Springs
Bosque
Radium Springs 2
Jornada
Rock
Jornada
Jornada
H2C
Augustine
Mineral Mountain
Dona Ana County
Hazard
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CITY OF LAS CRUCES
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WILDFIRE - MAP 3B
N
W
E
S
0 1.5 3 6 9 12
Miles
Sources: ESRI, 2020; NMRGIS,2020; DAC GIS, 2020; NWCG, 2020; USGS, 2016; SWCA, 2012; JEF, 2020

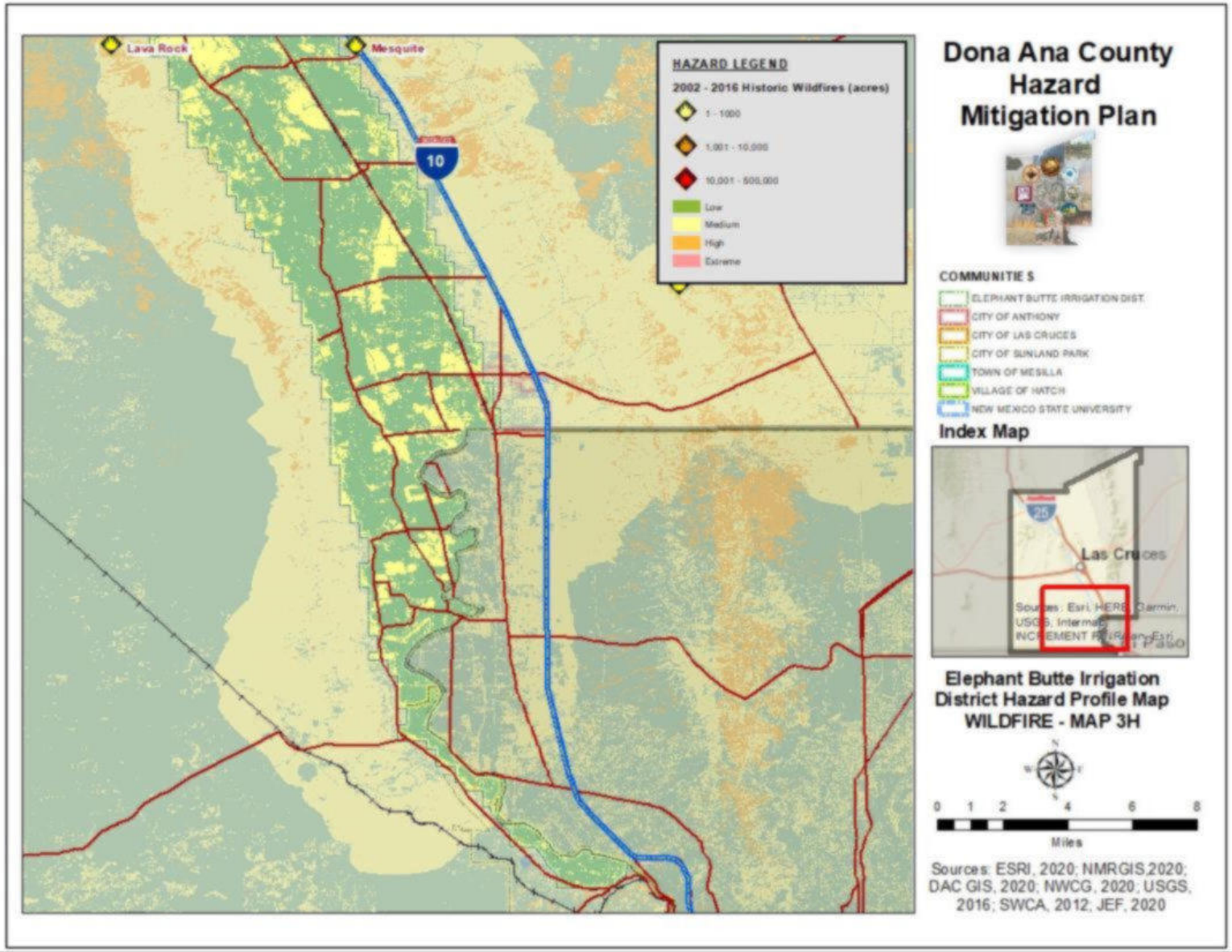

HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
Radium Springs 2
Bosque
Radium Springs
Jornada
Rock
Jornada
Jornada
Corralitas
Corralitos
Alameda Dam
Sierra Vista Trail
MM 116
I 10
Del Rio
Lava Rock
Mesquite
Lava Rock
Dona Ana County
Hazard
Mitigation Plan
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CITY OF ANTHONY
CITY OF LAS CRUCES
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CDRRC
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Index Map
Las Cruces
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Hazard Profile Map
WILDFIRE - MAP 3C
0 1.75 3.5 7 10.5 14
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020; NWCG, 2020; USGS,
2016; SWCA, 2012; JEF, 2020

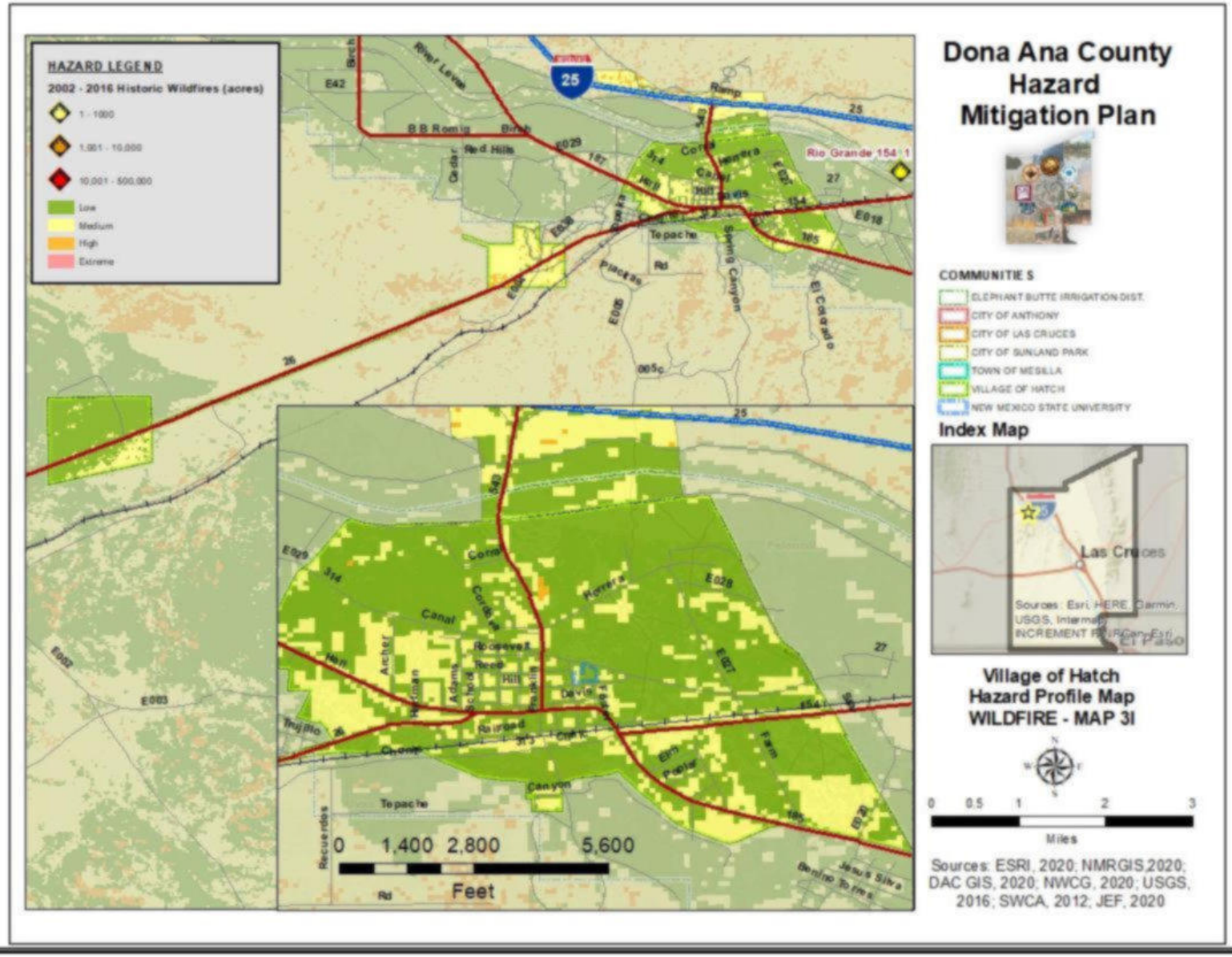

HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
Rock
Jornada
Jornada
Augustine
Mineral Mountain
Rock
October
Alameda Dam
Yucca Fire
Harve
Ring
Campsite 34
Fillmore South
Campsite 14
Needle
Sierra Vista Trail
Soledad Camp Fire
Sunday
Range 668
Dripping Springs
Ft. Bliss 2
KANUCK
Del Rio
Long Canyon
Lava Rock
Mesquite
Chaparral
Dona Ana County
Hazard
Mitigation Plan
COMMUNITIES
CITY OF ANTHONY
CITY OF LAS CRUCES
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VILLAGE OF HATCH
ELEPHANT BUTTE IRRIGATION DIST.
CDRRC
NEW MEXICO STATE UNIVERSITY
Index Map
Dona Ana County
Hazard Profile Map
WILDFIRE - MAP 3C
0 1.75 3.5 7 10.5 14
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020; NWCG, 2020; USGS,
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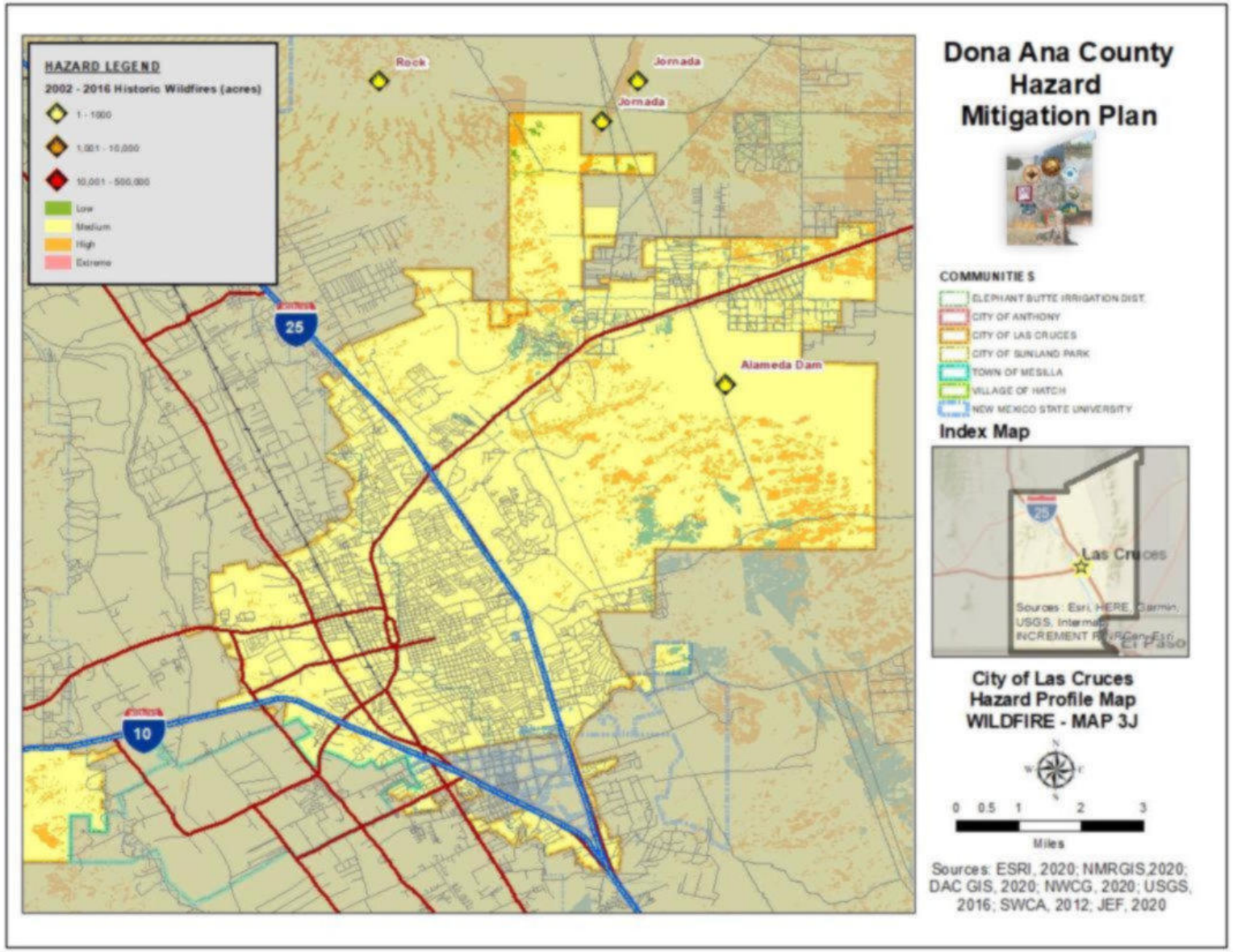

HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
Dona Ana County
Hazard
Mitigation Plan
COMMUNITIES
CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
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Index Map
Las Cruces
City of Anthony
Hazard Profile Map
WILDFIRE - MAP 3E
0 0.1 0.2 0.4 0.6 0.8
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020; NWCG, 2020; USGS,
2016; SWCA, 2012; JEF, 2020
Los Encinos
Montana Vista
Lattesta
Starlight Ow
Lipps
Gazelle
O Hara
Olsen
Willow
Langford
Whispering Dove
Duffer
Pult
Eagle
Crossett
Landers
Gannet
Acosta
Polk
Van Buren
Madera
Grant
Church
Lincoln
McKinley
Livesay
Washington
Ranch
Jefferson
Franklin
Houston
Antonio
Sandia
Donaldson
Kelly
Reagan
Longoria
Anthony
Elm
Lopez
Mesa
Zia
Forest
Main
Oak
Dona Ana
Boundary
Green Meadow
Three Saints
Big Horn
Monaka Apts
Night Owl
Burk
Deer
Stag
Sierra Vista
Aubrey Nance
John Hinkley
Valverde
Ayres
Creek
Frontage
Rd
Mesa
10
25

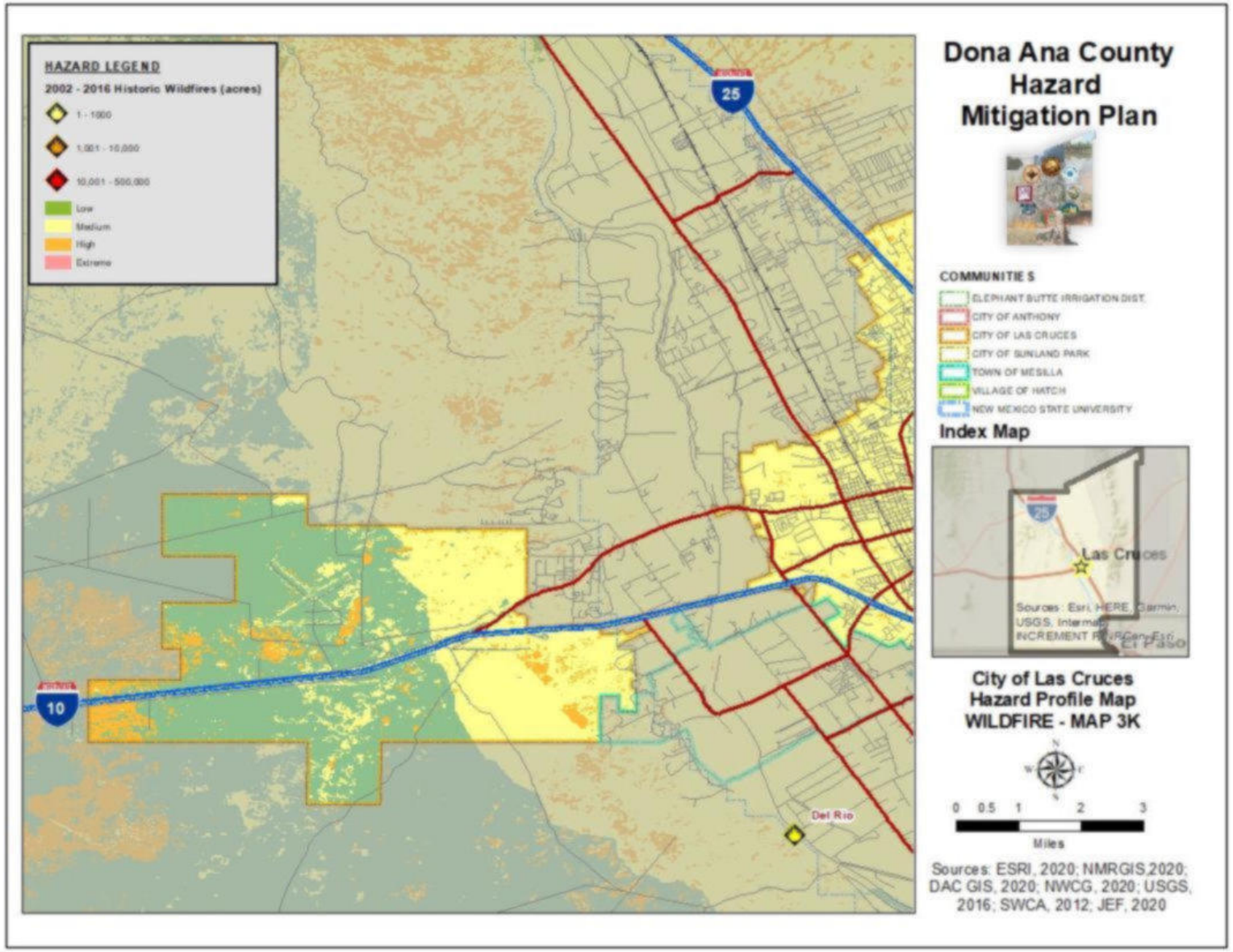

HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
Garfield
Rio Grande 154 1
Rio Grande 154 2
25
Peloncillo
Green Chile
RIVER
Uvas Springs
Rattlesnake
Dona Ana County Hazard Mitigation Plan
COMMUNITIES
ELEPHANT BUTTE IRRIGATION DIST.
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CITY OF LAS CRUCES
CITY OF SUNLAND PARK
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VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
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El Paso
Elephant Butte Irrigation District Hazard Profile Map
WILDFIRE - MAP 3F
0 1 2 4 6 8
Miles
Sources: ESRI, 2020; NMRGIS,2020; DAC GIS, 2020; NWCG, 2020; USGS, 2016; SWCA, 2012; JEF, 2020

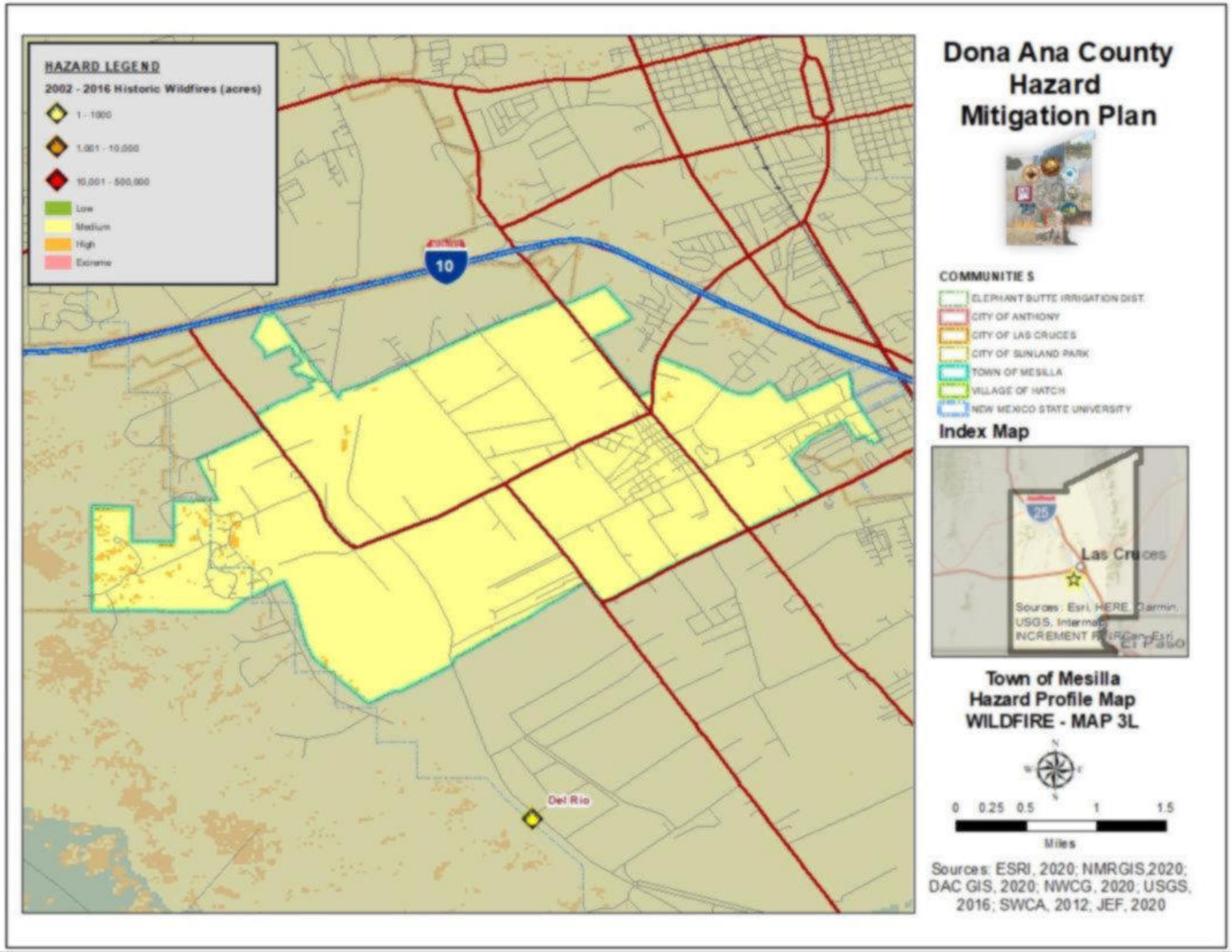

HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
Bosque
Radium Springs
Radium Springs 2
Jornada
Rock
Jornada
Jornada
Alameda Dam
Campsite 14
Fillmore South
Dripping Springs
Sierra Vista Trail
Soledad Camp Fire
Sunday
25
10
Del Rio
KANUCK
Long Canyon
Lava Rock
Mesquite
Dona Ana County Hazard Mitigation Plan
COMMUNITIES
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CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
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VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
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El Paso
Elephant Butte Irrigation District Hazard Profile Map
WILDFIRE - MAP 3G
0 1 2 4 6 8
Miles
Sources: ESRI, 2020; NMRGIS,2020; DAC GIS, 2020; NWCG, 2020; USGS, 2016; SWCA, 2012; JEF, 2020

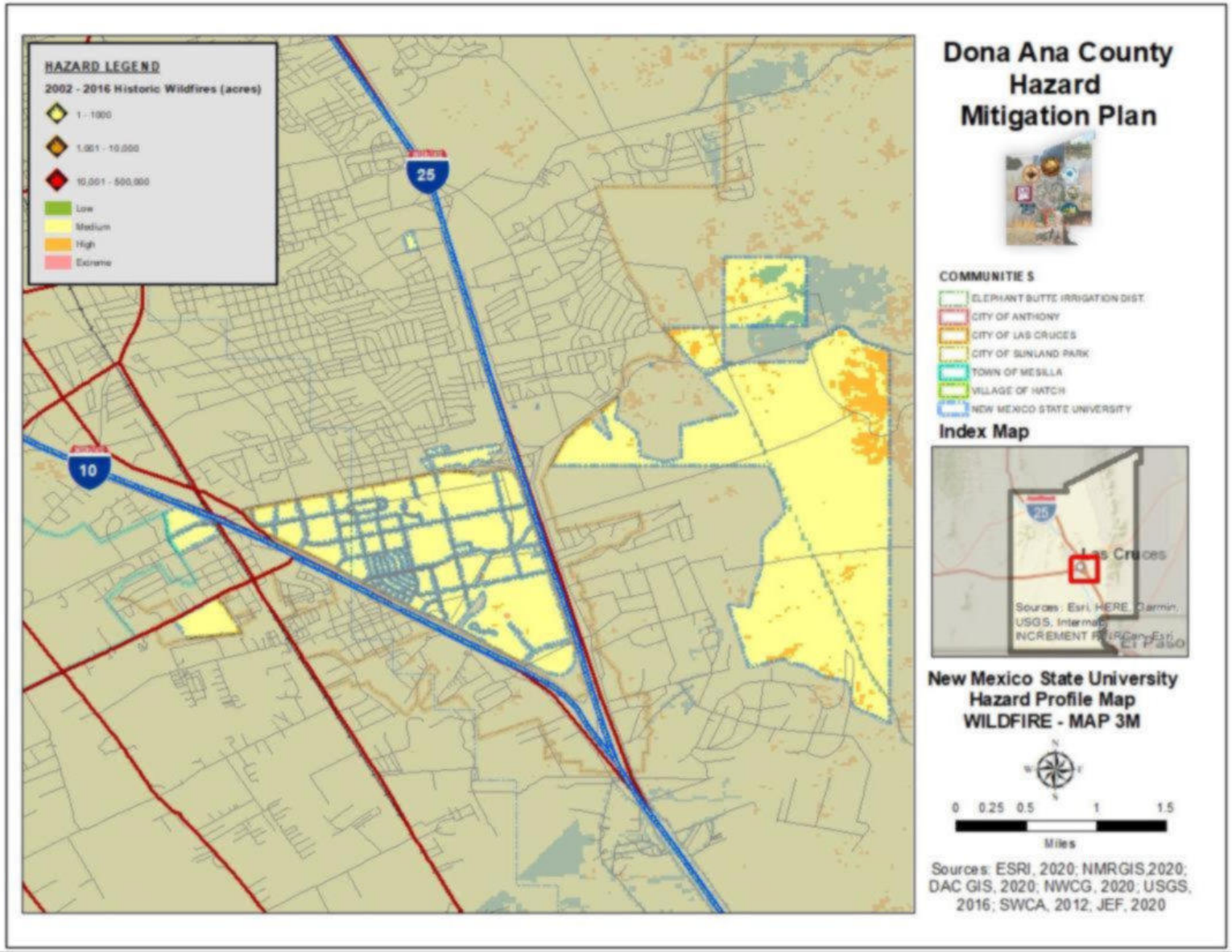

Lava Rock
Mesquite
10
HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
Dona Ana County
Hazard
Mitigation Plan
COMMUNITIES
ELEPHANT BUTTE IRRIGATION DIST.
CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
25
Las Cruces
El Paso
Elephant Butte Irrigation
District Hazard Profile Map
WILDFIRE - MAP 3H
N
W
E
S
0 1 2 4 6 8
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020; NWCG, 2020; USGS,
2016; SWCA, 2012; JEF, 2020

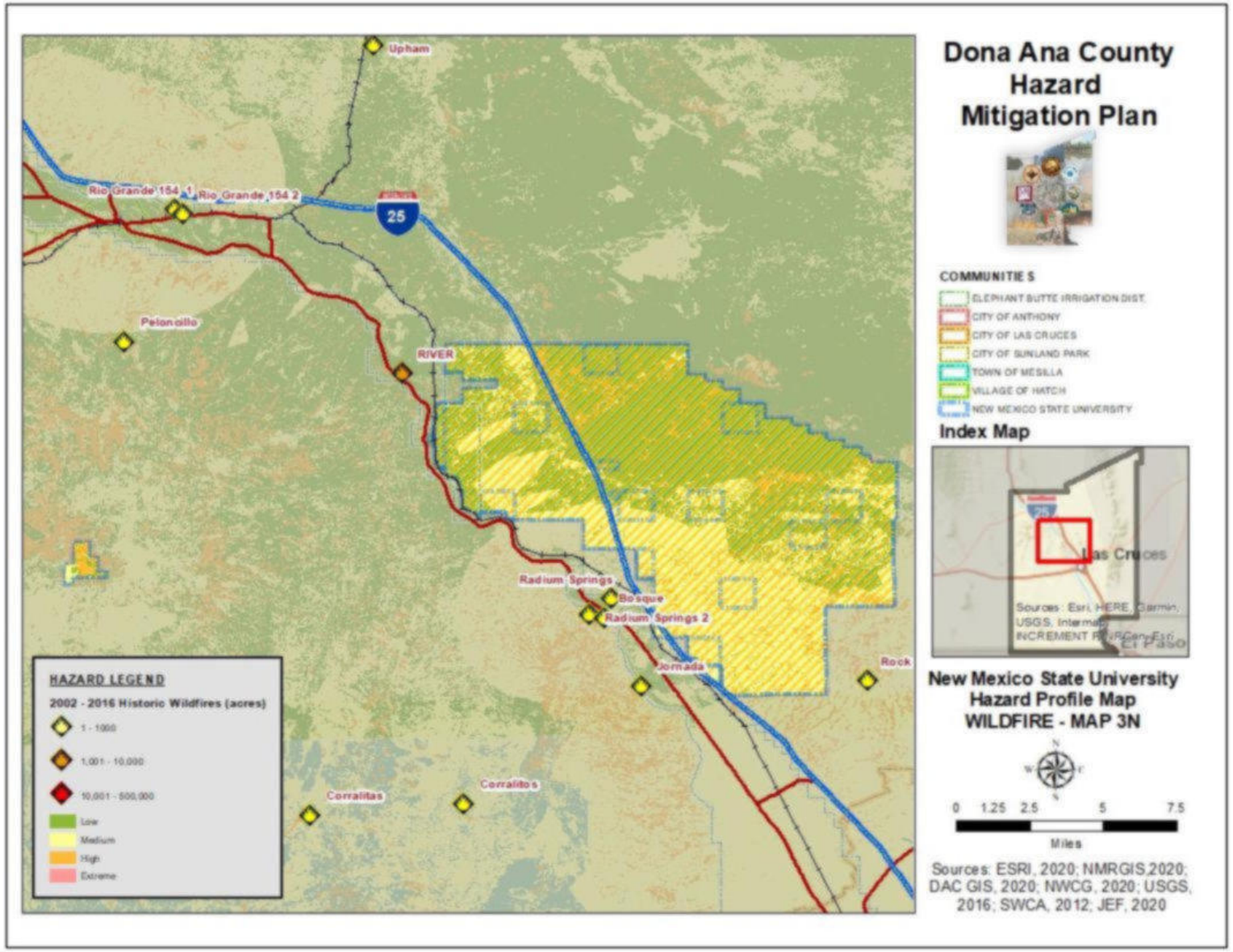

HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
Dona Ana County
Hazard
Mitigation Plan
COMMUNITIES
ELEPHANT BUTTE IRRIGATION DIST.
CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
Las Cruces
El Paso
Village of Hatch
Hazard Profile Map
WILDFIRE - MAP 3I
0 1,400 2,800 5,600
Feet
0 0.5 1 2 3
Miles
Sources: ESRI, 2020; NMRGIS,2020; DAC GIS, 2020; NWCG, 2020; USGS, 2016; SWCA, 2012; JEF, 2020

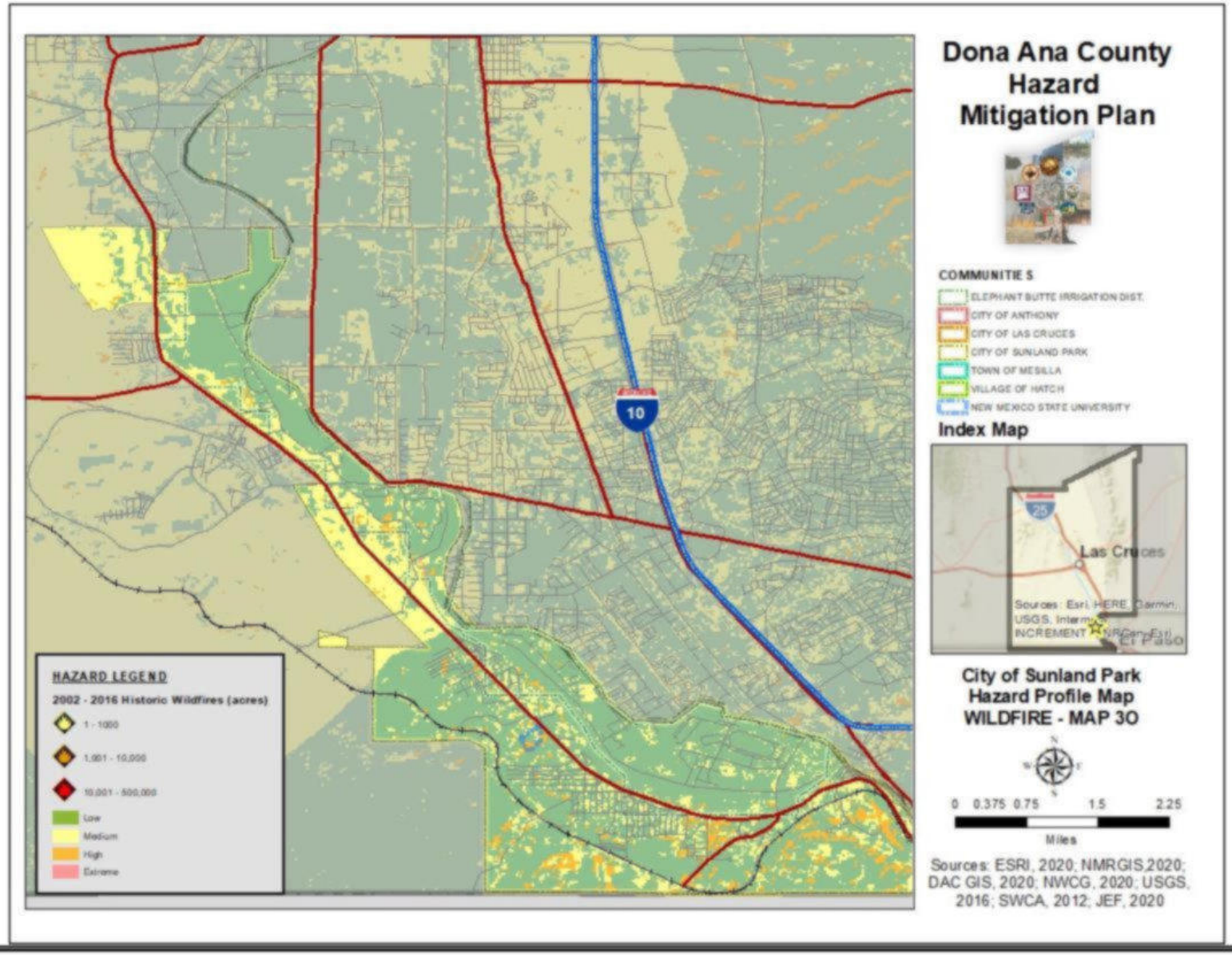

HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
Rock
Jornada
Jornada
Alameda Dam
25
10
Dona Ana County
Hazard
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ELEPHANT BUTTE IRRIGATION DIST.
CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
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VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
Las Cruces
City of Las Cruces
Hazard Profile Map
WILDFIRE - MAP 3J
0 0.5 1 2 3
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020; NWCG, 2020; USGS,
2016; SWCA, 2012; JEF, 2020


HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
25
10
Del Rio
Dona Ana County
Hazard
Mitigation Plan
COMMUNITIES
ELEPHANT BUTTE IRRIGATION DIST.
CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
Las Cruces
City of Las Cruces
Hazard Profile Map
WILDFIRE - MAP 3K
0 0.5 1 2 3
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020; NWCG, 2020; USGS,
2016; SWCA, 2012; JEF, 2020


HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
10
Del Rio
Dona Ana County
Hazard
Mitigation Plan
COMMUNITIES
ELEPHANT BUTTE IRRIGATION DIST.
CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
Las Cruces
El Paso
Town of Mesilla
Hazard Profile Map
WILDFIRE - MAP 3L
0 0.25 0.5 1 1.5
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020; NWCG, 2020; USGS,
2016; SWCA, 2012; JEF, 2020


HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
25
10
Dona Ana County Hazard Mitigation Plan
COMMUNITIES
ELEPHANT BUTTE IRRIGATION DIST.
CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
Las Cruces
El Paso
New Mexico State University
Hazard Profile Map
WILDFIRE - MAP 3M
0 0.25 0.5 1 1.5
Miles
Sources: ESRI, 2020; NMRGIS,2020; DAC GIS, 2020; NWCG, 2020; USGS, 2016; SWCA, 2012; JEF, 2020


Upham
Rio Grande 154
Rio Grande 154 2
25
Peloncillo
RIVER
Radium Springs
Bosque
Radium Springs 2
Jornada
Rock
Corralitas
Corralitos
HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
Dona Ana County
Hazard
Mitigation Plan
COMMUNITIES
ELEPHANT BUTTE IRRIGATION DIST.
CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
Las Cruces
New Mexico State University
Hazard Profile Map
WILDFIRE - MAP 3N
0 1.25 2.5 5 7.5
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020; NWCG, 2020; USGS,
2016; SWCA, 2012; JEF, 2020


Dona Ana County
Hazard
Mitigation Plan
COMMUNITIES
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CITY OF ANTHONY
CITY OF LAS CRUCES
CITY OF SUNLAND PARK
TOWN OF MESILLA
VILLAGE OF HATCH
NEW MEXICO STATE UNIVERSITY
Index Map
Las Cruces
El Paso
10
HAZARD LEGEND
2002 - 2016 Historic Wildfires (acres)
1 - 1000
1,001 - 10,000
10,001 - 500,000
Low
Medium
High
Extreme
City of Sunland Park
Hazard Profile Map
WILDFIRE - MAP 30
0 0.375 0.75 1.5 2.25
Miles
Sources: ESRI, 2020; NMRGIS,2020;
DAC GIS, 2020; NWCG, 2020; USGS,
2016; SWCA, 2012; JEF, 2020

4.4 Risk Assessment Summary

The jurisdictional variability of risk associated with each hazard assessed in Section 3.3 is demonstrated by the various CPRI and loss estimation results. Accordingly, each jurisdiction has varying levels of need regarding the hazards to be mitigated, and may not consider all of the hazards as posing a great risk to their individual communities. It should be noted that, owing to the nature of EBID's infrastructure, several of the hazards identified within the planning area were deemed to be "Nuisance Hazards" for the jurisdiction. This determination was made for Extreme Cold, Severe Wind, Thunderstorms, and Wildfire, as these hazards would have a negligible impact on the District's infrastructure. That is to say that the District's laterals, ditches, and operations would not be severely affected by these hazards. Because the physical and financial impacts of these hazards are negligible, projects/actions were not considered as they would provide little to no benefit. Table 4-19 summarizes the hazards selected as mitigation priorities by each jurisdiction and will be the basis for each jurisdiction's mitigation strategy.

Table 4-19: Summary of mitigation priority hazards for each participating jurisdiction

Jurisdiction	Dam Failure	Drought	Extreme Cold	Flooding	Severe Wind	Thunderstor	Wildfire
Unincorporated Doña Ana County	M	M	M	M	M	M	M
Anthony	M	M	L	M	M	M	L
EBID	M	M	NH	M	NH	NH	NH
Hatch	M	M	L	M	M	M	L
Las Cruces	M	M	M	M	M	M	M
Mesilla	M	M	M	M	M	M	M
NMSU	M	M	M	M	M	M	M
Sunland Park	M	M	L	M	M	M	L

M – Mitigation A/Ps will be identified
L – Mitigation A/Ps will be identified but given a low priority
NH – Nuisance hazard - no mitigation is warranted

SECTION 5: MITIGATION STRATEGY

The mitigation strategy provides the "what, when, and how" of actions that will reduce or possibly remove the community's exposure to hazard risks. According to DMA 2000, the primary components of the mitigation strategy are generally categorized into the following:

- **Capability Assessment**
- **Goals and Objectives**
- **Mitigation Actions/Projects and Implementation Strategy**

The entire 2013 Plan mitigation strategy was reviewed and updated by the Steering Committee. Specifics of the changes and updates are discussed in the subsections below.

5.1 Capability Assessment

An important component of the Mitigation Strategy is a review of each participating jurisdiction's capabilities in order to identify, evaluate, and enhance the capacity of local resources to mitigate the effects of hazards. The capability assessment is comprised of several components:

- ✓ Legal and Regulatory Review – a review of the legal and regulatory capabilities, including ordinances, codes, plans, manuals, guidelines, and technical reports that address hazard mitigation activities.
- ✓ Technical Staff and Personnel – this assessment evaluated and describes the administrative and technical capacity of the jurisdiction's staff and personnel resources.
- ✓ Fiscal Capability – this element summarizes each jurisdiction's fiscal capability to provide the financial resources to implement the mitigation strategy.
- ✓ National Flood Insurance Program (NFIP) Participation – the NFIP contains specific regulatory measures that enable government officials to determine where and how growth occurs relative to flood hazards. Participation in the NFIP is voluntary for local governments, but the program is promoted by FEMA as a basic first step for implementing and sustaining an effective flood hazard mitigation program, and is a key indicator for measuring local capability as part of this assessment.

5.1.1 Jurisdictional Capabilities

Tables 5-1-1 through 5-1-8 summarize the legal and regulatory mitigation capability for each participating jurisdiction. Information provided includes a brief listing of current codes, ordinances, plans, studies, and/or reports that are relevant to the jurisdictions capacity for mitigation. Tables 5-2-1 through 5-2-8 summarize the staff and personnel resources employed by each jurisdiction that serve as a resource for hazard mitigation. Tables 5-3-1 through 5-3-8 summarize the fiscal capability and budgetary tools available to each participating jurisdiction. Each of these three tables are listed below by jurisdiction.

Table 5-1-1: Legal and regulatory capabilities for Doña Ana County		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2015 International Residential Code • 2015 International Building Code · 2015 Uniform Plumbing Code • 2015 Uniform Mechanical Code • 2009 International Fuel Gas Code • 2009 International Energy Conservation Code • 2017 National Electrical Code	• Community Development Building Services • Building Services
	• Title 44 Code of Federal Regulations	• Flood Commission
	• 2009 International Fire Code	• Fire Marshal Office
	• Unified Development Code	• Community Development • Utilities • Codes Enforcement • County Engineering • Flood Commission
PLANS, MANUALS, and/or GUIDELINES	• 2015 Doña Ana County Comprehensive Plan	• Community Development
	• 2012 Community Wildfire Protection Plan	• Fire Department
	• 2011 Doña Ana County/City of Las Cruces All-Hazard Emergency Operations Plan	• Office of Emergency Management
	• 2009 Doña Ana County Storm Water Management Program	• County Engineering
	• 1992 Jornada Master Drainage Plan • 2008 Chaparral Drainage Master Plan • 2009 Picacho Hills Drainage Master Plan • 2009 Old Picacho Drainage Master Plan • 2012 East Mesa Drainage Master Plan • 2013 La Union Drainage Master Plan • 2016 Chamberino Drainage Master Plan • 2016 Rincon Drainage Master Plan • 2016 Salem Drainage Master Plan • 2017 Mesquite Drainage Master Plan • 2017 Montana Vista Drainage Master Plan • 2018 Placitas Arroyo Drainage Master Plan • 2018 Radium Springs Drainage Master Plan • 2019 Vado/Del Cerro Drainage Master Plan • 2020 Dona Ana Drainage Master Plan	• Doña Ana County Flood Commission Office

Table 5-1-1: Legal and regulatory capabilities for Doña Ana County		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
STUDIES	• 2004 Flood Studies of the Tellbrook and Fillmore Arroyos • 2016 FEMA Flood Insurance Study Doña Ana County • 2016 Natural Valley Analysis Pre-LAMP Report • 2018 Gardner Dam Breach Existing Conditions • 2017 Tortugas Site 1 Dam Emergency Action Plan • 2017 Crow Broad Placitas Dam No. 1 Emergency Action Plan • 2017 Crow Broad Placitas Dam No. 2A Emergency Action Plan • 2017 Hatch Valley Arroyo Dam No. 2 Emergency Action Plan • 2018 Hatch Valley Arroyo Dam No. 5 Emergency Action Plan	• Doña Ana County Flood Commission Office

Table 5-2-1: Summary of technical staff and personnel capabilities for Doña Ana County		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	**Community Development Building Services**-Building Official and Development Technicians **Community Development Planning Division**-Planners **Engineering**-Licensed Engineers, Engineer Interns/Techs/Aides; (Design and Project Mgmt) **Flood Commission Office**-Planner, Engineers, Certified Floodplain Managers **Fire Marshal's Office**-Fire Marshal, Fire Prevention Specialist **Assessor's Office**-County Assessor, Document Tech, Mapping, Appraisal Department **Facilities and Parks**-Manager, Maintenance Supervisor, Building Attendant Supervisor **Road Department**-Road Superintendent, Fleet Manager

Table 5-2-1: Summary of technical staff and personnel capabilities for Doña Ana County

Staff/Personnel Resources	☑	Department/Agency - Position
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	**Community Development Building Services**-Building Official and Development Technicians **Engineering**-Licensed Engineers, Engineer Interns/Techs/Aides; (Design and Project Mgmt) **Flood Commission Office**-Planner, Engineers, Certified Floodplain Managers **Fire Marshal's Office**-Fire Marshal, Fire Prevention Specialist **Assessor's Office**-County Assessor, Document Tech, Mapping, Appraisal Department **Facilities and Parks**-Manager, Maintenance Supervisor, Building Attendant Supervisor **Road Department**-Road Superintendent, Fleet Manager **Las Cruces/Doña Ana County Office of Emergency Management**- Emergency Management Personnel **Risk Management**-Risk Manager, Safety & Loss Coordinator
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	**Community Development Building Services**-Building Official and Development Technicians **Community Development Planning Division**-Planners **Engineering**-Licensed Engineers, Engineer Interns/Techs/Aides; (Design and Project Mgmt) **Flood Commission Office**-Planner, Engineers, Certified Floodplain Managers **Fire Marshal's Office**-Fire Marshal, Fire Prevention Specialist **Assessor's Office**-County Assessor, Document Tech, Mapping, Appraisal Department **Risk Management**-Risk Manager, Safety & Loss Coordinator **Facilities and Parks**-Manager, Maintenance Supervisor, Building Attendant Supervisor **Road Department**-Road Superintendent, Fleet Manager **Las Cruces/Doña Ana County Office of Emergency Management**- Emergency Management Personnel
Floodplain Manager	☑	**Flood Commission Office**-Planner, Engineers, Certified Floodplain Managers
Surveyors	☑	**Engineering**-Licensed Engineers, Licensed Surveyor; (Design and Project Mgmt)
Staff with education or expertise to assess the community's vulnerability to hazards	☑	**Las Cruces/Doña Ana County Office of Emergency Management**-Emergency Management Personnel **Flood Commission Office**-Planner, Engineers, Certified Floodplain Managers **Risk Management**-Risk Manager, Safety & Loss Coordinator **Fire Marshal's Office**-Fire Marshal, Fire Prevention Specialist **Assessor's Office**-County Assessor, Document Tech, Mapping, Appraisal Department **Facilities and Parks**-Manager, Maintenance Supervisor, Building Attendant Supervisor **Road Department**-Road Superintendent, Fleet Manager **Community Development Planning Division**-Planners **Engineering**-Licensed Engineers, Engineer Interns/Techs/Aides; (Design and Project Mgmt)

Table 5-2-1: Summary of technical staff and personnel capabilities for Doña Ana County		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Personnel skilled in GIS and/or HAZUS; AutoCad-Civil 3D; ArcViewGIS	☑	**Community Development Planning Division**-Planners **Community Development GIS Division-** **Flood Commission Office**-Planner, Engineers, Certified Floodplain Managers, GIS Specialists **Engineering**-Licensed Engineers, Licensed Surveyor; (Design and Project Mgmt) **Assessor's Office**-County Assessor, Document Tech, Mapping, Appraisal Department
Scientists familiar with the hazards of the community	☑	**Fire Marshal's Office**-Fire Marshal, Fire Prevention Specialist
Emergency manager	☑	**Las Cruces/Doña Ana County Office of Emergency Management**-Emergency Management Personnel **Fire Marshal's Office**-Fire Marshal, Fire Prevention Specialist
Grant writer(s)	☑	**Community Development Planning Division**-Planners **Purchasing Department**-Purchasing Manager, Contract Coordinator, Buyer **Health and Human Services**-Project Coordinators **Flood Commission** – Grant Administrator

Table 5-3-1: Fiscal capabilities for Doña Ana County		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	Apply for CDBG on an (as needed) annual basis: • Community Development Planning Division; • Health and Human Services; • Doña Ana County Housing Authority; • Engineering/Utilities
Capital Improvements Project funding	Yes	5-year CIP Program: • Community Development; • Flood Commission Office; • Engineering; • Fire Marshal's Office; • Airport; • Facilities and Parks; • Roads Department; • Utilities; • Health and Human Services; • Emergency Management; • Sheriff's Department; • Detention Center

Table 5-3-1: Fiscal capabilities for Doña Ana County		
Legislative General Obligation Bonds, General Fund Appropriations, Severance Tax Bond Appropriations	Yes	• Flood Commission Office; • Engineering; • Facilities and Parks; • Roads Department; • Utilities
Authority to levy taxes for specific purposes	Yes	Currently there is a tax mil-levy to operate the Flood Commission Office
Fees for water, sewer, gas, or electric service	Yes	There are fees for wastewater, water, and solid waste; Gas and electric are private.
Impact fees for homebuyers or new developments/homes	Yes	No Impact fees are used at this time.
Incur debt through general obligation bonds	No	
Incur debt through special tax bonds	No	

Table 5-1-2: Legal and regulatory capabilities for Anthony		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES and/or ORDINANCES	• IBC 2011 • City Code • Weed Abatement Ordinance (2010)	• City Council
PLANS, MANUALS, and/or GUIDELINES	• City of Anthony Comprehensive Plan (2010) • Economic Development Plan (2017)	• City Council
STUDIES	• Drainage Study by the USACOE (2011) • Draft Stormwater Master Plan (2017)	• FEMA • USACOE • City Council

Table 5-2-2: Summary of technical staff and personnel capabilities for Anthony		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices		No staff available. This work is contracted to the City's On-Call Engineering Consulting Firm.
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Code Enforcer / Building Inspector
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Acting Fire Chief
Floodplain Manager		
Surveyors		No staff available. This work is contracted to the City's On-Call Engineering Consulting Firm.
Staff with education or expertise to assess the community's vulnerability to hazards		
Personnel skilled in GIS and/or HAZUS; AutoCad-Civil 3D; ArcViewGIS		
Scientists familiar with the hazards of the community		
Emergency manager		
Grant writer(s)	☑	Special Projects Coordinator

Table 5-3-2: Fiscal capabilities for Anthony		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	City applied for FY 2021 Grant funding to construct roadway and drainage improvements
Capital Improvements Project funding	No	
Authority to levy taxes for specific purposes	Yes	None at this time
Fees for water, sewer, gas, or electric service	No	Under the Control of the Anthony Water & Sanitation District
Impact fees for homebuyers or new developments/homes	No	
Incur debt through general obligation bonds	Yes	2020 GO Bonds were sold to fund street and drainage improvements
Incur debt through special tax bonds	No	

Table 5-1-3: Legal and regulatory capabilities for EBID		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES and/or ORDINANCES	• None	• N/A
PLANS, MANUALS, and/or GUIDELINES	• Drought Management Plan • Area Drainage Master Plan • Drainage Manual • Emergency Action Plan	• Engineering • Groundwater Resources • Human Resources & Safety
STUDIES	• Dam Safety • Flood Control Dam EAP's	• Engineering • Maintenance

Table 5-2-3: Summary of technical staff and personnel capabilities for EBID		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Engineering Department
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Engineering Consultant Engineering Department Maintenance Department
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Engineering Consultant Engineering Department Maintenance Department Human Resources & Safety Dept.
Floodplain Manager	☑	Engineering Consultant Engineering Department
Surveyors	☑	Engineering Department
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Maintenance Department Human Resources & Safety Dept. SCADA Department
Personnel skilled in GIS and/or HAZUS; AutoCad-Civil 3D; ArcViewGIS	☑	Engineering Department
Scientists familiar with the hazards of the community	☑	Engineering Consultant Engineering Department
Emergency manager	☑	Manager/Treasurer Human Resources & Safety Director
Grant writer(s)	☑	Engineering Department Finance Department
Others	☑	SCADA Department Irrigation Department Groundwater Resources Department

Table 5-3-3: Fiscal capabilities for EBID		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	No	
Capital Improvements Project funding	Yes	
Authority to levy taxes for specific purposes	Yes	Land improvement development
Fees for water, sewer, gas, or electric service	Yes	Permit fees for utility use of right-of-way
Impact fees for homebuyers or new developments/homes	No	
Incur debt through general obligation bonds	No	
Incur debt through special tax bonds	No	

Table 5-1-4: Legal and regulatory capabilities for Hatch		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES and/or ORDINANCES	• Floodplain Management Ordinance (Ord. 220 § 1A, 1988) • Other codes and ordinances can be viewed at: www.villageofhatch.org	• Village of Hatch
PLANS, MANUALS, and/or GUIDELINES	• Safety Water	• Public Works
STUDIES	• Placitas Drainage Master Plan	• Village of Hatch / DACFC

Table 5-2-4: Summary of technical staff and personnel capabilities for Hatch		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	On Call Contract or Direct Engineering Services Agreement with Bohannan Huston, Inc.
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	On Call Contract or Direct Engineering Services Agreement with Bohannan Huston, Inc.
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	On Call Contract or Direct Engineering Services Agreement with Bohannan Huston, Inc.
Floodplain Manager	☑	Doña Ana County Flood Commission Office
Surveyors		On Call Contract or Direct Engineering Services Agreement with Bohannan Huston, Inc.
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Hatch PD Fire Chief Jorge Au
Personnel skilled in GIS and/or HAZUS; AutoCad-Civil 3D; ArcViewGIS	☑	On Call Contract or Direct Engineering Services Agreement with Bohannan Huston, Inc.
Scientists familiar with the hazards of the community	☑	On Call Contract or Direct Engineering Services Agreement with Bohannan Huston, Inc.
Emergency manager	☑	Mike Castillo, Public Works Manager
Grant writer(s)	☑	Annual contract with South Central Council of Governments, Tiffany Goolsby, Specialist for grant writing and applications

Table 5-3-4: Fiscal capabilities for Hatch		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	CDBG Requests made annually
Capital Improvements Project funding	Yes	Annual
Authority to levy taxes for specific purposes	Eligible	None Currently
Fees for water, sewer, gas, or electric service	Yes	Water/Sewer Only
Impact fees for homebuyers or new developments/homes	No	None
Incur debt through general obligation bonds	Eligible	None
Incur debt through special tax bonds	Eligible	None

Table 5-1-5: Legal and regulatory capabilities for Las Cruces		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES and/or ORDINANCES	• CLC Ordinance 2785; • CLC Municipal Code 34; • 44 CFR; • 2015 IBC;	• CLC Community Development; • CLC Public Works; Codes
PLANS, MANUALS, and/or GUIDELINES	• CLC Design Standards; • Municipal Code, • BCEGS; • CLC Master Drainage Plan;	• CLC Community Development; • CLC Public Works; Codes
STUDIES	• FIS (2016); • 2020 Elevate Las Cruces;	• FEMA/CLC; • CLC Public Works; • CLC Community Development

Table 5-2-5: Summary of technical staff and personnel capabilities for Las Cruces		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Community Development Public Works
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Community Development Public Works
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Community Development Public Works
Floodplain Manager	☑	Public Works – Floodplain Administrator
Surveyors	☑	Public Works – CLC Surveyor
Staff with education or expertise to assess the community's vulnerability to hazards	☑	LCFD; Doña Ana County - OEM
Personnel skilled in GIS and/or HAZUS; AutoCad-Civil 3D; ArcViewGIS	☑	Information Technology - staff
Scientists familiar with the hazards of the community		
Emergency manager	☑	Doña Ana County - OEM
Grant writer(s)	☑	Financial Services – Grants Administration

Table 5-3-5: Fiscal capabilities for Las Cruces		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	Apply for CDBG on an annual basis
Capital Improvements Project funding	Yes	Five year CIP program
Authority to levy taxes for specific purposes	Yes	2Mil Levy Tax
Fees for water, sewer, gas, or electric service	Yes	For all customers
Impact fees for homebuyers or new developments/homes	Yes	Fees are updated as needed
Incur debt through general obligation bonds	No	N/A
Incur debt through special tax bonds	Yes	Revenue Bonds
Loans	Yes	NM Finance Authority

Table 5-1-6: Legal and regulatory capabilities for Mesilla		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES	• 2018 International Building Code • 2018 International Residential Code • 2018 International Fire Code • 2018 Mesilla Town Code • Title 14 New Mexico Administrative Code	• Community Development • Fire • Public Works • NM Regulation and Licensing Department-Construction Industries Division

ORDINANCES	• Mesilla Town Code Title 8 Health and Safety
	  • Open Burning
	• Mesilla Town Code Title 15 Buildings and Construction
	  • Flood Damage Prevention
	  • Manufactured Housing
	  • Building Code
	  • International Fire Code
	• Mesilla Town Code Title 17 Subdivisions
	  • Suitability of Land
	• Mesilla Town Code Title 18 Zoning
	• Doña Ana County Flood Damage Prevention Ordinance No. 161-9
		• Community Development
		• Fire
		• Planning, Zoning and Historical Appropriateness Commission
		• DAC Flood Commission

PLANS, MANUALS, and/or GUIDELINES	• Doña Ana County Storm Criteria Guidelines • Doña Ana County All Hazard Emergency Operations Plan • Doña Ana County Community Wildfire Protection Plan • 2017 Town Of Mesilla Comprehensive Plan	• DAC/CLC Office of Emergency Management • Community Development • Public Works • Fire • DAC Flood Commission
STUDIES	• FEMA DFIRM Maps	• FEMA

Table 5-2-6: Summary of technical staff and personnel capabilities for Mesilla		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Public Works – Contract with Planning and Development Company
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Community Development – CID Building Department Issues Permits and Performs Building Inspections - Building Inspector

Table 5-2-6: Summary of technical staff and personnel capabilities for Mesilla		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards		
Floodplain Manager		
Surveyors		
Staff with education or expertise to assess the community's vulnerability to hazards Personnel skilled in GIS and/or HAZUS	☑	Fire – Fire Chief
Scientists familiar with the hazards of the community		
Emergency manager		
Grant writer(s)	☑	Public Works – Director Fire – Fire Chief

Table 5-3-6: Fiscal capabilities for Mesilla		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	Apply for CDBG annually
Capital Improvements Project funding	Yes	Apply for State funding annually and Federal Grants when available
Authority to levy taxes for specific purposes	Yes	Currently none in place
Fees for water, sewer, gas, or electric service	Yes	Fees for water system
Impact fees for homebuyers or new developments/homes	No	No ordinance in place
Incur debt through general obligation bonds	Yes	Currently non in place
Incur debt through special tax bonds	Yes	Currently non in place

Table 5-1-7: Legal and regulatory capabilities for NMSU		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES and/or ORDINANCES	• 2015 NM Commercial Building Code • 2015 NM Residential Code • 2018 NM Existing Building Code • 2018 NM / Uniform Plumbing Code • 2016 NM / National ASHRAE Mechanical Code • 2020 NM / National Electric Code • 2017 NM / National Electrical Safety Code • 2018 ICC International Fire Code for new construction • 2018 NFPA Fire Code –1 • 2018 Life Safety Code – 101	• Facilities & Services (FS) Project Development and Engineering • FS University Architect • FS Operations • FS Dept of Fire & Emergency Services • NMSU Board of Regents
POLICIES	• NMSU Policy Chapter 9: Facilities & Services • NM HED Web http://www.hed.state.nm.us/ • NM State Board Finance Statutes • NMSU Policy Chapter 16: Safety and Risk Management	• FS Project Development and Engineering • FS University Architect • FS Environmental Health & Safety & Risk Management • NMSU Planning & Institution Technology • FS Dept of Fire & Emergency Services • NMSU Police Department
PLANS, MANUALS, and/or GUIDELINES	• NMSU Master Plan • NMSU Utility Master Plan • NMSU Parking & Transportation Master Plan (currently in draft) • NMSU Housing Master Plan • NMSU All Hazards Emergency Operations Plan • NMSU Departmental Continuity of Operations Plans • NMSU Departmental Emergency Action Plans • NMSU IT Disaster Recovery Plan • NMSU Fire Prevention Guidelines & Practices • University Avenue Corridor Overlay District • City of Las Cruces Development • NMSU participation on CLC Metropolitan Planning Organization	• FS University Architect • Facilities & Services (FS) Project Development and Engineering • NMSU Auxiliary Administration • FS Operations • FS Dept of Fire & Emergency Services • NMSU Police Department • Environmental Health & Safety & Risk Management • NMSU Planning & Institution Technology

Table 5-1-7: Legal and regulatory capabilities for NMSU		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
STUDIES	• Fire Protection and Fire Life Safety System Assessment • DHS US Homeland Security evaluation • NMSU Stormwater Management Program • Utility Master Plan • Water Master Plan • Annual Fire Safety Report (Clery Act) • Annual Safety report (Clery Act)	• NMSU Purchasing • Environmental Health Safety & Risk Management • NMSU Police Department • FS Engineering • FS Dept of Fire & Emergency Services

Table 5-2-7: Summary of technical staff and personnel capabilities for NMSU		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	**Facilities and Services** (FS)- Asst VP for Facilities **FS Architect**- University Architect, **FS Engineering**- Facilities Engineer
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	**Facilities and Services** - Asst VP for Facilities **FS Project Construction**- Project Mgr Inspection **FS Project Design** – Project Mgr Design **FS Engineering**- Facilities Engineer
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	**Facilities and Services** - Asst VP for Facilities **FS Environmental Health & Safety** - Director, Asst Director **FS Engineering**- Facilities Engineer **FS University Architect** **FS Project Design** - Project Mgr Design **Purchasing and Risk Mgmt Admin** – Dir Procurement Svcs/Risk Mgt
Floodplain Manager	☑	**FS Engineering**- Facilities Engineer
Civil Engineering	☑	**FS Engineering**- Facilities Engineer
Staff with education or expertise to assess the community's vulnerability to hazards	☑	**Facilities and Services** - Asst VP for Facilities **NMSU Police Dept**. - Deputy Chief **FS Dept of Fire & Emerg. Services** – Fire Chief, Deputy Fire Chief **FS Environmental Health & Safety** - Director & Assistant Director **Student Health Center** - Exec Dir, Health & Wellness
Personnel skilled in GIS and or HAZUS	☑	**Geography** – GIS Analyst **NMSU Police Dept**. - Deputy Chief
NMSU Experts: academic personnel with relevant expertise in a specific area or field of study NMSU web search for experts updated annually	☑	Professor, land use and urban development Professor, Geographic Information Systems (GIS) Assc Dean, Eng, Construction Engineering/ Structural Engineering Acad Dept Head, Structural Engineering Associate Professor, Civil Engineering Associate Professor, Weather Professor ACES/PES, State Climatologist Assistant Professor, vulnerability and adaptation to climate change Associate Professor, Public Health Preparedness and Response Assistant Professor, Risk Management Assistant Professor, Insurance Ag Research Scientist, Weather forecasting GIS and regional water resources Dept Head of WRRI, water expertise

Table 5-2-7: Summary of technical staff and personnel capabilities for NMSU		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Emergency manager (Police, Fire, EH&S, UHC, FS)	☑	**Facilities and Services** - Asst VP for Facilities **NMSU Police** – Police Chief, All Supervisors **FS Dept of Fire & Emerg. Services** – Fire Chief, Fire Protection Shift Captain **FS Environmental Health & Safety** - Director, Assistant Director **Student Health Center** - Exec Dir, Health & Wellness
Grant writer(s)	☑	**Grants and Contracts Office** – Dir, Grants & Contracts **College Research Centers:** Agriculture and Home Econ College Arts and Sciences College Business College Education College Engineering College Health and Social Services College
FEMA rated communications leaders Public Information Officers	☑	**NMSU Emergency Dispatch Center** – Dispatchers **NMSU Police Department** - Multiple Designated PIOs **News and Media Relations** - Director, News & Media Relations **University Communications** - Assc VP, Univ Comm/Mkting Svcs
Telecommunication	☑	**ICT Telecomm and Networking Svcs** – Deputy CIO/Telecomm Dir
Water Electrical	☑	**FS Plumbing** – Supv, Skilled Crafts **FS Electricians** – Supv, Skilled Crafts
Housing Food Service	☑	**Housing and Residential Life** - Director, Housing & Res Life **Auxiliary Administration** - Asst VP, Auxiliary Svcs

Table 5-3-7: Fiscal capabilities for NMSU		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Eligible	Apply for CDBG on an annual basis
Capital Improvements Project funding	Yes	Through State of NM and subject to legislature appropriation
Authority to levy taxes for specific purposes	Yes	Community Colleges
Fees for water, sewer, gas, or electric service	Yes	Fees to cover utility expense applied to facilities that are operated as revenue centers and are not instruction or general service.
Impact fees for homebuyers or new developments/homes	No	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	DACC has the ability to seek voter approval

Table 5-3-7: Fiscal capabilities for NMSU		
Other	Yes	State of NM annually funds NMSU for operation, repair and maintenance of a portion of campus

Table 5-1-8: Legal and regulatory capabilities for Sunland Park		
Regulatory Tools for Hazard Mitigation	**Description**	**Responsible Department/Agency**
CODES and/or ORDINANCES	• International Building Codes • Flood Damage Prevention Ordinance • ICC Codes • Subdivision Ordinance • Zoning Ordinance	• Community Development Dept.
PLANS, MANUALS, and/or GUIDELINES	• City of Sunland Park Comprehensive Plan	• Community Development Dept.
STUDIES	• Flood Insurance Study (FIS)	• Community Development Dept.

Table 5-2-8: Summary of technical staff and personnel capabilities for Sunland Park		
Staff/Personnel Resources	☑	**Department/Agency - Position**
Planner(s) or engineer(s) with knowledge of land development and land management practices	☑	Community Development – Acting CED Director
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	☑	Community Development - Building Inspector
Planner(s) or engineer(s) with and understanding of natural and/or human-caused hazards	☑	Community Development – Acting CED Director / CFM
Floodplain Manager	☑	Community Development – Acting CED Director / CFM
Surveyors		
Staff with education or expertise to assess the community's vulnerability to hazards	☑	Community Development – Acting CED Director / CFM
Personnel skilled in GIS and/or HAZUS; AutoCad-Civil 3D; ArcViewGIS	☑	Community Development – Acting CED Director / CFM
Scientists familiar with the hazards of the community		
Emergency manager	☑	Fire Chief
Grant writer(s)	☑	Community Development – Economic Development & Business Registration

Table 5-3-8: Fiscal capabilities for Sunland Park		
Financial Resources	**Accessible or Eligible to Use (Yes, No, Don't Know)**	**Comments**
Community Development Block Grants	Yes	As needed
Capital Improvements Project funding	Yes	5 year project cycles
Authority to levy taxes for specific purposes	No	
Fees for water, sewer, gas, or electric service	No	Water/Wastewater Authority
Impact fees for homebuyers or new developments/homes	No	
Incur debt through general obligation bonds	No	
Incur debt through special tax bonds	No	

Opportunities for increased capability:

- International Building Codes (IBC) – Building codes are important mitigation tools because they are tailored to fit specific hazards present in each region. Consequently, structures that are built to applicable codes are resistant to hazards, such as strong winds, floods, and wildfires, and can help mitigate the effects of these hazards. New Mexico has adopted the 2015 IBC code as a minimum standard for all communities and provides inspection services through the Construction Industry Division of the New Mexico Department of Regulations and Licensing. Individual counties and municipalities are at liberty to adopt the most current IBC.
- Floodplain Ordinance and Community Rating System (CRS) – Dona Ana County and most participating jurisdictions are participants in the NFIP. Those participating can benefit from adopting higher standards in their floodplain ordinances to ensure additional protection for development in the floodplain or prohibit future development. Dona Ana County and City of Las Cruces should consider additional actions to continually improve their CRS ratings. The City of Anthony should consider joining the NFIP.
- Public Warning System – Warning systems are needed to ensure timely and accurate information to minimize the effects of disasters in the County.
- Formal Mitigation Function – For developing and implementing projects as well as maintaining the planning process.
- Firewise Communities/USA – A project of the National Wildfire Coordinating Group's Wildland-Urban Interface Working Team, it provides information and guidance for communities in the wildland-urban interface area (www.firewise.org).

5.1.2 National Flood Insurance Program Participation

Participation in the NFIP is a key element of any community's local floodplain management and flood mitigation strategy. Doña Ana County and the incorporated jurisdictions of Hatch, Las Cruces, Mesilla, and Sunland Park currently participate in the NFIP. The City of Anthony currently does not have staff on hand to handle participation in the NFIP and associated CRS requirements, and do not anticipate having the capability to hire staff to do so in the future, so NFIP participation would be contingent on drafting an MOA/JPA with DAC Flood Commission to take on all floodplain administration duties on behalf of the city. Although NMSU and EBID are not separately listed as participating jurisdictions in the NFIP, floodplain management within NMSU and EBID boundaries is covered by the county or incorporated community within which the subject property is located, as appropriate. NMSU also practices sound floodplain management through oversight and enforcement of regulations and ordinances by the Construction Industries Division of the New Mexico Regulation and Licensing Department. Both NMSU and EBID cooperate with the floodplain management objectives of Doña Ana County and the other NFIP communities to work towards a common goal of maintaining NFIP compliance.

Joining the NFIP requires the adoption of a floodplain management ordinance that requires jurisdictions to follow established minimum standards set forth by FEMA and the State of New Mexico, when developing in the floodplain. These standards require that all new buildings and substantial improvements to existing buildings will be protected from damage by the 100-year flood, and that new floodplain development will not aggravate existing flood problems or increase damage to neighboring properties. As a participant in the NFIP, communities 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. FIRMs are also an important source of information to educate residents, government officials and the private sector about the likelihood of flooding in their community. Table 5-4 summarizes the NFIP status and statistics for each of the jurisdictions participating in this Plan.

Table 5-4: NFIP status and statistics for Doña Ana County and participating jurisdictions as of August 2020						
Jurisdiction	**Community ID**	**NFIP Entry Date**	**Current Effective Map Date**	**Number of Policies**	**Amount of Coverage (x $1,000)**	**Floodplain Management Role**
Doña Ana County	350012	09/27/1991	07/06/16	433	$115,344.6	County manages floodplains for unincorporated areas of the County
City of Anthony	350061	Not currently a participate in the NFIP Program				
Village of Hatch	350013	01/03/1986	07/06/16	30	$5,421.5	Floodplain management provided by DAC Flood Commission.
City of Las Cruces	355332	06/11/1971	07/06/16	690	$160,439.8	Floodplain management provided by the city for all incorporated areas of Las Cruces, through the Engineering Services Section of the Public Works Department.
Town of Mesilla	350113	05/28/1985	9/27/1991	6	$1,925	Floodplain management provided by DAC Flood Commission.
City of Sunland Park	350147	11/08/2006	07/06/16	130	$31,512.2	Floodplain management provided by the city for all incorporated areas of Sunland Park, through the Community Development Department.
Elephant Butte Irrigation District	Not a participate in the NFIP Program. Floodplain management within EBID boundaries is covered by the county or incorporated community, as appropriate.					
New Mexico State University	Not a participate in the NFIP Program. Floodplain management within NMSU boundaries is covered by the county or incorporated community, as appropriate, with oversight provided by the Construction Industries Division of the New Mexico Regulation and Licensing Department.					
Sources: Policy Statistics - http://bsa.nfipstat.com/reports/1011.htm (12/31/2011) ; NFIP Status - http://bsa.nfipstat.com/comm_status/index.html (3/8/2012)						

Each of the incorporated jurisdictions currently participating in the NFIP program performed an overall assessment of their NFIP program by responding to the following questions:

Question 1: Describe your jurisdiction's current floodplain management / regulation process for construction of new or substantially improved development within your jurisdiction.

Question 2: Describe the status and/or validity of the current floodplain hazard mapping for your jurisdiction.

Question 3: Describe any community assistance activities (e.g. – help with obtaining Elevation Certificates, flood hazard identification assistance, flood insurance acquisition guidance, public involvement activities, etc.)

Question 4: Describe identified needs in your floodplain management program. This could include things like updating the floodplain management code/regulation, establishing written review procedures, modifying or adding flood hazard area mapping, etc.

Table 5-5 summarizes the responses provided by each of the currently participating jurisdictions

Table 5-5: NFIP program assessment for Doña Ana County and participating NFIP jurisdictions

Participating Jurisdiction	Responses to Questions 1-4	
Doña Ana County	Q1	The Doña Ana County Flood Commission Office reviews all building permits and land development applications (i.e., residential and commercial permits, mobile home installation permits, subdivision applications, land use applications, etc.) and validate if the permit/application is within a FEMA Special Flood Hazard Area (SFHA). We also reference and use our best available data (i.e., aerial photography (ArcView GIS), drainage studies, subdivision construction drawings, codes and development regulations, etc.) as part of that review. We maintain our review information on a log-database that is used at the end of the year for reporting activity to the BOCC and related Boards. When applicable, we require an Elevation Certificate be utilized when a structure is proposed within a FEMA SFHA or advise there may be a need for Letter of Map Change (LOMC). We also oversee the floodplain management process/program either through a MOU or JPA for the Village of Hatch and Town of Mesilla. We have a Flood Damage Prevention Section in our development code that we utilize for reviews/development/floodplain management. Our staff involved with reviews/development/floodplain management are CFMs.
	Q2	We obtained DFIRMs in 2016 through FEMA complete with maps and an FIS. We are also involved in the Cooperating Technical Partner (CTP) program and our community has processed several applications prior to the DFIRM process.

Table 5-5: NFIP program assessment for Doña Ana County and participating NFIP jurisdictions		
Participating Jurisdiction	**Responses to Questions 1-4**	
	Q3	We are in the Community Rating System (CRS) Program and are a Class 10. The CRS Program has several outreach strategies and action items that we currently do to maintain our CRS Program. We have had several CAVs from the State Floodplain Coordinator, ISO, and FEMA Region 6 Reps. Through the CRS Program as well as the NM Floodplain Managers Association, we have attended fairs and related functions for outreach. We also oversee the floodplain management process/program either through a MOU or JPA for the Village of Hatch and Town of Mesilla.
	Q4	We are always seeking to gain better knowledge and assistance with training specifically coming to our community. We are in close contact with reps from FEMA Region 6 to do this. If there is a need for improving our program, it would be going to the State Legislature and educating them more on floodplain management and the need for State support for projects, funding, outreach, natural hazards, etc. (which should be across the State).
Village of Hatch	Q1	Doña Ana County currently oversees building permit process for the Village of Hatch. Doña Ana County Flood Commission Office administers Flood Plan management for the Village of Hatch. Village of Hatch has updated the Zoning Approval Process to better assist Dona Ana County Building Services in the issue of Building Permits and the State Fire Marshal's Office planning review.
	Q2	DFIRMs will be revised via LOMR process after construction of the Hatch Dam is completed. CLOMR will be submitted once design drawings are completed winter 2021. Otherwise, DFIRMs are the used as effective 07/06/2016.
	Q3	Doña Ana County Flood Commission Office provides this service for the Village of Hatch.
	Q4	Additional training from FEMA/State; updating flood damage performance ordinance to be more inclusive of floodplain administration tasks. The current JPA does not specifically address building permit

Table 5-5: NFIP program assessment for Doña Ana County and participating NFIP jurisdictions		
Participating Jurisdiction	**Responses to Questions 1-4**	
		administration, elevation certificates, floodplain administration, etc.; more accurate flood mapping (currently the community is entirely mapped as approximate A Zone); drainage control structures, dams, dyke's, etc.
City of Las Cruces	Q1	All properties/parcels located within the City of Las Cruces limits have been loaded into a Accela software program. All properties/parcels located in the SFHA have been identified and are flagged as "Flood Zone – YES". If a permit request is made for a property or parcel that has been identified to be located in the SFHA – the permit technician contacts the Floodplain Administrator to see if the request should be permitted. The Floodplain Administrator will review the request and inform the requester of compliance issues.
	Q2	The City of Las Cruces is using the Flood Insurance Rate Maps from the most recent 2016 study.
	Q3	The City of Las Cruces is a CRS – Class 7 and conducts many of the activities in the NFIP-CRS.
	Q4	The City of Las Cruces needs to hire an official Floodplain Administrator.
Town of Mesilla	Q1	DAC County Flood Commission office does this work for the Town of Mesilla via a Memorandum of Understanding. All construction projects are permitted through the Town of Mesilla Community Development Director and must contain engineer stamped plans for site design, runoff compliance and applicable Town Codes.
	Q2	Utilizing current DFIRMs and relevant data approved 07/06/2016.
	Q3	DAC County Flood Commission office does this work for the Town of Mesilla. All construction projects are permitted through the Town of Mesilla Community Development Director and must contain engineer stamped plans for site design, runoff compliance and applicable Town Codes.
	Q4	More FEMA training in floodplain management and Town of Mesilla staff education. Grant Funding training is desirable.
City of Sunland Park	Q1	Sunland Park has adopted an ordinance addressing issues of flooding requiring all developers to comply with flood regulations; fines are imposed for non-compliance.

Table 5-5: NFIP program assessment for Doña Ana County and participating NFIP jurisdictions		
Participating Jurisdiction	**Responses to Questions 1-4**	
	Q2	DFIRMs approved 07/06/2016. DACFC has identified areas that require revisions, and willingness to provide support, but no progress has been made to date.
	Q3	Flood plain manager of Sunland Park assists with all building permits that includes; Elevation Certificates, flood hazard identification assistance, flood zone determination, drainage projects, etc.
	Q4	More detailed flood zone mapping, most are currently unnumbered A Zones.

5.2 Hazard Mitigation Goals

An assessment of the mitigation goals summarized in the 2013 Plan was performed by the Steering Committee during the fourth planning meeting. To aid with the assessment, the goals listed in the 2018 State Plan (NMDHSEM, 2018) were made available. The Steering Committee reviewed and discussed the 2013 Plan mitigation goals section and came to a consensus that the stated goals would remain unchanged for the Plan update.

The final list of mitigation goals developed by the Steering Committee are listed below in no particular order of importance.

Goal 1 – Improve hazard mitigation communication and collaboration with federal, state, local, and other governmental agencies, and private sector organizations and stakeholders.

Goal 2 – Promote disaster-resistant future development.

Goal 3 – Promote public understanding, support, and demand for hazard mitigation.

Goal 4 – Reduce or eliminate the risk to people and property from natural hazards by developing community resiliency.

Goal 5 – Explore all internal and external avenues to fund mitigation activities.

5.3 Mitigation Actions/Projects

Mitigation actions/projects (A/P) are those activities identified by a jurisdiction, that when implemented, will have the effect of reducing the community's exposure and risk to the particular hazard or hazards being mitigated. The implementation strategy addresses the "*how, when, and by whom?*" questions related to implementing an identified A/P.

The process for defining the list of mitigation A/Ps for the Plan was accomplished in three steps. First, an assessment of the actions and projects specified in the 2013 Plan was performed, wherein each jurisdiction reviewed and evaluated their jurisdiction specific list. Second, a new list of A/Ps for the Plan was developed by combining the 2013 Plan A/Ps that will be carried forward as a result of the assessment, and any new A/Ps. Third, an implementation strategy for the combined list of A/Ps was formulated. Details of each step and the results of the process are summarized in the following sections.

5.3.1 Previous Mitigation Actions/Projects Assessment

The Steering Committee and Local Planning Team for each jurisdiction, reviewed and assessed the 2004 Plan actions and projects. The assessment included evaluating and classifying each of the previously identified A/Ps based on the following criteria:

STATUS		***DISPOSITION***	
Classification	Explanation Requirement:	Classification	Explanation Requirement:
"***No Action***"	Reason for no progress	***"Keep"***	None required

"***In Progress***"	What progress has been made	***"Revise"***	Revised components
"***Complete***"	Date of completion and final cost of project (if applicable)	***"Delete"***	Reason(s) for exclusion.

Any A/P with a disposition classification of "Keep" or "Revise" was carried forward to become part of the new A/P list for the Plan. All A/Ps identified for deletion were removed and are not included in this Plan. The results of the assessment for each of the 2013 Plan A/Ps is summarized by jurisdiction in Tables 5-6-1 through 5-6-8.

Table 5-6-1
Assessment of mitigation actions/projects identified by Doña Ana County in the previous plan cycle

Action / Project Title	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
A1. Doña Ana County FIRM Upgrade to DFIRM	• DACFC • Federal Funding FEMA Region VI initial mapping budget is $250M; local share through CTP Program • January 2020	Complete	Delete	New Flood Maps and DFIRMs became effective July 6, 2016.
A2. Upgrade Flood Protection Capabilities of the Rio Grande Canalization Project.	• DACFC • Federal Funding through USIBWC and USACOE will fund and conduct hydraulic studies, geotechnical studies, etc. • FY 2025?	In Progress	Revise	This project is closer to being completed with the DFIRMs but is still waiting on federal funding for interior drainage studies before levees can become certified.
A3. Public Education and Public Notification Regarding Severe Weather	• DAC OEM & DACFC w/ Local Govt. Participation • Contributions from local business and volunteer work. • Annually	In Progress	Keep	Updates to County website, community outreach, production of educational presentations & materials by DAC are ongoing.
A4. Improve Emergency Communication Capabilities To Facilitate Better Warning And Emergency Response To Severe Weather Conditions.	• DAC OEM & DACFC w/ Local Govt. Participation • Annually	In Progress	Revise	This goal includes installing new infrastructure to increase communication capabilities in remote areas, and having more defined emergency notificaiton and protocol defined. We removed the $10,000/phase as defined in the last plan, as the various phases of the goal include installation of weather stations, radio towers, etc, and costs are variable and dependent on size, location, and scope of plan.

Table 5-6-1
Assessment of mitigation actions/projects identified by Doña Ana County in the previous plan cycle

Action / Project Title	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
A5. County-Wide Flood Warning and Response System	• DAC OEM & DACFC w/ Local Govt. Participation • $500,000.00 estimated initial with additional phases with costs to follow. • Annually	In Progress	Keep	68 automated weather monitoring stations, rain gauges, pressure transducers and stream gauges provide weather alerts and enable warning notifications in the current network
A6. Install Staff Rain Gages at Low Water Crossings and Arroyos throughout the County	• DAC OEM & DACFC w/ Local Govt. Participation • $20,000 estimated initial purchase of a dozen with more to follow. • Annually	No Action	Keep	Development to County Wide Flood Warning System and increase in operations staff is currently preparing to head in this direction.
A7. Develop a County-Wide Dam Safety Program	• DAC OEM & DACFC w/ Local Govt. Participation • $1 million (est) to be phased over a five-year period • Annually (As needed)	In Progress	Keep	This will involve Dam Safety Bureau cooperation to have emergency action plans approved for state wide use. The County is pursuing alternative options to have emergency protocol and notification process in house for internal use.
A8. Become a Storm-Ready Community	• DAC OEM & DACFC w/ Local Govt. Participation • Contributions from local business and volunteer work. • Annually	Complete	Revise	Since the last plan, Dona Ana County has become a storm-ready community. Our status is active, but requirements are becoming more stringent, and our goal is to retain an active status, so the goal will be revised to "Remain a Storm-Ready Community"
A9. Evaluate, update, and adopt Building Codes.	• DAC OEM & DACFC w/ Local Govt. Participation • Staff time • Annually (As needed)	Complete	Keep	2015 International Building Code and 2015 International Fire Code were adopted by BOCC. This update process should be ongoing as new versions become available.

Table 5-6-1
Assessment of mitigation actions/projects identified by Doña Ana County in the previous plan cycle

Action / Project Title	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
A10. Drought Related Public Education and Outreach	• DAC OEM & DACFC w/ Local Govt. Participation • Staff time + $5,000 • Annually	No Action	Keep	Methods to improve community outreach and increase resident engagement is ongoing and requires continuous evaluation.
A11. Drought Resistant Landscape Regulation	• Community Development, Director • Staff time • Ongoing as needed	Complete	Delete	The action has been completed with regulations included in the Unified Development Code adopted in 2016.
A12. Defensible Space Practices	• DAC OEM w/ local Fire District support • Staff time • Ongoing as needed	Complete	Revise	This goal is ongoing, but initial outlines for practices were covered in the 2012 Community Wildfire Protection Plan with implementation strategies and methods – The goal should be revised to say "Encourage and Maintain Defensible Space Practices throughout Dona Ana County"
A13. Wildfire Education and Public Outreach	• DAC OEM w/ local Fire District support • Staff time + $2,000/yr • Annually	In Progress	Keep	This goal is ongoing. Education and Outreach is covered in the 2012 Community Wildfire Protection Plan, but the goal requires ongoing adaptation and reevaluation to ensure effectiveness.

Table 5-6-2

Assessment of mitigation actions/projects identified by Anthony in the previous plan cycle

Action / Project Title	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
B1. Anthony Stormwater Master Plan	• City Council / Mayor • 350,000 • 2021	In Progress	In Progress	Preliminary DMP is completed. New goal is to secure funding to prepare final plan.
B2. Join NFIP	• City Council / Mayor • Staff time • 2021	No Action	Keep	Limited Staff & Funding. Need a Memorandum of Understanding with Dona Ana County Flood Commission or to hire a Floodplain Administrator.
B3. Drought Related Public Education and Outreach	• City Council / Mayor • Staff time • Annually w/ County	No Action	Keep	Methods to improve community outreach and increase resident engagement is ongoing and requires continuous evaluation.
B4. Drought Resistant Landscape Regulation	• City Council / Mayor • Staff time • Ongoing as needed	Complete	Delete	This action has been completed with regulations included in the Unified Development Code adopted Dona Ana County in 2016.
B5. Building Code Review, Update and/or Adoption	• City Council / Mayor • Staff time • Annually	No Action	Keep	Limited Staff & Funding
B6. Assist Doña Ana County To Improve Emergency Communications County-Wide	• City Council / Mayor • Staff time • Annually	No Action	Keep	Limited Staff & Funding
B7. County-Wide Flood Warning and Response System	• City Council / Mayor • Staff time • As Needed per County Schedule	No Action	Keep	Limited Staff & Funding
B8. Encourage and Maintain Defensible Space Practices throughout Dona Ana County	• City Council / Mayor • Staff time • Ongoing as needed	In Progress	Keep	This goal is ongoing, but initial outlines for practices were covered in the 2012 Community Wildfire Protection Plan with implementation strategies and methods.
B9. Flood Retarding Structure Emergency Action Plan Development	• City Council / Mayor • Staff time • Ongoing as needed	In Progress	Keep	Breedlove and Lauson Dam EAP's done. Anthony Arroyo still needs to be done.

Table 5-6-3
Assessment of mitigation actions/projects identified by EBID in the previous plan cycle

Action / Project Title	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
C1. Diez Lagos Project	• EBID Maintenance • $650,000 • 2014	Complete	Delete	Project Completed Unable to provide costs at this time
C2. Flood Control Dam EAP's	• EBID Engineering • $1,360,000 • 2 by 12/2012 5 by 12/2013 5 by 12/2014 • 5 by 12/2015	In Progress	Keep	EAP's have taken longer through the approval process; not all have been completed. We have 7 finalized. 6 in progress in house. Unable to provide costs at this time
C3. Placitas Arroyo	• EBID / Village of Hatch • $1,000,000 • 2017	Complete	Delete	Project Completed Unable to provide costs at this time
C4. Drought Related Public Education and Outreach	• EBID / DAC • Staff time • Annually w/ County	In Progress	Keep	We continually did outreach through 2019; due to COVID-19, we had to postpone presentations to public and schools
C5. Groundwater Recharge Opportunities	• EBID Engineering • Staff time • 2017	In Progress	Keep	Continues as drought continues Work being done through our Groundwater Resource Department, not Engineering

Table 5-6-4
Assessment of mitigation actions/projects identified by Hatch in the previous plan cycle

Action / Project Title	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
D1. Evaluate and Update Building Code	• Planning Development Department/ Building Official • $4,000 + Staff time • Annually	No Action	Keep	Have not incorporated building inspection as part of Village services. Currently all inspection go through Dona Ana County. 2015 International Building Code and 2015 International Fire Code were adopted by BOCC. This update process should be ongoing as new versions become available.
D2. Village of Hatch Drainage Master Plan	• Village of Hatch / Mayor • $250,000 + Staff time • FY 2016	Complete	Delete	DMP complete 7/23/2018 by Smith Eng. Co. $259,000
D3. Reduce Flood Risk for Village of Hatch	• Village of Hatch / DAC • $8 Million + Staff time • Annually / FY 2016	In Progress	Keep	USACE is currently in the design process for the new Spring Canyon Dam project. The Village and DAC are working towards match funding for construction for the project. Smith Eng. Co. has also completed the Waterline relocation design to move the mainline around the dam area. Implementing Placitas DMP capital recommendations as funding becomes available.
D4. Village of Hatch Storm Drain Upgrade and Expansion	• Village of Hatch / Mayor • $900,000 • FY 2016	In Progress	Keep	The Village of Hatch construction project to remove the Concrete Box Culverts at the Canal rd./ Placitas Arroyo has been designed and is currently under construction. Bid Award 7/29/2020. Construction start August 2020.
D5. Efforts to Reduce Hazardous Material Dumping	• Village of Hatch / Mayor • $10,000 • Annually	In Progress	Keep	No action

Table 5-6-4
Assessment of mitigation actions/projects identified by Hatch in the previous plan cycle

Action / Project Title	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
D6. County-Wide Flood Warning and Response System	• Village of Hatch / Mayor • Staff time • Annually (per County schedule)	In Progress	Keep	The village has been working with DAC Flood Commission to install sensors in existing Flood Control Dams in order to provide early warning of possible flood hazards. Sensors have not been installed and further work with Flood Commission is necessary.
D7. Drought Related Public Education and Outreach	• Village of Hatch / Mayor • Staff time • Annually w/ County	In Progress	Keep	Limited staff and funding.
D8. Drought Resistant Landscape Regulation	• Planning Development Department / Building Official • Staff time • Ongoing as needed	Complete	Delete	Water Conservation Plan, approved by the Office of the State Engineer 4/20/2020. Cost $33,250.
D9. Assist Doña Ana County To Improve Emergency Communications County-Wide	• Public Works Department / Director • Staff time • Annually	In progress	Keep	New Chief of Police working on.
D10. Defensible Space Practices	• Planning Development Department / Building Official • Staff time • Ongoing as needed	In progress	Keep	Limited staff and funding. This goal is ongoing, but initial outlines for practices were covered in the 2012 Community Wildfire Protection Plan with implementation strategies and methods – The goal should be revised to say “Encourage and Maintain Defensible Space Practices throughout Dona Ana County”

Table 5-6-4
Assessment of mitigation actions/projects identified by Hatch in the previous plan cycle

Action / Project Title	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
D11. Flood Retarding Structure Emergency Action Plan Development	• Public Works Department / Director • Staff time • Per DACFC Schedule	In Progress	Keep	USACE and DACFC are working on final design of the Spring Canyon Flood Control project. We do not have a construction date at this point.

Table 5-6-5
Assessment of mitigation actions/projects identified by Las Cruces in the previous plan cycle

Action / Project Title	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
E1. Increase Public Awareness related to the National Flood Insurance Program (NFIP).	• City of Las Cruces – Public Works Department / Floodplain Administrator • Staff time • Ongoing	In Progress	Keep	CLC Annual Water Festival Various school presentations Public Information pamphlets
E2. Digital Flood Insurance Rate Map (DFIRMS)	• City of Las Cruces Public Works Department / Floodplain Administrator • Staff time • Ongoing	Complete	Delete	Currently utilizing DFIRM's from 2016 Study
E3. County-Wide Flood Warning and Response System	• OEM and Local Governmental Jurisdictions • Staff time; $500,000 estimated initial with additional phases with costs to follow. • 2022	In Progress	Keep	68 automated weather monitoring stations, rain gauges, pressure transducers and stream gauges provide weather alerts and enable warning notifications in the current network
E4. Develop a County-Wide Dam Safety Program	• OEM and Local Governmental Jurisdictions • $100,000 (est) to be phased over a five-year period. • Annually	In Progress	Keep	Cooperate with the County in pursuit of alternative options to have emergency protocol and notification process in house for internal use.

Table 5-6-5
Assessment of mitigation actions/projects identified by Las Cruces in the previous plan cycle

Action / Project Title	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
E5. Install Staff Rain Gages at Low Water Crossings and Arroyos throughout the County.	• OEM and Local Governmental Jurisdictions • Staff time; $20,000 estimated initial purchase of a dozen with more to follow. • Ongoing	No Action	Keep	No action due to high staff turnover rate. Development of County Wide Flood Warning System and increase in operations staff to facilitate completion of this project.
E6. Become a Storm-Ready Community	• OEM and Local Governmental Jurisdictions • Staff time; Contributions from local business and volunteer work. • Ongoing	No Action	Keep	No action due to high staff turnover rate.
E7. Evaluate and Adopt Updated Building Codes.	• City of Las Cruces – Community Development / Building & Development Service Administrator • Staff time • Ongoing	In Progress	Keep	Currently utilizing the: 2015 IBC 2015 IRC 2015 IEBC Continue evaluating as needs arise.
E8. Reduce Hazardous Material Dumping.	• City of Las Cruces Police Department / Codes Enforcement • Staff time • Ongoing	In Progress	Keep	Programs include: Keep Las Cruces Beautiful Tos no Mas

Table 5-6-5
Assessment of mitigation actions/projects identified by Las Cruces in the previous plan cycle

Action / Project Title	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
E9. Water Conservation Program – Education and Outreach	• City of Las Cruces Utilities Department / Water Conservation Coordinator • Staff time • Annually	In Progress	Keep	CLC Annual Water Festival Public Information pamphlets
E10. Defensible Space Practices	• City of Las Cruces Fire Department / Fire Chief • Staff time • Ongoing as needed	In Progress	Keep	This goal is ongoing, but initial outlines for practices were covered in the 2012 Community Wildfire Protection Plan with implementation strategies and methods – The goal should be revised to say "Encourage and Maintain Defensible Space Practices throughout Dona Ana County"
E11. Wildfire Education and Public Outreach	• City of Las Cruces Fire Department / Fire Chief • Staff time+ $2,000/yr • Annually	In Progress	Keep	This goal is ongoing. Education and Outreach is covered in the 2012 Community Wildfire Protection Plan, but the goal requires ongoing adaptation and reevaluation to ensure effectiveness.

Table 5-6-6
Assessment of mitigation actions/projects identified by Mesilla in the previous plan cycle

Action / Project Title	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
F1. Upgrade/Repair Mesilla Community Center to serve as Cooling/Heating Station	• Public Works / Director • $490,000 • Jan 2013	Complete	Delete	Completed 2013/2014
F2. Rehabilitation / Repair Public Safety Building	• Public Works / Director • $4000.00 • Annually	In Progress	Keep	Annual maintenance is performed to the Public Safety Building. A building maintenance budget of $4,000 is adequate for preventative maintenance needs.
F3. Storm Drain Inspections and Repairs	• Public Works / Director • $2000.00 • Annually	In Progress	Keep	Inspections are done semi-annually, and a maintenance budget of $2,000/year is sufficient to complete this action.
F4. Implement the Life Safety Initiative “Turn Around Don’t Drown”	• Safety Training Consultants • $1,800.00 • Annually	In progress	Keep	Safety Training Consultants provides this training on an annual basis. The budget of $1,800 is sufficient to complete this task.
F5. Reduce Hazardous Material Dumping	• Codes Enforcement • Staff Time • Ongoing	In Progress	Keep	Code Enforcement monitors, reports and issues citations for hazardous materials dumping.
F6. County-wide Flood Warning and Response System	• Fire Department / Fire Chief • Staff time • Annually with County	In Progress	Keep	In collaboration with the other jurisdictions in Dona Ana County, the Town of Mesilla participates in developing early warning and response procedures.
F7. Drought Related Public Education and Outreach	• Public Works / Director	In Progress	Keep	Town attends yearly outreach events sponsored by the County to educate public.

Table 5-6-6
Assessment of mitigation actions/projects identified by Mesilla in the previous plan cycle

Action / Project Title	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
F8. Drought Resistant Landscape Regulation	• Community Development / Coordinator • Staff time • Ongoing as needed	In Progress	Keep	No progress. Due to a shortage of staff no progress has been made to implement a Town ordinance for drought resistant landscape.
F9. Assist Dona Ana County to Improve Emergency Communications County-Wide	• Fire Department / Fire Chief • Staff time • Annually	In Progress	Keep	Fire Department staff work in conjunction with Dona Ana County to improve county wide emergency communications.
F10. Defensible Space Practices	• City of Las Cruces Fire Department / Fire Chief • Staff time • Ongoing as needed	In Progress	Keep	The Fire Department staff assist with the task of identifying and minimizing risks associated with overgrowth of vegetation and/or debris.
F11. Wildfire Education and Public Outreach	• City of Las Cruces Fire Department / Fire Chief • Staff time + $2,000/yr • Annually	In Progress	Keep	The Town of Mesilla participates in training and public outreach for wildfire education, and a budget of approximately $2,000 per year is sufficient to complete this task.

Table 5-6-7
Assessment of mitigation actions/projects identified by NMSU in the previous plan cycle

Action / Project Title	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
G1. Tunnel Assessment	• Facilities & Services / Engineer • $5,000,000 • 6 yrs	In Progress	Keep	This will be a continual operation for foreseeable future.
G2. Tortugas Dams Study	• Dept. of Civil Engineering / Assoc. Dept Head • $150,000 • 3 yrs	Complete	Delete	Tortugas Site 1 Dam EAP (2017)
G3. Temperature Resistant Equipment	• Facilities & Services / Exec. Director; Auxiliary Svcs / AVP • $50,000 • 5 yrs	No Action	Delete	The concept of this action in unknown by current management team. Flood sensors have been installed in various locations of NMSU Tunnel System.
G4. Drainage Master Plan And Flooding Detection/ Warning	• Facilities & Services / Engineer • $60,000 • 4 yrs	Complete	Keep	NMSU Auxilliary Services completed a flood drainage study in 2013. NMSU Purchased an early warning message system known as “Everbridge” to send out emergency messages,
G5. Unified Mapping	• Facilities & Services / Space Manager • $250,000	Revise	Keep	FS employees 6 persons to update our Campus Maps. FS Space Manager oversees.
G6. Emergency Power To Shelter Facilities	• Facilities & Services / Engineer • $1,000,000	Complete	Keep	Corbett Center was placed on NMSU turbine to supply redundant power in association with a remodel project completed in ~ 2017

Table 5-6-7
Assessment of mitigation actions/projects identified by NMSU in the previous plan cycle

Action / Project Title	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
G7. Generational Capacity	• Facilities & Services / AVP • $5,000,000 • 3 yrs	No Action	Delete	The concept of this action in unknown by current management team.
G8. Land Use Planning	• NMSU Architect • Staff time • 2 yrs	In Progress	Keep	Planning studies are in progress for East Mesa, Arrowhead Park and West Campus Agricultural areas.
G9. CDRRC Wildfire Protection	• Agricultural Experiment Station / Farm Ranch Manager • $2,500 • Annually as needed	No Action	Delete	The concept of this action in unknown by current management team.
G10. Drought Related Public Education and Outreach	• College of ACES • Staff time • Annually	In Progress	Keep	Personal changes in this position has slowed progress.
G11. Water Conservation Design Standards	• Facilities & Services / AVP • Staff time • Ongoing as needed	In Progress	Keep	Design standards in general are a continual process. Current version completed in 2020. Process starts again in 2021.

Table 5-6-8
Assessment of mitigation actions/projects identified by Sunland Park in the previous plan cycle

Action / Project Title	• **Lead Agency** • **Proposed Cost** • **Proposed Comp Date**	Status	Disposition	Explanation
H1. Relocation of City Hall	• Mayor's Office / Mayor; City Engineer / City Manager; Community Development Dept / Public Works • $2,500,000 • December 2017	In Progress	Revise	Various options have been explored for a proposed centralized municipal complex. The cost to procure should be updated to 15,000,000. The proposed options include new construction or the purchase of an existing facility.
H2. County-Wide Flood Warning and Response System	• Community Development / Building Inspector • Staff time • Annually (Per County schedule)	In Progress	Keep	The Public Works department is working with State, County and FEMA flood response departments. Various projects have been completed with FEMA funds. Other studies are being collaborated with Count, State and IBWC to understand and accurately measure storm water discharges to the Rio Grande.
H3. Drought Related Public Education and Outreach	• Water Utilities / Director Community Development / Director • Staff time • Annually with County	In Progress	Keep	Park, open spaces and landscaping ordinances are being developed and will be adopted in the current fiscal year.
H4. Drought Resistant Landscape Regulation	• Community Development / Building Inspector • Staff time • Ongoing as needed	In progress	Keep	New ordinances have been identified and are in process of being either amended or created.

Table 5-6-8
Assessment of mitigation actions/projects identified by Sunland Park in the previous plan cycle

Action / Project Title	• Lead Agency • Proposed Cost • Proposed Comp Date	Status	Disposition	Explanation
H5. Building Code Review, Update and/or Adoption	• Community Development / Building Inspector • Staff time • Annually	In progress	Keep	New code review has been adopted. New ordinances are being created to enforce or strengthen International Building Code.
H6. Assist Doña Ana County To Improve Emergency Communications County- Wide	• Fire Department / Fire Chief Police Department / Police Chief • Staff time • Annually	In Progress	Keep	New Police, Fire and Public Works protocols have been stablished. Both Police and Fire are now part of the emergency response team that includes state and federal entities.
H7. Pipe Freeze Assessment for City Owned Buildings	• Community Development / Building Inspector • $5,000,000 • December 2017	Complete	Delete	City campus has been assessed and infrastructure has been assessed. Corrective action was taken and water lines were either replaced or protected. Gas lines have been also replaced.
H8. Defensible Space Practices	• Community Development / Building Inspector • Staff time • Ongoing as needed	In Progress	Keep	This goal is ongoing, but initial outlines for practices were covered in the 2012 Community Wildfire Protection Plan with implementation strategies and methods – The goal should be revised to say "Encourage and Maintain Defensible Space Practices throughout Dona Ana County"
H9. Waterline Insulation Program	• Community Development / Building Inspector • $20,000 • December 2018	Complete	Delete	Water lines have been corrected either by complete replacement or by eradicating exposed lines from the elements.

5.3.2 New Mitigation Actions / Projects and Implementation Strategy

Upon completion of the assessment summarized in Section 4.3.1, the Steering Committee and each jurisdiction's Local Planning Team developed new A/Ps using the goals, results of the vulnerability analysis and capability assessment, and the Steering Committee's institutional knowledge of hazard mitigation needs in the County and jurisdictions. The A/Ps can be generally classified as either structural or non-structural. Structural A/Ps typify a traditional "bricks and mortar" approach where physical improvements are provided to effect the mitigation goals. Examples may include forest thinning, channels, culverts, bridges, detention basins, dams, emergency structures, and structural augmentations of existing facilities. Non-structural A/Ps deal more with policy, ordinance, regulation and administrative actions or changes, buy-out programs, and legislative actions. For each A/P, the following elements were identified:

- **Name** – a unique short name for the A/P.
- **Hazard(s) Mitigated** – a list of the hazard or hazards mitigated by the A/P.
- **Community Assets Mitigated** – a brief descriptor to qualify the type of assets (existing, future, or both) that the proposed mitigation A/P addresses.
- **Description** – a brief description of the A/P including a supporting statement that tells the "what" and "why" reason for the A/P.
- **Estimated Costs** – concept level cost estimates that may be in dollars, staff time, or both.

Once the full list of A/Ps was completed to the satisfaction of the jurisdiction, the Local Planning Team then performed a STAPLE+E assessment [1] of each A/P using one of three qualifiers for each STAPLE+E category. The STAPLE+E assessment provides a qualitative evaluation of actions and projects to assist in prioritization by evaluating each project in terms of the Social, Technical, Administrative, Political, Legal, Economic, and Environmental acceptability. Each action/project is evaluated and scored using the following qualifiers:

- **F** – assigned if the A/P has a favorable disposition for the category.
- **L** – assigned for A/Ps that are less than favorable for the category
- **N** – assigned if the A/P is neutral for the category.

Participants were asked to consider several criteria within each category of the STAPLE+E assessment. The criteria considered in scoring each A/P is provided below:

- Social – Community acceptance of the A/P and effect on the population.

[1] FEMA, 2003, *Developing the Mitigation Plan – Identifying Mitigation Actions and Implementation Strategies*, FEMA 386-3, pp 2-12 through 2-21.

- Technical – Is the A/P a technically feasible, long-term solution? Does it have secondary impacts?
- Administrative – Does the jurisdiction have the staffing, funding allocation, maintenance & operations capabilities to implement the A/P?
- Political – Does the A/P have political support, a local champion, and/or public support?
- Legal – Does existing State authority and local authority allow for A/P implementation? Are there potential legal challenges?
- Economic – What are the benefits and costs of action? Does the A/P contribute to economic goals? Will it require outside funding?
- Environmental – What are the potential effects on land/waters, endangered species, and HAZMAT/waste sites? Is the A/P consistent with Community environmental goals and Federal Laws?

Once the STAPLE+E assessment was completed, each jurisdiction then assigned a numeric ranking to each A/P based on the assessment results and the jurisdiction's priorities.

Upon completion of the ranking process, each jurisdiction then developed the implementation strategy for the A/Ps. The implementation strategy addresses the *"how, when, and by whom?"* questions related to the execution and completion of an identified A/P. Specific elements identified as a part of the implementation strategy included:

- **Planning Mechanism(s) for Implementation** – where applicable, a list of current planning mechanisms or processes under which the A/P will be implemented. Examples could include CIPs, General Plans, Area Drainage Master Plans, etc.
- **Anticipated Completion Date** – a realistic and general timeframe for completing the A/P. Examples may include a specific target date, a timeframe contingent upon other processes, or recurring timeframes.
- **Primary Agency and Job Title Responsible for Implementation** –the agency, department, office, or other entity and corresponding job title that will have responsibility for the A/P and its implementation.
- **Funding Source** – the source or sources of anticipated funding for the A/P.

Tables 5-7-1 and 5-7-2 summarize the new mitigation A/Ps and implementation strategy for Doña Ana County. Similarly, Tables 5-8-1 through 5-14-1 and Tables 5-8-2 through 5-14-2 summarize the new mitigation A/Ps and implementation strategy for Anthony, EBID, Hatch, Las Cruces, Mesilla, NMSU, and Sunland Park, respectively.

Table 5-7-1
Mitigation actions/projects identified by Doña Ana County

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
A1. Upgrade Flood Protection Capabilities of the Rio Grande Canalization Project.	Flood	Both	Evaluate and if required, restore the flood protection capabilities of the Rio Grande Canalization Project. Coordinate with the US International Boundary and Water Commission (USIBWC) to incorporate technical data regarding the Rio Grande Canalization Project. Based on information provided by the USIBWC, the water surface profiles for the Rio Grande Canalization Project were developed by the US Army Corps of Engineers (USACOE) Albuquerque District in a study completed in 1998. The study indicates that some reaches of the levee system from Percha Dam, located downstream of Caballo Dam, to the American Dam, located downstream of Sunland Park, NM, will be overtopped in a 100-year flood and other reaches provide protection with limited freeboard.	Cost TBD. Project will be federally funded through USIBWC. USACOE will fund and conduct hydraulic studies, geotechnical studies, etc.	F	F	F	F	F	F	F	1

Table 5-7-1
Mitigation actions/projects identified by Doña Ana County

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
A2. Improve Emergency Communication Capabilities To Facilitate Better Warning And Emergency Response To Severe Weather Conditions.	Dam Failure, Extreme Cold, Flooding, Severe Wind, Thunderstorm, Wildfire	Both	Due to their sudden, abrupt nature and limited predictability, improvement in the communications network will help to provide warning in case of a flood, tornado, terrorism incident, or other event. This effort should begin with a survey of the entire county to identify amateur radio operators, receivers and repeaters, cellular towers, and power sustainability. The survey could be used to determine what resources are available and what critical warning and communications system back-up would be necessary for all local Fire Departments, Police and Sheriff Departments.	Various phases of the goal include installation of weather stations, radio towers, etc, and costs are variable and dependent on size, location, and scope of plan.	F	F	F	F	F	F	F	2

Table 5-7-1
Mitigation actions/projects identified by Doña Ana County

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
A3. County-Wide Flood Warning and Response System	Flood, Dam Failure	Both	Initiate a ten-year plan to develop a countywide Flood Warning and Response System. Utilize existing rain gage data, including dam failure warnings, to develop a system to forecast flood events based on real time rainfall data. Modify the Doña Ana County Emergency Response Plan to incorporate a Flood Warning and Response capabilities section. As real-time data is available from current sources (and any newly installed systems) the Doña Ana County Flood Commission can develop the capacity to analyze the hydrologic data and develop a flood warning system that includes: (1) Evaluation of existing rain and stream gages (2) Installation of needed gages with real time telemeter capability (3) Obtaining a Storm Ready certification from the NWS Installation of a NEXRAD system.	$500,000.00 estimated initial with additional phases with costs to follow. .	F	F	F	F	F	F	F	3

Table 5-7-1
Mitigation actions/projects identified by Doña Ana County

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
A4. Develop a County-Wide Dam Safety Program	Dam Failure	Both	Utilize the data contained in the Doña Ana County Mitigation Plan and compile a detailed inventory of all dams in Doña Ana County. Identify high-risk dams based on age, elevation, maintenance and operation plans, and state or Federal designations that do not have dam failure emergency action plans. Solicit funding to conduct inspections or dam failure analysis and compile a countywide database. Develop a countywide dam safety program.	$1 million (est) to be phased over a five-year period.	F	F	F	F	F	F	F	4

Table 5-7-1
Mitigation actions/projects identified by Doña Ana County

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
A5. Install Staff Rain Gages at Low Water Crossings and Arroyos throughout the County.	Flood	Existing	Install Rain Gauges at selected (hazardous) locations. The Rain Gauge is a localized flood threat recognition system that enables motorists to see how deep the water is and avoid risking their cars and lives. They can be installed by agencies responsible for the streets and highways in each community. Each community would be responsible for identifying locations and providing a listing and priority ranking for sites where gages should be installed.	$20,000 estimated initial purchase of a dozen with more to follow.	F	F	F	F	F	F	F	5

A6. Public Education and Public Notification Regarding Severe Weather	Dam Failure, Flood, Extreme Cold, Severe Wind, Thunderstorms	Both	Severe winter storm hazards result in auto accidents, power outages, structural failures, loss of access to emergency services, and possible casualties from overexposure. Experience has shown that no area can prepare fully for severe winter storms. Other severe storms that have occurred in Doña Ana County include wind, dust, and hail. Extreme heat can result in power outages, fire, and, in time, drought. However, measures can be taken to inform the public of these hazardous conditions and ways to reduce the associated risks. Cooperation between local businesses such as insurance agents, state agencies, and other organizations could provide training for bad weather driving, for example. Training sessions could be conducted in schools or another suitable forum on how to be protected in the event of a hazardous weather condition on routes to and from school. Each school has a NOAA (National Oceanic and Atmospheric Administration/National Weather Service) weather radio provided by the Office of Emergency Management to help provide early warning for severe winter weather. The Office of Emergency Management has provided NOAA Weather Radios to all government buildings, schools, hospitals, and other critical facilities in Doña Ana County.	Contributions from local business and volunteer work. Staff Time +/- $1,000/year for outreach items to hand out at events and presentations	F	F	F	F	F	F	F	6
A7. Evaluate, update, and adopt Building Codes.	Dam Failure, Drought, Extreme Cold, Flooding, Severe Wind, Thunderstorms, Wildfire	Both	Each community should evaluate their existing building codes (UBC, SB, IBC and others) in addition to State Law requirements to determine which code would be appropriate for adoption. It is recommended that all communities select the same code for consistency and will improve the level of regional protection.	Staff Time	F	F	F	F	F	F	F	7

Table 5-7-1
Mitigation actions/projects identified by Doña Ana County

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
A8. Defensible Space Practices	Wildfire	Both	Recommend and implement defensible space, coupled with Firewise Communities practices, to reduce structural ignitability and to protect critical infrastructure within the wildland-urban interface areas.	Staff Time	N	F	F	F	F	F	N	8
A9. Wildfire Education and Public Outreach	Wildfire	Both	Conduct regular public outreach events to disseminate information regarding fire risk and hazards, using flyers, pamphlets, and website notices.	Staff + $2,000/yr	F	F	F	F	F	F	F	9
A10. Drought Related Public Education and Outreach	Drought	Both	Conduct a county-wide public education campaign to raise awareness of drought conditions and provide recommendations for ways to conserve water. Public contact may be accomplished through website notices, utility bill inserts, flyers and pamphlets.	Staff time plus $5,000 for outreach material and other miscellaneous costs	F	F	F	F	F	F	F	10

Table 5-7-1
Mitigation actions/projects identified by Doña Ana County

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
A11. Remain a Storm-Ready Community	Dam Failure, Flood, Extreme Cold, Severe Wind, Thunderstorms	Both	Becoming a designated StormReady community is one way to ensure that a community is prepared for localized flooding. The StormReady program is administered by the National Weather Service (NWS) to help communities become better prepared for storms and other natural disasters. Furthermore, pursuant to FEMA's NFIP CRS Program, Activity 610, Flood Warning Program, program points are allotted for the designation by the National Weather Service as a StormReady community.	Contributions from local business and volunteer work. Staff Time	F	F	F	F	F	F	F	11

Table 5-7-2
Mitigation actions/projects implementation strategy for Doña Ana County

Name	Planning Mechanism(s) for Implementation	Anticipated Completion Schedule	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
A1. Upgrade Flood Protection Capabilities of the Rio Grande Canalization Project.	N/A	FY 2025	Doña Ana County Flood Commission	Federal Funds and potential hatch by Local Government through General Fund & Mitigation Grants
A2. Improve Emergency Communication Capabilities To Facilitate Better Warning And Emergency Response To Severe Weather Conditions.	N/A	Continuous; Progress and funding pursued annually	OEM and Doña Ana County Flood Commission with Local Govt Jurisdictional Participation	General Fund & Mitigation Grants
A3. County-Wide Flood Warning and Response System	FWS Master Plan	Ongoing; Next Phase FY 2021	OEM and Doña Ana County Flood Commission with Local Govt Jurisdictional Participation	General Fund & Mitigation Grants
A4. Develop a County-Wide Dam Safety Program	A6. Develop a County-Wide Dam Safety Program	CRS/OSE-DSB	Annually (As needed)	OEM and Doña Ana County Flood Commission with Local Govt Jurisdictional Participation
A5. Install Staff Rain Gages at Low Water Crossings and Arroyos throughout the County.	N/A	Annually	OEM and Doña Ana County Flood Commission with Local Govt Jurisdictional Participation	General Fund & Mitigation Grants
A6. Public Education and Public Notification Regarding Severe Weather	N/A	Annually	OEM and Doña Ana County Flood Commission with Local Govt Jurisdictional Participation	General Fund & Mitigation Grants

Table 5-7-2
Mitigation actions/projects implementation strategy for Doña Ana County

Name	Planning Mechanism(s) for Implementation	Anticipated Completion Schedule	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
A7. Evaluate, update, and adopt Building Codes.	N/A	Annually (As needed)	OEM and Doña Ana County Flood Commission with Local Govt Jurisdictional Participation	N/A
A8. Defensible Space Practices	CWPP	Ongoing as needed	Doña Ana County OEM with local Fire District Support	General Fund
A9. Wildfire Education and Public Outreach	CWPP	Annually	Doña Ana County OEM with local Fire District Support	General Fund
A10. Drought Related Public Education and Outreach	N/A	Annually	OEM and Doña Ana County Flood Commission with Local Govt Jurisdictional Participation	General Fund
A11. Remain a Storm-Ready Community	NWS & CRS	Renewal Every 3 years	OEM and Doña Ana County Flood Commission with Local Govt Jurisdictional Participation	N/A

Table 5-8-1
Mitigation actions/projects identified by Anthony

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
B1. Anthony Stormwater Master Plan	Flood	Existing	Finalize storm water master plan to identify existing flood hazards and mitigation alternatives.	$350,000	F	F	F	F	F	F	F	1
B2. Join NFIP	Flood	Both	Prepare and adopt a floodplain management ordinance and submit application to FEMA to join the NFIP and develop a Memorandum of Understanding with Dona Ana County to administer floodplain regulations.	Staff Time	F	F	F	F	F	N	F	2
B3. Drought Related Public Education and Outreach	Drought	Both	Participate with Doña Ana County to conduct a county-wide public education campaign to raise awareness of drought conditions and provide recommendations for ways to conserve water. Public contact may be accomplished through website notices, utility bill inserts, flyers and pamphlets.	Staff Time	F	F	F	F	F	F	F	3
B4. Building Code Review, Update and/or Adoption	Flood, Extreme Cold, Severe Wind, Thunderstorms, Drought	Both	Assess and review existing building codes, and implement necessary updates as needed to maintain current standards and compliance with State Law requirements	Staff Time	N	F	F	F	F	F	F	4

Table 5-8-1
Mitigation actions/projects identified by Anthony

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
B5. Assist Doña Ana County To Improve Emergency Communications County-Wide	Dam Failure, Extreme Cold, Flooding, Severe Wind, Thunderstorms, Wildfire	Both	Work in cooperation with Doña Ana County to improve county-wide emergency communications and hazard event warning capacity. Provide assistance with identifying community specific resources (amateur radio operators, receivers and repeaters, cellular towers, power sustainability, and critical warning and communications systems) as well as providing feedback regarding anticipated resource needs.	Staff Time	F	F	F	F	F	F	F	5
B6. County-Wide Flood Warning and Response System	Flood, Dam Failure	Both	Participate with Doña Ana County Flood Commission to develop a countywide Flood Warning and Response System, by providing localized feedback regarding potential locations for local gages and targeted populations to receive warnings.	Staff Time	F	F	F	F	F	F	F	6
B7. Defensible Space Practices	Wildfire	Both	Recommend and implement defensible space, coupled with Firewise Communities practices, to reduce structural ignitability and to protect critical infrastructure within the wildland-urban interface areas.	Staff Time	N	F	F	F	F	F	N	7

Table 5-8-1
Mitigation actions/projects identified by Anthony

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
B8. Flood Retarding Structure Emergency Action Plan Development	Dam Failure	Both	Participate with Doña Ana County Flood Commission to develop Emergency Action Plans for the county owned flood retarding structures located upstream of the City.	Staff Time	F	F	F	F	F	F	F	8

Table 5-8-2
Mitigation actions/projects implementation strategy for Anthony

Name	Planning Mechanism(s) for Implementation	Anticipated Completion Schedule	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
B1. Anthony Stormwater Master Plan	CIP	2021	City Council / Mayor	Grant / CIP
B2. Join NFIP	N/A	2021	City Council / Mayor	General Fund
B3. Drought Related Public Education and Outreach	N/A	Annually with County	City Council / Mayor	General Fund

Table 5-8-2
Mitigation actions/projects implementation strategy for Anthony

Name	Planning Mechanism(s) for Implementation	Anticipated Completion Schedule	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
B4. Building Code Review, Update and/or Adoption	City Code	Annually	City Council / Mayor	General Fund
B5. Assist Doña Ana County To Improve Emergency Communications County-Wide	N/A	Annually	City Council / Mayor	General Fund
B6. County-Wide Flood Warning and Response System	N/A	As Needed per County Schedule	City Council / Mayor	General Fund
B7. Defensible Space Practices	CWPP	Ongoing as needed	City Council / Mayor	General Fund
B8. Flood Retarding Structure Emergency Action Plan Development	County Flood Commission	Ongoing as needed	City Council / Mayor	General Fund

Table 5-9-1
Mitigation actions/projects identified by EBID

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
C1. Flood Control Dam EAP's	Flood, Dam Failure	Both	Prepare & submit emergency action plans (EAP) for each of the EBID sponsored dams to develop, coordinate and instruct emergency managers in the event of an extreme rainfall event enabling them to respond and communicate within each agency and with EBID. There are 25 flood control dams located within Dona Ana County that need EAP's.	$1,360,000	F	F	N	F	F	L	F	1
C2. Rodey Lateral Improvement	Flood	Both	Flood Commission working on the new Village of Hatch Dam; Rodey lateral currently collects uncontrolled stormwater flows, improve water flow and ability to spill water to Colorado drain until Dam is built; mitigating flood issues in that area	$350,000	F	F	F	F	F	F	F	2
C3. Groundwater Recharge Opportunities	Drought, Flood	Both	Perform preliminary in-house reconnaissance by the installation of radio telemetry units (RTU) that will meter and monitor flows into potential drainage sites that would capture and direct flood flows to drainage recharge zones in the aquifer or for possible delivery for irrigation use. In addition, utilizing the Drought Resiliency Implementation Grant to help fund weather/rain stations throughout the District, improve the Hayner Cable to track river flows, and test turnout automation for emergency evacuation of flood flows.	Staff Time + $300,000	F	F	F	F	F	F	F	3
C4. Mesilla Dam	Dam Failure	Both	Fence, closure of Mesilla Dam in the future to vehicle traffic to maintain integrity of dam and keep vandalism to a minimum	$100,000	N	N	F	L	F	F	F	4

Table 5-9-1
Mitigation actions/projects identified by EBID

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
C5. Drought Related Public Education and Outreach	Drought	Both	Participate with Doña Ana County to conduct a county- wide public education campaign to raise awareness of drought conditions and provide recommendations for ways to conserve water. Public contact may be accomplished through website notices, utility bill inserts, flyers and pamphlets.	Staff Time	F	F	F	F	F	F	F	5
C6. Rincon Arroyo	Flood	Both	Rincon arroyo watershed project to control sediment and flood control, water quality	Cost TBD	F	F	F	F	F	N	F	6
C7. Flood Control Dam Inspections	Dam Failure	Both	Flood Control Dams are inspected on an annual basis in order to determine any deficiencies in the dam and its appurtenances as well as comply with dam safety inspections that affect the emergency action plans for each dam. Conduct additional repairs/rehabilitation based on these inspections which help identify and prioritize deficiencies.	Staff Time	F	F	N	F	F	N	F	7

Table 5-9-2
Mitigation actions/projects implementation strategy for EBID

Name	Planning Mechanism(s) for Implementation	Anticipated Completion Schedule	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
C1. Flood Control Dam EAP's	N/A	6 in process 8 additional Total 14 by 2025	EBID Engineering	In house & LID
C2. Rodey Lateral Improvement	N/A	2021	EBID Maintenance	Capital Outlay Funding
C3. Groundwater Recharge Opportunities	Work with grant requirements and District needs	Grant will have deadlines, but other areas will be continuous	EBID Engineering	In house, LID & BOR Watersmart Grant
C4. Mesilla Dam	N/A	2024	EBID SCADA and Maintenance	General Fund
C5. Drought Related Public Education and Outreach	N/A	Annually	EBID All Departments	General Fund
C6. Rincon Arroyo	N/A	Unknown	EBID and Flood Commission	Flood Commission
C7. Flood Control Dam Inspections	NRCS coordinates inspections annually with EBID & Flood Commission	Annually	EBID Maintenance, Engineering, Flood Commission, NRCS and the Soil & Water Conservation Districts and IBWC will participate when inspecting their dams	In house

Table 5-10-1
Mitigation actions/projects identified by Hatch

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
D1. Evaluate and Update Building Code	Flood, Severe Wind, Drought, Extreme Cold, Thunderstorm	Both	Each community should evaluate and update to the latest edition of building codes (UBC, SB, IBC and others) in addition to State Law requirements. It is recommended that all communities select the same code for consistency. Adoption and or update of the entire International Building Code Series by each community was recommended by the Mitigation Committee; however, State Law requirements must be satisfied prior to individual community adoption.	≈$4,000 + Staff Time	F	F	F	L	N	F	F	1
D2. Reduce Flood Risk for Village of Hatch	Flood	Future	Areas in Doña Ana County have an increased flood risk due to development. Options for reducing the risk include relocation of the residents and construction of drainage and flood protection projects such as a permitted dam and interceptor channel project upstream from the Village of Hatch. Another option for reducing the risk is to educate individuals directly or indirectly involved with development within the identified floodplain so that property owners, developers, lenders, real estate agents, and the general public will be aware that development permits are required for any development. Proposed development within identified floodplains must be required to meet elevation requirements that will be enforced by each community.	≈$2 Million + Staff Time	F	F	L	F	N	F	F	2

Table 5-10-1
Mitigation actions/projects identified by Hatch

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
D3. Village of Hatch Drainage Master Plan	Flood	Both	Develop a Drainage Master Plan for the Village of Hatch to identify existing and future runoff conditions. As part of the plan, identify critical areas and identify future capital improvement projects for the area.	≈$250,000 + Staff Time	F	F	F	F	N	F	F	3
D4. Village of Hatch Storm Drain Upgrade and Expansion	Flood	Future	Implement system upgrades through coordination with local jurisdictions and develop a plan/process to utilize existing conveyance channels, drainage facilities, and Right of Ways, to upgrade or design and construct surface/subsurface storm water improvements to help mitigate runoff effectively through the community. Implement improvements through phases according to jurisdictional requirements and funding availability.	≈$4 Million + Staff time	F	F	F	L	N	F	F	4

Table 5-10-1
Mitigation actions/projects identified by Hatch

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
D5. Efforts to Reduce Hazardous Material Dumping	Public Health Hazard	Future	Illegal dumping of hazardous materials, in addition to violating the law, can result in major environmental and health problems in Doña Ana County. Code enforcement, in cooperation with appropriate law enforcement agencies, should attempt to document and identify the most frequent areas where illegal dumping occurs. Education by the Code Enforcement Office could be provided to the general public via training classes, billboards, news media, City of Las Cruces and Doña Ana County web sites, and other methods, regarding the proper procedures for dumping and recycling. Many communities place signage that contains phrases such as "Please don't feed the storm drains" and "Drains to Creek/River" on or near drains to discourage intentional or unintentional dumping.	≈$10,000	F	F	L	F	N	F	F	5
D6. County-Wide Flood Warning and Response System	Flood, Dam Failure	Both	Participate with Doña Ana County Flood Commission to develop a countywide Flood Warning and Response System, by providing localized feedback regarding potential locations for local gages and targeted populations to receive warnings.	Staff Time	F	F	L	F	N	F	F	6

Table 5-10-1
Mitigation actions/projects identified by Hatch

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
D7. Drought Resistant Landscape Regulation	Drought	Both	Encourage and/or mandate the use of drought resistant landscaping , as appropriate, through ordinance development and/or enforcement.	Staff Time	N	F	F	N	N	F	F	7
D8. Assist Doña Ana County To Improve Emergency Communications County-Wide	Dam Failure Extreme Cold Flooding Severe Wind Thunderstorms Wildfire	Both	Work in cooperation with Doña Ana County to improve county-wide emergency communications and hazard event warning capacity. Provide assistance with identifying community specific resources (amateur radio operators, receivers and repeaters, cellular towers, power sustainability, and critical warning and communications systems) as well as providing feedback regarding anticipated resource needs.	Staff Time	F	F	F	F	F	F	N	8
D9. Defensible Space Practices	Wildfire	Both	Recommend and implement defensible space, coupled with Firewise Communities practices, to reduce structural ignitability and to protect critical infrastructure within the wildland-urban interface areas.	Staff Time	N	F	F	F	F	F	N	9
D10. Flood Retarding Structure Emergency Action Plan Development	Dam Failure	Both	Participate with Doña Ana County Flood Commission to develop Emergency Action Plans for the county owned flood retarding structures located upstream of the Village.	$65,000 + Staff Time	F	F	F	F	F	F	F	10

Table 5-10-2
Mitigation actions/projects implementation strategy for Hatch

Name	Planning Mechanism(s) for Implementation	Anticipated Completion Schedule	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
D1. Evaluate and Update Building Code	N/A	Adopted IPMC 2018	Village of Hatch/ Planning Development Department	General Funds
D2. Reduce Flood Risk for Village of Hatch	Public Outreach/5 YR. CIP	Placitas Arroyo Improvements complete 2020	Village of Hatch/ Mayor	HMGP/ FMA/General Funds
D3. Village of Hatch Drainage Master Plan	N/A	DMP completed 2018	Village of Hatch/ Mayor	HMGP/ FMA/General Funds
D4. Village of Hatch Storm Drain Upgrade and Expansion	5 YR. CIP	FY 2024	Village of Hatch	HMGP/ FMA/General Funds
D5. Efforts to Reduce Hazardous Material Dumping	Advertisement/ Public Outreach	Annually	Village of Hatch / Mayor	General Funds
D6. County-Wide Flood Warning and Response System	N/A	Annually	Village of Hatch/ Mayor	General Funds
D7. Drought Resistant Landscape Regulation	N/A	Annually	Village of Hatch/ Mayor	General Funds

Table 5-10-2
Mitigation actions/projects implementation strategy for Hatch

Name	Planning Mechanism(s) for Implementation	Anticipated Completion Schedule	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
D8. Assist Doña Ana County To Improve Emergency Communications County-Wide	N/A	Annually	Village of Hatch / Public Works Department & Dona Ana County	General Funds
D9. Defensible Space Practices	CWPP	Ongoing as needed	Village of Hatch/ Fire Department	General funds
D10. Flood Retarding Structure Emergency Action Plan Development	DACFC / Village of Hatch	Ongoing as needed	Village of Hatch/ Planning Development Department	NMFA LGP/ General Funds

Table 5-11-1
Mitigation actions/projects identified by Las Cruces

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
E1. Increase Public Awareness related to the National Flood Insurance Program (NFIP).	Flood	Both	This Action Item is to sponsor countywide NFIP Workshops for insurance agencies, lenders, community officials, developers, engineers, surveyors and local citizens. The goal is also to increase the number of flood insurance policies.	Staff time;	F	F	F	F	F	F	F	1

Table 5-11-1
Mitigation actions/projects identified by Las Cruces

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
E2. County-Wide Flood Warning and Response System	Flood, Dam Failure	Both	Initiate a ten-year plan to develop a countywide Flood Warning and Response System. Utilize existing rain gage data, including dam failure warnings, to develop a system to forecast flood events based on real time rainfall data. Modify the Doña Ana County Emergency Response Plan to incorporate a Flood Warning and Response capabilities section. As real-time data is available from current sources (and any newly installed systems) the Doña Ana County Flood Commission can develop the capacity to analyze the hydrologic data and develop a flood warning system that includes:(1) Evaluation of existing rain and stream gages; (2) Installation of needed gages with real time telemeter capability; (3) Obtaining a Storm Ready certification from the NWS; (4) Installation of a NEXRAD system	Staff time; $500,000 estimated initial with additional phases with costs to follow.	F	F	F	F	F	F	F	2
E3. Develop a County-Wide Dam Safety Program	Dam Failure	Both	Utilize the data contained in the Doña Ana County Mitigation Plan and compile a detailed inventory of all dams in Doña Ana County. Identify high-risk dams based on age, elevation, maintenance and operation plans, and state or Federal designations that do not have dam failure emergency action plans. Solicit funding to conduct inspections or dam failure analysis and compile a countywide database. Develop a countywide dam safety program.	$100,000 (est) to be phased over a five-year period.	F	F	F	F	F	F	F	3

Table 5-11-1
Mitigation actions/projects identified by Las Cruces

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
E4. Install Staff Rain Gages at Low Water Crossings and Arroyos throughout the County.	Flood	Both	Install Rain Gauges at selected (hazardous) locations. The Rain Gauge is a localized flood threat recognition system that enables motorists to see how deep the water is and avoid risking their cars and lives. They can be installed by agencies responsible for the streets and highways in each community. Each community would be responsible for identifying locations and providing a listing and priority ranking for sites where gages should be installed.	Staff time; $20,000 estimated initial purchase of a dozen with more to follow.	F	F	F	F	F	F	F	4
E5. Become a Storm-Ready Community	Flooding, Extreme Cold, Severe Wind, Thunderstorms	Both	Becoming a designated StormReady community is one way to ensure that a community is prepared for localized flooding. The StormReady program is administered by the National Weather Service (NWS) to help communities become better prepared for storms and other natural disasters. Furthermore, pursuant to FEMA's NFIP CRS Program, Activity 610, Flood Warning Program, program points are allotted for the designation by the National Weather Service as a StormReady community.	Staff time; Contributions from local business and volunteer work.	F	F	F	F	F	F	F	5
E6. Evaluate and Adopt Updated Building Codes.	Drought, Flood, Extreme Cold, Severe Wind Thunderstorms, Dam Failure	Both	The City of Las Cruces will continue to evaluate and adopt new building codes, as appropriate, to provide the latest and most up-to-date regulatory tools for reducing natural hazard risks to new and substantially improved structures.	Staff time;	F	F	F	F	F	F	F	6

Table 5-11-1
Mitigation actions/projects identified by Las Cruces

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
E7. Reduce Hazardous Material Dumping.	HAZMAT	Both	Illegal dumping of hazardous materials, in addition to violating the law, can result in major environmental and health problems in Doña Ana County. Las Cruces Code enforcement, in cooperation with appropriate law enforcement agencies, should attempt to document and identify the most frequent areas where illegal dumping occurs.	Staff time	F	F	F	F	F	F	F	7
E8. Water Conservation Program – Education and Outreach	Drought	Both	The City of Las Cruces will continue to conduct a utility service-wide, county-wide public education campaign to raise awareness of water conservation and provide recommendations for ways to conserve water. Public contact may be accomplished through website notices, utility bill inserts, flyers and pamphlets	Staff Time	F	F	F	F	F	F	F	8
E9. Defensible Space Practices	Wildfire	Both	Recommend and implement defensible space, coupled with Firewise Communities practices, to reduce structural ignitability and to protect critical infrastructure within the wildland-urban interface areas.	Staff Time	N	F	F	F	F	F	N	9
E10. Wildfire Education and Public Outreach	Wildfire	Both	Conduct regular public outreach events to disseminate information regarding fire risk and hazards, using flyers, pamphlets, and website notices and methods that homeowners and businesses can use to mitigate wildfire risk.	Staff + $2,000/yr	F	F	F	F	F	F	F	10

Table 5-11-2
Mitigation actions/projects implementation strategy for Las Cruces

Name	Planning Mechanism(s) for Implementation	Anticipated Completion Schedule	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
E1. Increase Public Awareness related to the National Flood Insurance Program (NFIP).	Conduct training sessions independently as well as through the New Mexico Floodplain Managers Association Workshops	Ongoing	City of Las Cruces – Community Development Department / Floodplain Administrator	General Fund
E2. County-Wide Flood Warning and Response System	Coordinate with Doña Ana County, Office of Emergency Management, and the National Weather Service.	2022	OEM and Local Governmental Jurisdictions	General Fund
E3. Develop a County-Wide Dam Safety Program	Coordinate with Doña Ana County, Office of Emergency Management, as well as Dam owners.	Annually	OEM and Local Governmental Jurisdictions	General Fund
E4. Install Staff Rain Gages at Low Water Crossings and Arroyos throughout the County.	Coordinate with Doña Ana County, Office of Emergency Management, NOAA, Elephant Butte Irrigation District as well as property owners.	Ongoing	OEM and Local Governmental Jurisdictions	General Fund

Table 5-11-2
Mitigation actions/projects implementation strategy for Las Cruces

Name	Planning Mechanism(s) for Implementation	Anticipated Completion Schedule	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
E5. Become a Storm-Ready Community	Coordinate with Doña Ana County, Office of Emergency Management, and the National Weather Service.	Ongoing	OEM and Local Governmental Jurisdictions	General Fund
E6. Evaluate and Adopt Updated Building Codes	In general, the City updates when the State does.	Ongoing	City of Las Cruces - Community Development / Building & Development Service Administrator	General Fund
E7. Reduce Hazardous Material Dumping	Education by the media, City of Las Cruces & Doña Ana County web sites, and other methods, regarding the proper procedures for dumping and recycling.	Ongoing	City of Las Cruces Police Department / Codes Enforcement	General Fund
E8. Water Conservation Program –Education and Outreach	City of Las Cruces Water Conservation Plan	Annually	City of Las Cruces Utilities Department / Water Conservation Coordinator	Water Utility Fund
E9. Defensible Space Practices	CWPP	Ongoing as needed	City of Las Cruces Fire Department / Fire Chief	General Fund
E10. Wildfire Education and Public Outreach	CWPP	Annually	City of Las Cruces Fire Department / Fire Chief	General Fund

Table 5-12-1
Mitigation actions/projects identified by Mesilla

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
F1. Rehabilitate/ Repair Public Safety Building	Dam Failure, Flood, Extreme Cold, Severe Wind	Both	Perform repairs and maintenance to critical systems to withstand severe weather impacts. The Public Safety Building serves as the staging area and command center for community responses to all hazards.	$4,000 Annually	N	F	F	N	F	L	F	1
F2. Storm Drain Inspections and Repairs	Flood	Both	Perform inspections and necessary repairs to storm system to ensure the system effectively will handle runoff when flood conditions occur.	$2,000 Annually	N	F	F	N	F	F	F	2
F3. Reduce Hazardous Material Dumping	HAZMAT	Both	Reduce the amount of HAZMATs that are dumped within the Town limits through enforcement of local ordinance and regulations	Staff time	N	F	F	F	F	F	F	3
F4. County-Wide Flood Warning and Response System"	Flood, Dam Failure	Both	Participate with Doña Ana County Flood Commission to develop a countywide Flood Warning and Response System, by providing localized feedback regarding potential locations for local gages and targeted populations to receive warnings.	Staff time	F	F	F	F	F	F	F	4

Table 5-12-1
Mitigation actions/projects identified by Mesilla

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
F5. Backup power for Town Facilities	Dam Failure, Flood, Extreme Cold, Severe Wind, Thunderstorms	Both	Provide backup power generator for the Mesilla Water System Plant Operations and Public Safety Building. The Public Safety Building serves as the staging area and command center for community responses to all hazards.	$175,000	N	F	F	N	F	L	F	5

Table 5-12-1
Mitigation actions/projects identified by Mesilla

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
F6. Implement the Life Safety Initiative "Turn Around Don't Drown"	Flood	Existing	The National Weather Service (NWS) has introduced a national flood safety initiative "Turn around Don't Drown". The "Turn Around Don't Drown" campaign termed "TADD" has been endorsed by numerous communities and agencies nationwide. The TADD initiate is a solution to minimize the loss of lives each year when motorists drive into floodwaters. The simple solution is to stay out of flooded roadways. The NWS program is geared to inform the public of these dangers. Communities have the opportunity to participate in a number of ways: 1) Post TADD information and TADD icons on community WebPages; 2) Place TADD bumper stickers on all community vehicles; 3) Construct TADD barricades that can be placed at selected low water crossings during flooding conditions; 4) Install flood warning (TADD) signage on roadways in selected areas; 5) Initiate public education efforts	$1,800	N	F	F	F	F	N	N	6

Table 5-12-1
Mitigation actions/projects identified by Mesilla

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
F7. Drought Related Public Education and Outreach	Drought	Both	Participate with Doña Ana County to conduct a county-wide public education campaign to raise awareness of drought conditions and provide recommendations for ways to conserve water. Public contact may be accomplished through website notices, utility bill inserts, flyers and pamphlets.	Staff Time	F	F	F	F	F	F	F	7
F8. Drought Resistant Landscape Regulation	Drought	Both	Encourage and/or mandate the use of drought resistant landscaping , as appropriate, through ordinance development and/or enforcement.	Staff Time	N	F	F	N	N	F	F	8
F9. Assist Doña Ana County To Improve Emergency Communications County-Wide	Dam Failure Drought Extreme Cold Flooding Severe Wind Thunderstorms Wildfire	Both	Work in cooperation with Doña Ana County to improve county-wide emergency communications and hazard event warning capacity. Provide assistance with identifying community specific resources (amateur radio operators, receivers and repeaters, cellular towers, power sustainability, and critical warning and communications systems) as well as providing feedback regarding anticipated resource needs.	Staff Time	F	F	F	F	F	F	F	9
F10. Defensible Space Practices	Wildfire	Both	Recommend and implement defensible space, coupled with Firewise Communities practices, to reduce structural ignitability and to protect critical infrastructure within the wildland-urban interface areas.	Staff Time	N	F	F	F	F	F	N	10

Table 5-12-1
Mitigation actions/projects identified by Mesilla

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
F11. Wildfire Education and Public Outreach	Wildfire	Both	Conduct regular public outreach events to disseminate information regarding fire risk and hazards, using flyers, pamphlets, and website notices.	Staff + $1,000/yr	F	F	F	F	F	F	F	11

Table 5-12-2
Mitigation actions/projects implementation strategy for Mesilla

Name	Planning Mechanism(s) for Implementation	Anticipated Completion Schedule	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
F1. Rehabilitate/ Repair Public Safety Building	N/A	Ongoing	Public Works / Director	Enterprise Funds, General Funds
F2. Storm Drain Inspections and Repairs	Water Plan	Ongoing	Public Works / Director	Enterprise Funds, State Loans/Grants
F3. Reduce Hazardous Material Dumping	N/A	Ongoing	Codes Enforcement	General Fund
F4. County-Wide Flood Warning and Response System"	N/A	Annually (per County schedule)	Fire Department / Fire Chief	General Fund
F5. Backup power for Town Facilities	Pending Grant Applications	Jan 2028	Public Works / Director	Grants, State Grants, State Loans
F6. Implement the Life Safety Initiative "Turn Around Don't Drown"	N/A	Ongoing	Safety Training Consultants	General Fund
F7. Drought Related Public Education and Outreach	N/A	Annually with County	Public Works / Director	General Fund
F8. Drought Resistant Landscape Regulation	Town Code	Ongoing as needed	Community Development / Coordinator	General Fund
F9. Assist Doña Ana County To Improve Emergency Communications County-Wide	N/A	Annually	Fire Department / Fire Chief	General Fund

F10. Defensible Space Practices	CWPP	Ongoing as needed	City of Las Cruces Fire Department / Fire Chief	General Fund
F11. Wildfire Education and Public Outreach	CWPP	Annually	City of Las Cruces Fire Department / Fire Chief	General Fund

Table 5-13-1
Mitigation actions/projects identified by NMSU

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
G1. Tunnel Assessment	Flood	Both	Survey tunnel system to identify and correct critical vulnerabilities associated with the essential utilities.	$5,000,000	F	F	F	F	F	L	F	1
G2. Emergency Power to Shelter Facilities	Extreme Cold, Severe Wind, Thunderstorms	Existing	Upgrade distribution system to include critical facilities access to emergency power during hazard events that cause loss of main power.	$1,000,000	F	L	L	F	F	L	F	2
G3. Unified Mapping	Flood	Both	Consistent mapping for improved interoperability - identify critical assets and hazard areas.	$250,000	F	F	F	F	F	F	N	3
G4. Drainage Master Plan and Flooding Detection/Warning	Flood, Dam Failure	Both	Develop drainage master plan and install early detection and warning sump pump systems to prevent repeated flooding. This is implementation of NMSU Storm water plan.	$60,000	F	F	F	F	F	F	F	4

Table 5-13-1
Mitigation actions/projects identified by NMSU

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
G5. Water Conservation Design Standards	Drought	Both	Develop and enforce design standards that incorporate sustainable landscape and building features that optimize and reduce water use, as appropriate and whenever possible, at NMSU owned facilities.	Staff time	F	F	F	F	F	F	F	5
G6. Drought Related Public Education and Outreach	Drought	Both	Participate with Doña Ana County to conduct a county wide education campaign to raise awareness of drought conditions and provide recommendations for ways to conserve water. Public contact may be accomplished through website notices and newsletter.	Staff time	F	F	F	F	N	F	F	6
G7. Land Use Planning	Wildfire	Both	Establish a land use planning process to regulate and ensure appropriate development in wildfire hazard areas. This is to mitigate the spread of wildfires into NMSU critical facilities and infrastructure.	Staff time	F	F	F	F	F	F	F	7
G8. Drainage Master Plan and Flooding Detection Public Education and Outreach	Flood, Dam Failure	Both	Participate with Doña Ana County to conduct a county wide education campaign to raise awareness of dams, drainage and flooding conditions and provide recommendations for ways to mitigate water run-off. Public contact may be accomplished through website notices and newsletter.	Staff time	F	F	F	F	N	F	F	8

Table 5-13-1
Mitigation actions/projects identified by NMSU

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
G9. Weather Detection Public Education and Outreach	Extreme Cold, Severe Wind, Thunderstorms	Both	Participate with Doña Ana County to conduct a county wide education campaign to raise awareness of extreme weather conditions and provide recommendations for ways to address hazards caused by extreme weather conditions on personal and public property. Public contact may be accomplished through website notices and newsletter.	Staff time	F	F	F	F	N	F	F	9
G10. Land Use Planning Public Education and Outreach	Drought, Wildfire	Both	Participate with Doña Ana County to conduct a county wide education campaign to raise awareness of drought and wildfire conditions and provide recommendations for ways to address hazards caused by drought and wildfire conditions on personal and public property. Public contact may be accomplished through website notices and newsletter.	Staff time	F	F	F	F	N	F	F	10

Table 5-13-2
Mitigation actions/projects implementation strategy for NMSU

Name	Planning Mechanism(s) for Implementation	Anticipated Completion Schedule	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
G1. Tunnel Assessment	Long term funding plan	3 years	Facilities & Services/Engineer	BRR funds and State appropriations funds
G2. Emergency Power to Shelter Facilities	Long term funding plan	5 years	Facilities & Services/Engineer	BRR funding: $300K per year for the 5 year period
G3. Unified Mapping	Critical infrastructure in years 1 and 2. Years 3-5 expansion and cross utilization.	5 years	Facilities & Services/Information Manager	BRR funds or operating budget
G4. Drainage Master Plan and Flooding Detection/Warning	NMSU Stormwater management Program; Equipment maintenance	4 years	Facilities & Services/Engineer	BRR funds or operating budget
G5. Water Conservation Design Standards	Regular building project review process	Ongoing as needed	NMSU Office of Sustainability, with Utilities and Plan Operations	Operating budget
G6. Drought Related Public Education and Outreach	N/A	Annually	NMSU office of Sustainability	Operating budget
G7. Land Use Planning	Chihuahuan Desert Rangeland Research Center steering committee	2 years	Head of the Department of Animal and Range Sciences	Operating budget
G8. Drainage Master Plan and Flooding Detection Public Education and Outreach	Regular project review process in the Emergency Planning Committee	Ongoing as determined/needed	Emergency Planning Committee	BRR Funds or operating budget
G9. Weather Detection Public Education and Outreach	Regular project review process in the Emergency Planning Committee	Ongoing as determined/needed	Emergency Planning Committee	BRR Funds or operating budget

Table 5-13-2
Mitigation actions/projects implementation strategy for NMSU

Name	Planning Mechanism(s) for Implementation	Anticipated Completion Schedule	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
G10. Land Use Planning Public Education and Outreach	Regular project review process in the Emergency Planning Committee	Ongoing as determined/needed	Emergency Planning Committee	BRR funds or operating budget

Table 5-14-1
Mitigation actions/projects identified by Sunland Park

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
H1. Construction of Community Safety Building	Dam Failure, Extreme Cold, Flood, Severe Wind, Wildfire Thunderstorms	Both	City will construct a new public safety building to house both the Fire Department and Police Department in order to expand services and decrease response time to the northern portion of the City. The facility will include a training facility and burn building.	$5,000,000	F	F	F	F	F	F	F	1
H2. Relocation of City Hall	Dam Failure, Flood	Existing	Locate, design and construct a new city hall to remove from high risk Dam Failure and Flood limits.	$2,500,000	F	F	F	F	F	N	N	2

Table 5-14-1
Mitigation actions/projects identified by Sunland Park

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
H3. County-Wide Flood Warning and Response System	Flood, Dam Failure	Both	Participate with Doña Ana County Flood Commission to develop a countywide Flood Warning and Response System, by providing localized feedback regarding potential locations for local gages and targeted populations to receive warnings.	Staff Time	F	F	F	F	F	F	F	3
H4. Building Code Review, Update and/or Adoption	Dam Failure, Extreme Cold, Flood, Severe Wind, Wildfire	Both	Assess and review existing building codes, and implement necessary updates as needed to maintain current standards and compliance with State Law requirements	Staff Time	N	F	F	F	F	F	F	4
H5. Assist Doña Ana County To Improve Emergency Communication County- Wide	Dam Failure Flood Severe Wind Extreme Cold Thunderstorm Wildfire	Both	Work in cooperation with Doña Ana County to improve county-wide emergency communications and hazard event warning capacity. Provide assistance with identifying community specific resources (amateur radio operators, receivers and repeaters, cellular towers, power sustainability, and critical warning and communications systems) as well as providing feedback regarding anticipated resource needs.	Staff Time	F	F	F	F	F	F	F	5

Table 5-14-1
Mitigation actions/projects identified by Sunland Park

Name	Hazard(s) Mitigated	Community Assets Mitigated (Existing/ Future/ Both)	Description	Estimated Cost	STAPLE+E Assessment (F) Favorable; (L) Less Favorable; (N) Neutral							Project Rank
					Social	Technical	Administrative	Political	Legal	Economic	Environmental	
H6. Drought Related Public Education and Outreach	Drought	Both	Participate with Doña Ana County to conduct a county- wide public education campaign to raise awareness of drought conditions and provide recommendations for ways to conserve water. Public contact may be accomplished through website notices, utility bill inserts, flyers and pamphlets.	Staff Time	F	F	F	F	F	F	F	6
H7. Drought Resistant Landscape Regulation	Drought	Both	Encourage and/or mandate the use of drought resistant landscaping as appropriate, through ordinance development and/or enforcement.	Staff Time	N	F	F	N	N	F	F	7
H8. Defensible Space Practices	Wildfire	Both	Recommend and implement defensible space, coupled with Firewise Communities practices, to reduce structural ignitability and to protect critical infrastructure within the wildland-urban interface areas.	Staff Time	N	F	F	F	F	F	N	8

Table 5-14-2
Mitigation actions/projects implementation strategy for Sunland Park

Name	Planning Mechanism(s) for Implementation	Anticipated Completion Schedule	Primary Agency / Job Title Responsible for Implementation	Funding Source(s)
H1. Construction of Community Safety Building	ICIP	2022	Community Development / Acting CED Director	ICIP Funds
H2. Relocation of City Hall	5-Year CIP	2025	Mayor's Office / Mayor; City Engineer / City Manager; Community Development Dept / Public Works	Grants; CIP; other Sources
H3. County-Wide Flood Warning and Response System	N / A	Annually (Per County schedule)	Community Development / Acting CED Director	General Fund
H4. Building Code Review, Update and/or Adoption	City Code	Annually	Community Development / Building Inspector	General Fund
H5. Assist Dona Ana County To Improve Emergency Communications County-Wide	N/A	Annually	Fire Department / Fire Chief Police Department / Police Chief	General Fund
H6. Drought Related Public Education & Outreach	N/A	Annually with County	Water Utilities / Director Community Development / Acting CED Director	General Fund
H7. Drought Resistant Landscape Regulation	City Code	Annually	Community Development / Acting CED Director	General Fund
H8. Defensible Space Practices	CWPP	Ongoing as needed	Community Development / Building Inspector	General Fund

SECTION 6: PLAN MAINTENANCE PROCEDURES

According to the DMA 2000 requirements, each plan must define and document processes or mechanisms for maintaining, updating, and integrating the hazard mitigation plan within the established five-year planning cycle. Elements of this plan maintenance section include:

- **Monitoring and Evaluating the Plan**
- **Updating the Plan**
- **Continued Public Participation**

The following sections document the past and proposed plan maintenance and integration procedures discussed and defined by the Steering Committee.

6.1 Monitoring and Evaluation

6.1.1 Past Plan Cycle

Doña Ana County and the participating jurisdictions recognize that this hazard mitigation plan is intended to be a "living" document with regularly scheduled monitoring, evaluation, and updating. Section 6.1.2 of the 2013 Plan outlined a schedule of specific activities for annual evaluations of the 2013 Plan. A poll of the Steering Committee regarding the past execution of the plan maintenance strategy was taken and found that the plan maintenance during the past cycle was largely ineffective.

Reasons for the lack of review included:

- Staff turnover and lack of continuity to original planning team.
- Lack of communicating plan maintenance responsibilities to successors during staff changes.
- Lack of outreach.
- Lack of response from participating jurisdictions.

Recognizing the need for improvement, the Steering Committee discussed ways to make sure that the Plan review and maintenance process will occur over the next five years. The results of those discussions are outlined in the following sections.

6.1.2 Proposed Schedule and Scope

Having a multi-jurisdictional plan can aide in the plan monitoring and evaluation through the consolidation of information for all participating jurisdictions into one document. The Steering Committee reviewed the current DMA 2000 rules and discussed a strategy for performing the required monitoring and evaluation of the Plan over the next Plan cycle. The monitoring and evaluation procedures resulting from those discussions are as follows:

- **Schedule** – The Steering Committee will meet in the first quarter of Plan years two (2), three (3) and four (4), either in person or virtually, to review and discuss the Plan.

Additional meetings may be scheduled, if needed, to accommodate reviews following a major disaster or for some other reason.

- **Responsibility** – The Doña Ana County Flood Commission, in conjunction with the Doña Ana County Office of Emergency Management, will take responsibility for organizing and facilitating the review meetings. Steering Committee members, or their replacement, will be contacted via an invitation email/letter stating the meeting date and agenda. Content review worksheets, developed as part of this update and included in Appendix G, will be sent with the invitations to aid jurisdictions in reviewing the plan prior to the meeting. Invitations will be made one month in advance of the meeting date.
- **Review Content** – The content and scope of the above referenced Plan review and evaluation will address the following questions to be addressed by each participating jurisdiction:
    - ***Hazard Identification:*** *Have the risks and hazards changed?*
    - ***Goals and objectives:*** *Are the goals and objectives still able to address current and expected conditions?*
    - ***Mitigation Projects and Actions:*** *Has the project been completed? If not complete but started, what has been done and what percent of the project has been completed? What remains to be done? Are there changes to the scope of work?*
- **Documentation** – Each jurisdiction will review and evaluate the Plan as it relates to their community and document responses to the above questions using the content review worksheets in Appendix G. During the scheduled review meeting, responses to each of the questions will be discussed by the Steering Committee to address concerns or successes. Documentation of each review meeting will include a list of attendees, a compilation of the worksheets generated by each jurisdiction, and any notes on discussions and conclusions made during the meeting, all compiled into a brief memorandum or review report. Copies of the review memorandum/report will be distributed to each jurisdiction for inclusion in Appendix G. The memorandums will also be posted to the County's website and a press release will be published through the County's Media and Public Communications Department announcing the completion of the review and posting of the summary memorandums.

6.2 Plan Update

According to DMA 2000, the Plan requires updating and approval from the NMDHSEM and FEMA every five years. The plan updates will adhere to that set schedule using the following procedure:

- ✓ Approximately two years prior to the plan expiration date, the Steering Committee will research sources and secure funding to begin the plan update process.
- ✓ Approximately 18 months prior to the plan expiration date, the Steering Committee will be re-convened to begin the update process. The Doña Ana County Flood

Commission, in conjunction with the Doña Ana County Office of Emergency Management will take responsibility to organize and facilitate the update effort.

- ✓ During the update, the Steering Committee will review and assess the materials accumulated in Appendix G, and update and/or revise the Plan in its entirety. The update planning process will result in a completely revised plan document.
- ✓ The revised plan will be submitted to NMDHSEM and FEMA for review, comment and the issuance of an "Approval Pending Adoption" (APA) letter from FEMA.
- ✓ The APA Plan document will be presented before the respective councils and boards for an official concurrence/adoption of the changes.
- ✓ Official copies of the resolutions will be sent to NMDHSEM and FEMA for the final approval.

Items or data needs that have been specifically identified during the development of this Plan that should be considered during the next update include:

- Incorporation of updated Census Block data.

6.3 Continued Public Involvement

The Steering Committee reviewed Section 6.3 of the 2013 Plan (current Plan) and discussed the challenges and successes regarding the identified continued public involvement strategy. The 2013 Plan identified the following strategy for continued public involvement:

- Announcement of the Plan update completion and subsequent reviews would be posted on all participating jurisdiction websites and a link would be provided to the Plan location on the County website.
- Public venues such as the Southern New Mexico State Fair, the Water Festival, the annual Chile Festival, etc. would be used by all jurisdictions as opportunities to inform the public about the Plan and hazard mitigation.
- Presentation of mitigation actions and projects will be provide to boards, councils, and/or trustees as they are implemented.
- Public outreach efforts undertaken as part of the jurisdictions CRS efforts will also include information about the Plan and hazard mitigation education.

A poll of the Steering Committee revealed that the 2013 Plan was posted to the City of Las Cruces and Doña Ana County websites.

Several of the participating jurisdictions conducted other efforts to elevate hazard mitigation awareness in the general public and community on an ongoing basis over the past plan cycle, with varying degrees of success. Examples included:

- Doña Ana County Flood Commission had a booth at the Southern New Mexico State Fair.
- Dona Ana County Flood Commission has provided hazard mitigation information while presenting their flood model at area schools.
- City of Las Cruces ran "Turn Around Don't Drown" public service announcement on CLC TV.

- City of Las Cruces provides hazard mitigation information at the Water Festival and other venues.
- EBID provided community outreach using the water trailer at several venues.
- EBID provides weather data on their website.
- NMSU conducts table top exercise for their plans at least once a year with upper administration.
- Presentation of mitigation actions/projects as they are implemented, to boards, councils, and/or trustees.
- Community Rating System outreach efforts by the City of Las Cruces and Doña Ana County.

All participating jurisdictions remain committed to keeping the public informed and aware about the hazard mitigation planning efforts, actions and projects and the plan maintenance activities. Table 6-1 summarizes proposed activities for continued public involvement and dissemination of information that shall be pursued whenever possible and appropriate during the next five years. The memorandums generated following the two, three and four year plan maintenance reviews discussed in Section 6.1.2 will be posted to the County's website and a public notice article will be provided through press releases from the Media & Public Communications Department alerting citizens to the plan maintenance activity and website. Copies of materials documenting or pertaining to these public involvement efforts will be kept during the next five years and archived in Appendix G for use in the next update process.

Table 6-1: Proposed continued public involvement activities or opportunities identified by Doña Ana County jurisdictions

Jurisdiction	Proposed Continued Public Involvement Activity or Opportunity
All Participating Jurisdictions	• Centralize posting of Plan to the Doña Ana County website with each participating jurisdiction providing a brief note and link to the county's website on their local website, as appropriate. • LEPC meetings – regular announcement of hazard mitigation information and availability of the Plan for review and reference. • Presentation of mitigation actions/projects as they are implemented, to boards, councils, and/or trustees, as appropriate. • The memorandums generated following the two, three and four year plan maintenance reviews discussed in Section 5.1.2 will be posted to the County's website and a public notice article will be provided through a press release from Doña Ana County announcing the completion of the review and posting of the summary memorandums.
Doña Ana County	• Provide a copy of Plan at fair booth or similar venues • CRS outreach efforts
City of Anthony	• Plan awareness through the Anthony Water and Sanitation District Fair.

Table 6-1: Proposed continued public involvement activities or opportunities identified by Doña Ana County jurisdictions

Jurisdiction	Proposed Continued Public Involvement Activity or Opportunity
Village of Hatch	• Provide a narrative and link to the Plan on the Village of Hatch Website • Provide a copy of the Plan at the Village of Hatch Library • Perform community outreach and public awareness of the Plan at the annual Chile Festival, when possible.
City of Las Cruces	• Public service announcement on CLC TV • CRS outreach efforts • Work with Watershed Groups/City Public Works Department to include hazard mitigation information in virtual tours of locations around the City.
Town of Mesilla	• Present the completed Plan at a Town Hall Meeting
City of Sunland Park	• Provide a copy of the Plan at the Sunland Park Community Library for public review and comment.
Elephant Butte Irrigation District	• Community outreach using the water trailer, when possible • Provide website connections to weather data / weather stations
New Mexico State University	• Coordination of Plan awareness amongst NMSU departments • Practice and review plan once a year with upper administration • Review continuity of operations plans every 2 years • Continually review planning awareness with departments and with emergency planning committee

Appendix A
Acronyms and Definitions

A.1 Acronyms

A/P ..... Mitigation Action/Project
ALOHA ..... Areal Location of Hazardous Atmospheres model
ASCE ..... American Society of Civil Engineers
BLM ..... Bureau of Land Management
CAMEO ..... Computer Aided Management of Emergency Operations model
CAP ..... Community Assistance Program
CAV ..... Community Assistance Visits
CLIMAS ..... Climate Assessment for the Southwest
CFI ..... Critical Facilities and Infrastructure
CFR ..... Code of Federal Regulations
CPRI ..... Calculated Priority Risk Index
CRS ..... Community Rating System
CWPP ..... Community Wildfire Protection Plan
DACOEM ..... Doña Ana County Office of Emergency Management
DACFC ..... Doña Ana County Flood Commission
DFIRM ..... Digital Flood Insurance Rate Map
DMA 2000 ..... Disaster Mitigation Act of 2000
DOD ..... Department of Defense
DOT ..... Department of Transportation
EBID ..... Elephant Butte Irrigation District
EAP ..... Emergency Action Plan
EHS ..... Extremely Hazardous Substance
EOP ..... Emergency Operations Plan
EPA ..... Environmental Protection Agency
EPCRA ..... Emergency Planning and Community Right to Know Act
ETZ ..... Extra-Territorial Zone
FEMA ..... Federal Emergency Management Agency
FIRM ..... Flood Insurance Rate Map
FMA ..... Flood Mitigation Assistance Grant Program
GIS ..... Geographic Information System
HAZMAT ..... Hazardous Material
HAZUS-MH ..... Hazards United States Multi-Hazard
HMGP ..... Hazard Mitigation Grant Program
IFCI ..... International Fire Code Institute
ISO ..... Insurance Services Office
LEPC ..... Local Emergency Planning Committee
MJHMP ..... Multi-Jurisdictional Hazard Mitigation Plan
MMI ..... Modified Mercalli Intensity
MPO ..... Metropolitan Planning Organization
MSA ..... Metropolitan Statistical Area
MVEDA ..... Mesilla Valley Economic Development Alliance

NCDC ..... National Climate Data Center
NDMC ..... National Drought Mitigation Center
NESDIS ..... National Environmental Satellite, Data and Information Service
NFIP ..... National Flood Insurance Program
NFPA ..... National Fire Protection Association
NHC ..... National Hurricane Center
NIBS ..... National Institute of Building Services
NID ..... National Inventory of Dams
NIST ..... National Institute of Standards and Technology
NMDHSEM ..... New Mexico Department of Homeland Security & Emergency Management
NMDTF ..... New Mexico Drought Task Force
NMEMNRD ..... New Mexico Energy, Minerals, and Natural Resources Department
NMSU ..... New Mexico State University
NOAA ..... National Oceanic and Atmospheric Administration
NRC ..... National Response Center
NSF ..... National Science Foundation
NWCG ..... National Wildfire Coordination Group
NWS ..... National Weather Service
OSEDSB ..... New Mexico Office of the State Engineer Dam Safety Bureau
OEM ..... Office of Emergency Management
OVOV 2040 ..... One Valley One Vision 2040 Regional Plan
PDM ..... Pre-Disaster Mitigation Grant
PSDI ..... Palmer Drought Severity Index
RL ..... Repetitive Loss
SARA ..... Superfund Amendments and Reauthorization Act
SFHA ..... Special Flood Hazard Area
SRLP ..... Severe Repetitive Loss Properties
SRL ..... Severe Repetitive Loss
TPC ..... Threshold Planning Quantity
UBC ..... Uniform Building Code
USACE ..... United States Army Corps of Engineers
USBR ..... United States Bureau of Reclamation
USDA ..... United States Department of Agriculture
USFS ..... United States Forest Service
USGS ..... United States Geological Survey
VA ..... Vulnerability Analysis
WUI ..... Wildland Urban Interface

A.2 Definitions

The following terms and definitions are provided for reference.

Dam Failure

A dam failure is a catastrophic type of failure characterized by the sudden, rapid and uncontrolled release of impounded water. Dam failures are typically due to either overtopping or piping and can result from a variety of causes including natural events such as floods, landslides or earthquakes, deterioration of foundation or compositional materials, penetration by vegetative roots or animal burrows, fissures or improper design and construction. Such a failure presents a significant potential for a disaster as significant loss of life and property would be expected in addition to the possible loss of power and water resources.

Drought

A drought is a deficiency of precipitation over on extended period of time, resulting in water shortage for some activity, group or environmental sector. "Severe" to "extreme" drought conditions endanger livestock and crops, significantly reduce surface and ground water supplies, increase the potential risk for wildland fires, increase the potential for dust storms, and cause significant economic loss. Humid areas are more vulnerable than arid areas. Drought may not be constant or predictable and does not begin or end on any schedule. Short term droughts are less impacting due to the reliance on irrigation and groundwater in arid environments.

Earthquake

An earthquake is a naturally-induced shaking of the ground, caused by the fracture and sliding of rock within the Earth's crust. The magnitude is determined by the dimensions of the rupturing fracture (fault) and the amount of displacement that takes place. The larger the fault surface and displacement, the greater the energy. In addition to deforming the rock near the fault, this energy produces the shaking and a variety of seismic waves that radiate throughout the Earth. Earthquake magnitude is measured using the Richter Scale and earthquake intensity is measured using the Modified Mercalli Intensity Scale.

Fissure

Earth fissures are tension cracks that open as the result of subsidence due to severe overdrafts (i.e., pumping) of groundwater, and occur about the margins of alluvial basins, near exposed or shallow buried bedrock, or over zones of differential land subsidence. As the ground slowly settles, cracks form at depth and propagate towards the surface, hundreds of feet above. Individual fissures range in length from hundreds of feet to several miles, and from less than an inch to several feet wide. Rainstorms can erode fissure walls rapidly causing them to widen and lengthen suddenly and dangerously, forming gullies five to 15- feet wide and tens of feet deep.

Flooding

Flooding is an overflowing of water onto normally dry land and is one of the most significant and costly of natural disasters. Flooding tends to occur in New Mexico during anomalous years of prolonged, regional rainfall (typical of an El Nino year), and is typified by increased humidity and high summer temperatures.

Flash flooding is caused excessive rain falling in a small area in a short time. Flash floods are usually associated with summer monsoon thunderstorms or the remnants of a tropical storm. Factors contributing to flash flooding include: rainfall intensity and duration, topography, soil conditions, and ground cover. Most flash flooding is caused by slow-moving thunderstorms or thunderstorms repeatedly moving over the same area and can occur within a few minutes or hours of excessive rainfall, or a quick release from a dam or levee failure. Thunderstorms produce flash flooding, often far from the actual storm and at night when natural warnings may not be noticed.

Landslide / Mudslide

Landslides like avalanches are massive downward and outward movements of slope-forming materials. The term landslide is restricted to movement of rock and soil and includes a broad range of velocities. Slow movements, although rarely a threat to life, can destroy buildings or break buried utility lines. A landslide occurs when a portion of a hill slope becomes too weak to support its own weight. The weakness is generally initiated when rainfall or some other source of water increases the water content of the slope, reducing the shear strength of the materials. A mud slide is a type of landslide referred to as a flow. Flows are landslides that behave like fluids: mud flows involve wet mud and debris.

Levee Failure / Breach

Levee failures are typically due to either overtopping or erosive piping and can result from a variety of causes including natural events such as floods, hurricane/tropical storms, or earthquakes, deterioration of foundation or compositional materials, penetration by vegetative roots or animal burrows, fissures, or improper design, construction and maintenance. A levee breach is the opening formed by the erosion of levee material and can form suddenly or gradually depending on the hydraulic conditions at the time of failure and the type of material comprising the levee.

Thunderstorms

Thunderstorms are characterized as violent storms that typically are associated with high winds, dust storms, heavy rainfall, hail, lightning strikes, and/or tornadoes. The unpredictability of thunderstorms, particularly their formation and rapid movement to new locations heightens the possibility of floods. Thunderstorms, dust/sand storms and the like are most prevalent during the monsoon season, which is a seasonal shift in the winds that causes an increase in humidity capable of fueling thunderstorms. The monsoon season typically is from late-June or early-July through mid- September.

Tornadoes

Tornadoes are violently rotating columns of air extending from a thunderstorm to the ground. The most violent tornadoes are capable of tremendous destruction with wind speeds in excess of 250 mph. Damage paths can exceed a mile wide and 50 miles long. The damage from tornadoes is due to high winds. The Fujita Scale of Tornado Intensity measures tornado / high wind intensity and damage.

Tropical Storms/Hurricanes

Tropical Storms are storms in which the maximum sustained surface wind ranges from 39-73 mph. Tropical storms are associated with heavy rain and high winds. High intensity rainfall in short periods is typical. A tropical storm is classified as a hurricane when its sustained winds reach or exceed 74 mph. These storms are medium to large in size and are capable of producing dangerous winds, torrential rains, and flooding, all of which may result in tremendous property damage and loss of life, primarily in coastal populated areas. The effects are typically most dangerous before a hurricane makes landfall, when most damage occurs.

Subsidence

Land subsidence in New Mexico is primarily attributed to substantial groundwater withdrawal from aquifers in sedimentary basins. As the water is removed, the sedimentary layers consolidate resulting in a general lowering of the corresponding ground surface. Subsidence frequently results in regional bowl-shaped depressions, with loss of elevation greatest in the center and decreasing towards the perimeter. Subsidence can measurably change or reverse basin gradients causing expensive localized flooding and adverse impacts or even rupture to long-baseline infrastructure such as canals, sewer systems, gas lines and roads. Earth fissures are the most spectacular and destructive manifestation of subsidence-related phenomena.

Wildfire

Wildfire is a rapid, persistent chemical reaction that releases heat and light, especially the exothermic combination of a combustible substance with oxygen. Wildfires present a significant potential for disaster in the southwest, a region of relatively high temperatures, low humidity, low precipitation, and during the spring moderately strong daytime winds. Combine these severe burning conditions with people or lightning and the stage is set for the occurrence of large, destructive wildfires.

Winter Storm

Winter storms bring heavy snowfall and frequently have freezing rain and sleet. Sleet is defined as pellets of ice composed of frozen or mostly frozen raindrops or refrozen partially melted snowflakes. These pellets of ice usually bounce after hitting the ground or other hard surfaces. Freezing rain begins as snow at higher altitudes and melts completely on its way down while passing through a layer of air above freezing temperature, then encounters

a layer below freezing at lower level to become supercooled, freezing upon impact of any object it then encounters. Because freeing rain hits the ground as a rain droplet, it conforms to the shape of the ground, making one thick layer of ice. Snow is generally formed directly from the freezing of airborne water vapor into ice crystals that often agglomerates into snowflakes. Average annual snowfall varies with geographic location and elevation, and can range from trace amounts to hundreds of inches. Severe snow storms can affect transportation, emergency services, utilities, agriculture and basic subsistence supply to isolated communities. In extreme cases, snowloads can cause significant structural damage to underdesigned buildings.

GENERAL PLAN TERMS

Asset
Any natural or human-caused feature that has value, including, but not limited to people; buildings; infrastructure like bridges, roads, and sewer and water systems; lifelines like electricity and communication resources; or environmental, cultural, or recreational features like parks, dunes, wetlands, or landmarks.

Building
A structure that is walled and roofed, principally above ground and permanently affixed to a site. The term includes a manufactured home on a permanent foundation on which the wheels and axles carry no weight.

Critical Facilities and Infrastructure
Systems or facilities whose incapacity or destruction would have a debilitating impact on the defense or economic security of the nation. The Critical Infrastructure Assurance Office (CIAO) defines eight categories of critical infrastructure, as follows:

Telecommunications infrastructure: Telephone, data services, and Internet communications, which have become essential to continuity of business, industry, government, and military operations.

Electrical power systems: Generation stations and transmission and distribution networks that create and supply electricity to end-users.
Gas and oil facilities: Production and holding facilities for natural gas, crude and refined petroleum, and petroleum-derived fuels, as well as the refining and processing facilities for these fuels.

Banking and finance institutions: Banks, financial service companies, payment systems, investment companies, and securities/commodities exchanges.

Transportation networks: Highways, railroads, ports and inland waterways, pipelines, and airports and airways that facilitate the efficient movement of goods and people.

Water supply systems: Sources of water; reservoirs and holding facilities; aqueducts and other transport systems; filtration, cleaning, and treatment systems; pipelines; cooling systems; and other delivery mechanisms that provide for domestic and industrial applications, including systems for dealing with water runoff, wastewater, and firefighting.

Government services: Capabilities at the federal, state, and local levels of government required to meet the needs for essential services to the public.

Emergency services: Medical, police, fire, and rescue systems.

Disaster Mitigation Act of 2000 (DMA2K)
A law signed by the President on October 30, 2000 that encourages and rewards local and state predisaster planning, promotes sustainability as a strategy for disaster resistance, and is intended to integrate state and local planning with the aim of strengthening statewide mitigation planning.

Emergency Preparedness and Response (EPR) Directorate
One of five major Department of Homeland Security Directorates which builds upon the formerly independent Federal Emergency Management Agency (FEMA). EPR is responsible for preparing for natural and human-caused disasters through a comprehensive, risk-based emergency management program of preparedness, prevention, response, and recovery. This work incorporates the concept of disaster-resistant communities, including providing federal support for local governments that promote structures and communities that reduce the chances of being hit by disasters.

Emergency Response Plan
A document that contains information on the actions that may be taken by a governmental jurisdiction to protect people and property before, during, and after a disaster.

Federal Emergency Management Agency (FEMA)
Formerly independent agency created in 1978 to provide a single point of accountability for all Federal activities related to disaster mitigation and emergency preparedness, response and recovery. As of March 2003, FEMA is a part of the Department of Homeland Security's Emergency Preparedness and Response (EPR) Directorate.

Flood Insurance Rate Map (FIRM)

Map of a community, prepared by FEMA that shows the special flood hazard areas and the risk premium zones applicable to the community.

Frequency
A measure of how often events of a particular magnitude are expected to occur. Frequency describes how often a hazard of a specific magnitude, duration, and/or extent typically occurs, on average. Statistically, a hazard with a 100-year recurrence interval is expected to occur once every 100 years on average, and would have a 1% chance – its probability – of happening in any given year. The reliability of this information varies depending on the kind of hazard being considered.

Geographic Information Systems (GIS)
A computer software application that relates physical features on the earth to a database to be used for mapping and analysis.

Hazard
A source of potential danger or adverse condition. Hazards include both natural and human-caused events. A natural event is a hazard when it has the potential to harm people or property and may include events such as floods, earthquakes, tornadoes, tsunami, coastal storms, landslides, and wildfires that strike populated areas. Human-caused hazard events originate from human activity and may include technological hazards and terrorism. Technological hazards arise from human activities and are assumed to be accidental and/or have unintended consequences (e.g., manufacture, storage and use of hazardous materials). While no single definition of terrorism exists, the Code of Federal Regulations defines terrorism as "…unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives."

Hazard Event
A specific occurrence of a particular type of hazard.

Hazard Identification
The process of identifying hazards that threaten an area.

Hazard Mitigation
Cost effective measures taken to reduce or eliminate long-term risk associated with hazards and their effects.

Hazard Profile
A description of the physical characteristics of hazards and a determination of various descriptors including magnitude, duration, frequency, probability, and extent.

HAZUS
A GIS-based nationally standardized earthquake, flood and high wind event loss estimation tool developed by FEMA.

Mitigate
To cause to become less harsh or hostile; to make less severe or painful. Mitigation activities are actions taken to eliminate or reduce the probability of the event, or reduce its severity of consequences, either prior to or following a disaster/emergency.

Mitigation Plan
A systematic evaluation of the nature and extent of vulnerability to the effects of natural hazards typically present in a defined geographic area, including a description of actions to minimize future vulnerability to hazards.

100-Hundred Year Floodplain
Also referred to as the Base Flood Elevation (BFE) and Special Flood Hazard Area (SFHA). An area within a floodplain having a 1% or greater chance of flood occurrence in any given year.

Planning
The act or process of making or carrying out plans; the establishment of goals, policies, and procedures for a social or economic unit.

Probability
A statistical measure of the likelihood that a hazard event will occur.

Promulgation
To make public and put into action the Hazard Mitigation Plan via formal adoption and/or approval by the governing body of the respective community or jurisdiction (i.e. – Town or City Council, County Board of Directors, etc.).

Q3 Data
The Q3 Flood Data product is a digital representation of certain features of FEMA's Flood Insurance Rate Map (FIRM) product, intended for use with desktop mapping and Geographic Information Systems technology. The digital Q3 Flood Data are created by scanning the effective FIRM paper maps and digitizing selected features and lines. The digital Q3 Flood Data are designed to serve FEMA's needs for disaster response activities, National Flood Insurance Program activities, risk assessment, and floodplain management.

Repetitive Loss Property

A property that is currently insured for which two or more National Flood Insurance Program losses (occurring more than ten days apart) of at least $1,000 each have been paid within any 10 year period since 1978.

Risk
The estimated impact that a hazard would have on people, services, facilities, and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage. Risk is often expressed in relative terms such as a high, moderate, or low likelihood of sustaining damage beyond a particular threshold due to a specific type of hazard event. It also can be expressed in terms of potential monetary losses associated with the intensity of the hazard.

Substantial Damage
Damage of any origin sustained by a structure in a Special Flood Hazard Area whereby the cost of restoring the structure to its before-damaged condition would equal or exceeds 50% of the market value of the structure before the damage.

Vulnerability
Describes how exposed or susceptible to damage an asset is. Vulnerability depends on an asset's construction, contents, and the economic value of its functions. Like indirect damages, the vulnerability of one element of the community is often related to the vulnerability of another. For example, many businesses depend on uninterrupted electrical power–if an electric substation is flooded, it will affect not only the substation itself, but a number of businesses as well. Often, indirect effects can be much more widespread and damaging than direct effects.

Vulnerability Analysis
The extent of injury and damage that may result from a hazard event of a given intensity in a given area. The vulnerability analysis should address impacts of hazard events on the existing and future built environment.

Vulnerable Populations
Any segment of the population that is more vulnerable to the effects of hazards because of things such as lack of mobility, sensitivity to environmental factors, or physical abilities. These populations can include, but are not limited to, senior citizens and school children.

Goals
General guidelines that explain what you want to achieve. Goals are usually broad statements with long-term perspective.

Objectives

Defined strategies or implementation steps intended to attain the identified goals. Objectives are specific, measurable, and have a defined time horizon.

Actions/Projects
Specific actions or projects that help achieve goals and objectives.

Implementation Strategy
A comprehensive strategy that describes how the mitigation actions will be implemented.

GENERAL HAZARD TERMS

Fujita Scale of Tornado Intensity
Rates tornadoes with numeric values from F0 to F5 based on tornado winds peed and damage sustained. An F0 indicates minimal damage such as broken tree limbs or signs, while an F5 indicates severe damage sustained.

Liquefaction
The phenomenon that occurs when ground shaking (earthquake) causes loose soils to lose strength and act like viscous fluid. Liquefaction causes two types of ground failure: lateral spread and loss of bearing strength.

Modified Mercalli Intensity Scale
The Modified Mercalli Intensity Scale is commonly used in the United States by seismologists seeking information on the severity of earthquake effects. Intensity ratings are expressed as Roman numerals between I at the low end and XII at the high end. The Intensity Scale differs from the Richter Magnitude Scale in that the effects of any one earthquake vary greatly from place to place, so there may be many Intensity values (e.g.: IV, VII) measured from one earthquake. Each earthquake, on the other hand, should have just one Magnitude, although the several methods of estimating it will yield slightly different values (e.g.: 6.1, 6.3).

Monsoon
A monsoon is any wind that reverses its direction seasonally. In the Southwestern U.S., for most of the year the winds blow from the west/northwest. During the summer months, the Mexican Monsoon turns the winds to a more south/southeast direction and brings moisture from the Pacific Ocean, Gulf of California, and Gulf of Mexico. This moisture often leads to thunderstorms in the higher mountains, with air cooled from these storms often moving from the high country to the deserts, leading to further thunderstorm activity in the desert. A common misuse of the term monsoon is to refer to individual thunderstorms as monsoons.

Richter Magnitude Scale

A logarithmic scale devised by seismologist C.F. Richter in 1935 to express the total amount of energy released by an earthquake. While the scale has no upper limit, values are typically between 1 and 9, and each increase of 1 represents a 32-fold increase in released energy.

Appendix B

Local Mitigation Plan Review Tool

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA's evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan's strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of the each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

Jurisdictions: Dona Ana County, City of Anthony, City of Las Cruces, City of Sunland Park, Town of Mesilla, Village of Hatch, Elephant Butte Irrigation District, New Mexico State University	**Title of Plan:** Dona Ana County All Hazard Mitigation Plan	**Date of Plan:** October 2020
Local Point of Contact: Michael Garza	**Address:** 845 North Motel Boulevard, Room 1-250, Las Cruces, NM 88007	
Title: Flood Engineer		
Agency: Dona Ana County Flood Commission		
Phone Number: 575-525-5553	**E-Mail:** michaelg@donaanacounty.org	

State Reviewer:	**Title:**	**Date:** September

FEMA Reviewer:	**Title:**	**Date:**
Date Received in FEMA Region ***(insert #)***		
Plan Not Approved		
Plan Approvable Pending Adoption		
Plan Approved		

SECTION 1: REGULATION CHECKLIST

INSTRUCTIONS: The Regulation Checklist must be completed by FEMA. 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.' The

'Required Revisions' summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is 'Not Met.' Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	**Location in Plan (section and/or page number)**	**Met**	**Not Met**
ELEMENT A. PLANNING PROCESS			
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	All of Section 3.0 and Appendices C and D		
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	Sections 3.3.5 and 3.4.2		
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Section 3.4.2		
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	Section 3.5 and last paragraph of Section 3.3.5		
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	Section 6.3 Table 6-1		
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	Sections 6.1 and 6.2		
ELEMENT A: REVISIONS			

ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT

B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	Each hazard subsection of Section 4.3		
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	Each hazard subsection of Section 4.3 and Appendix E		
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	Each hazard subsection of Section 4.3		
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	Section 4.3.4, Vulnerability - Repetitive Loss Properties subsection		

ELEMENT B: REVISIONS

ELEMENT C. MITIGATION STRATEGY

C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	Section 5.1.1		
C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	Section 5.1.2		
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Section 5.2		
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	Section 5.3 and more specifically Section 5.3.2, Tables 5-8-1 through 5-14-1		
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	Section 5.3 and more specifically Section 5.3.2, Tables 5-8-2 through 5-14-2		
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	Section 3.6 and specifically Section 3.6.2		

ELEMENT C: REVISIONS

ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION
(applicable to plan updates only)

D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Section 2.2 Development Trends subsection for each jurisdiction and the Vulnerability/Development Trends of Sections 4.3.1-4.3.7		
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Section 5.3.1		
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	Changes are throughout the document. Examples include Sections 4.1, 5.3.1, 5.3.2		
ELEMENT D: REQUIRED REVISIONS			
ELEMENT E. PLAN ADOPTION			
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))			
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))			
ELEMENT E: REQUIRED REVISIONS			
ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)			
F1. There are no additional State requirements.			
F2.			
ELEMENT F: REQUIRED REVISIONS			

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

Element B: Hazard Identification and Risk Assessment

In addition to the requirements listed in the Regulation Checklist, 44 CFR 201.6 Local Mitigation Plans identifies additional elements that should be included as part of a plan's risk assessment. The plan should describe vulnerability in terms of:

1) *A general description of land uses and future development trends within the community so that mitigation options can be considered in future land use decisions;*
2) *The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas; and*
3) *A description of potential dollar losses to vulnerable structures, and a description of the methodology used to prepare the estimate.*

The plan should more precise detail about hazard information. For example when discussing location the plan should provide information with enough detail for someone to know where they should go to check on potential damage after a hazard moves through the community.

Element C: Mitigation Strategy

The plan contains various actions that do seem to result in the direct reduction of loss to life and property. When including actions ensure the descriptions used lead to direct mitigation activities.

Element D: Plan Update, Evaluation, and Implementation (*Plan Updates Only*

B. Resources for Implementing Your Approved Plan

Ideas may be offered on moving the mitigation plan forward and continuing the relationship with key mitigation stakeholders such as the following:

SECTION 3:
MULTI-JURISDICTION SUMMARY SHEET (OPTIONAL)

INSTRUCTIONS: For multi-jurisdictional plans, a Multi-jurisdiction Summary Spreadsheet may be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were 'Met' or 'Not Met,' and when the adoption resolutions were received. This Summary Sheet does not imply that a mini-plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type (city/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Requi re-ments
1	Doña Ana County	County	Michael Garza	845 North Motel Boulevard, Room 1-250, Las Cruces, NM 88007	michaelg@donaanacounty.org	575-525-5553	Y	Y	Y	Y	N	NA
2	Anthony, City of	City	Oscar Dominguez	820 Highway 478, Anthony, NM 88021	odominguez@cityofanthonynm.org	575-882-2983	Y	Y	Y	Y	N	NA
3	Elephant Butte Irrigation District	District	Delyce Maciel	530 South Melendres Street, Las Cruces, NM 88005	dmaciel@ebid-nm.org	575-933-2490	Y	Y	Y	Y	N	NA
4	Hatch, Village of	Village	Dave Sment	133 N. Franklin Street P.O. Box 220 Hatch, NM 87937	dsment@villageofhatch.org	575-343-7662	Y	Y	Y	Y	N	NA
5	Las Cruces, City of	City	Jacob Kidd	700 North Main Street, Las Cruces, NM 88001	jkidd@las-cruces.org	575-541-2008	Y	Y	Y	Y	N	NA
6	Mesilla, Town of	Town	Rod McGillivray	2231 Avenida de Mesilla P.O. Box 10 Mesilla, NM 88046	rodm@mesillanm.gov	575-524-8244	Y	Y	Y	Y	N	NA

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type (city/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Requi re-ments
7	New Mexico State University	University	Johnny Carillo	MSC-3545, P.O. Box 30001, 1510 Wells Street Las Cruces, NM 88003	jcarr622@nmsu.edu	575-646-5219	Y	Y	Y	Y	N	NA
8	Sunland Park, City of	City	Danielle Villegas	1000 McNutt Road, Suite G, Sunland Park, NM 88063	danielle.villegas@cityofsunlandpark-nm.org	575-589-3631 Ext. 2070	Y	Y	Y	Y	N	NA

Appendix C

Steering Committee Meeting Documentation

From: Michael A. Garza
To: Andrew Guerra; Betty Gonzales (bgbetty@aol.com); Cecilia Estrada (cestrada@las-cruces.org); Delyce Maciel (dmaciel@eboid-nm.org); Dwaine Solarez; Elizabeth Pinnay; Gerlitz, Sara M, DHSEM; John Gwynne; Katrina Doolittle (kadoolittle@aud.nmsu.edu); Kevin Hoban (kevinhoban@msn.com); Mike Castillo (ceo@villageofhatch.org); Mitigation, DHSEM, DHSEM; Mary Evans; Peter Bennett (pbennett@las-cruces.org); Scott Ogden; Tiffany Goolsby; ttevino@las-cruces.org
Subject: All Hazard Mitigation Plan Update - Invitation for Core Team Meeting
Date: Friday, December 6, 2019 10:02:19 AM

The Dona Ana County Flood Commission has secured grant funding to begin the process of updating the 2013 *All Hazard Mitigation Plan*, and has retained JE Fuller/Hydrology and Geomorphology, Inc. (JE Fuller) to assist with the plan update process. This 5-year plan update is required to maintain compliance with federal regulations set forth by the Disaster Mitigation Act of 2000 (DMA 2000), including continued eligibility for certain non-emergency hazard mitigation grant funds.

In 2011 and 2012, the Dona Ana County Flood Commission and seven other jurisdictions (*City of Anthony, Elephant Butte Irrigation District, Village of Hatch, City of Las Cruces, Town of Mesilla, New Mexico State University and City of Sunland Park)* participated in a multi-jurisdictional mitigation planning effort that prepared the 2013 Plan and received official FEMA approval on October 1, 2013. The 2013 Plan 5-year planning cycle has ended, and the plan is currently expired and requires updating.

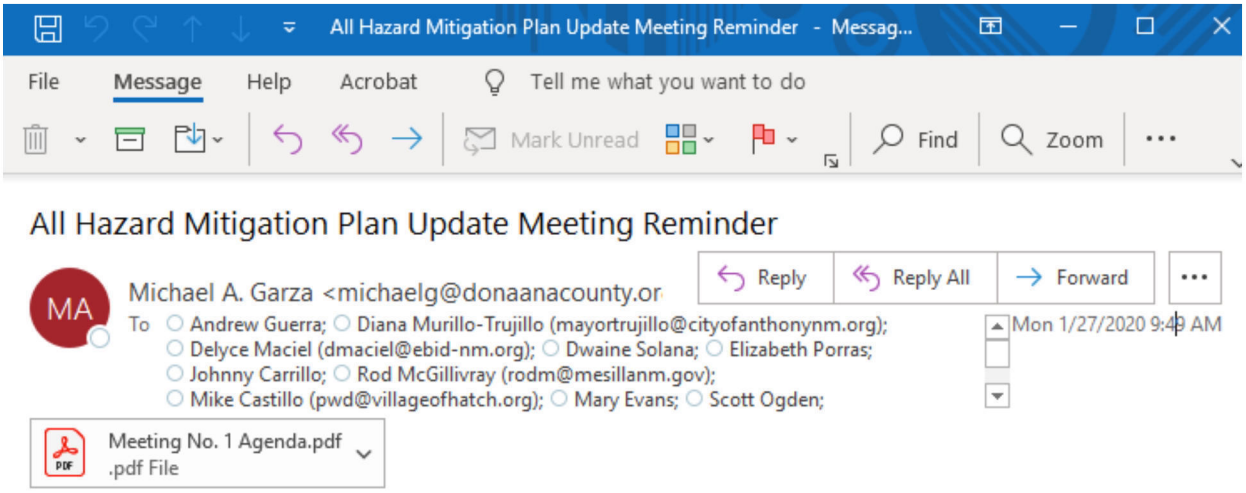
We are reaching out to all the past jurisdictional participants to organize and reconvene a core planning team to perform the necessary plan updates and serve as a liaison and key point of contact(s) for your agency or community. As with past efforts, attendance at ***ALL*** planning team meetings by each participating jurisdiction is ***mandatory*** to maintain eligibility and inclusion in the multi-jurisdictional plan. A total of four 4 half-day planning team meetings are envisioned with a goal of submitting a final draft of the 2020 Plan to FEMA by late in 2020. The first planning team meeting is scheduled for **Thursday, February 6th, at 1pm at the Dona Ana County Government Building Room 117. An invite to reserve the time slot on your calendar will be sent immediately following this email.**

As a part of the core planning team organization, it is important that each jurisdiction designate one or more individuals who can consistently attend every planning team meeting and function as the primary point of contact for the plan update effort. Further involvement by others from each jurisdiction will be discussed and outlined at the first meeting.

PLEASE NOTE: The first meeting will include some introductory discussions for those not familiar with the hazard mitigation planning process and will provide an opportunity to educate officials on the requirements, process and effort involved with the update. The first meeting will also be a working meeting in which several task assignments will be made, so ***attendance by the community appointed primary point of contact is essential***. **Please respond to this email, and confirm who will be the primary point of contact for your jurisdiction.**

DACFC and JE Fuller look forward to working through this hazard mitigation plan update process with you and/or your planning team representative(s). If you have questions on the plan update process or identifying a team representative, please contact the DACFC primary point of contact, Mike Garza at 575-525-5553 or michaelg@donaanacounty.org.

Michael Garza E.I.T, CFM
Flood Engineer Intern
Dona Ana County Flood Commission
michaelg@donaanacounty.org
575-525-5553



Good Morning Everyone,

I just wanted to reach out to you all this morning to remind you of our upcoming Planning Meeting No. 1 for our All Hazard Mitigation Plan Update. The Meeting will take place **February 6th, 2020 from 1-5pm at the Dona Ana County Government Center Room 117**. Many of you have already accepted the invite, but there are several invitees that I have yet to hear from. It is vital that all participating jurisdictions are present and involved not only in this first planning meeting, but the remaining 3 that we intend to have throughout this process. If you or a member of your jurisdiction are not able to attend, please let me know so I can be sure to keep you well informed as the plan update continues to move forward. As always if you have any questions, please be sure to let me know.

For those of you that have already confirmed your attendance, I have attached a copy of the agenda for the meeting, and below you will find a link to our 2013 All Hazard Mitigation Plan for your reference if you would like to skim through it before next Thursday.

https://www.donaanacounty.org/sites/default/files/pages/AHMP_Final_Oct%202013.pdf

Thanks and have a great day,

Michael Garza E.I.T, CFM
Flood Engineer Intern
Dona Ana County Flood Commission
michaelg@donaanacounty.org
575-525-5553

PLANNING TEAM MEETING NO.1

Dona Ana County Government Building, Room 117

February 6, 2020

1:00 PM

- **INITIAL INTRODUCTIONS**
- **DISCUSSION OF SCOPE AND SCHEDULE**
- **DMA2K OVERVIEW AND UPDATE REQUIREMENTS**
  - **General DMA2K Overview**
  - **Update Requirements**
  - **Proposed Outline for New Plan**
- **PLANNING PROCESS**
  - **Discussion of Last Planning Process**
  - **Planning Team Roles and Responsibilities**
- **PUBLIC INVOLVEMENT**
  - **Discuss Past Strategy**
  - **Formulate New Strategy**
- **RISK ASSESSMENT**
  - **Hazard List Identification**
  - **Existing Plans, Studies, Reports and Technical Information**
- **SCHEDULE PLANNING COMMITTEE MEETINGS 2-4**

Kickoff - Planning Team Meeting No. 1

Date: February 6, 2020

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E-Mail Address
Delyce Maciel	EBID	HR + Safety	HR/Safety Director	(575) 493-2490	(575) 639-4377	dmaciel@ebid-nm.org
Tim Pitts	CLC	Community Dev't.	Deputy Director	575-528-3085	575-[illegible]336	0296 tpitts@las-cruces.org
Tiffany Goolsby	South Central Council of Governments		Senior Planner	575-740-2926	575-740-2926	Tigoolsby@SCCOG-NM.com
Cullen Combs	DAC/CLCOEM	OEM	Emergency Manager	X-7100	575-649-1065	
DWAINE SOLANA	SUNLAND PARK	BUILDING.	CBO	575 589 3631		
PETER BENNETT	CLC	Public Works	Engineering Tech. Sr.	575-528-3075		pbennett@las-cruces.org

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Kickoff - Planning Team Meeting No. 1

Date: February 6, 2020

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E-Mail Address
Mary Evans	JE Fuller			(575) 956-6151	(575) 313-7650	mary@jefuller.com
Scott Ogden	JE Fuller			(480) 222-5117	(480) 299-3314	scott@jefuller.com
Sara Gerlitz	DHSEM	Mitigation	Mitigation Specialist		(505) 660-3808	saram.gerlitz@state.nm.us
Lance Stephan	Mesilla	marshals	Sergeant	575 646-[illegible]		lance@mesillanm.gov
Michael Garza	DAC Flood	Flood commission	Flood Engineer	575-525-5553		Michaelg@donaanacounty.org
Lonnie Hudson	NMSU FD	Fire	Deputy Chief	575 646.2519	575.430.1977	Lahudson@nmsu.edu
Carl Lukesh	DAC Flood	Flood Commission	Planner	575-525-5566		carll@donaanacounty.org
DAVE SNENT	VILLAGE OF HATCH	PLANNING, ZONING	P & Z DIRECTOR	575-343-7662		DSNENT@VILLAGEOFHATCH.ORG
DENNIS SCHOEN JR	SUNLAND PARK FIRE DEPT	FIRE DEPT	CAPTAIN	575-589-2302	915-760-7302	dennis.schoen@sunlandpark-nm.gov
RAMIRO RIOS	SUNLAND PARK FIRE	FIRE DEPT	INTERIM FIRE CHIEF	575 268-6234	915 472-3550	RAMIRO.RIOS@SUNLANDPARK-NM.GOV
Dennis McCarville	EBID	Engineering				dmccarville@ebid-nm.org
DALE HARRELL	NMSU	ENGINEERING DEPT	CIVIL ENG	575-646-3203		dharrell@nmsu.edu
Geremy Barela	CLC	Community Development	Associate Eng.	575-528-3496		gbarela@las-cruces.org
Diana M. Trujillo	City of Anthony	[illegible] Exec.	Mayor	5756187297		mayortrujillo@cityofanthonynm.org
Christina Ainsworth	DAC	comm. Dev.	Director	525 6113		christinaa@donaanacounty.org
Lorenzo Espinoza	NMDHSEM	Preparedness	LPC	575 589-6501	699-9323	lorenzo.espinoza@state.nm.us

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Kickoff - Planning Team Meeting No. 1

Date: February 6, 2020

Name	Jurisdiction/Agency/Organization	Department/Division/Branch	Title	Office Phone	Cell Phone	E-Mail Address
Jacob Kidd	CLC	Comm Dev	Environmental Planner	575-541-2057	—	jacobk@las-cruces.org

Doña Ana County All Hazard Mitigation Plan 2020 Update

MEETING DATE: February 6, 2020

MEETING TIME: 1 PM TO 4:30 PM

MEETING LOCATION: Doña Ana County Government Center
Room 1-113 (Multi-Purpose Conference Room)
845 N. Motel Blvd, Las Cruces, New Mexico

FROM: Mary Evans – JEF

RE: **Doña Ana County All Hazard Mitigation Plan**
Project Team Meeting #1

ATTENDEES: SEE PLANNING TEAM MEETING NO. 1 SIGN IN SHEET

AGENDA

1. **INITIAL INTRODUCTIONS**
2. **DISCUSSION OF SCOPE AND PROJECT SCHEDULE**
3. **DMA2K OVERVIEW AND UPDATE REQUIREMENTS**
    a. **General DMA2K Overview**
    b. **Update Requirements**
    c. **Proposed Outline for New Plan**
4. **PLANNING PROCESS**
    a. **Discussion of Last Planning Process**
    b. **Planning Team Roles and Responsibilities**
5. **PUBLIC INVOLVEMENT**
    a. **Discuss Past Strategy**
    b. **Formulate New Strategy**
6. **RISK ASSESSMENT**
    a. **Hazard List Identification**

DISCUSSION

Agenda Item 1:

- Dona Ana County Flood Commission staff, John Gwynne (Director) and Michael Garza (Engineer), introduced themselves and turned the meeting over to Scott Ogden (JE Fuller/Consultant). Scott Ogden and Mary Evans introduced themselves a briefly discussed JE Fuller's role the HMP Update process. Sara Gerlitz (DHSEM – Mitigation) introduced herself and provided a brief overview of her involvement in the update process. Individuals in attendance from each community in attendance then provided their name, position, the community the represented, and indicated whether they had participated in the last HMP Update effort.

Agenda Item 2:

- S. Ogden presented the attendees with a document outlining the anticipated meeting agendas for the rest of the project and explained that the intention was to conduct one meeting on an approximately monthly basis. The first draft is anticipated for the end of July 2020. Each meeting will be 4-hours in length and each meeting is critical as each meeting builds upon the prior meeting's agenda.

Agenda Item 3:

- S. Ogden presented a brief overview of the Project Team meeting agenda and purpose.
- S. Ogden led a quick review of the current 2013 Plan and a general discussion of the prior experiences with FEMA reviews. He explained the Disaster Mitigation Act of 2000 history and requirements, highlighting the federal programs for which eligibility is impacted by whether a community has adopted a FEMA approved Hazard Mitigation Plan.
- All JE Fuller consultants expressed the importance of complete attendance by all signing jurisdictions.
- S. Ogden presented a proposed plan outline for the team's consideration. This outline aligns well with current FEMA Guidance and was implemented in the 2013 plan update. The group consensus was to keep this outline.

Agenda Item 4:

- S. Ogden briefly reviewed the 4 elements of the Hazard Mitigation Plan (Planning Process, Risk Assessment, Mitigation Strategy, and Plan Maintenance Procedures) and highlighted the tasks in each element.
- S. Ogden reviewed how the planning process and development of a Hazard Mitigation Plan is organized for multiple jurisdictions with a common process, hazards, general goals, collaborative actions and plan maintenance and unique sections for each

jurisdiction addressing geographically specific hazards, risks specific goals, actions, plan update participation and adoption.

- S. Ogden discussed the makeup of the Multi-Jurisdictional Planning Team. Communities were advised that Michael Garza (DACFC) would serve as the Primary Point of Contact (PPOC) for the Plan Update, while each Jurisdiction would need to select a Jurisdictional Point of Contact (JPOC) to coordinate with the PPOC and coordinate with the jurisdiction's local team to complete update tasks. It was requested that each jurisdiction identify their JPOC at the meeting or shortly there after and provide that information to the PPOC. A list of potential candidates recommended to take part in the effort at local level was provided for the jurisdictions consideration in putting together their local planning team.

Agenda Item 5:

- S. Ogden reviewed the public involvement requirements for the Plan Update process and provided a summary of the efforts employed in the past update processes.
- S. Ogden provided public involvement strategy recommendations for the current update opened up the meeting to discussion of the most effective methods for soliciting and receiving public input on the Plan Update. It was widely agreed that "physical" community meetings are not well attended and would not be practical for the current update. S. Ogden provided an example questionnaire that could be provided to the public in hard copy or electronic format to solicit public input the Hazard Mitigation Plan. M. Garza indicated that he could work with the County's IT Department to put the Questionnaire up on the Flood Commission's Hazard Mitigation Plan Website. D. Maciel indicated the EBID would be able to send out hard copies of the questionnaire with monthly water bills.
- Several jurisdictions indicated a willingness to use social media platforms to solicit public input on the Plan Update. All jurisdictions are to provide either a website or social media posting informing the public that the update is in progress and providing a link to the County's Hazard Mitigation Page.
- It was recommended that a single logo be created to represent the Planning Team and Hazard Mitigation Plan Update that reflected all jurisdictions and the County as a whole. It was requested that this logo be scalable for application to different mediums.
- M. Garza mentioned the potential for posting flyers and community centers and other venues throughout the county where residents typically congregate. He further suggested that this flyer direct residents to the DACFC or website for further information and clearly state that no physical meetings would take place. Finally, it was noted that all advertisements and questionnaires be provided in English and Spanish. M. Evans indicated she would coordinate with DACFC Staff to have the documents translated to Spanish.
- S. Ogden discussed the secondary invitees which need to be considered and solicited to participate in the Plan Update. Examples provided include neighboring Counties

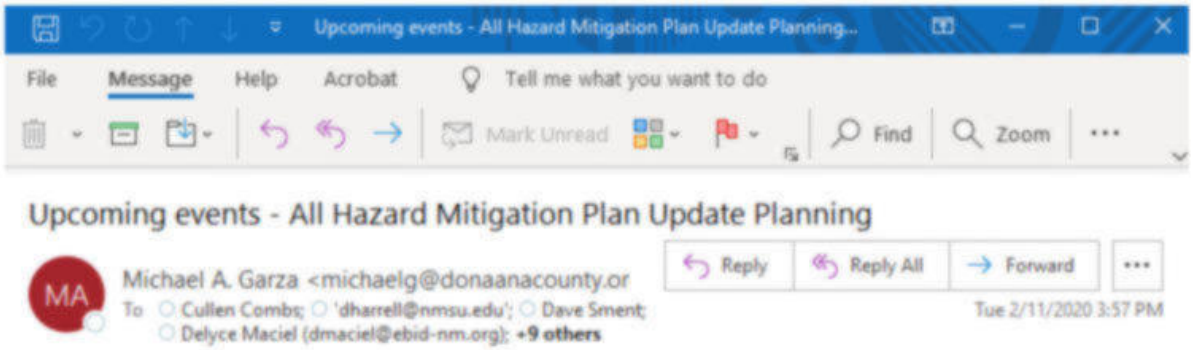
Emergency Managers, IBWC, OSE, and the NM Boarder Authority. Each jurisdiction was asked to provide a list of agencies for the team to reach out prior to the next meeting.

Agenda Item 6:

- S. Ogden reviewed the Risk Assessment Element of the Plan Update and specifically, the hazard identification component of this element. He explained that the current update would start with the existing plan hazards and would consider all hazards listed within the NM State Plan.
- S. Ogden provided a table showing both the current plan hazards and the NM State Plan Hazards. A handout was provided to participants showing the historical hazard events for Dona Ana County from 1956 to 2019.
- S. Ogden then requested that the group discuss the existing profiled hazards and whether or not there were additional hazards that the group felt should be profiled. It was agreed that the existing list encompassed the most likely hazards to occur within the County, but the group decided to add Lightning and Hail events to the list of profile hazards. It was determined that, while these events do not often result in significant impacts to the area, they occur regularly and have the potential to cause issues in the County.
- Before concluding the meeting, the group scheduled the remaining planning team meetings as follows;
    - Meeting 2: Thursday, March 19th at 1 p.m.
    - Meeting 3: Thursday, April 30th at 1 p.m.
    - Meeting 4: Thursday, June 18th at 1 p.m.

ACTION ITEM SUMMARY:

ITEM NO.	DESCRIPTION	RESPONSIBILITY [DUE DATE]
PT-1	Identify/Designate JPOC	All Jurisdictions [03/19/2020]
PT-2	Begin Assembling Local Planning Team	All Jurisdictions [03/19/2020]
PT-3	Start on Public Involvement	All Jurisdictions [ongoing]
PT-4	Develop Logo for Plan Update	M. Evans – JEF [2/21/2020]



Upcoming events - All Hazard Mitigation Plan Update Planning

MA

Michael A. Garza <michaelg@donaanacounty.or

To Cullen Combs; 'dharrell@nmsu.edu'; Dave Sment; Delyce Maciel (dmaciel@ebid-nm.org); **+9 others**

Reply | Reply All | Forward

Tue 2/11/2020 3:57 PM

Good Afternoon everyone,

I was just reaching out to inform you that I have been able to reserve rooms at the County Building for the remaining 3 planning meetings for all the dates and times we discussed at the meeting last Thursday. As a reminder, those dates are:

Thursday March 19th 1-5pm

Thursday April 30th 1-5pm

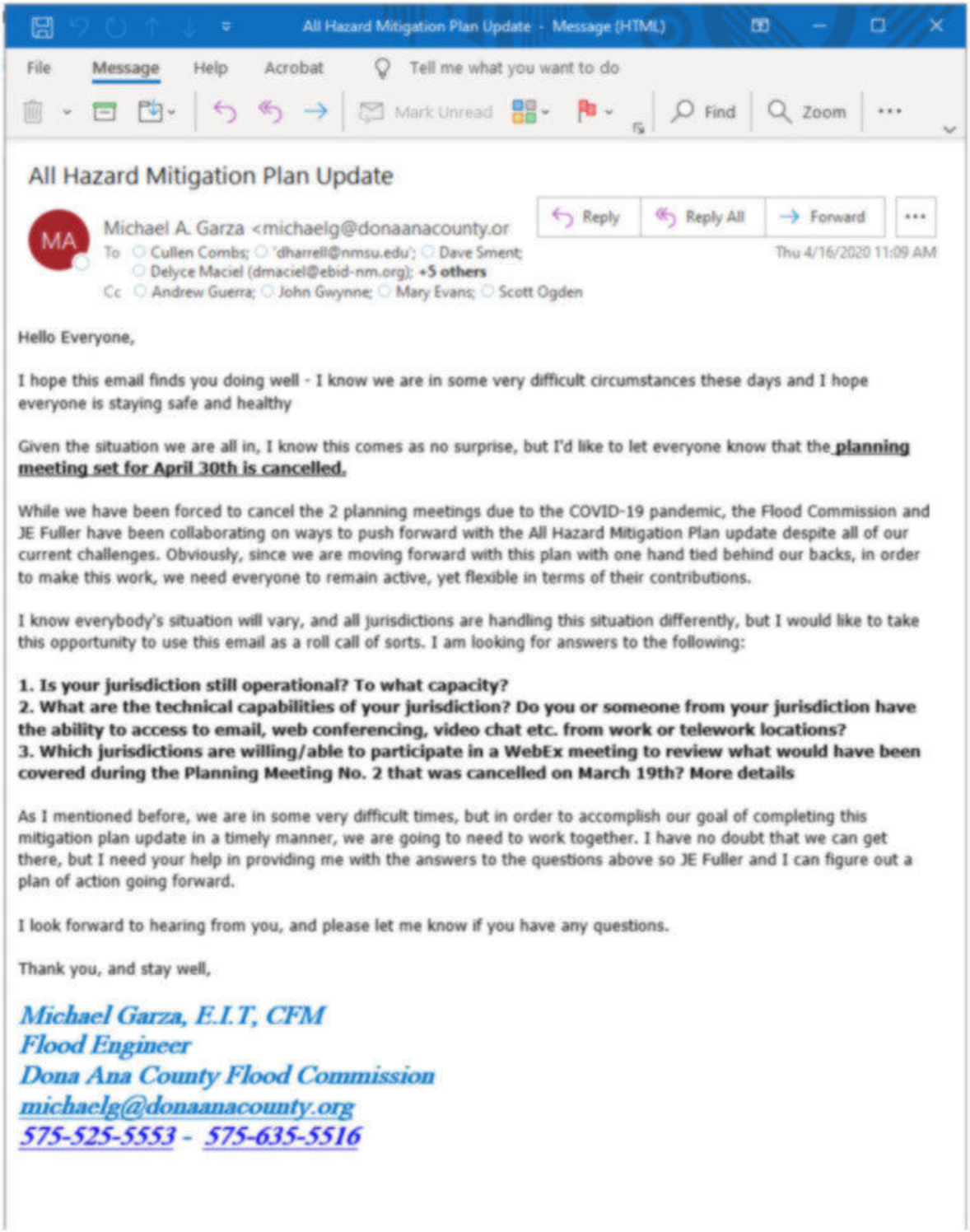
Thursday June 18th 1-5pm

Please reserve the dates on the calendar and ensure that if you are not able to attend the meetings planned for these dates, that somebody from your jurisdiction is able to attend and participate. I will be sending outlook invitations following this email for each of the meeting dates – Feel free to forward along as needed to interested parties.

Also FYI, we have a meeting scheduled for next Tuesday the 18th with our IT department to get our website figured out. So after that meeting I will be sure to get everyone all relevant links to our website once it is up and running.

Thanks,

Michael Garza E.I.T, CFM
Flood Engineer Intern
Dona Ana County Flood Commission
michaelg@donaanacounty.org
575-525-5553



All Hazard Mitigation Plan Update - Message (HTML)

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All Hazard Mitigation Plan Update

MA

Michael A. Garza <michaelg@donaanacounty.or

Reply Reply All Forward

To Cullen Combs; 'dharrell@nmsu.edu'; Dave Sment; Delyce Maciel (dmaciel@ebid-nm.org); **+5 others**

Thu 4/16/2020 11:09 AM

Cc Andrew Guerra; John Gwynne; Mary Evans; Scott Ogden

Hello Everyone,

I hope this email finds you doing well - I know we are in some very difficult circumstances these days and I hope everyone is staying safe and healthy

Given the situation we are all in, I know this comes as no surprise, but I'd like to let everyone know that the **planning meeting set for April 30th is cancelled.**

While we have been forced to cancel the 2 planning meetings due to the COVID-19 pandemic, the Flood Commission and JE Fuller have been collaborating on ways to push forward with the All Hazard Mitigation Plan update despite all of our current challenges. Obviously, since we are moving forward with this plan with one hand tied behind our backs, in order to make this work, we need everyone to remain active, yet flexible in terms of their contributions.

I know everybody's situation will vary, and all jurisdictions are handling this situation differently, but I would like to take this opportunity to use this email as a roll call of sorts. I am looking for answers to the following:

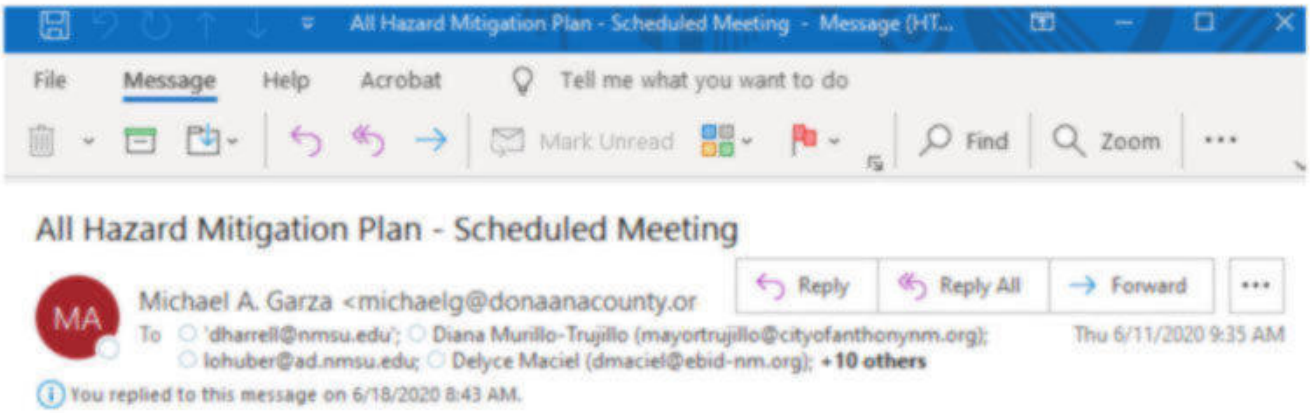
1. Is your jurisdiction still operational? To what capacity?
2. What are the technical capabilities of your jurisdiction? Do you or someone from your jurisdiction have the ability to access to email, web conferencing, video chat etc. from work or telework locations?
3. Which jurisdictions are willing/able to participate in a WebEx meeting to review what would have been covered during the Planning Meeting No. 2 that was cancelled on March 19th? More details

As I mentioned before, we are in some very difficult times, but in order to accomplish our goal of completing this mitigation plan update in a timely manner, we are going to need to work together. I have no doubt that we can get there, but I need your help in providing me with the answers to the questions above so JE Fuller and I can figure out a plan of action going forward.

I look forward to hearing from you, and please let me know if you have any questions.

Thank you, and stay well,

Michael Garza, E.I.T, CFM
Flood Engineer
Dona Ana County Flood Commission
michaelg@donaanacounty.org
575-525-5553 - 575-635-5516



All Hazard Mitigation Plan - Scheduled Meeting

MA

Michael A. Garza <michaelg@donaanacounty.or

Reply | Reply All | Forward

To 'dharrell@nmsu.edu'; Diana Murillo-Trujillo (mayortrujillo@cityofanthonynm.org); lohuber@ad.nmsu.edu; Delyce Maciel (dmaciel@ebid-nm.org); **+10 others**

Thu 6/11/2020 9:35 AM

You replied to this message on 6/18/2020 8:43 AM.

Good Morning everyone,

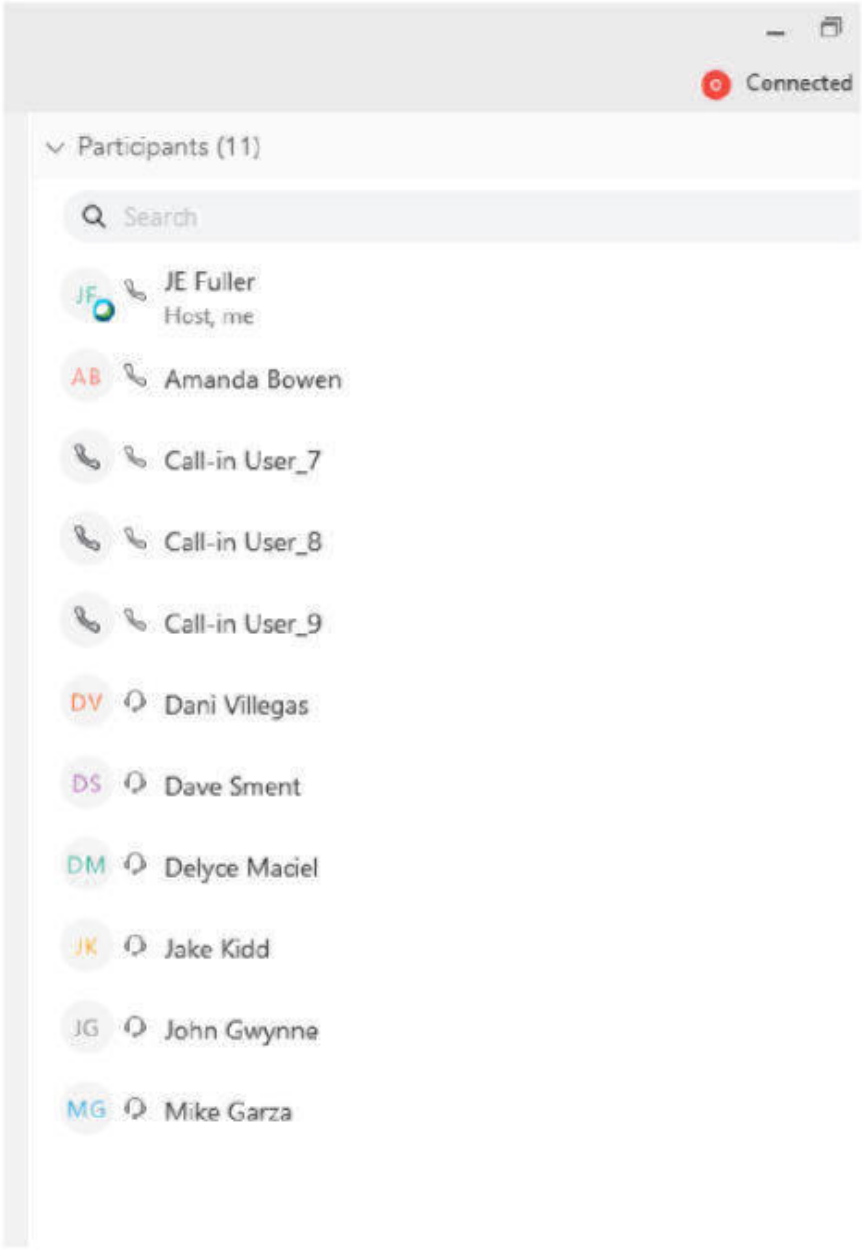
As you are aware, during the COVID-19 pandemic, we have unfortunately been forced to cancel 2 planning meetings for our All Hazard Mitigation Plan Update. We still have a meeting scheduled for next Thursday, June 18th and 1pm and while we are still not able to accommodate a physical meeting at the County Building, we would still like to host an online meeting via WebEx in order to provide everyone with an opportunity to meet with us and discuss where we are at in the process, as well as assign another jurisdictional task. This task will require a little more effort than the last, so it would be beneficial for a member of your jurisdiction to attend the meeting encase you have any questions on how to complete it. We will also have reference documents and worksheets to provide to everyone at the meeting.

I have simply chosen this date and time because it was already on the calendar from what we agreed to at the first meeting. Rest assured, it will not take 4 hours like we have reserved on the schedule - We anticipate a much shorter meeting, so plan on reserving only about 30 min to an hour to get through everything. While I hope everyone is willing and able to attend, I understand that these difficult times have caused a lot of things to change, so if you know you are unable to attend, please reach out to me in the next week so the team at JE Fuller and I can work together to set something up for your jurisdiction specifically at another date/time. We really appreciate everybody's flexibility in their participation, and the completion of this project will continue to take a team effort.

We will provide a link to the WebEx conference prior to the meeting, but if you have any questions before hand, let me know.

Thank you,

Michael Garza, E.I.T, CFM
Flood Engineer
Dona Ana County Flood Commission
michaelg@donaanacounty.org
575-525-5553 - 575-635-5516



***Call-in User 7: Dave Sment**
Call-in User 8: Andrew Guerra

MEETING DATE: June 18, 2020

MEETING TIME: 1 PM TO 1:30 PM

MEETING LOCATION: Zoom Virtual Meeting

FROM: Mary Evans – JEF

RE: **Doña Ana County All Hazard Mitigation Plan**
Project Team Meeting #2

ATTENDEES:
MARY EVANS – JE FULLER
AMANDA BOWEN – DAC OEM
DANI VILLEGAS – CITY OF SUNLAND PARK
DAVE SMENT – VILLAGE OF HATCH
DELYCE MACIEL – EBID
JAKE KIDD – CITY OF LAS CRUCES
JOHN GWYNNE – DACFC
ANDREW GUERRA – DACFC
MICHAEL GARZA - DACFC

AGENDA

1. **COMMUNITY PROFILES**
2. **RISK ASSESSMENT TOPICS:**
    a. **Hazard Profile Data Review**
        i. **Mapping / Maps**
        ii. **Historic Hazard Database Overview**
    b. **Critical Priority Risk Index (CPRI)**
    c. **Critical Facilities And Infrastructure**
    d. **Development Trend Discussion**
        i. **Past Plan Cycle (last 5 years)**
        ii. **Future Development (5-year horizon)**
3. **CLOSING ITEMS**
    a. **Schedule Next Meeting**
    b. **Summarize Action Items / Task Assignments**

DISCUSSION

Agenda Item 1:

- M. Evans discussed the need to review and update the jurisdictional overviews presented in Section 1.6 of the planning document. While these sections were largely updated by using available comprehensive plans and demographic data, each jurisdiction was encouraged to review and provide feedback where necessary.

Agenda Item 2.a:

- M. Evans presented a series of maps and explanatory handouts showing the various hazard profile data compiled by JE Fuller for the seven hazards identified by the Steering Committee during Meeting No. 1. She also presented a historic hazard event database compiled from readily available sources, studies and reports. Each set of maps and data was discussed and the highlights of the discussions are summarized as follows:

Agenda Item 2b:

- M. Evans presented an overview and instructions for the Critical Priority Risk Index (CPRI) and its intended use in the Plan update. Each jurisdiction will need to provide a CPRI evaluation for all of the Plan hazards. JE Fuller will provide a worksheet for each jurisdiction to use for the exercise.

Agenda Item 2c:

- M. Evans led a discussion/presentation on the development of a critical facility and infrastructure (CFI) database for the county and communities. A working definition of what constitutes a critical facility was discussed and a template/example worksheet of the minimum data needed for each facility compiled was reviewed and discussed.
- Each Jurisdiction will review the current CFI database and update, as necessary, no later than July 2, 2020.

Agenda Item 2d:

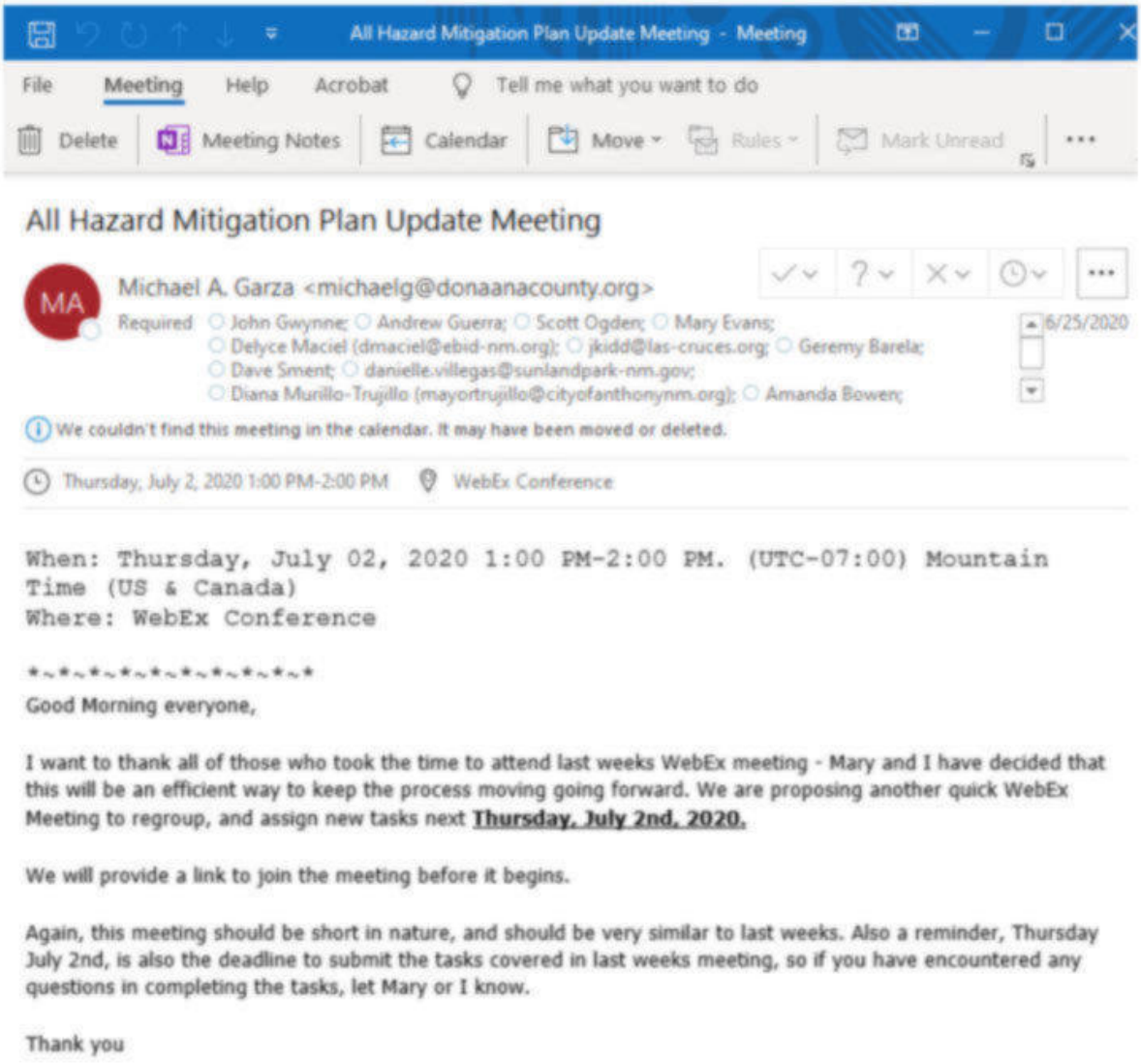
- M. Evans led a discussion/presentation on the purpose and need for a Development Trend Analysis.
- M. Evans explained that the Plan must provide a hazard assessment of development trends and in particular, 5-year periods of past and future development. Each jurisdiction was instructed to provide a brief narrative of development over the past 5-year period and anticipated development over the next 5-years. Jurisdictions were encouraged to look at general and comprehensive plans for help with this task.
- JE Fuller will use these paragraphs and descriptions to perform a risk assessment for each hazard.

Agenda Item 3:

- Action Items for this meeting are summarized below and were summarized at the close of the meeting.
- The next planning team meeting (Meeting No. 3a) is scheduled for: ***July 2, 2020 from 1:00 pm to 1:30 pm via Zoom Virtual Meeting.***

ACTION ITEM SUMMARY:

ITEM NO.	DESCRIPTION	RESPONSIBILITY [DUE DATE]
PT-5	Inundation Mapping for Las Cruces Dam / Update Critical Facilities Database	City of Las Cruces [07/2/2020]
PT-6	Review / Update Community Profiles	All Jurisdictions [07/2/2020]
PT-7	Risk Assessment / Hazard Risk Profile Review /CPRI Worksheet	All Jurisdictions [07/2/2020]
PT-8	Development Trend Analysis Worksheet	All Jurisdictions [07/2/2020]



All Hazard Mitigation Plan Update Meeting - Meeting

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All Hazard Mitigation Plan Update Meeting

MA Michael A. Garza <michaelg@donaanacounty.org>

Required John Gwynne; Andrew Guerra; Scott Ogden; Mary Evans; Delyce Maciel (dmaciel@ebid-nm.org); jkidd@las-cruces.org; Geremy Barela; Dave Sment; danielle.villegas@sunlandpark-nm.gov; Diana Murillo-Trujillo (mayortrujillo@cityofanthonynm.org); Amanda Bowen;

6/25/2020

We couldn't find this meeting in the calendar. It may have been moved or deleted.

Thursday, July 2, 2020 1:00 PM-2:00 PM WebEx Conference

When: Thursday, July 02, 2020 1:00 PM-2:00 PM. (UTC-07:00) Mountain Time (US & Canada)
Where: WebEx Conference

~~*~*~*~*~*~*~*~*~*

Good Morning everyone,

I want to thank all of those who took the time to attend last weeks WebEx meeting - Mary and I have decided that this will be an efficient way to keep the process moving going forward. We are proposing another quick WebEx Meeting to regroup, and assign new tasks next **Thursday, July 2nd, 2020.**

We will provide a link to join the meeting before it begins.

Again, this meeting should be short in nature, and should be very similar to last weeks. Also a reminder, Thursday July 2nd, is also the deadline to submit the tasks covered in last weeks meeting, so if you have encountered any questions in completing the tasks, let Mary or I know.

Thank you

MEETING DATE: July 2, 2020

MEETING TIME: 1 PM TO 1:30 PM

MEETING LOCATION: Zoom Virtual Meeting

FROM: Mary Evans – JEF

RE: **Doña Ana County All Hazard Mitigation Plan**
Project Team Meeting #3a

ATTENDEES:
MARY EVANS – JE FULLER
AMANDA BOWEN – DAC OEM
MAYOR TRUJILLO – CITY OF ANTHONY
DELYCE MACIEL – EBID
JAKE KIDD – CITY OF LAS CRUCES
JOHN GWYNNE – DACFC
ANDREW GUERRA – DACFC
MICHAEL GARZA - DACFC

AGENDA

1. **TASK ASSIGNMENT STATUS REVIEW**
2. **MITIGATION STRATEGY TOPICS**
    a. **NFIP Statistics and Compliance**
    b. **Repetitive Loss Properties**
    c. **Capability Assessment**
        i. **Legal and Regulatory (Codes / Ordinances / Plans / Manuals / Guidelines)**
        ii. **Administrative and Technical Staff Resources**
        iii. **Fiscal Capabilities**
3. **MITIGATION STRATEGY TOPICS**
    a. **Previous cycle A/P evaluation**
4. **CLOSING ITEMS**
    a. **Schedule Next Meeting**
    b. **Summarize Action Items / Task Assignments**

DISCUSSION

Agenda Item 1:

- M. Evans reviewed that previous meetings assignments and asked if there were any questions or concerns in completing those assignments. The group in attendance did not have questions.

Agenda Item 2a:

- M. Evans reviewed the DMA 2000 requirements for addressing participation and compliance with the NFIP. A table with NFIP statistics was presented and reviewed by the Steering Committee. A questionnaire worksheet will be used to address the continued compliance with the NFIP for each jurisdiction. The worksheet will be provided to the Steering Committee by JE Fuller via M. Garza.

Agenda Item 2b:

- M. Evans presented repetitive loss statistics for the county, as provided by DAC Flood Commission. M. Garza confirmed that the data was still correct. No other jurisdictions had any RL properties to address.

Agenda Item 2c:

- M. Evans led a discussion/presentation on the purpose and scope of a capability assessment in a hazard mitigation plan. She pointed out that no assessment was done for the 2013 Plan, but would be required for this plan update.
- M. Evans presented a worksheet with a series of tables that will be used to document the capability assessment. Tables summarizing legal and regulatory tools, staff capacity, and fiscal resources were presented and discussed, along with an example document. JE Fuller will provide a template worksheet to each jurisdiction via M. Garza, for their completion and return.

Agenda Item 3:

- M. Evans presented an overview of the process the Steering Committee will use to update the Mitigation Strategy portion of the Plan. The first step of that process will involve an assessment of the 2013 Plan's mitigation actions/project (A/Ps).
- The Steering Committee briefly reviewed the mitigation A/Ps listed in the 2013 Plan.
- M. Evans presented and explained a worksheet that each jurisdiction shall use to perform an assessment of the 2013 Plan mitigation A/Ps and worked through an example assessment.
- Worksheets will be provided to all of the 2013 Plan participants for use in performing the assessment. Each jurisdiction shall complete the worksheet and return it to M. Garza for delivery to JE Fuller

Agenda Item 4:

- Action Items for this meeting are summarized below and were summarized at the close of the meeting.
- The next planning team meeting (Meeting No. 3a) is scheduled for: ***July 16, 2020 from 1:00 pm to 2:00 pm via Zoom Virtual Meeting.***

ACTION ITEM SUMMARY:

ITEM NO.	DESCRIPTION	RESPONSIBILITY [DUE DATE]
PT-9	NFIP Compliance Worksheet	All Jurisdictions [07/16/2020]
PT-10	Jurisdictional Capabilities Assessment	All Jurisdictions [07/16/2020]
PT-11	Previous Cycle Action / Project Evaluation Worksheet	All Jurisdictions [07/16/2020]

MEETING DATE: July 16, 2020

MEETING TIME: 1 PM TO 2:12 PM

MEETING LOCATION: Zoom Virtual Meeting

FROM: Mary Evans – JEF

RE: **Doña Ana County All Hazard Mitigation Plan**
Project Team Meeting #3b

ATTENDEES: MARY EVANS – JE FULLER
AMANDA BOWEN – DAC OEM
MAYOR TRUJILLO – CITY OF ANTHONY
DELYCE MACIEL – EBID
JAKE KIDD – CITY OF LAS CRUCES
ANDREW GUERRA – DACFC
MICHAEL GARZA - DACFC

AGENDA

1. **TASK ASSIGNMENT STATUS REVIEW**
2. **MITIGATION STRATEGY TOPICS**
    a. **Goals**
        i. **Review current plan goals**
        ii. **Formulate goals for updated plan**
3. **PLANNING PROCESS TOPICS**
    a. **Plan Integration and Incorporation**
        i. **Past Plan Cycle**
        ii. **Future Strategy**
4. **PLAN MAINTENANCE STRATEGY**
    a. **Review/Discuss maintenance and monitoring over the last plan cycle**
    b. **Develop New Monitoring Schedule**
    c. **Plan Update Schedule**
5. **CLOSING ITEMS**
    a. **Schedule Next Meeting**
    b. **Summarize Action Items / Task Assignments**

DISCUSSION

Agenda Item 1:

- M. Evans reviewed that previous meetings assignments and asked if there were any questions or concerns in completing those assignments. The group in attendance did not have questions.

Agenda Item 2a:

- M. Evans led the Steering Committee in a review of 2013 Plan goals as well as the 2018 State of New Mexico Hazard Mitigation Plan goals. The steering committee agreed to maintain the existing plan goals and the discussion was opened to any additional problems/goals that the plan might address.
- The Steering Committee worked through a problem statement session wherein problems and challenges regarding natural hazards and their mitigation, were brainstormed and documented. A total of 2 general problem statements were developed.
- The Steering Committee then used these problem statements, with guidance from the State Plan goals and other example sources, to formulate 2 additional potential goals for review by all jurisdictions. The result of this exercise was that the committee determined that the existing goals were most appropriate to keep in the plan, and decided to scrap the proposed goals developed.

Agenda Item 3a:

- M. Evans led a discussion/presentation on the plan integration requirements of DMA 2000. She then polled the Steering Committee to discuss and summarize the ways the 2013Plan has been integrated and/or referenced into other planning mechanisms used by the jurisdictions. Areas of incorporation were noted and will be summarized in the 2020 Plan.
- Challenges and/or reasons for not incorporating the 2013 Plan were discussed and documented.
- The Steering Committee then identified both general and specific mechanisms that would be target candidates for integrating / referencing the 2020 Plan.
- The results of these discussions will be documented in the 2020 Plan and a draft of the section will be provided to the Steering Committee for review and comment.

Agenda Item 4a and 4b:

- M. Evans presented an overview of the plan maintenance requirements of DMA2000 and the specific elements that must be addressed and redefined with the 2020 Plan.

- The Steering Committee reviewed the plan monitoring and evaluation schedule and scope outlined in the 2013 Plan and then reported out on the execution, or lack thereof, of those elements. Challenges / reasons for not executing the stated maintenance goals were discussed.
- The Steering Committee discussed and developed a new schedule and scope for the monitoring and evaluation, and defined lines of responsibility for ensuring that the actions are accomplished. DAC Flood Commission and OEM will jointly lead the effort.
- The results of these discussions will be documented in the 2020 Plan and a draft of the section will be provided to the Steering Committee for review and comment.

Agenda Item 4c:

- The Steering Committee discussed the a procedure for beginning the official update of the Plan.
- The Steering Committee defined a schedule of events and a general scope of task items for updating the Plan at the end of the 5 year cycle. DAC Flood Commission and OEM will jointly take responsibility for seeing that process accomplished.
- The results of these discussions will be documented in the 2020 Plan and a draft of the section will be provided to the Steering Committee for review and comment.

Agenda Item 5:

- Action Items for this meeting are summarized below and were summarized at the close of the meeting.
- The next planning team meeting (Meeting No. 3a) is scheduled for: ***August 6, 2020 from 1:00 pm to 2: pm via Zoom Virtual Meeting.***

ACTION ITEM SUMMARY:

ITEM NO.	DESCRIPTION	RESPONSIBILITY [DUE DATE]
PT-12	Plan Integration Worksheet	City of Las Cruces [8/6/2020]

MEETING DATE: August 6, 2020

MEETING TIME: 1 PM TO 2:00 PM

MEETING LOCATION: Zoom Virtual Meeting

FROM: Mary Evans – JEF

RE: **Doña Ana County All Hazard Mitigation Plan**
Project Team Meeting #4a

ATTENDEES: MARY EVANS – JE FULLER
ROD MCGILLIVRAY – TOWN OF MESILLA
DAVE SMENT – VILLAGE OF HATCH
DELYCE MACIEL – EBID
GEREMY BARELA – CITY OF LAS CRUCES
MICHAEL GARZA - DACFC

AGENDA

1. ***OPTIONAL COMMUNITY ASSISTANCE TIME*: (JE Fuller worked with jurisdictions needing assistance to complete any of the task assignments)**

DISCUSSION

Agenda Item 1:

- This meeting was scheduled to provide jurisdictions with an opportunity to ask questions and get help with outstanding assignments. To that end, no schedule or agenda was developed. The steering committee met via a Zoom Virtual Meeting and M. Evans answered questions on assigned tasks.

Agenda Item 3:

- Action Items for this meeting are summarized below and were summarized at the close of the meeting.
- The next planning team meeting (Meeting No. 3a) is scheduled for: ***August 20, 2020 from 1:00 pm to 2:00 pm via Zoom Virtual Meeting.***

MEETING DATE: August 20, 2020

MEETING TIME: 1 PM TO 2:10 PM

MEETING LOCATION: Zoom Virtual Meeting

FROM: Mary Evans – JEF

RE: **Doña Ana County All Hazard Mitigation Plan**
Project Team Meeting #4b

ATTENDEES: MARY EVANS – JE FULLER
DAVE SMENT – VILLAGE OF HATCH
DELYCE MACIEL – EBID
ROD MCGILLIVRAY – TOWN OF MESILLA
JAKE KIDD – CITY OF LAS CRUCES
JOHNNY CARILLO - NMSU
MICHAEL GARZA - DACFC

AGENDA

1. **TASK ASSIGNMENT STATUS REVIEW**
2. **PLAN MAINTENANCE STRATEGY**
    a. **Continued Public Involvement**
3. **MITIGATION STRATEGY TOPICS**
    a. **Mitigation Activities / Projects**
    b. **Implementation Strategy**
4. **PROMULGATION PROCESS**
5. **CLOSING ITEMS**
    a. **Summary of Task Assignments**

DISCUSSION

Agenda Item 1:

- M. Evans reviewed that previous meetings assignments and asked if there were any questions or concerns in completing those assignments. The group in attendance did not have questions.

Agenda Item 2a:

- The Steering Committee reviewed the continued public involvement items in the 2013 Plan and then reported out on the execution, or lack thereof, of those items. Challenges / reasons for not executing the stated continued public involvement items were discussed and are essentially the same as those identified previously for the plan integration and the monitoring and evaluation.
- M. Evans led the Steering Committee in brainstorming session to identify other ways that the county and communities engage the public with hazard mitigation related messages and materials.
- Using these past occurrences as sources and seed ideas, the Steering Committee then brainstormed potential ways and future activities wherein the 2020 Plan and hazard mitigation messages and materials could be used to engage the public.
- The results of these discussions will be documented in the 2020Plan and a draft of the section will be provided to the Steering Committee for review and comment.

Agenda Item 3a and 3b:

- M. Evans provided an overview of the process for updating the mitigation strategy and specifically the mitigation action/project formulation and implementation strategy. The review included an explanation of the various categories of possible mitigation actions/projects.
- M. Evans presented the worksheet that will be used to document the actions/projects and implementation strategy and explained each of the data columns needed for completion of the worksheet. Instructions were given regarding the formulation of actions/projects and a few example projects were compiled in a work session format.
- JE Fuller will provide a digital copy of the worksheet to each jurisdiction for their completion. Actions/projects from the 2013 Plan that were designated as “Keep” or “Revise” in the assessment worksheet (See Action Item No. 2-16) will be pre-entered into the worksheet for those jurisdictions that participated in the 2013 Plan.
- Repetitive loss structures and potential mitigation actions/projects were briefly discussed.
- Each jurisdiction was instructed to complete the worksheet per the guidelines discussed during the meeting and provide to M. Garza for delivery to JE Fuller.

Agenda Item 4:

- M. Evans led a discussion/presentation on the promulgation schedule and process that will take place following this last meeting, summarized as follows:
    - Prepare Draft and Submit to Steering Committee for review (Target = 9/4/2020)
    - Steering Committee comments will be due by COB 9/18/2020 (2 weeks).
    - Final Draft Plan to NMDHSEM by COB 9/25/2020
    - NMDHSEM review 3 to 4 weeks. Hopefully we can interactively address comments.
    - Anticipated FEMA ready Final Draft to NMDHSEM for submittal to FEMA by COB 10/23/2020.
    - FEMA Review (assume 60 days). Hopefully we can interactively address comments during that period.
    - Address FEMA comments and resubmit (if needed)
    - FEMA will issue an "Approvable Pending Adoption" letter (December 2020?).
    - JE Fuller will provide Final hard copies of Plan with digital copies on enclosed CD.
    - Each jurisdiction works to get resolution approved by Board/Council as soon as possible. Resolutions will be provided to M. Garza, who will then forward to the NMDHSEM for delivery to FEMA and final plan approval.

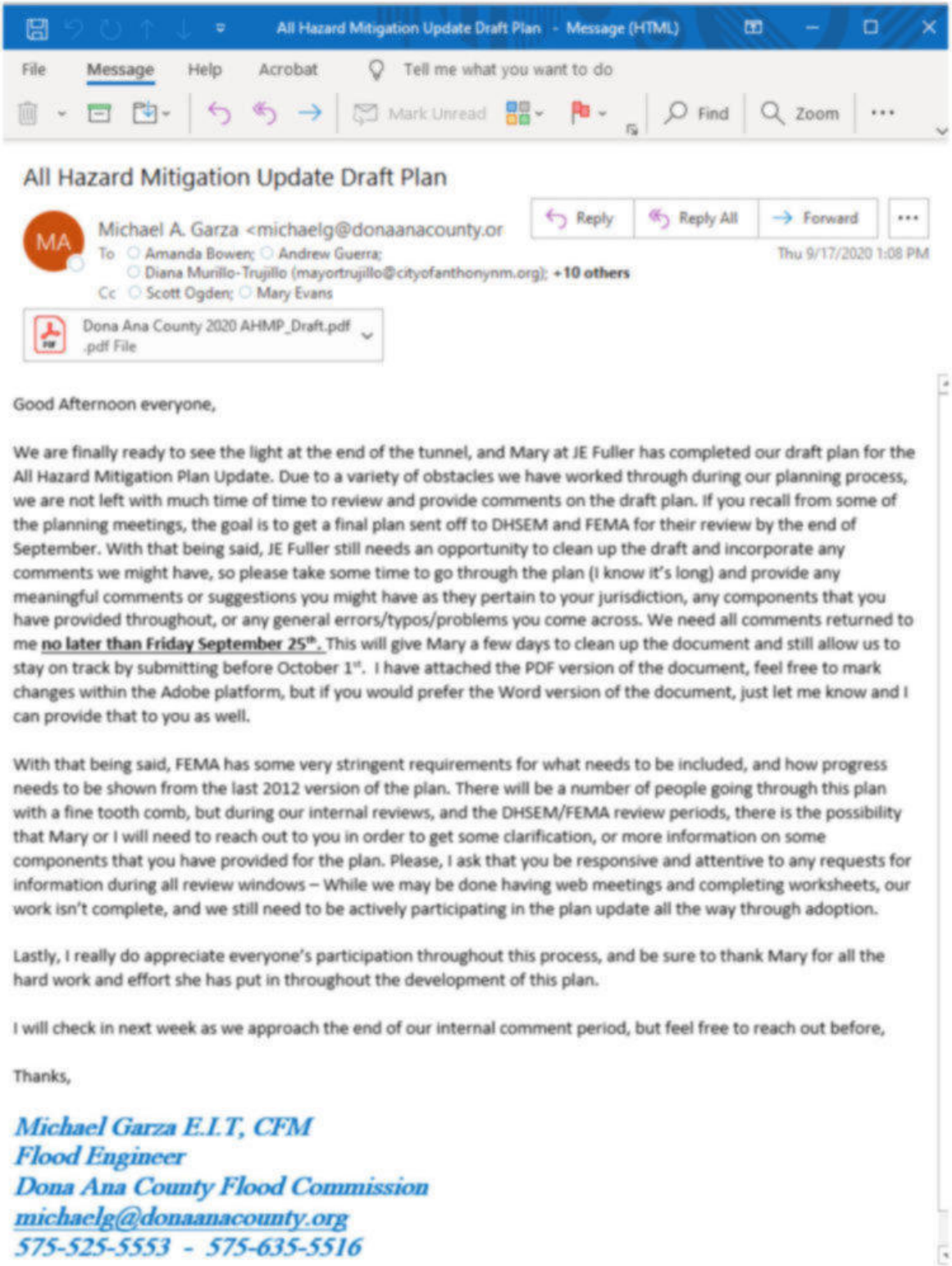
Agenda Item 5:

- Action Items for this meeting are summarized below and were summarized at the close of the meeting.

ACTION ITEM SUMMARY:

ITEM NO.	DESCRIPTION	RESPONSIBILITY [DUE DATE]
PT-13	Current Cycle Actions and Projects Worksheet	City of Las Cruces [09/03/2020]

	Assignment #										
	PT-5	PT-6	PT-7	PT+8	PT-9	PT-12	n/a	PT-9	PT-10	PT-11	PT-13
	Critical Facilities	Community Description	CPRI	Development Trends	Repetitive Loss	Plan Integration	Hazard Mitigation Goals	NFIP Compliance	Capabilities Assessment	Previous Cycle A/Ps	New A/Ps
Dona Ana	X	X	X	X	X	X	X	X	X	X	X
Las Cruces	X	X	X	X	X	X	No Comment	X	X	X	X
Hatch	X	X	X	X	X	X	No Comment	X	X	X	X
Mesilla	X	X	X	X	X	X	No Comment	X	X	X	X
Anthony	X	X	X	X	X	X	No Comment	X	X	X	X
Sunland Park	X	X	X	X	X	X	No Comment	X	X	X	X
EBID	X**	X	X	N/A	N/A	X	No Comment	N/A	X	X	X
NMSU	X	X	X	X	N/A	X	No Comment	N/A	X	X	X
EBID provided updated critical facilities 9/11/2020											



All Hazard Mitigation Update Draft Plan - Message (HTML)

File Message Help Acrobat Tell me what you want to do

Mark Unread Find Zoom

All Hazard Mitigation Update Draft Plan

MA

Michael A. Garza <michaelg@donaanacounty.or

Reply Reply All Forward

To Amanda Bowen; Andrew Guerra;
Diana Murillo-Trujillo (mayortrujillo@cityofanthonynm.org); +10 others

Thu 9/17/2020 1:08 PM

Cc Scott Ogden; Mary Evans

Dona Ana County 2020 AHMP_Draft.pdf
.pdf File

Good Afternoon everyone,

We are finally ready to see the light at the end of the tunnel, and Mary at JE Fuller has completed our draft plan for the All Hazard Mitigation Plan Update. Due to a variety of obstacles we have worked through during our planning process, we are not left with much time of time to review and provide comments on the draft plan. If you recall from some of the planning meetings, the goal is to get a final plan sent off to DHSEM and FEMA for their review by the end of September. With that being said, JE Fuller still needs an opportunity to clean up the draft and incorporate any comments we might have, so please take some time to go through the plan (I know it's long) and provide any meaningful comments or suggestions you might have as they pertain to your jurisdiction, any components that you have provided throughout, or any general errors/typos/problems you come across. We need all comments returned to me **no later than Friday September 25th.** This will give Mary a few days to clean up the document and still allow us to stay on track by submitting before October 1st. I have attached the PDF version of the document, feel free to mark changes within the Adobe platform, but if you would prefer the Word version of the document, just let me know and I can provide that to you as well.

With that being said, FEMA has some very stringent requirements for what needs to be included, and how progress needs to be shown from the last 2012 version of the plan. There will be a number of people going through this plan with a fine tooth comb, but during our internal reviews, and the DHSEM/FEMA review periods, there is the possibility that Mary or I will need to reach out to you in order to get some clarification, or more information on some components that you have provided for the plan. Please, I ask that you be responsive and attentive to any requests for information during all review windows – While we may be done having web meetings and completing worksheets, our work isn't complete, and we still need to be actively participating in the plan update all the way through adoption.

Lastly, I really do appreciate everyone's participation throughout this process, and be sure to thank Mary for all the hard work and effort she has put in throughout the development of this plan.

I will check in next week as we approach the end of our internal comment period, but feel free to reach out before,

Thanks,

Michael Garza E.I.T, CFM
Flood Engineer
Dona Ana County Flood Commission
michaelg@donaanacounty.org
575-525-5553 - 575-635-5516

Appendix D

Public Involvement Documentation



Doña Ana County

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SEARCH

ELECTED OFFICIALS | DEPARTMENTS | AGENDAS | NEWS | SERVICES | JOBS

Departments > Community Services > Flood Commission

All Hazards Mitigation Plan

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All Hazards Mitigation Plan
DAC Flood Warning System

PUBLIC INPUT INVITED FOR UPDATES TO THE EXISTING ALL HAZARDS MITIGATION PLAN

The Doña Ana County Flood Commission Office and the Office of Emergency Management have joined forces with Doña Ana County, City of Las Cruces, Village of Hatch, Town of Mesilla, City of Sunland Park, Elephant Butte Irrigation District, New Mexico State University, and City of Anthony, New Mexico to review and update the All Hazards Mitigation Plan. The goal of the mitigation planning effort is to reduce or eliminate long-term risk to life and property from all hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first place.

The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure continued eligibility for non-emergency, federal hazard mitigation grants.

The multi-jurisdictional planning committee comprised of representatives from Doña Ana County, the Cities of Anthony, Las Cruces, and Sunland Park, the Town of Mesilla, the Village of Hatch, the Elephant Butte Irrigation District, and New Mexico State University, met regularly to review, revise and update the current All-Hazard Mitigation Plan. The steering committee met regularly to review, revise, and/or update the following plan elements:

- Natural hazards that may impact or have impacted the community
- Profiles of the most relevant hazards
- Vulnerability assessment to the identified hazards
- Goals and objectives for hazard risk reduction/elimination
- Mitigation actions/projects to achieve the stated goals and objectives
- Plan maintenance strategy for the next 5-year cycle

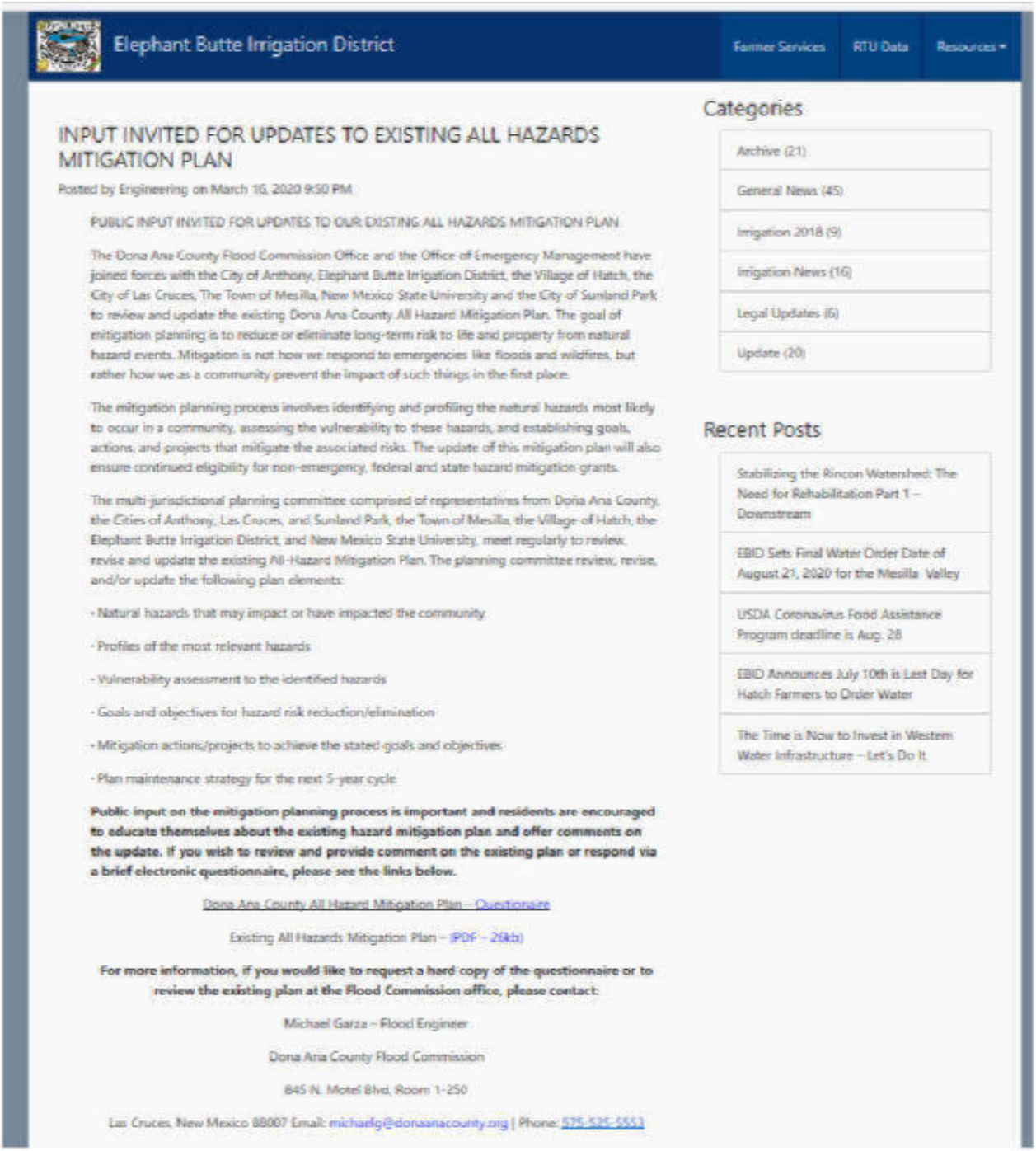
Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing hazard mitigation plan and offer comments on the update. If you wish to review and provide comment on the existing plan or respond via a brief electronic questionnaire, please click the link below:

Dona Ana County All Hazard Mitigation Plan - Questionnaire

Existing All Hazards Mitigation Plan – (PDF - 26kb)

For more information, if you would like to request a hard copy of the questionnaire or to review the existing plan at the Flood Commission office, please contact:
Michael Garza – Flood Engineer
Dona Ana County Flood Commission
845 N. Motel Blvd. Room 1-250
Las Cruces, New Mexico 88007
Email: michaelg@donaanacounty.org | Phone: 575-525-5553

Our All Hazards Mitigation Plan is in the process of being revised. FEMA regulations require that Local Mitigation Plans be updated and resubmitted for approval every five (5) years. If you would like more information, please contact our Community Rating System Coordinator, Carl Lukesh, Planner.



Elephant Butte Irrigation District

Farmer Services | RTU Data | Resources

INPUT INVITED FOR UPDATES TO EXISTING ALL HAZARDS MITIGATION PLAN

Posted by Engineering on March 16, 2020 9:50 PM

PUBLIC INPUT INVITED FOR UPDATES TO OUR EXISTING ALL HAZARDS MITIGATION PLAN

The Dona Ana County Flood Commission Office and the Office of Emergency Management have joined forces with the City of Anthony, Elephant Butte Irrigation District, the Village of Hatch, the City of Las Cruces, The Town of Mesilla, New Mexico State University and the City of Sunland Park to review and update the existing Dona Ana County All Hazard Mitigation Plan. The goal of mitigation planning is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to emergencies like floods and wildfires, but rather how we as a community prevent the impact of such things in the first place.

The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing the vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The update of this mitigation plan will also ensure continued eligibility for non-emergency, federal and state hazard mitigation grants.

The multi-jurisdictional planning committee comprised of representatives from Doña Ana County, the Cities of Anthony, Las Cruces, and Sunland Park, the Town of Mesilla, the Village of Hatch, the Elephant Butte Irrigation District, and New Mexico State University, meet regularly to review, revise and update the existing All-Hazard Mitigation Plan. The planning committee review, revise, and/or update the following plan elements:

- Natural hazards that may impact or have impacted the community
- Profiles of the most relevant hazards
- Vulnerability assessment to the identified hazards
- Goals and objectives for hazard risk reduction/elimination
- Mitigation actions/projects to achieve the stated goals and objectives
- Plan maintenance strategy for the next 5-year cycle

Public input on the mitigation planning process is important and residents are encouraged to educate themselves about the existing hazard mitigation plan and offer comments on the update. If you wish to review and provide comment on the existing plan or respond via a brief electronic questionnaire, please see the links below.

Dona Ana County All Hazard Mitigation Plan – Questionaire

Existing All Hazards Mitigation Plan – (PDF - 26kb)

For more information, if you would like to request a hard copy of the questionnaire or to review the existing plan at the Flood Commission office, please contact:

Michael Garza – Flood Engineer

Dona Ana County Flood Commission

845 N. Motel Blvd, Room 1-250

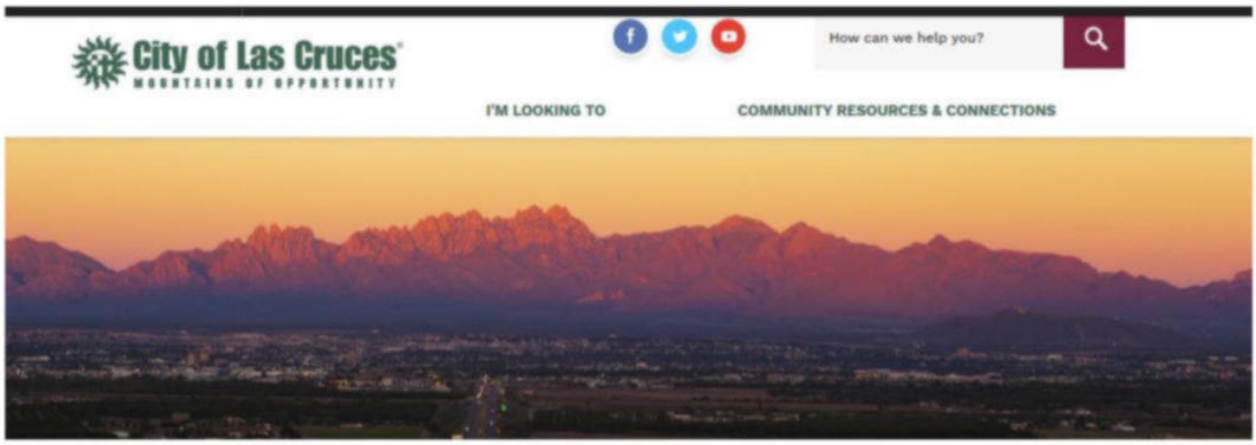
Las Cruces, New Mexico 88007 Email: michaelg@donaanacounty.org | Phone: 575-525-5553

Categories

- Archive (21)
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- Irrigation News (16)
- Legal Updates (6)
- Update (20)

Recent Posts

- Stabilizing the Rincon Watershed: The Need for Rehabilitation Part 1 – Downstream
- EBID Sets Final Water Order Date of August 21, 2020 for the Mesilla Valley
- USDA Coronavirus Food Assistance Program deadline is Aug. 28
- EBID Announces July 10th is Last Day for Hatch Farmers to Order Water
- The Time is Now to Invest in Western Water Infrastructure – Let's Do It



Stormwater & Floodplain Information

Stormwater & Flood Resources

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Stormwater & Flood Resources

Welcome

Provided are a collection of helpful links and forms to provide you with important information about Stormwater and Flood Zones.

Definition of 3rd Party

This page has links to many other sites ("third-party sites"). A link to a third-party site does not imply that City of Las Cruces endorses or is associated with the third party site, or that the third party site endorses or is associated with the City. These links are provided for informational purposes only. City of Las Cruces does not control and is not responsible for the content, accuracy or completeness of third-party site.

Related Documents

- All Hazard Mitigation Plan (PDF)
- Citizen Guide (PDF)
- Commercial Car Wash and Auto Detailing (PDF)
- FEMA Disaster Hotline (PDF)
- Pet Waste Video (WMV)
- Restaurant Fact Sheet (PDF)
- Storm Drain versus Sanitary Sewer (PDF)
- Top Ten Flood Hazard Basics (DOCX)

PUBLIC INPUT INVITED



THE DONA ANA COUNTY FLOOD COMMISSION, IN PARTNERSHIP WITH THE CITIES OF LAS CRUCES, SUNLAND PARK & ANTHONY, THE VILLAGE OF HATCH, TOWN OF MESILLA, NEW MEXICO STATE UNIVERSITY, & ELEPHANT BUTTE IRRIGATION DISTRICT, IS SEEKING PUBLIC INPUT ON THE UPDATE OF THE DONA ANA COUNTY HAZARD MITIGATION PLAN.

- Goal: reduce or eliminate long-term risk to life and property from natural hazard events.
- Process: identify and profile natural hazards most likely to occur, assess vulnerability, establish goals, actions and projects to mitigate risks.

We need your help to determine what natural hazards you are concerned about, and which you have personally experienced.

The Flood Commission requests that members of the public provide feedback electronically, over the phone, or in person at the Flood Commission Office. A short, online Questionnaire can be found on the Flood Commission website at:

https://www.donaanacounty.org/flood/mitigation/

General feedback and suggestions can also be sent to the contact info listed below.

For more information, if you would like to request a hard copy of the questionnaire or to review the existing plan at the Flood Commission office, please contact:

Michael Garza – Flood Engineer
Dona Ana County Flood Commission
845 N. Motel Blvd, Room 1-250
Las Cruces, New Mexico 88007
Email: michaelg@donaanacounty.org | Phone: 575-525-5553

ESTAN INVITADOS A DAR SU OPINION



LA OFICINA DE LA COMISION DE INUNDACIONES DEL CONDADO DE DONA ANA JUNTO CON LAS CIUDADES DE LAS CRUCES, SUNLAND PARK, ANTHONY, HATCH, MESILLA, NEW MEXICO STATE UNIVERSITY, & ELEPHANT BUTTE IRRIGATION DISTRICT, ESTAN BUSCANDO SU OPINION SOBRE LA ACTUALIZACION DEL PLAN DE MITIGACION DE RIESGOS DEL CONDADO DE DONA ANA.

- **Objetivo:** reducir o eliminar el riesgo a largo plazo para la vida y la propiedad de los eventos de peligro natural.
- **Proceso:** identificar y perfilar los peligros naturales con mayor probabilidad de ocurrir, evaluar la vulnerabilidad, establecer objetivos, acciones y proyectos para mitigar los riesgos.

Necesitamos su ayuda para determinar que peligros naturales les preocuan y cuales han experimentado personalmente.

La Comision de Inundaciones del Condado de Dona Ana solicita que los miembros del publico proporcionen comentarios por via electronica, por telefono, o en persona en la Oficina de la Comision de Inundaciones. Puede encontrar un breve cuestionario en el sitio web de la Comision de Inundaciones en:

https://www.donaanacounty.org/flood/mitigation/

Se puede enviar comentarios generales y sugerencias a la informacion de contacto que se detalla a continuacion.

Para obtener mas informacion, si desea solicitar una copia impresa del cuestionario or revisar el plan existente en la oficina de la Comision de Inundaciones, comuniquese con:

Michael Garza – Flood Engineer
Dona Ana County Flood Commission
845 N. Motel Blvd, Room 1-250
Las Cruces, New Mexico 88007
Email: michaelg@donaanacounty.org | Phone: 575-525-5553

Dona Ana County All Hazard Mitigation Plan – Questionnaire

1) Which of the following types of natural disasters have you or someone in your household experienced in the past 20 years within Dona Ana County? (check all that apply)

- ❑ Dam Failure
- ❑ Drought
- ❑ Extreme Temperatures (Heat and/or Cold)
- ❑ Flood / Flash Flood
- ❑ Severe Winds (tornado, thunderstorm winds, dust storms, etc.)
- ❑ Wildfire
- ❑ Lightening & Hail
- ❑ Other (Please specify) _____

2) Please select a level for the following hazards that represents your opinion of likelihood that the hazard will cause damage to buildings and property or harm to residents in your community. Mark only one choice for each hazard (Very High, High, Medium, Low, Very Low).

HAZARD	Very High	High	Medium	Low	Very Low
Dam Failure	❑	❑	❑	❑	❑
Drought	❑	❑	❑	❑	❑
Extreme Temperatures (Heat and/or Cold)	❑	❑	❑	❑	❑
Flood/Flash Flood	❑	❑	❑	❑	❑
Severe Winds (Tornado, thunderstorm winds, dust storms, etc.)	❑	❑	❑	❑	❑
Wildfire	❑	❑	❑	❑	❑
Lightening & Hail	❑	❑	❑	❑	❑
Other (Please Specify): _____	❑	❑	❑	❑	❑
Other (Please Specify): _____	❑	❑	❑	❑	❑

3) Are you aware that Dona Ana County, Anthony, Elephant Butte Irrigation District, Hatch, Las Cruces, Mesilla, New Mexico State University and Sunland Park have a multi-jurisdictional hazard mitigation plan — a plan that is written to guide how our community will lower its risk and exposure to natural disasters?

O Yes O No

4) Is your home or business located in or near a Federal Emergency Management Agency (FEMA) designated flood zone? For more information please visit the Federal Emergency Management Agency's flood hazard website (http://msc.fema.gov/portal) and the National Flood Insurance Program website (https://www.floodsmart.gov/floodsmart/)

O Yes O No O Don't know

1

5) Do you carry flood insurance (for your home or your business)?

○ Yes	○ No	○ Don't know

6) What types of projects should Dona Ana County and the other jurisdictional participants focus on to reduce hazard impacts? (Please rank each option on a scale of 1 to 5, with 1 being least favorable and 5 being the most favorable)

_____ Structure/Infrastructure Improvements
_____ Critical Facility Upgrades
_____ Public Education and Outreach
_____ Environmental Protection of Natural Buffers (for example, open space in a floodplain)
_____ Regulatory Standards and Strategic Plans
_____ Other (please specify)

7) What is the most effective way for you to receive information about how to protect your family and prepare your home for hazard events? (Please rank each option on a scale of 1 to 5, with 1 being least favorable and 5 being the most favorable)

_____ Television
_____ Radio
_____ Websites
_____ Mail
_____ Email
_____ Public Meetings/ Workshops
_____ Social Media (Facebook, Twitter, etc.)

8) You know better than anyone else what your home, neighborhood, and community hazards are and as your local government, we want to do our best to help. What else do you think we should know?

_____
_____
_____
_____

9) Do you want to be notified of upcoming mitigation public events? If so, please leave your contact information below.

Name: _____
Email: _____
Phone: _____

10) Do you have any additional comments?

_____
_____
_____

Please return this completed form to:

Michael Garza – Flood Engineering Intern
Dona Ana County Flood Commission
Email: michaelg@donaanacounty.org | Phone: 575-525-5553

Thank you!!!!

2

Submission Date	Submission By	Survey ID	1) Which of the following types of natural disasters have you or someone in your household experienced in the past 20 years within Dona Ana County? (check all that apply)							
			Dam Failure	Drought	Extreme Temp	Flash Flood	Severe Winds	Wildfire	Other (Specify)	
3/25/2020	Anonymous	24172		X	X	X	X			
3/25/2020	Anonymous	24173		X	X	X				
3/25/2020	Anonymous	24174				X				
3/25/2020	Anonymous	24176		X	X					
3/25/2020	M Caldarella	24177		X	X		X			
3/25/2020	Anonymous	24179			X		X			
3/25/2020	Anonymous	24182		X	X		X			
3/25/2020	Anonymous	24183				X				
3/25/2020	Anonymous	24184		X	X	X				
3/26/2020	Tom Phillips	24185		X		X	X			
3/26/2020	Joe Chavez	24186		X						
3/26/2020	Anonymous	24187				X				
3/26/2020	Anonymous	24188		X	X		X			
3/26/2020	Donald Word	24189			X	X	X			
3/26/2020	Anonymous	24190		X	X		X			
3/26/2020	Anonymous	24191				X				
3/26/2020	Anonymous	24193	X	X	X	X	X			
3/27/2020	Anonymous	24204		X	X		X			
3/27/2020	Colbert Coldwell	Print		X		X	X			
3/27/2020	Anonymous	24215		X	X	X	X			
3/27/2020	Anonymous	24221		X	X		X			
3/27/2020	Sam Calhoun	Print			X		X			
3/28/2020	Kevin Farrah	Print							X	Hail
3/28/2020	Mario Tellez	24224	X	X	X	X	X			
3/29/2020	Anonymous	24225					X	X		
3/30/2020	Melinda Whitley	24231		X	X		X			
3/30/2020	Eduardo Gutierrez	Print		X	X		X			
3/30/2020	Aaron Chavarria	24245	X	X	X	X	X			
3/30/2020	Peter Stanslow	Print			X		X		X	Dust Storms
3/31/2020	R. Cereceres	24256		X	X					
3/31/2020	Keith Deputy	Print		X		X	X			
3/31/2020	Robert Hastings	Print		X	X		X			
3/31/2020	Anonymous	Print		X			X			
3/31/2020	Anonymous	Print			X		X			
3/31/2020	Anonymous	Print		X	X		X			

3/31/2020	Rosie Lack	Print		X	X	X	X	X		
3/31/2020	Anonymous	Print		X						
3/31/2020	Hollis Train	Print		X		X	X			
3/31/2020	Anonymous	Print		X	X				X	Significant drop of water table
3/31/2020	Betty Russell	Print				X				
3/31/2020	Anonymous	Print		X	X		X			
3/31/2020	Abel Hinojosa	Print		X	X	X	X			
3/31/2020	Robert Anderson	Print								
3/31/2020	Anonymous	Print		X	X		X			
3/31/2020	Anonymous	Print					X			
3/31/2020	Rodolfo Santini	Print		X			X			
3/31/2020	Stephanie Medoff	Print			X		X			
3/31/2020	John Pinkerton	Print		X		X				
3/31/2020	Anonymous	Print		X			X			
4/1/2020	Roy Willoughby	24276		X	X		X			
4/1/2020	Jeffery Smith	Print		X	X		X			
4/6/2020	The Bennys	Print				X	X			
4/6/2020	Raymundo & Patricia Heredia	Print		X	X		X			
4/6/2020	Robert Cline	Print		X	X		X			
4/6/2020	Rm. Alvarez Stutts	Print				X				"My brother, stealing water to flood my yard on purpose
4/6/2020	Sam Motts	Print		X	X					
4/6/2020	Delfarro	Print		X	X		X			
4/6/2020	Anonymous	Print		X		X	X			
4/6/2020	Arturo Alvarado	Print	X	X	X	X	X	Bug infestation		
4/6/2020	Anonymous	Print		X			X			
4/6/2020	Caroline Wozniak	Print			X		X			
4/6/2020	John & Judy Harris	Print		X						
4/6/2020	Jose Sanchez	24353		X						
4/6/2020	Anonymous	Print			X		X			
4/6/2020	Anonymous	Print					X			
4/6/2020	Anonymous	Print			X					
4/7/2020	Anonymous	24379								
4/8/2020	Anonymous	24393			X	X				
4/9/2020	Filippo Rimi	Print		X	X					
4/10/2020	Robert Otero	Print					X			
4/10/2020	Anonymous	Print	X	X	X	X				
4/10/2020	Rosario Montes-Arena	Print			X					
4/10/2020	Anonymous	Print		X		X				
4/10/2020	Anonymous	Print		X	X		X			
4/10/2020	Dennis Sandoval	Print		X	X				X	Hail
4/10/2020	Jerry & Martha Stevens	Print		X	X		X		X	Lack of water for pecan trees

4/10/2020	onnie Moore & Carolyn Moo	Print		X	X					
4/10/2020	Ralph Parsons	Print					X			
4/10/2020	arcia Williams & Jerome Wall	Print								
4/10/2020	Anonymous	Print								
4/10/2020	Anonymous	Print	X	X	X	X	X	X	X	Hail disaster
4/10/2020	Anonymous	Print		X	X		X			
4/10/2020	Anonymous	Print			X		X			
4/10/2020	Diana Howard	Print		X	X		X			
4/10/2020	L. M. Zornes	Print		X	X		X	X		
4/10/2020	Anonymous	Print		X		X	X			
4/10/2020	Anonymous	Print		X	X		X			
4/10/2020	Robert & Bonnie Murphy	Print		X	X	X	X			
4/10/2020	San Shields	Print		X			X			
4/10/2020	Michael Francis	Print				X				
4/12/2020	Anonymous	24446		X	X	X	X			
4/12/2020	Scott Bailey	Print		X	X		X			
4/16/2020	Joshua Mort	24513		X			X			
4/21/2020	Richard Arzabal	Print		X	X		X		X	Hail
4/21/2020	Anonymous	Print		X	X	X	X			
4/21/2020	Smokey Blanton	Print								
4/30/2020	Leticia Mora	Print		X	X		X			
5/4/2020	Franz Rueckner	24799				X				
5/5/2020	Anonymous	24843	X	X						
5/6/2020	Harry Palmer	24870				X				
5/7/2020	Eduardo Rey Flores	Print		X		X	X			
5/7/2020	Steven Patterson	Print		X	X					
5/7/2020	Anonymous	Print		X	X		X			
5/7/2020	Joan Woodward	Print		X	X	X	X	X		
5/7/2020	Anonymous	24890		X			X			
5/26/2020	Martha Valdez	25198		X	X					
5/26/2020	Jim Higdon	Print				X			X	Hard Freeze
5/26/2020	Les Williamson	Print			X					
6/9/2020	Sherwin Wang	Print		X		X				
6/18/2020	Celia Aldaz Garza	Print		X	X					
6/18/2020	Mike & Diane Datton	Print	X	X	X	X	X			
6/18/2020	Anonymous	Print		X		X	X			
6/18/2020	Anonymous	Print		X	X					
6/18/2020	Anonymous	Print		X	X		X			
6/18/2020	Anonymous	25624		X	X	X	X			

Count

Dam Failure	Drought	Extreme Temp	Flash Flood	Severe Winds	Wildfire	Hail	Other	Total Surveys
8	80	70	42	73	5	4	5	115
0.07	0.70	0.61	0.37	0.63	0.04	0.03	0.04	
7%	70%	61%	37%	63%	4%	3%	4%	

Submission Date	Submission By	Survey ID	2) Please select a level for the following hazards that represents your opinion of likelihood that the hazard will cause damage to buildings and property or harm to residents in your community.									
			Dam Failure	Drought	Extreme Temp	Flash Flood	Severe Winds	Wildfire	Other Hazard (Specify)	Other (Specify)	Other (Specify)	Other (Specify)
3/25/2020	Anonymous	24172	Very High	Medium	High	Very	High	High				
3/25/2020	Anonymous	24173	N/A	High	High	Very High	High	High				
3/25/2020	Anonymous	24174	Medium	High	High	Low	Medium	Very Low				
3/25/2020	Anonymous	24176	Very High	Very High	Very High	Low	Medium	Medium				
3/25/2020	M Caldarella	24177	Low	Very High	High	High	Medium	N/A				
3/25/2020	Anonymous	24179	Low	Very High	Very High	Medium	High	Low				
3/25/2020	Anonymous	24182	Medium	Very High	Very High	High	Very High	High				
3/25/2020	Anonymous	24183	Medium	Medium	Medium	Medium	Medium	Medium	Earthquake related flood	Medium		
3/25/2020	Anonymous	24184	Low	High	Very High	High	High	Medium				
3/26/2020	Tom Phillips	24185	Low	Medium	N/A	High	Very High	Very Low				
3/26/2020	Joe Chavez	24186	Very Low	Very High	High	Low	Medium	Very Low	?	Very Low	?	Very Low
3/26/2020	Anonymous	24187	Medium	Medium	Low	Medium	Medium	Low				
3/26/2020	Anonymous	24188	Low	Very High	High	Low	High	Very Low				
3/26/2020	Donald Word	24189	Very Low	Very High	Very High	Very High	Very High	High	?	Very Low		
3/26/2020	Anonymous	24190	Medium	Very High	Very High	High	Very High	High				
3/26/2020	Anonymous	24191	Very Low	Very Low	High	Very High	High	Low				
3/26/2020	Anonymous	24193	Very High	High	Very High	Very High	High	Very High				
3/27/2020	Anonymous	24204	N/A	Very High	Very High	Very High	Very High	High				
3/27/2020	Colbert Coldwell	Print	Very Low	High	Medium	Medium	Medium	Medium				
3/27/2020	Anonymous	24215	Low	High	High	Medium	Very High	Low	Power Failure	High		
3/27/2020	Anonymous	24221	Low	Very High	Very High	Low	Very High	Low				

3/27/2020	Sam Calhoun	Print	Very High	Very High	Medium	Medium	Medium	Medium	Virus		Ingest Extreme?	
3/28/2020	Kevin Farrah	Print	Medium	Medium	Very Low	Medium	High	Low	Hail	Very High	High Taxes	High
3/28/2020	Mario Tellez	24224	Very High	Very High	High	Very High	High	Low				
3/29/2020	Anonymous	24225	Low	Low	Low	Medium	High	Low				
3/30/2020	Melinda Whitley	24231	Very Low	Very High	Very High	Very Low	Very High	Very Low				
3/30/2020	Eduardo Gutierrez	Print	Low	Medium	High	High	High	Low				
3/30/2020	Aaron Chavarria	24245	High	Very High	Very High	Very High	Very High	Medium				
3/30/2020	Peter Stanslow	Print	Very Low	Medium	High	Very Low	Medium	Low				
3/31/2020	R. Cereceres	24256	Very Low	Medium	Medium	Very Low	Low	Very Low				
3/31/2020	Keith Deputy	Print	Very Low	High	Medium	High	High	Very Low				
3/31/2020	Robert Hastings	Print	Very Low	Medium	Low	Very Low	Medium	Very Low				
3/31/2020	Anonymous	Print	Very Low	High	Low	Low	High	Very Low				
3/31/2020	Anonymous	Print	Medium	Medium	Medium	Low	Medium	Low				
3/31/2020	Anonymous	Print	Very High	Medium	Medium	Medium	Medium	High				
3/31/2020	Rosie Lack	Print	N/A	High	High	Very High	Very High	Very High				
3/31/2020	Anonymous	Print	Very Low	High	Medium	Medium	High	Low				
3/31/2020	Hollis Train	Print	Low	Very High	Very High	High	High	Low				
3/31/2020	Anonymous	Print	Very Low	High	Very High	Medium	High	Low	Drop of water table	High		
3/31/2020	Betty Russell	Print	Very High	Very Low	Very Low	Very High	Very Low	Very Low				
3/31/2020	Anonymous	Print	Very High	Very High	Medium	High	High	Medium	Terrorism	High		
3/31/2020	Abel Hinojosa	Print	Medium	High	Medium	High	Medium	Low				
3/31/2020	Robert Anderson	Print	High	Very Low	Low	High	Very High	Low	Toxic Spill	Low	Radioactive Spill	Very Low
3/31/2020	Anonymous	Print	Very Low	High	High	Medium	Medium	Very Low				
3/31/2020	Anonymous	Print	Low	Medium	Medium	Low	High	Very Low				
3/31/2020	Rodolfo Santini	Print	N/A	Very High	Low	Very Low	Medium	Very Low				

3/31/2020	Stephanie Medoff	Print	Low	High	Medium	Low	High	Low				
3/31/2020	John Pinkerton	Print	N/A	Very High	N/A	High	N/A	N/A				
3/31/2020	Anonymous	Print	Medium	Very High	Medium	Medium	Very High	Low				
4/1/2020	Roy Willoughby	24276	High	Very High	High	Medium	Medium	Very Low				
4/1/2020	Jeffery Smith	Print	Low	Very High	Very High	Low	High	Low				
4/6/2020	The Bennys	Print	Medium	Medium	Medium	Medium	Medium	Medium				
4/6/2020	Raymundo & Patricia Heredia	Print	Very Low	High	High	Low	High					
4/6/2020	Robert Cline	Print	Medium	Very High	High	Medium	Very High	Medium				
4/6/2020	Rm. Alvarez Stutts	Print				Very High			"He could dissolve the house!"			
4/6/2020	Sam Motts	Print	Low	High	High	Medium	High	Very Low				
4/6/2020	Delfarro	Print										
4/6/2020	Anonymous	Print	Very Low	High	Medium	Medium	High	Low				
4/6/2020	Arturo Alvarado	Print	Medium	High	High	Medium	High	Very High	Asbestos	Very High	Toxic Spills	Very High
4/6/2020	Anonymous	Print		High			High					
4/6/2020	Caroline Wozniak	Print	Low	Medium	High	Medium	Very High	Very High	Fire caused by weeds	Very High		
4/6/2020	John & Judy Harris	Print		Very High			High					
4/6/2020	Jose Sanchez	24353	Very Low	Very High	Low	Medium	Low	Very Low				
4/6/2020	Anonymous	Print	Very Low	Low	Medium	Very Low	High	Very Low	Hail	Medium		
4/6/2020	Anonymous	Print	Low	Medium	Medium	Low	High	Medium				
4/6/2020	Anonymous	Print	Very Low	Medium	High	Very Low	Medium	Very Low				
4/7/2020	Anonymous	24379										
4/8/2020	Anonymous	24393	Medium	High	High	Medium	High	High				
4/9/2020	Filippo Rimi	Print	Very Low	High	Medium	Low	Medium	Low				
4/10/2020	Robert Otero	Print	Very Low	Medium	High	Very Low	High	Medium				
4/10/2020	Anonymous	Print	High	Very High	Very High	High	High	Low				

4/10/2020	Rosario Montes-Arena	Print	Very Low	Medium	Very Low	Very Low	Medium	Very Low				
4/10/2020	Anonymous	Print	Low	Low	Low	Low	Medium	Low				
4/10/2020	Anonymous	Print	Very Low	Very High	High	Medium	High	Very Low				
4/10/2020	Dennis Sandoval	Print	Medium	Very High	Very High	High	High	Low	Hail	Very High		
4/10/2020	Jerry & Martha Stevens	Print		Very High	Very High	Very High	Very High					
4/10/2020	Lonnie Moore & Carolyn Moore	Print	Low	Medium	Low	Very Low	Very Low	Very Low				
4/10/2020	Ralph Parsons	Print	Medium	Medium	Very Low	Low	Medium	Very Low	Earthquake	Low		
4/10/2020	Marcia Williams & Jerome Walker	Print	High	Very High	Low	High	High	Medium	Smoke from fires elsewhere	High		
4/10/2020	Anonymous	Print	Very Low	Low	Medium	Very Low	Medium	Very Low				
4/10/2020	Anonymous	Print	High	Very High	Very High	Very High	Very High	High	Hail Disaster	High	Earthquake	Medium
4/10/2020	Anonymous	Print	Very Low	Medium	Medium	High	High	Very Low				
4/10/2020	Anonymous	Print			Very High		Very High					
4/10/2020	Diana Howard	Print	Very High	High								
4/10/2020	L. M. Zornes	Print	Low	Very High	Very High	Low	Medium	Low				
4/10/2020	Anonymous	Print		High		High	Very High					
4/10/2020	Anonymous	Print	Low	Low	High	Medium	High	Low				
4/10/2020	Robert & Bonnie Murphy	Print	Low	High	High	Very High	Medium	High				
4/10/2020	San Shields	Print	Very Low	Very High	High	Low	High	Low	Depletion of aquafor	Very High	Too Damn many people	Very High
4/10/2020	Michael Francis	Print	Medium	High	High	Medium	High	Medium				
4/12/2020	Anonymous	24446	Very Low	Low	Low	Medium	High	Very Low				
4/12/2020	Scott Bailey	Print	Very High	High	High	Very High	High	High				
4/16/2020	Joshua Mort	24513	Low	Medium	Low	Medium	High	Low				
4/21/2020	Richard Arzabal	Print	Very High	Very High	Very High	Very High	Very High	Very High				

4/21/2020	Anonymous	Print		High	Medium	Very High						
4/21/2020	Smokey Blanton	Print	Very Low	Very High	Medium	High	Medium	Very Low				
4/30/2020	Leticia Mora	Print		High	High		High					
5/4/2020	Franz Rueckner	24799	Very High	Very High	Low	Very High	High	High				
5/5/2020	Anonymous	24843	Very High	Medium	Low	Medium	Low	Very Low				
5/6/2020	Harry Palmer	24870	High	Very High	High	High	High	High	Wear on irrigation ditches due to excessive vehicle speed	High		
5/7/2020	Eduardo Rey Flores	Print	Low	High	Medium	Medium	Medium					
5/7/2020	Steven Patterson	Print	Very Low	Medium	Medium	Medium	Medium	Very Low				
5/7/2020	Anonymous	Print	Low	Very High	Very High	Low	High	Low				
5/7/2020	Joan Woodward	Print	High	Very High	Very High	Very High	Very High	Very High				
5/7/2020	Anonymous	24890	Very High	High	High	High	High	Low				
5/26/2020	Martha Valdez	25198	Medium	Very High	Very High	High	High	Very High				
5/26/2020	Jim Higdon	Print	Very Low	High	Very Low	Medium	Medium	Very Low				
5/26/2020	Les Williamson	Print	Low	High	High	Low	Medium	Very Low				
6/9/2020	Sherwin Wang	Print		Very High		Very High						
6/18/2020	Celia Aldaz Garza	Print	Medium	Very High	Very High	Medium	High	High				
6/18/2020	Mike & Diane Datton	Print	Very High	High	High	Very High	Very High	Medium				
6/18/2020	Anonymous	Print	Low	High	Very Low	High	Medium	Very Low				
6/18/2020	Anonymous	Print	Low	Very High	Very High	Medium	Low	Medium				
6/18/2020	Anonymous	Print	Very Low	High	High	Very Low	Very High	Very Low				
6/18/2020	Anonymous	25624	Very Low	High	Very High	Medium	Very High	Low				

	Dam Failure	Drought	Extreme Temp	Flash Flood	Severe Winds	Wildfire	Other	Total Surveys
Very High	15	42	27	20	23	7	0	115
High	8	36	34	22	48	14	0	
Medium	18	24	24	34	31	15	0	
Low	27	6	14	19	4	31	0	
Very Low	31	3	6	12	2	32	0	
No Opinion	16	4	10	8	7	16		

Submission Date	Submission By	Survey ID	3) Are you aware that () have a multi-jurisdictional hazard mitigation plan?		
			Yes	No	Don't Know
3/25/2020	Anonymous	24172		X	
3/25/2020	Anonymous	24173		X	
3/25/2020	Anonymous	24174	X		
3/25/2020	Anonymous	24176		X	
3/25/2020	M Caldarella	24177		X	
3/25/2020	Anonymous	24179		X	
3/25/2020	Anonymous	24182		X	
3/25/2020	Anonymous	24183		X	
3/25/2020	Anonymous	24184	X		
3/26/2020	Tom Phillips	24185		X	
3/26/2020	Joe Chavez	24186		X	
3/26/2020	Anonymous	24187		X	
3/26/2020	Anonymous	24188		X	
3/26/2020	Donald Word	24189		X	
3/26/2020	Anonymous	24190		X	
3/26/2020	Anonymous	24191		X	
3/26/2020	Anonymous	24193		X	
3/27/2020	Anonymous	24204		X	
3/27/2020	Colbert Coldwell	Print		X	
3/27/2020	Anonymous	24215		X	

3/27/2020	Anonymous	24221		X	
3/27/2020	Sam Calhoun	Print	X		
3/28/2020	Kevin Farrah	Print		X	
3/28/2020	Mario Tellez	24224		X	
3/29/2020	Anonymous	24225		X	
3/30/2020	Melinda Whitley	24231	X		
3/30/2020	Eduardo Gutierrez	Print		X	
3/30/2020	Aaron Chavarria	24245		X	
3/30/2020	Peter Stanslow	Print		X	
3/31/2020	R. Cereceres	24256		X	
3/31/2020	Keith Deputy	Print		X	
3/31/2020	Robert Hastings	Print		X	
3/31/2020	Anonymous	Print	X		
3/31/2020	Anonymous	Print	X		
3/31/2020	Anonymous	Print		X	
3/31/2020	Rosie Lack	Print		X	
3/31/2020	Anonymous	Print		X	
3/31/2020	Hollis Train	Print		X	
3/31/2020	Anonymous	Print		X	
3/31/2020	Betty Russell	Print		X	
3/31/2020	Anonymous	Print	X		
3/31/2020	Abel Hinojosa	Print		X	
3/31/2020	Robert Anderson	Print		X	
3/31/2020	Anonymous	Print		X	
3/31/2020	Anonymous	Print		X	
3/31/2020	Rodolfo Santini	Print		X	
3/31/2020	Stephanie Medoff	Print	X		
3/31/2020	John Pinkerton	Print		X	

3/31/2020	Anonymous	Print	X		
4/1/2020	Roy Willoughby	24276		X	
4/1/2020	Jeffery Smith	Print		X	
4/6/2020	The Bennys	Print	X		
4/6/2020	Raymundo & Patricia Heredia	Print		X	
4/6/2020	Robert Cline	Print		X	
4/6/2020	Rm. Alvarez Stutts	Print		X	
4/6/2020	Sam Motts	Print		X	
4/6/2020	Delfarro	Print		X	
4/6/2020	Anonymous	Print	X		
4/6/2020	Arturo Alvarado	Print		X	
4/6/2020	Anonymous	Print	X		
4/6/2020	Caroline Wozniak	Print		X	
4/6/2020	John & Judy Harris	Print		X	
4/6/2020	Jose Sanchez	24353		X	
4/6/2020	Anonymous	Print	X		
4/6/2020	Anonymous	Print		X	
4/6/2020	Anonymous	Print		X	
4/7/2020	Anonymous	24379		X	
4/8/2020	Anonymous	24393		X	
4/9/2020	Filippo Rimi	Print		X	
4/10/2020	Robert Otero	Print	X		
4/10/2020	Anonymous	Print		X	
4/10/2020	Rosario Montes-Arena	Print		X	
4/10/2020	Anonymous	Print	X		
4/10/2020	Anonymous	Print		X	
4/10/2020	Dennis Sandoval	Print		X	
4/10/2020	Jerry & Martha Stevens	Print		X	

4/10/2020	Lonnie Moore & Carolyn Moore	Print	X		
4/10/2020	Ralph Parsons	Print		X	
4/10/2020	Marcia Williams & Jerome Walker	Print	X		
4/10/2020	Anonymous	Print	X		
4/10/2020	Anonymous	Print	X		
4/10/2020	Anonymous	Print		X	
4/10/2020	Anonymous	Print		X	
4/10/2020	Diana Howard	Print		X	
4/10/2020	L. M. Zornes	Print		X	
4/10/2020	Anonymous	Print	X		
4/10/2020	Anonymous	Print		X	
4/10/2020	Robert & Bonnie Murphy	Print		X	
4/10/2020	San Shields	Print		X	
4/10/2020	Michael Francis	Print	X		
4/12/2020	Anonymous	24446		X	
4/12/2020	Scott Bailey	Print		X	
4/16/2020	Joshua Mort	24513		X	
4/21/2020	Richard Arzabal	Print		X	
4/21/2020	Anonymous	Print	X		
4/21/2020	Smokey Blanton	Print		X	
4/30/2020	Leticia Mora	Print		X	
5/4/2020	Franz Rueckner	24799		X	
5/5/2020	Anonymous	24843		X	
5/6/2020	Harry Palmer	24870	X		
5/7/2020	Eduardo Rey Flores	Print	X		
5/7/2020	Steven Patterson	Print	X		
5/7/2020	Anonymous	Print	X		
5/7/2020	Joan Woodward	Print	X		

5/7/2020	Anonymous	24890	X		
5/26/2020	Martha Valdez	25198		X	
5/26/2020	Jim Higdon	Print		X	
5/26/2020	Les Williamson	Print		X	
6/9/2020	Sherwin Wang	Print		X	
6/18/2020	Celia Aldaz Garza	Print		X	
6/18/2020	Mike & Diane Datton	Print		X	
6/18/2020	Anonymous	Print		X	
6/18/2020	Anonymous	Print		X	
6/18/2020	Anonymous	Print		X	
6/18/2020	Anonymous	25624	X		

Yes	No	Don't Know	Total
29	86	0	115

Submission Date	Submission By	Survey ID	4) Is your home or business located in or near a (FEMA) designated flood zone?		
			Yes	No	Don't Know
3/25/2020	Anonymous	24172		X	
3/25/2020	Anonymous	24173		X	
3/25/2020	Anonymous	24174		X	
3/25/2020	Anonymous	24176			X
3/25/2020	M Caldarella	24177		X	
3/25/2020	Anonymous	24179			X
3/25/2020	Anonymous	24182	X		
3/25/2020	Anonymous	24183	X		
3/25/2020	Anonymous	24184	X		
3/26/2020	Tom Phillips	24185		X	
3/26/2020	Joe Chavez	24186	X		
3/26/2020	Anonymous	24187	X		
3/26/2020	Anonymous	24188			X
3/26/2020	Donald Word	24189			X
3/26/2020	Anonymous	24190		X	
3/26/2020	Anonymous	24191	X		
3/26/2020	Anonymous	24193		X	
3/27/2020	Anonymous	24204	X		
3/27/2020	Colbert Coldwell	Print			X
3/27/2020	Anonymous	24215		X	
3/27/2020	Anonymous	24221			X
3/27/2020	Sam Calhoun	Print		X	

3/28/2020	Kevin Farrah	Print		X	
3/28/2020	Mario Tellez	24224			X
3/29/2020	Anonymous	24225		X	
3/30/2020	Melinda Whitley	24231		X	
3/30/2020	Eduardo Gutierrez	Print	X		
3/30/2020	Aaron Chavarria	24245		X	
3/30/2020	Peter Stanslow	Print	X		
3/31/2020	R. Cereceres	24256		X	
3/31/2020	Keith Deputy	Print			X
3/31/2020	Robert Hastings	Print	X		
3/31/2020	Anonymous	Print	X		
3/31/2020	Anonymous	Print			X
3/31/2020	Anonymous	Print	X		
3/31/2020	Rosie Lack	Print			X
3/31/2020	Anonymous	Print	X		
3/31/2020	Hollis Train	Print		X	
3/31/2020	Anonymous	Print	X		
3/31/2020	Betty Russell	Print		X	
3/31/2020	Anonymous	Print		X	
3/31/2020	Abel Hinojosa	Print			X
3/31/2020	Robert Anderson	Print			X
3/31/2020	Anonymous	Print			X
3/31/2020	Anonymous	Print			X
3/31/2020	Rodolfo Santini	Print			X
3/31/2020	Stephanie Medoff	Print		X	
3/31/2020	John Pinkerton	Print	X		
3/31/2020	Anonymous	Print	X		
4/1/2020	Roy Willoughby	24276			X

4/1/2020	Jeffery Smith	Print	X		
4/6/2020	The Bennys	Print			X
4/6/2020	Raymundo & Patricia Heredia	Print			X
4/6/2020	Robert Cline	Print			X
4/6/2020	Rm. Alvarez Stutts	Print			X
4/6/2020	Sam Motts	Print			X
4/6/2020	Delfarro	Print			X
4/6/2020	Anonymous	Print	X		
4/6/2020	Arturo Alvarado	Print			X
4/6/2020	Anonymous	Print		X	
4/6/2020	Caroline Wozniak	Print	X		
4/6/2020	John & Judy Harris	Print			X
4/6/2020	Jose Sanchez	24353	X		
4/6/2020	Anonymous	Print		X	
4/6/2020	Anonymous	Print		X	
4/6/2020	Anonymous	Print		X	
4/7/2020	Anonymous	24379		X	
4/8/2020	Anonymous	24393	X		
4/9/2020	Filippo Rimi	Print		X	
4/10/2020	Robert Otero	Print	X		
4/10/2020	Anonymous	Print	X		
4/10/2020	Rosario Montes-Arena	Print		X	
4/10/2020	Anonymous	Print			X
4/10/2020	Anonymous	Print	X		
4/10/2020	Dennis Sandoval	Print			X
4/10/2020	Jerry & Martha Stevens	Print		X	
4/10/2020	Lonnie Moore & Carolyn Moore	Print			X
4/10/2020	Ralph Parsons	Print			X

4/10/2020	Marcia Williams & Jerome Walker	Print		X	
4/10/2020	Anonymous	Print		X	
4/10/2020	Anonymous	Print	X		
4/10/2020	Anonymous	Print			X
4/10/2020	Anonymous	Print			X
4/10/2020	Diana Howard	Print	X		
4/10/2020	L. M. Zornes	Print			X
4/10/2020	Anonymous	Print		X	
4/10/2020	Anonymous	Print			X
4/10/2020	Robert & Bonnie Murphy	Print		X	
4/10/2020	San Shields	Print			X
4/10/2020	Michael Francis	Print		X	
4/12/2020	Anonymous	24446			X
4/12/2020	Scott Bailey	Print		X	
4/16/2020	Joshua Mort	24513	X		
4/21/2020	Richard Arzabal	Print	X		
4/21/2020	Anonymous	Print		X	
4/21/2020	Smokey Blanton	Print		X	
4/30/2020	Leticia Mora	Print			X
5/4/2020	Franz Rueckner	24799		X	
5/5/2020	Anonymous	24843		X	
5/6/2020	Harry Palmer	24870			X
5/7/2020	Eduardo Rey Flores	Print		X	
5/7/2020	Steven Patterson	Print		X	
5/7/2020	Anonymous	Print		X	
5/7/2020	Joan Woodward	Print		X	
5/7/2020	Anonymous	24890	X		
5/26/2020	Martha Valdez	25198		X	

5/26/2020	Jim Higdon	Print	X		
5/26/2020	Les Williamson	Print		X	
6/9/2020	Sherwin Wang	Print	X		
6/18/2020	Celia Aldaz Garza	Print			X
6/18/2020	Mike & Diane Datton	Print			X
6/18/2020	Anonymous	Print	X		
6/18/2020	Anonymous	Print			X
6/18/2020	Anonymous	Print		X	
6/18/2020	Anonymous	25624		X	

Yes	No	Don't Know	Total
32	44	39	115

Submission Date	Submission By	Survey ID	5) Do you carry flood insurance (for your home or your business)?		
			Yes	No	Don't Know
3/25/2020	Anonymous	24172		X	
3/25/2020	Anonymous	24173		X	
3/25/2020	Anonymous	24174		X	
3/25/2020	Anonymous	24176		X	
3/25/2020	M Caldarella	24177	X		
3/25/2020	Anonymous	24179	X		
3/25/2020	Anonymous	24182	X		
3/25/2020	Anonymous	24183		X	
3/25/2020	Anonymous	24184		X	
3/26/2020	Tom Phillips	24185		X	
3/26/2020	Joe Chavez	24186	X		
3/26/2020	Anonymous	24187	X		
3/26/2020	Anonymous	24188		X	
3/26/2020	Donald Word	24189		X	
3/26/2020	Anonymous	24190		X	
3/26/2020	Anonymous	24191		X	
3/26/2020	Anonymous	24193		X	
3/27/2020	Anonymous	24204		X	
3/27/2020	Colbert Coldwell	Print		X	
3/27/2020	Anonymous	24215		X	
3/27/2020	Anonymous	24221		X	
3/27/2020	Sam Calhoun	Print		X	

3/28/2020	Kevin Farrah	Print	X		
3/28/2020	Mario Tellez	24224			X
3/29/2020	Anonymous	24225	X		
3/30/2020	Melinda Whitley	24231		X	
3/30/2020	Eduardo Gutierrez	Print		X	
3/30/2020	Aaron Chavarria	24245	X		
3/30/2020	Peter Stanslow	Print	X		
3/31/2020	R. Cereceres	24256		X	
3/31/2020	Keith Deputy	Print			X
3/31/2020	Robert Hastings	Print	X		
3/31/2020	Anonymous	Print		X	
3/31/2020	Anonymous	Print		X	
3/31/2020	Anonymous	Print	X		
3/31/2020	Rosie Lack	Print	X		
3/31/2020	Anonymous	Print	X		
3/31/2020	Hollis Train	Print		X	
3/31/2020	Anonymous	Print	X		
3/31/2020	Betty Russell	Print		X	
3/31/2020	Anonymous	Print		X	
3/31/2020	Abel Hinojosa	Print	X		
3/31/2020	Robert Anderson	Print		X	
3/31/2020	Anonymous	Print		X	
3/31/2020	Anonymous	Print		X	
3/31/2020	Rodolfo Santini	Print		X	
3/31/2020	Stephanie Medoff	Print		X	
3/31/2020	John Pinkerton	Print	X		
3/31/2020	Anonymous	Print	X		
4/1/2020	Roy Willoughby	24276		X	

4/1/2020	Jeffery Smith	Print		X	
4/6/2020	The Bennys	Print		X	
4/6/2020	Raymundo & Patricia Heredia	Print		X	
4/6/2020	Robert Cline	Print		X	
4/6/2020	Rm. Alvarez Stutts	Print		X	
4/6/2020	Sam Motts	Print		X	
4/6/2020	Delfarro	Print			
4/6/2020	Anonymous	Print		X	
4/6/2020	Arturo Alvarado	Print		X	
4/6/2020	Anonymous	Print		X	
4/6/2020	Caroline Wozniak	Print		X	
4/6/2020	John & Judy Harris	Print		X	
4/6/2020	Jose Sanchez	24353		X	
4/6/2020	Anonymous	Print		X	
4/6/2020	Anonymous	Print		X	
4/6/2020	Anonymous	Print		X	
4/7/2020	Anonymous	24379		X	
4/8/2020	Anonymous	24393	X		
4/9/2020	Filippo Rimi	Print			X
4/10/2020	Robert Otero	Print	X		
4/10/2020	Anonymous	Print		X	
4/10/2020	Rosario Montes-Arena	Print		X	
4/10/2020	Anonymous	Print		X	
4/10/2020	Anonymous	Print		X	
4/10/2020	Dennis Sandoval	Print			X
4/10/2020	Jerry & Martha Stevens	Print		X	
4/10/2020	Lonnie Moore & Carolyn Moore	Print		X	
4/10/2020	Ralph Parsons	Print		X	

4/10/2020	Marcia Williams & Jerome Walker	Print		X	
4/10/2020	Anonymous	Print	X		
4/10/2020	Anonymous	Print		X	
4/10/2020	Anonymous	Print			X
4/10/2020	Anonymous	Print		X	
4/10/2020	Diana Howard	Print	X		
4/10/2020	L. M. Zornes	Print		X	
4/10/2020	Anonymous	Print		X	
4/10/2020	Anonymous	Print	X		
4/10/2020	Robert & Bonnie Murphy	Print		X	
4/10/2020	San Shields	Print	X		
4/10/2020	Michael Francis	Print		X	
4/12/2020	Anonymous	24446		X	
4/12/2020	Scott Bailey	Print		X	
4/16/2020	Joshua Mort	24513		X	
4/21/2020	Richard Arzabal	Print			X
4/21/2020	Anonymous	Print		X	
4/21/2020	Smokey Blanton	Print		X	
4/30/2020	Leticia Mora	Print			X
5/4/2020	Franz Rueckner	24799	X		
5/5/2020	Anonymous	24843		X	
5/6/2020	Harry Palmer	24870		X	
5/7/2020	Eduardo Rey Flores	Print		X	
5/7/2020	Steven Patterson	Print		X	
5/7/2020	Anonymous	Print		X	
5/7/2020	Joan Woodward	Print	X		
5/7/2020	Anonymous	24890		X	
5/26/2020	Martha Valdez	25198		X	

5/26/2020	Jim Higdon	Print		X	
5/26/2020	Les Williamson	Print			X
6/9/2020	Sherwin Wang	Print		X	
6/18/2020	Celia Aldaz Garza	Print		X	
6/18/2020	Mike & Diane Datton	Print		X	
6/18/2020	Anonymous	Print		X	
6/18/2020	Anonymous	Print	X		
6/18/2020	Anonymous	Print		X	
6/18/2020	Anonymous	25624		X	

Yes	No	Don't Know	Total
26	80	8	114

Submission Date	Submission By	Survey ID	6) What types of projects should participants focus on to reduce hazard impacts? (Please rank each option with 1 being least favorable and 5 being the most favorable)						
			Structure/Infrastructure Improvements	Critical Facilities Upgrades	Public Education and Outreach	Environmental Protection of Natural Buffers	Regulatory Standards & Strategic Plans	Other	
3/25/2020	Anonymous	24172	3	5	4	2	1		
3/25/2020	Anonymous	24173	1	3	4	2	5		
3/25/2020	Anonymous	24174					5		
3/25/2020	Anonymous	24176	5		3		3		
3/25/2020	M Caldarella	24177	5	3	4	2	4		
3/25/2020	Anonymous	24179	3	4	2	5	1		
3/25/2020	Anonymous	24182	5	3	3	5	4		
3/25/2020	Anonymous	24183	3	5	1	1	4		
3/25/2020	Anonymous	24184	2	1	5	3	4		
3/26/2020	Tom Phillips	24185	3	4	5	1	2		
3/26/2020	Joe Chavez	24186	4	5	3	2	1		
3/26/2020	Anonymous	24187	3	5	4	1	2		
3/26/2020	Anonymous	24188	2	3	2	2	4		
3/26/2020	Donald Word	24189	5	5	3	1	2		
3/26/2020	Anonymous	24190	4	4	3	3	5		
3/26/2020	Anonymous	24191	3	4	1	2	5		
3/26/2020	Anonymous	24193	1	2	5	3	4		
3/27/2020	Anonymous	24204	5		5	5	5		
3/27/2020	Colbert Coldwell	Print	5	5	5	5	5		

3/27/2020	Anonymous	24215	3	4	1		5		
3/27/2020	Anonymous	24221	2	1	5	3	4		
3/27/2020	Sam Calhoun	Print	1	2	4	5	3		
3/28/2020	Kevin Farrah	Print	4	5	1	1	1	5	Maintenance of existing infrastructure
3/28/2020	Mario Tellez	24224	5	4	3	5	3		
3/29/2020	Anonymous	24225	3	4	1	1	3		
3/30/2020	Melinda Whitley	24231	4	4	3	5	5		
3/30/2020	Eduardo Gutierrez	Print	2	3	5	4	1		
3/30/2020	Aaron Chavarria	24245	1	4	5	2	3		
3/30/2020	Peter Stanslow	Print	5	3	3	5	5		
3/31/2020	R. Cereceres	24256	5	5	3	5	3		
3/31/2020	Keith Deputy	Print	5					5	Clean ponds or Dams that have been in place for 100 Years and work if county would clean them out
3/31/2020	Robert Hastings	Print	4	3	2	5	2	5	Replenishing the Mesilla Bolson
3/31/2020	Anonymous	Print	2	3	4	5	1		
3/31/2020	Anonymous	Print	1	4	1	1	4		
3/31/2020	Anonymous	Print	3	4	2	5	1		
3/31/2020	Rosie Lack	Print	5						
3/31/2020	Anonymous	Print							
3/31/2020	Hollis Train	Print							
3/31/2020	Anonymous	Print	4	3	3	5	5		
3/31/2020	Betty Russell	Print	5	5	1				
3/31/2020	Anonymous	Print	5	5	1	4	3		
3/31/2020	Abel Hinojosa	Print	5	5	5	5	5		

3/31/2020	Robert Anderson	Print	3	5	2	2	2		
3/31/2020	Anonymous	Print	5	5	2	4	3		
3/31/2020	Anonymous	Print	4	4	2	3	4		
3/31/2020	Rodolfo Santini	Print	2	1	2	3	2		
3/31/2020	Stephanie Medoff	Print	5	5	3	5	5		
3/31/2020	John Pinkerton	Print							
3/31/2020	Anonymous	Print	5	5	3	5	4		
4/1/2020	Roy Willoughby	24276	4	5	3		3		
4/1/2020	Jeffery Smith	Print	1	2	4	3	5		
4/6/2020	The Bennys	Print	2	3	5	1	4		
4/6/2020	Raymundo & Patricia Heredia	Print							
4/6/2020	Robert Cline	Print	5	5	5	5	5		
4/6/2020	Rm. Alvarez Stutts	Print							
4/6/2020	Sam Motts	Print	2	1	4	5	3		
4/6/2020	Delfarro	Print							
4/6/2020	Anonymous	Print	5	3	2	4	1		
4/6/2020	Arturo Alvarado	Print	2	3	4	5	2		
4/6/2020	Anonymous	Print							
4/6/2020	Caroline Wozniak	Print	4	4	3	5	3		
4/6/2020	John & Judy Harris	Print	3						
4/6/2020	Jose Sanchez	24353	3	4	4	3	4		
4/6/2020	Anonymous	Print	1	3	5	2	4		
4/6/2020	Anonymous	Print	3	4	3	4	2		
4/6/2020	Anonymous	Print							

4/7/2020	Anonymous	24379	4	3	3	5	4		
4/8/2020	Anonymous	24393	4	3	3	4	3		
4/9/2020	Filippo Rimi	Print	5	2	2	3	3		
4/10/2020	Robert Otero	Print	1	1	1	1	1		
4/10/2020	Anonymous	Print	5	3	5	2	3		
4/10/2020	Rosario Montes-Arena	Print	2	4		3	1		
4/10/2020	Anonymous	Print	2	2	3	2	5		
4/10/2020	Anonymous	Print	5	5	2	3	3		
4/10/2020	Dennis Sandoval	Print	5	5	5	5	5		
4/10/2020	Jerry & Martha Stevens	Print						5	Lower Dona Ana should not begiven to El Paso EBID - No maintenance
4/10/2020	Lonnie Moore & Carolyn Moore	Print	5	5	3	2	2		
4/10/2020	Ralph Parsons	Print	5	4	3	2	1		
4/10/2020	Marcia Williams & Jerome Walker	Print				5	4	5	Prevention of hacking and other cyber threats to critical infrastructure such as the dams
4/10/2020	Anonymous	Print	4	2	5	3	1		
4/10/2020	Anonymous	Print	4	4	5	5	5	5	Plan review w/ drainage easements, protocol & Building pad sites above adjacent grade.
4/10/2020	Anonymous	Print	2	3	4	5	1		
4/10/2020	Anonymous	Print	5		5				
4/10/2020	Diana Howard	Print	5	4	2	3	1		
4/10/2020	L. M. Zornes	Print							
4/10/2020	Anonymous	Print	5	3	5	5	5		
4/10/2020	Anonymous	Print	3	4	2	1	5		

4/10/2020	Robert & Bonnie Murphy	Print	4	5	3	4	4		
4/10/2020	San Shields	Print	5	4	2	3	1		
4/10/2020	Michael Francis	Print	3	2	2	4	4		
4/12/2020	Anonymous	24446							
4/12/2020	Scott Bailey	Print	5	4	1	2	3		
4/16/2020	Joshua Mort	24513	1	4	2	3	3		
4/21/2020	Richard Arzabal	Print	5	5	5	5	5		
4/21/2020	Anonymous	Print					5		Get professional engineer certified in soil absorption to calculate change to water flood charts due to development
4/21/2020	Smokey Blanton	Print	5	3	2	1	3		
4/30/2020	Leticia Mora	Print	1	3	5	2	4		
5/4/2020	Franz Rueckner	24799	4	5	4	4	2		
5/5/2020	Anonymous	24843	5	4	2	1	1		
5/6/2020	Harry Palmer	24870	5	4	4	3	3		
5/7/2020	Eduardo Rey Flores	Print	5	3	4	2	1		
5/7/2020	Steven Patterson	Print							
5/7/2020	Anonymous	Print	5	4	4	5	5		
5/7/2020	Joan Woodward	Print	5	5	5	5	5	5	Improve coordination with IBWC for better wildfire threat response (eg - crack down on trespassing in the river corridor, reducing runaway campfiire threat")
5/7/2020	Anonymous	24890	5	4	3	3	3	2	

5/26/2020	Martha Valdez	25198	2	3	4	4	5		
5/26/2020	Jim Higdon	Print	1	4	2	3	5		
5/26/2020	Les Williamson	Print	3	4	3	4	3		
6/9/2020	Sherwin Wang	Print	5	4	1	2	3		
6/18/2020	Celia Aldaz Garza	Print	5	5	5	5	5		
6/18/2020	Mike & Diane Datton	Print	5	5	3	1	1		
6/18/2020	Anonymous	Print	2	1	3	4		5	Bury drains beneath East-West streets
6/18/2020	Anonymous	Print	5	4	1	2	3		
6/18/2020	Anonymous	Print	3	2	5	1	1		
6/18/2020	Anonymous	25624	5	3	1	4	2		

Favorability	Structure/Infrastructure Improvements	Critical Facilities Upgrades	Public Education and Outreach	Environmental Protection of Natural Buffers	Regulatory Standards & Strategic Plans	Other
5	43	26	23	30	26	8
4	15	31	16	13	18	0
3	17	23	25	18	23	0
2	14	8	19	18	11	1
1	11	6	13	14	19	0
No Response	15	21	19	22	18	106
Total	115	115	115	115	115	115

Submission By	Survey ID	7) What is the most effective way for you to receive information about how to protect your family and prepare your home for hazard events?						
		TV	Radio	Website	Mail	Public Meeting/ Workshops	Social Media	Email
Anonymous	24193	3	5	2	4		1	
Anonymous	24204	5	3	3	5	2	2	
Colbert Coldwell	Print	4	3		1	5	2	
Anonymous	24215	3	2		5	4	1	
Anonymous	24221	3	4	3	2	5	1	
Sam Calhoun	Print	5	4	2	1	3	5	
Kevin Farrah	Print	1	2	5	4	3	1	3
Mario Tellez	24224	3	3	5	5	3	1	
Anonymous	24225	3	4	2	1	2	1	
Melinda Whitley	24231	3	1	3	3	1	1	
Eduardo Gutierrez	Print	2	1	3			4	5
Aaron Chavarria	24245	3	2	5	1		4	
Peter Stanslow	Print				5			5
R. Cereceres	24256	5	5	5	5			
Keith Deputy	Print							
Robert Hastings	Print	1	5	2	5	1	1	5
Anonymous	Print	5	3	1	4	2	1	2
Anonymous	Print	1	1	3	2	4	1	5
Anonymous	Print		5	4	2	1		3
Rosie Lack	Print	5						5
Anonymous	Print	1	5	4		3	2	5
Hollis Train	Print	5	4	3	1			2

Anonymous	Print	3	3	3	5	2	3	4
Betty Russell	Print	5	5	1	5	1		5
Anonymous	Print	5	5	4	5	3	3	3
Abel Hinojosa	Print	5	5	1	1	3	5	5
Robert Anderson	Print	3	3	1	1	1	2	4
Anonymous	Print	3	2	3	4	1	1	5
Anonymous	Print	1	2	2	1	4	4	2
Rodolfo Santini	Print							5
Stephanie Medoff	Print	5	5	1	5	1	1	3
John Pinkerton	Print	4		2		1	3	5
Anonymous	Print	1	2	4	1	3	4	1
Roy Willoughby	24276	3	1	4		3	3	
Jeffery Smith	Print			1	2			3
The Bennys	Print	5		5	5			
Raymundo & Patricia Heredia	Print	5	5					
Robert Cline	Print				5			5
Rm. Alvarez Stutts	Print		5					
Sam Motts	Print	5	4	1	3	1	1	2
Delfarro	Print							
Anonymous	Print	3	1		4	2		5
Arturo Alvarado	Print	5	4	3	4	4	4	2
Anonymous	Print	2	1	3	2	1	5	5
Caroline Wozniak	Print	5	5	3	5	3	3	2
John & Judy Harris	Print	5			5			
Jose Sanchez	24353	1	1	5	3	3	5	
Anonymous	Print	1	2	3	4	5	5	5
Anonymous	Print	2	1	3	5	1	4	5
Anonymous	Print	1	1	1	5	1	1	1

Anonymous	24379	4	5	2	4	2	1	
Anonymous	24393							
Filippo Rimi	Print	1	2	3	3	1	2	4
Robert Otero	Print	5	5	5	1	5	5	5
Anonymous	Print	5	5	3	4	3	3	4
Rosario Montes-Arena	Print					5		5
Anonymous	Print	1	1	1	1	1	5	1
Anonymous	Print	2	1	4	5	1	3	3
Dennis Sandoval	Print	5	5	5	5			5
Jerry & Martha Stevens	Print	5	1	1	4	1	1	1
Lonnie Moore & Carolyn Moore	Print	5	5	3	4	2	1	3
Ralph Parsons	Print	4	1	1	2	3	5	5
Marcia Williams & Jerome Walker	Print							5
Anonymous	Print		2	3	1		4	5
Anonymous	Print	5	5	5	4	5	2	
Anonymous	Print	5	1		4	3		2
Anonymous	Print	5	5		5			
Diana Howard	Print	3	4	1	2	5		
L. M. Zornes	Print	5	5	3	5	1	1	2
Anonymous	Print	5	5	1	4	5	1	3
Anonymous	Print	4	5	3	2		1	
Robert & Bonnie Murphy	Print	5	3	3	3	3	5	5
San Shields	Print							5
Michael Francis	Print	3	3	4	5	3	2	5
Anonymous	24446	5						
Scott Bailey	Print		1	3	5	2		4

Joshua Mort	24513	3	4	1	3	4	3	
Richard Arzabal	Print	5	5	5	5	2	5	5
Anonymous	Print				5			
Smokey Blanton	Print	3	2		5	2		
Leticia Mora	Print	2	4		1	3	5	
Franz Rueckner	24799	4	4	5	5	2	5	
Anonymous	24843	1	1	1	3	1	4	
Harry Palmer	24870	5	4	3	4	2	4	
Eduardo Rey Flores	Print	4	1	5	3			2
Steven Patterson	Print	3	1	2	4			5
Anonymous	Print	5	5	1	5	2	1	5
Joan Woodward	Print	1	4	3	5	5	3	5
Anonymous	24890	5	2	4	4	3	5	
Martha Valdez	25198	3	2	4	5	5	2	
Jim Higdon	Print	4	4	2	3	5		1
Les Williamson	Print	5	4	2	4	4	2	2
Sherwin Wang	Print	1	1	4	2	3	1	5
Celia Aldaz Garza	Print	1	1	5	5	5	1	5
Mike & Diane Datton	Print	1	1	1	5	1		1
Anonymous	Print	4	3		5		1	2
Anonymous	Print	5	5	5	5	2	3	5
Anonymous	Print	5	4	3	3	3	5	3
Anonymous	25624	4	3	5	4	1	2	

Favorability	TV	Radio	Website	Mail	Public Meeting/ Workshops	Social Media	Email
5	39	26	19	36	14	21	32
4	14	17	14	19	8	10	5
3	19	11	29	12	21	15	9
2	7	15	11	13	19	10	11
1	19	28	17	17	23	26	6
No Response	17	18	25	18	30	33	52
Total	115	115	115	115	115	115	115

Submission Date	Submission By	Survey ID	8) What else do you think we should know?
3/25/2020	Anonymous	24172	N/A
3/25/2020	Anonymous	24173	"I think you're doing a great job! Thank you!!!"
3/25/2020	Anonymous	24174	"Construction Dust"
3/25/2020	Anonymous	24176	N/A
3/25/2020	M Caldarella	24177	N/A
3/25/2020	Anonymous	24179	N/A
3/25/2020	Anonymous	24182	"Air quality due to diesel exhaust from farm equipment and semi trucks"
3/25/2020	Anonymous	24183	"Improve Contracting processes, go to a pay for performance pay scale for county workers"
3/25/2020	Anonymous	24184	N/A
3/26/2020	Tom Phillips	24185	"keep the needs of small farms, hobby farms, and rural neighborhoods in mind"
3/26/2020	Joe Chavez	24186	"Trends for the future, especially with changes due to influx of retirees."
3/26/2020	Anonymous	24187	N/A
3/26/2020	Anonymous	24188	N/A
3/26/2020	Donald Word	24189	"quit fighting w/ Texas"
3/26/2020	Anonymous	24190	N/A
3/26/2020	Anonymous	24191	"More exposure to the public on Storm Water Coalition purpose and projects"
3/26/2020	Anonymous	24193	N/A
3/27/2020	Anonymous	24204	N/A
3/27/2020	Colbert Coldwell	Print	N/A
3/27/2020	Anonymous	24215	N/A
3/27/2020	Anonymous	24221	N/A
3/27/2020	Sam Calhoun	Print	N/A
3/28/2020	Kevin Farrah	Print	N/A
3/28/2020	Mario Tellez	24224	N/A

3/29/2020	Anonymous	24225	N/A
3/30/2020	Melinda Whitley	24231	N/A
3/30/2020	Eduardo Gutierrez	Print	"Gas line pipeline hazard mitigation"
3/30/2020	Aaron Chavarria	24245	N/A
3/30/2020	Peter Stanslow	Print	N/A
3/31/2020	R. Cereceres	24256	N/A
3/31/2020	Keith Deputy	Print	"Clean ponds out!! To protect property!!"
3/31/2020	Robert Hastings	Print	"We face water shortages. Our water (city) comes from the Mesilla Bolson. That Bolson needs to be recharged, instead of continually drained. Water laws need revision so that pumping is not unlimited. It is a resource as finite as Elephant Butte Reservoir.
3/31/2020	Anonymous	Print	N/A
3/31/2020	Anonymous	Print	N/A
3/31/2020	Anonymous	Print	N/A
3/31/2020	Rosie Lack	Print	N/A
3/31/2020	Anonymous	Print	N/A
3/31/2020	Hollis Train	Print	N/A
3/31/2020	Anonymous	Print	"Monitor and report groundwater level to public. Stop over pumping of ground water. Cap/limit additional water intensive crops such as pecan trees."
3/31/2020	Betty Russell	Print	"There is no cooperation between BLM monument etc and private farmland. My farm in Hatch was flooded 2 years ago due to an arroyo that originates on BLM Land- I lost the whole crop."
3/31/2020	Anonymous	Print	"Railroad and interstate accidents involving hazardous materials."
3/31/2020	Abel Hinojosa	Print	"Flooding"
3/31/2020	Robert Anderson	Print	"Need to tax all property with government flood protection not just those on EBID rights. Need to get volunteer fire departments paper work in order and recruit as public service with social benefits."
3/31/2020	Anonymous	Print	N/A
3/31/2020	Anonymous	Print	N/A
3/31/2020	Rodolfo Santini	Print	"Pray for more water in Elephant Butte."

3/31/2020	Stephanie Medoff	Print	"you should know that my opinions on Page 1 are basically uneducated!"
3/31/2020	John Pinkerton	Print	"The re-routing of arroyos by individuals which I understand is illegal but still occurs even with notice to the proper authorities in particular upper Sandy Crock Road? La Union"
3/31/2020	Anonymous	Print	N/A
4/1/2020	Roy Willoughby	24276	
4/1/2020	Jeffery Smith	Print	
4/6/2020	The Bennys	Print	"Keep the drainage ditches and arroyos cleaned off please"
4/6/2020	Raymundo & Patricia Heredia	Print	
4/6/2020	Robert Cline	Print	"People need to clean ditches and maintain them better"
4/6/2020	Rm. Alvarez Stutts	Print	"Gary Esslinger: In the past year, my young brother, Isidro Alvarez II on purpose floods my property, the site of our house At least 3 times; Flooded my 23 acres on purpose! Broke the border!"
4/6/2020	Sam Motts	Print	
4/6/2020	Delfarro	Print	
4/6/2020	Anonymous	Print	"Continued County improvement in flood zones ie. Bridges over arroyos, maintenance of levees."
4/6/2020	Arturo Alvarado	Print	"Most important to know how to deal with enviornmental disasters that have plague many communities & Farmers in the Berino, El Bosque areas for so many years."
4/6/2020	Anonymous	Print	
4/6/2020	Caroline Wozniak	Print	"I am near the levee and the government has not planted fire prevention plants, it has gone to dry tumble weed if it catches fire the whole neighborhood will go due to propane fuel tank for heating. Terrible fire hazard."
4/6/2020	John & Judy Harris	Print	
4/6/2020	Jose Sanchez	24353	"Make yourselves known to the community and what it is that you do."
4/6/2020	Anonymous	Print	
4/6/2020	Anonymous	Print	
4/6/2020	Anonymous	Print	
4/7/2020	Anonymous	24379	
4/8/2020	Anonymous	24393	

4/9/2020	Filippo Rimi	Print	
4/10/2020	Robert Otero	Print	"We have a very bad problem with drugs, crack cocaine, black tar heroin, Dope! As do other states. I am ?? With the Dona Ana Sheriffs Dept. I have turned in 18 areas to stop this problem. We are all in state of emergency."
4/10/2020	Anonymous	Print	
4/10/2020	Rosario Montes-Arena	Print	"Empty lots get lots of weeds, trash etc. that could be a fire hazard. I can't tell that there is enforcement to clean up periodically"
4/10/2020	Anonymous	Print	"Have a plan. Have a plan you can implement. Don't add more government intrusions on business and individuals"
4/10/2020	Anonymous	Print	
4/10/2020	Dennis Sandoval	Print	
4/10/2020	Jerry & Martha Stevens	Print	"Fill in the canal along North Vinton, the bank side caves in and no one cares. Sometimes we can't drive to our homes because of the rain washing away the banks."
4/10/2020	Lonnie Moore & Carolyn Moore	Print	"Border Contrl. Dope Control"
4/10/2020	Ralph Parsons	Print	"Prohibit boating activity close to the dam. Keep trucks with encolsed beds off the dam and away from its base. Put a watch tower and/or surveillance camera above the dam."
4/10/2020	Marcia Williams & Jerome Walker	Print	
4/10/2020	Anonymous	Print	
4/10/2020	Anonymous	Print	"Priority should be on public outreach and education; CRS program is very important for multiple reasons."
4/10/2020	Anonymous	Print	"Flood potential on W. Boutz Rd. due to poor design of Stern Dr./Boutz intersection"
4/10/2020	Anonymous	Print	"Due to wind storms, land is pretty dry, would appreciate more water rights than just per year, 1/2 all is pecan trees are not producing due to lack of water could be dangerous and fire hazard."
4/10/2020	Diana Howard	Print	"When is someone going to dredge the Rio Grande; since before 1999, it has been silting up and when we get floods it will overflow and probably change course. Since 1999 it has probably lost 4" depth - now has islands"
4/10/2020	L. M. Zornes	Print	"Feral animals are proliferating and creating ripe environments for rabies/plague epidemias."
4/10/2020	Anonymous	Print	
4/10/2020	Anonymous	Print	"Continue to improve quality of secondary roads (rural)"
4/10/2020	Robert & Bonnie Murphy	Print	"Mosquito & gnat abatement - in seasons when the gnats are extreme is there any type of abatement program available?"
4/10/2020	San Shields	Print	"Electronic alerts via phone & radio help the most. Not so sure about the volunteer fire dept. in Mesilla NM"

4/10/2020	Michael Francis	Print	"Need to do more weed and rodent control on ditches to prevent flooding."
4/12/2020	Anonymous	24446	
4/12/2020	Scott Bailey	Print	
4/16/2020	Joshua Mort	24513	"You should really have surveyors survey the land before someone just colors in what will flood"
4/21/2020	Richard Arzabal	Print	
4/21/2020	Anonymous	Print	"Your current way of calculating flood water is not correct - if it was, Columbia would not have flooded twice. And house 1 block away would not have flooded."
4/21/2020	Smokey Blanton	Print	
4/30/2020	Leticia Mora	Print	
5/4/2020	Franz Rueckner	24799	
5/5/2020	Anonymous	24843	"The economic impact to small/medium sized business in NM by anti-business legislators is the greatest threat to Dona Ana County, reducing tax revenue, and further impoverishing the poorest in our community."
5/6/2020	Harry Palmer	24870	"Challenge of enforing speed limits on EBID levees & ditches. Too many riders run wide open down these irrigaiton roads causing hazards to farmers, walkers and farm equipment."
5/7/2020	Eduardo Rey Flores	Print	"Flood - Placitas Arroyo Spring Canyon"
5/7/2020	Steven Patterson	Print	
5/7/2020	Anonymous	Print	"Lack of water and water conservation projects need more attention seasonal mosquito control/bee (for pollination) increase projects, farming labor shortages"
5/7/2020	Joan Woodward	Print	"The lack of river corridor patrol/ clear law enforcement jurisdiction and funding increases floodplain fire threat. Require stormwater detention ponds are compromised by poor management on private lands, Maintenance incentives are needed."
5/7/2020	Anonymous	24890	
5/26/2020	Martha Valdez	25198	
5/26/2020	Jim Higdon	Print	"Evacuation Public Plan for the valley in case of flood"
5/26/2020	Les Williamson	Print	
6/9/2020	Sherwin Wang	Print	"Concrete irrigation canals will improve efficiency. Help landowners resolve land lock issues."
6/18/2020	Celia Aldaz Garza	Print	"Dona Ana needs water for irrigation"

6/18/2020	Mike & Diane Datton	Print	"Dams and arroyos need to be cleaned out and diverted to the drain systems. Check trash dumping in Mesas and Sand hills"
6/18/2020	Anonymous	Print	"Install curb side drains above the valley floor. Bury large drains beneath critical East-West roads. Dig more ponding areas"
6/18/2020	Anonymous	Print	"Many catwalks on checks on my ditch need structural repair, this may not cause flooding but the check and catwalk may fail"
6/18/2020	Anonymous	Print	
6/18/2020	Anonymous	25624	

Submission Date	Submission By	Survey ID	9) Do you want to be notified of upcoming mitigation public events		
			Name	Email	Phone
3/25/2020	Anonymous	24172	N/A	N/A	N/A
3/25/2020	Anonymous	24173	N/A	N/A	N/A
3/25/2020	Anonymous	24174	N/A	N/A	N/A
3/25/2020	Anonymous	24176	N/A	N/A	N/A
3/25/2020	M Caldarella	24177	M Caldarella	mickeycaldarella@gmail.com	N/A
3/25/2020	Anonymous	24179	N/A	N/A	N/A
3/25/2020	Anonymous	24182	N/A	N/A	N/A
3/25/2020	Anonymous	24183	N/A	N/A	N/A
3/25/2020	Anonymous	24184	N/A	N/A	N/A
3/26/2020	Tom Phillips	24185	Tom Phillips	twinpine25@yahoo.com	575-644-5216
3/26/2020	Joe Chavez	24186	Joe Chavez	zchavez@comcast.net	575-523-6925
3/26/2020	Anonymous	24187	N/A	N/A	N/A
3/26/2020	Anonymous	24188	N/A	chcogomez@aol.com	N/A
3/26/2020	Donald Word	24189	Donald Word	pilotword@gmail.com	915-637-4400
3/26/2020	Anonymous	24190	N/A	N/A	N/A
3/26/2020	Anonymous	24191	N/A	N/A	N/A
3/26/2020	Anonymous	24193	N/A	N/A	N/A
3/27/2020	Anonymous	24204	N/A	N/A	N/A
3/27/2020	Colbert Coldwell	Print	Colbert Coldwell	cncoldwell@elp.rr.com	915-479-0498
3/27/2020	Anonymous	24215	N/A	N/A	N/A
3/27/2020	Anonymous	24221	N/A	f.ernest31@yahoo.com	N/A
3/27/2020	Sam Calhoun	Print	Sam Calhoun	calhounsfarm@gmail.com	915-525-8850
3/28/2020	Kevin Farrah	Print	Kevin Farrah	farsidest@aol.com	N/A
3/28/2020	Mario Tellez	24224	Mario Tellez	mtellez@nmsu.edu	575-932-9595

3/29/2020	Anonymous	24225	N/A	N/A	N/A
3/30/2020	Melinda Whitley	24231	Melinda Whitley	whitleyms@gmail.com	575-993-8496
3/30/2020	Eduardo Gutierrez	Print	Ed Gutierrez	N/A	915-490-3381
3/30/2020	Aaron Chavarria	24245	Aaron Chavarria	aaron.chavarria@state.nm.us	575-6804
3/30/2020	Peter Stanslow	Print	Peter Stanslow	p.j.stanslow@gmail.com	915-238-0092
3/31/2020	R. Cereceres	24256	R. Cereceres	pcereceres@msn.com	575-525-8493
3/31/2020	Keith Deputy	Print	Keith Deputy	altennis21@hotmail.com	915-494-8100
3/31/2020	Robert Hastings	Print	Robert Hastings	RNHastings@zianet.com	575-541-5744
3/31/2020	Anonymous	Print	N/A	N/A	N/A
3/31/2020	Anonymous	Print	N/A	N/A	N/A
3/31/2020	Anonymous	Print	N/A	N/A	N/A
3/31/2020	Rosie Lack	Print	Rosie Lack	rosie@lackfarms.com	575-649-4751
3/31/2020	Anonymous	Print	N/A	N/A	N/A
3/31/2020	Hollis Train	Print	Hollis Train	hollistrain@gmail.com	575-649-6894
3/31/2020	Anonymous	Print	N/A	N/A	N/A
3/31/2020	Betty Russell	Print	Betty Russell	russellbetty70@gmail.com	575-680-4904
3/31/2020	Anonymous	Print	N/A	N/A	N/A
3/31/2020	Abel Hinojosa	Print	Abel Hinojosa	83c20chevy@gmail.com	575-652-2381
3/31/2020	Robert Anderson	Print	Robert Anderson	aec_bob@msn.com	N/A
3/31/2020	Anonymous	Print	N/A	N/A	N/A
3/31/2020	Anonymous	Print	N/A	N/A	N/A
3/31/2020	Rodolfo Santini	Print	Rodolfo Santini	rsantini1@elp.rr.com	N/A
3/31/2020	Stephanie Medoff	Print	Stepanie Medoff	N/A	N/A
3/31/2020	John Pinkerton	Print	John Pinkerton	pinkyfarms@gmail.com	N/A
3/31/2020	Anonymous	Print	N/A	N/A	N/A

4/1/2020	Roy Willoughby	24276	Roy Willoughby	rswillowbee@comcast.net	575-524-9395
4/1/2020	Jeffery Smith	Print	Jeffery Smith	kaladan@zianet.com	575-343-2834
4/6/2020	The Bennys	Print	N/A	N/A	N/A
4/6/2020	Raymundo & Patricia Heredia	Print	N/A	N/A	N/A
4/6/2020	Robert Cline	Print	Robert Cline	robtomcl@gmail.com	505-290-2930
4/6/2020	Rm. Alvarez Stutts	Print	N/A	N/A	N/A
4/6/2020	Sam Motts	Print	N/A	N/A	N/A
4/6/2020	Delfarro	Print	N/A	N/A	N/A
4/6/2020	Anonymous	Print	N/A	N/A	N/A
4/6/2020	Arturo Alvarado	Print	Arturo Alvarado	arturoalvardo4985@gmail.com	575-618-0124
4/6/2020	Anonymous	Print	N/A	N/A	N/A
4/6/2020	Caroline Wozniak	Print	Caroline Wozniak	N/A	575-647-5849
4/6/2020	John & Judy Harris	Print	John & Judy Harris	judy@quinoneshomes.com	575-640-5535
4/6/2020	Jose Sanchez	24353	Jose Sanchez	josan1919@gmail.com	575-650-6585
4/6/2020	Anonymous	Print	N/A	N/A	N/A
4/6/2020	Anonymous	Print	N/A	N/A	N/A
4/6/2020	Anonymous	Print	N/A	N/A	N/A
4/7/2020	Anonymous	24379	N/A	N/A	N/A
4/8/2020	Anonymous	24393	N/A	N/A	N/A
4/9/2020	Filippo Rimi	Print	N/A	N/A	N/A
4/10/2020	Robert Otero	Print	N/A	N/A	N/A
4/10/2020	Anonymous	Print	N/A	N/A	N/A
4/10/2020	Rosario Montes-Arena	Print	Rosario Montes-Arena	rosariomonare@comcast.net	N/A
4/10/2020	Anonymous	Print	N/A	N/A	N/A

4/10/2020	Anonymous	Print	N/A	N/A	N/A
4/10/2020	Dennis Sandoval	Print	Dennis Sandoval	sandovaldennis@yahoo.com	575-312-7755
4/10/2020	Jerry & Martha Stevens	Print	Jerry & Martha Stevens	N/A	575-649-0987
4/10/2020	Lonnie Moore & Carolyn Moore	Print	Lonnie Moore & Carolyn Moore	carmoorenm@yahoo.com	575-524-0671
4/10/2020	Ralph Parsons	Print	N/A	N/A	N/A
4/10/2020	Marcia Williams & Jerome Walker	Print	Marcia Williams & Jerome Walker	marcia.e.williams@protonmail.com	406-210-5376
4/10/2020	Anonymous	Print	N/A	N/A	N/A
4/10/2020	Anonymous	Print	N/A	ovfierro8998@yahoo.com	N/A
4/10/2020	Anonymous	Print	N/A	N/A	N/A
4/10/2020	Anonymous	Print	N/A	N/A	N/A
4/10/2020	Diana Howard	Print	Diana Howard	frostyceres@q.com	575-649-4266
4/10/2020	L. M. Zornes	Print	L. M. Lornes	lmzornes@comcast.net	575-639-1579
4/10/2020	Anonymous	Print	N/A	N/A	N/A
4/10/2020	Anonymous	Print	N/A	N/A	N/A
4/10/2020	Robert & Bonnie Murphy	Print	Robert & Bonnie Murphy	murphy1motel@yahoo.com	N/A
4/10/2020	San Shields	Print	San Shields	sanshields@yahoo.com	575-202-2516
4/10/2020	Michael Francis	Print	Michael Francis	mfrancis51@hotmail.com	575-644-8132
4/12/2020	Anonymous	24446	N/A	N/A	N/A
4/12/2020	Scott Bailey	Print	Scott Bailey	scott.bailey@farmcreditnm.com	575-649-7627
4/16/2020	Joshua Mort	24513	Joshua Mort	Joshua.william.m@gmail.com	N/A
4/21/2020	Richard Arzabal	Print	N/A	N/A	N/A
4/21/2020	Anonymous	Print	N/A	N/A	N/A

4/21/2020	Smokey Blanton	Print	N/A	N/A	N/A
4/30/2020	Leticia Mora	Print	Leticia Mora	lettyomora88@gmail.com	915-491-4475
5/4/2020	Franz Rueckner	24799	Franz Rueckner	franzrueckner@gmail.com	N/A
5/5/2020	Anonymous	24843	N/A	N/A	N/A
5/6/2020	Harry Palmer	24870	Harry Palmer	nmcamper24@gmail.com	575-524-4311
5/7/2020	Eduardo Rey Flores	Print	Eduardo Rey Flores	N/A	575-267-4152
5/7/2020	Steven Patterson	Print	Steven Patterson	pattersonsteve52@gmail.com	575-571-9829
5/7/2020	Anonymous	Print	N/A	N/A	N/A
5/7/2020	Joan Woodward	Print	Joan Woodward	jhirschman@cpp.edu	N/A
5/7/2020	Anonymous	24890	N/A	N/A	N/A
5/26/2020	Martha Valdez	25198	Martha Valdez	yolandav885@gmail.com	N/A
5/26/2020	Jim Higdon	Print	Jim Higdon	jimrhigdon@earthlink.net	N/A
5/26/2020	Les Williamson	Print	Les Williamson	les.williamson@yahoo.com	575-202-1057
6/9/2020	Sherwin Wang	Print	Sherwin Wang	wsy8168@outlook.com	575-502-0548
6/18/2020	Celia Aldaz Garza	Print	Celia Aldaz Garza	celiag524@gmail.com	915-888-0844
6/18/2020	Mike & Diane Datton	Print	Mike & Diane Datton	ddutton99@yahoo.com	575-997-5589
6/18/2020	Anonymous	Print	N/A	N/A	N/A
6/18/2020	Anonymous	Print	N/A	N/A	N/A
6/18/2020	Anonymous	Print	N/A	N/A	N/A
6/18/2020	Anonymous		N/A	N/A	N/A

Submission Date	Submission By	Survey ID	10) Do you have any additional comments?
3/25/2020	Anonymous	24172	N/A
3/25/2020	Anonymous	24173	N/A
3/25/2020	Anonymous	24174	"Thanks for asking! DAC flood Commission doing great work!"
3/25/2020	Anonymous	24176	N/A
3/25/2020	M Caldarella	24177	N/A
3/25/2020	Anonymous	24179	N/A
3/25/2020	Anonymous	24182	N/A
3/25/2020	Anonymous	24183	N/A
3/25/2020	Anonymous	24184	N/A
3/26/2020	Tom Phillips	24185	"Yes, I couldn't note in question 7 above, but my most favorite way to receive information is thru email (that option didn't show on this online version)"
3/26/2020	Joe Chavez	24186	N/A
3/26/2020	Anonymous	24187	N/A
3/26/2020	Anonymous	24188	N/A
3/26/2020	Donald Word	24189	N/A
3/26/2020	Anonymous	24190	N/A
3/26/2020	Anonymous	24191	N/A
3/26/2020	Anonymous	24193	N/A
3/27/2020	Anonymous	24204	"Great effort in doing this survey!"
3/27/2020	Colbert Coldwell	Print	N/A
3/27/2020	Anonymous	24215	N/A
3/27/2020	Anonymous	24221	N/A
3/27/2020	Sam Calhoun	Print	"Glad you are sending survey out!"
3/28/2020	Kevin Farrah	Print	N/A

3/28/2020	Mario Tellez	24224	N/A
3/29/2020	Anonymous	24225	N/A
3/30/2020	Melinda Whitley	24231	N/A
3/30/2020	Eduardo Gutierrez	Print	N/A
3/30/2020	Aaron Chavarria	24245	N/A
3/30/2020	Peter Stanslow	Print	N/A
3/31/2020	R. Cereceres	24256	N/A
3/31/2020	Keith Deputy	Print	"Stop talking and meeting!! Do something!! Act!! Too much talking and no doing, Do Something!! Santa Teresa Airport - No or little catching of runoff water!! Pond protecting town of La Union for 100 Years - Clean it out!! Heard youre going to tear down Gardner Dam?? Where's that water going?? It works just fix it!! Common Sense!!"
3/31/2020	Robert Hastings	Print	"Having to carry flood insurance (because of my mortgage) is an unnecessary expense in a land of perpetual drought."
3/31/2020	Anonymous	Print	N/A
3/31/2020	Anonymous	Print	N/A
3/31/2020	Anonymous	Print	N/A
3/31/2020	Rosie Lack	Print	N/A
3/31/2020	Anonymous	Print	N/A
3/31/2020	Hollis Train	Print	N/A
3/31/2020	Anonymous	Print	N/A
3/31/2020	Betty Russell	Print	"Most dams are full of silt - A danger to everyone - city and farm."
3/31/2020	Anonymous	Print	N/A
3/31/2020	Abel Hinojosa	Print	N/A
3/31/2020	Robert Anderson	Print	"Need to improve zoning in floodplains."
3/31/2020	Anonymous	Print	N/A
3/31/2020	Anonymous	Print	N/A
3/31/2020	Rodolfo Santini	Print	N/A
3/31/2020	Stephanie Medoff	Print	"I trust you all to do the best you can on behalf of our community. Thank you."

3/31/2020	John Pinkerton	Print	N/A
3/31/2020	Anonymous	Print	N/A
4/1/2020	Roy Willoughby	24276	
4/1/2020	Jeffery Smith	Print	
4/6/2020	The Bennys	Print	"Thank you! Good luck to Michael and the rest of the commission and crew! Be the heroes!"
4/6/2020	Raymundo & Patricia Heredia	Print	
4/6/2020	Robert Cline	Print	
4/6/2020	Rm. Alvarez Stutts	Print	"I am related to Dosie Alvarez from La Union, perhaps your neighbor. (My fathers relative)"
4/6/2020	Sam Motts	Print	
4/6/2020	Delfarro	Print	
4/6/2020	Anonymous	Print	
4/6/2020	Arturo Alvarado	Print	"Berino has asbestos that tested pos high levels of which drains into sewage system and later released into Rio Grande. Fuel ine rupture on Three Saints Rd. that has contaminated underground water. I have lab results."
4/6/2020	Anonymous	Print	
4/6/2020	Caroline Wozniak	Print	"The Rio Grande is without water a long period each year. During dry spells it becomes a playground for terrain wheeled and growth of unwanted weeds. I would suggest a functional use during day periods and clean up of unwanted growth. The Rio Grande can be beautiful with care."
4/6/2020	John & Judy Harris	Print	
4/6/2020	Jose Sanchez	24353	
4/6/2020	Anonymous	Print	
4/6/2020	Anonymous	Print	
4/6/2020	Anonymous	Print	
4/7/2020	Anonymous	24379	
4/8/2020	Anonymous	24393	
4/9/2020	Filippo Rimi	Print	
4/10/2020	Robert Otero	Print	"All Ok - There is a great Mesilla Valley, lets keep it that way"
4/10/2020	Anonymous	Print	

4/10/2020	Rosario Montes-Arena	Print	"Thank you for all the services to date!"
4/10/2020	Anonymous	Print	"Personal responsibility; if you live in a floodplain build your house above 24", if you live in the dense woods, expect a fire."
4/10/2020	Anonymous	Print	
4/10/2020	Dennis Sandoval	Print	
4/10/2020	Jerry & Martha Stevens	Print	"Don't get rid of the weeds with water in the ditch, do it before there is water in the ditch. Also take all the sand out of the ditch on west side road."
4/10/2020	Lonnie Moore & Carolyn Moore	Print	"The city is one of the best run cities that I have lived in in my 83 years. The County also gets high marks."
4/10/2020	Ralph Parsons	Print	
4/10/2020	Marcia Williams & Jerome Walker	Print	"Thanks for asking"
4/10/2020	Anonymous	Print	
4/10/2020	Anonymous	Print	"Flood Commission staff (spec. CFM's) are doiing a tremendous job; continue working with surrounding communities, agency's, private utility companies, and DAC departments that can help promote floodplain management. Public Outreach and education is ~80%, of the mitigation of natural hazards as well as floodplain management principles.
4/10/2020	Anonymous	Print	
4/10/2020	Anonymous	Print	
4/10/2020	Diana Howard	Print	
4/10/2020	L. M. Zornes	Print	
4/10/2020	Anonymous	Print	
4/10/2020	Anonymous	Print	
4/10/2020	Robert & Bonnie Murphy	Print	
4/10/2020	San Shields	Print	
4/10/2020	Michael Francis	Print	
4/12/2020	Anonymous	24446	
4/12/2020	Scott Bailey	Print	
4/16/2020	Joshua Mort	24513	

4/21/2020	Richard Arzabal	Print	
4/21/2020	Anonymous	Print	"Hire people that know what they are doing to do a complete assessment of flood increase due to development!!"
4/21/2020	Smokey Blanton	Print	
4/30/2020	Leticia Mora	Print	
5/4/2020	Franz Rueckner	24799	
5/5/2020	Anonymous	24843	"Take down hurdles to business, create a pro business government environment and watch the ccommunity prosper."
5/6/2020	Harry Palmer	24870	"Overall, EBID does a good job, but over time they need to measure the sides of the ditches to ensure adequate depth is maintained so the canals don't flood or run over."
5/7/2020	Eduardo Rey Flores	Print	
5/7/2020	Steven Patterson	Print	
5/7/2020	Anonymous	Print	
5/7/2020	Joan Woodward	Print	
5/7/2020	Anonymous	24890	
5/26/2020	Martha Valdez	25198	
5/26/2020	Jim Higdon	Print	"Glad you're worrying about these things."
5/26/2020	Les Williamson	Print	
6/9/2020	Sherwin Wang	Print	
6/18/2020	Celia Aldaz Garza	Print	
6/18/2020	Mike & Diane Datton	Print	
6/18/2020	Anonymous	Print	
6/18/2020	Anonymous	Print	
6/18/2020	Anonymous	Print	
6/18/2020	Anonymous	25624	



DONA ANA COUNTY HAZARD MITIGATION PLAN 2020 UPDATE

DATE: << INSERT DATE >>

TO: Interested Agencies and Organizations Within or Near Dona Ana County

FROM: The Dona Ana County All Hazard Mitigation Planning Team

RE: Invitation of Participation

In 2011-2012, Dona Ana County, the City of Anthony, Elephant Butte Irrigation District, the Village of Hatch, the City of Las Cruces, the Town of Mesilla, New Mexico State University and the City of Sunland Park conducted a year-long, multi-hazard mitigation planning effort that resulted in the current 2013 multi- jurisdictional all hazard mitigation plan. The current plan (2013 Plan) was prepared in compliance with federal regulations set forth by the Disaster Mitigation Act of 2000 (DMA2K), which requires local, county, tribal and state governments to develop a multi-hazard mitigation plan for their respective jurisdiction in order to be eligible to receive certain hazard mitigation and public assistance funds. The 2013 Plan was submitted to the Federal Emergency Management Agency (FEMA) and approved in October 2013. The 2013 Plan is now expired as of October 2018.

Dona Ana County and the other planning jurisdictions have reconvened a planning team and have begun an effort to review and update the 2013 Plan. Each participating jurisdiction is a stakeholder in the Plan and the updated document will ultimately be resubmitted to the New Mexico Department of Homeland Security and Emergency Management (NMDHSEM) and FEMA for review and approval. Once an "Approved Pending Adoption" notice is received from FEMA, the updated plan will then be formally adopted by each jurisdiction to complete the approval process.

The goal of this mitigation planning effort is to reduce or eliminate long-term risk to life and property from natural hazard events. Mitigation is not how we respond to natural disasters like floods and wildfires, but rather how we as a community can lessen or prevent the impact of such things in the first place. The mitigation planning process involves identifying and profiling the natural hazards most likely to occur in a community, assessing vulnerability to these hazards, and establishing goals, actions, and projects that mitigate the associated risks. The development of this mitigation plan will also ensure continued eligibility on the part of the county and communities for non-emergency, federal hazard mitigation grants.

Unfortunately, the current COVID-19 pandemic and "stay-at-home" order have severally limited our planning team's ability to host and participate in physical work sessions. This being the case,

we have revised our process to incorporate telecommunications and other electronic mediums in order to move the planning process forward and achieve our goal of completing the plan draft by late 2020. This new format will still provide an opportunity for participating communities and stakeholders to provide input and review in the planning process.

As a prominent organization in or adjacent to Dona Ana County, you are invited to participate in the Hazard Mitigation Plan update process as a representative of your agency or the community at large. Public and stakeholder input on the mitigation planning process is important. Residents and community stakeholders are encouraged to educate themselves about the existing plan and offer comments on the update. The planning team will provide the public with an opportunity to review and comment the draft plan at the end of the update process.

If you are interested in participating the update process, actively or as an observer, or for questions or concerns, please contact the following:

Michael Garza – Flood Engineer

Dona Ana County Flood Commission

Email: michaelg@donaanacounty.org

Phone: 575-525-5553

If you would like to review the existing plan, you may download it from the following link:

https://www.donaanacounty.org/flood/mitigation/

Secondary Contact List

	Agency / Organization	Contact Position	Email
From Previous Plan	El Paso Electric Company	Distribution and Operations-Manager	Edward Seeley
	International Boundary and Water Commission	Engineering Department-Principal Engineer	Wayne Belzer : wayne.belzer@ibwc.gov
	La Clinica de Familia	Martin Lopez-Department/Position not provided	mlopez@lcdfnm.org
	Las Cruces Public Schools	Todd Gregory-Safety & Security/Coordinator	tgregory@lcps.k12.nm.us
		Jeff Harris-Technical Support Services/ Director	jharris@lcps.k12.nm.us

	New Mexico Commission for Deaf and Hard of Hearing	Alexis Zarret-Las Cruces Office/Assistant/Interpreter	Alexis.zarret@state.nm.us
	South Central Council of Governments	Regional Planning – Planner	Tiffany Bloom : tibloom@sccog-nm.com
	The Ability Center for Independent Living	Miguel Parra-Social Security Payee Advocate	miguelparra@theabilitycenter.org
Suggested Additional Contacts	Luna County OEM	Potential Contact: Phillip Rodriguez-Emergency Management Coordinator	emergency_managment@lunacountynm.us
	Luna County Floodplain Administrator	Potential Contact: Benny Ramon-Floodplain Administrator	benny_ramon@lunacountynm.us
	Sierra County Floodplain Administrator	Potential Contact: Travis Atwell - Flood Director	tatwell@sierraco.org
	Sierra County OEM	Potential Contact: Paul Tooley-Emergency Services Administrator	ptooley@sierraco.org
	Otero County Emergency Services/Floodplain Administrator	Potential Contact: Paul Quairoli-Emergency Services	paul.quairoli@co.otero.nm.us
	Department of Homeland Security & Emergency Management	Sara Gerlitz - Mitigation Specialist	
	NM Dam Safety Bureau	Bud Brock - Engineer	

Appendix E

Detailed Historic Hazard Documentation

Dona Ana County Historic Hazard Events
October 1956 to June 2020

Hazard	No. of Records	Recorded Losses		
		Fatalities	Injuries	Damage Costs ($)
Drought	119	0	0	$280,000
Dam Failure	0	0	0	$0
Earthquake	4	0	0	$0
Expansive Soils	0	0	0	$0
Extreme Heat/Cold	3	0	0	$585,870
Flood	85	0	1	$16,741,467
Hail	105	0	0	$17,260,743
HAZMAT Incident	43	1	34	$0
Heavy Snow	8	0	0	$0
Landslide	0	0	0	$0
Land Subsidence	0	0	0	$0
Lightning	4	0	6	$19,669
Severe Wind	197	0	3	$2,991,197
Volcanoes	0	0	0	$0
Wildfire	5	0	1	$0

Notes:
- SEVERE WIND category includes all events with damaging winds (High Wind, Tornado, Microburst, Macroburst, Gustnadoes, etc.)
- Damage Costs include property and crop/livestock losses and are reported as is with no attempt to adjust costs to current dollar values. Furthermore, wildfire damage cost do not include the cost of suppression which can be quite substantial.
- Sources: NCDC, NWCG, NWS, USFS, DAC, NMDHSEM

Date	Hazard	Description
10/17/1956	Hail	1 inch hail event
7/29/1959	Severe Wind	
7/29/1959	Severe Wind	F1 tornado event
10/18/1962	Hail	0.75 inch hail event
6/10/1965	Hail	1 inch hail event
4/21/1966	Severe Wind	62 knot wind speeds reported
6/10/1966	Hail	0.75 inch hail event
9/7/1966	Severe Wind	F0 tornado event
6/15/1969	Hail	2.25 inch hail event
9/2/1969	Severe Wind	
10/8/1969	Hail	1 inch hail event
10/4/1970	Hail	1.25 inch hail event
9/19/1972	Severe Wind	F0 tornado event
9/20/1972	Flood	Heavy rains and flooding that resulted in a disaster declaration (FEMA-DR-353). Local officials estimated damages for Dona Ana County to be about $212,000 for public facilities and over $500,000 to private businesses and residents.
5/12/1973	Hail	1.75 inch hail event
7/21/1973	Severe Wind	
6/29/1974	Severe Wind	
10/22/1974	Hail	1 inch hail event
8/3/1975	Severe Wind	
1/4/1977	Earthquake	Magnitude 3.2 earthquake. No reported damages or injuries
5/20/1978	Hail	0.75 inch hail event
7/31/1979	Severe Wind	F1 tornado event
8/3/1984	Flood	Doña Ana County experienced heavy rainfall that caused flooding in many locations. In the Chaparral area, homes were surrounded by water and dirt streets were turned into lakes that were impassible due to siltation and flooding. Pumping was required to alleviate the problems.
6/5/1985	Earthquake	Magnitude 2.9 earthquake. No reported damages or injuries
9/6/1985	Earthquake	Magnitude 2.6 earthquake. No reported damages or injuries
4/17/1986	Earthquake	Magnitude 2.7 earthquake. No reported damages or injuries
7/22/1987	Severe Wind	F0 tornado event
8/8/1987	Severe Wind	
8/23/1987	Flood	Over three inches of rainfall was recorded. Floodwater inundated homes, business, schools, and hundreds of acres of farmland, and over-taxed irrigation canals. Approximately $667,000 in damages was reported by the County. The arroyos east of the Rio Grande in the City of Las Cruces were among the areas affected by the floodwaters.
8/22/1988	Severe Wind	
9/22/1988	Severe Wind	F0 tornado event
9/22/1988	Hail	0.75 inch hail event
11/8/1988	Hail	1.75 inch hail event
5/27/1989	Hail	1.75 inch hail event
5/27/1989	Severe Wind	
6/13/1989	Severe Wind	89 knot winds reported
7/28/1989	Severe Wind	F1 tornado event

7/22/1990	Severe Wind	61 knot wind speeds reported
5/20/1991	Hail	2.5 inch hail event
5/21/1991	Hail	1.75 inch hail event
7/1/1991	Severe Wind	
1/12/1992	Severe Wind	
1/22/1992	HAZMAT Incident	STORAGE TANK/ BURST DISK FAILURE. 60 POUND(S) OF NITROGEN TETROXIDE WAS RELEASED TO AIR.
2/24/1992	HAZMAT Incident	CAPACITATOR / RUPTURED DUE TO POWER OUTAGE. 0.99 GALLON(S) OF POLYCHLORINATED BIPHENYLS WAS RELEASED TO MATERIAL SPILLED ONTO A TRANSMITTER.
7/28/1992	HAZMAT Incident	A VACUUM TRUCK HAD A DEFECTIVE HOSE AND RELEASED MATERIAL DURINGTRANSFER FROM A 8 INCH PIPELINE TO THE TRUCK. 30 BARREL(S) OF OIL: DIESEL WAS RELEASED TO SOIL.
8/18/1992	HAZMAT Incident	2 RAIL TANK CARS/ LOOSE FILLER CAPS. 0.99 GALLON(S) OF ETHYL ALCOHOL WAS RELEASED TO RAILCAR.
3/11/1993	Severe Wind	Thunderstorm winds were estimated at 55 knots (63 mph) at the Las Cruces airport at 1625 MST.
10/23/1993	HAZMAT Incident	DOME VALVE ON TANK CAR / THE RELEASE IS CAUSED BY OVERPRESSURIZATIONOF TANK. 120 GALLON(S) OF STYRENE WAS RELEASED TO SOIL / GRAVEL.
3/18/1994	HAZMAT Incident	PHOTO PROCESSING UNIT/LINE RUPTURED IN UNIT RESULTING IN RELEASE. 5 GALLON(S) OF SILVER BEARING WASTE WAS RELEASED TO SEWAGE TREATMENT PLANT.
5/12/1994	HAZMAT Incident	TRANSFORMER/OVERHEATING CAUSED SPILL. 0 UNKNOWN AMOUNT OF TRANSFORMER COOLANT FREON WAS RELEASED TO ATMOSPHERE.
5/15/1994	Severe Wind	An early evening thunderstorm produced wind gusts estimated at 65 mph which blew over several utility poles and damaged several small sheds and carports.
5/21/1994	Hail	A short, but intense hail storm ravaged fields of chile, cotton and pecans. Hail to one-half inch accumulated to nearly six inches deep in a few locations.
6/14/1994	Severe Wind	Winds knocked down several utility poles and caused damage to porch covers and a few roofs. Several large dust devils were observed in the area.
7/1/1994	HAZMAT Incident	CALLER REPORTS PRP IS DUMPING OIL FILTERS AND OIL ONTO THE GROUND. 0 UNKNOWN AMOUNT OF OIL FILTERS WAS RELEASED TO DIRT AND GRASS.
7/7/1994	HAZMAT Incident	CALLER STATES RP IS CHANGING THE OIL IN HIS CAR AND DUMPING IT ON HISPROPERTY. 0 UNKNOWN AMOUNT OF OIL, MISC: MOTOR WAS RELEASED TO SOIL//3FT X 3FT.
7/28/1994	Flood	Heavy rains up to three inches produced flooding in several businesses, an apartment complex, and a church day care center. Damage was estimated at $5 million.
7/28/1994	HAZMAT Incident	EQUIPMENT FAILURE ON A PHOTOPROCESSING UNIT. 1 GALLON(S) OF SODIUM DISULFATE WAS RELEASED TO BASE SEWER.
10/26/1994	HAZMAT Incident	COOLING SYSTEM/RELIEF VALVE BLEW RESULTING IN RELEASE. 400 GALLON(S) OF AMMONIA, ANHYDROUS WAS RELEASED TO ATMOSPHERE.
6/12/1995	HAZMAT Incident	55 GALLON DRUM//ROLLED OFF OF A PICK-UP TRUCK. 25 GALLON(S) OF FERROUS CHLORIDE WAS RELEASED TO PAVEMENT.
7/12/1995	HAZMAT Incident	HYDRO PLUGS/MECHANICAL LEAK. 30 OTHER OF HYDRAULIC OIL WAS RELEASED TO ATMOSPHERE.
8/30/1995	HAZMAT Incident	STORAGE TANK/"QUICK DISCONNECT" FAILED. 55 POUND(S) OF NITROGEN TETROXIDE WAS RELEASED TO ATMOSPHERE.
10/4/1995	Severe Wind	Gusty winds felled several antennas and tree limbs onto power lines causing at least four transformer explosions and grass fires in Las Cruces.
11/1/1995	Extreme Heat/Cold	Unusually warm conditions persisted throughout the month across New Mexico resulting in a number of daily record high temperatures, several new records for monthly average temperature and a two to four week delay in first fall freeze. Both Los Alamos and Albuquerque set new daily highs on three occasions each. A high of 74 degrees on the 26th at Albuquerque set a new record for warmest so late in the year.

2/2/1996	HAZMAT Incident	BAGHOUSE BAGS / MATERIAL WAS ACCIDENTLY PICKED UP BY A GARBAGE TRUCKAND TAKEN TO A LANDFILL. 0 UNKNOWN AMOUNT OF ARSENIC TRIOXIDE WAS RELEASED TO SOIL.
3/1/1996	HAZMAT Incident	TANK / VALVE LEAKED. 1000 POUND(S) OF NITROGEN TETROXIDE WAS RELEASED TO SOIL.
5/1/1996	Drought	State declaration of drought disaster primarily for the loss of domestic drinking water
7/15/1996	Flood	Heavy rain from a thunderstorm flooded 9 homes and 7 vehicles near Anthony, New Mexico. Several of the homes were temporarily evacuated. A mudslide was reported at Exit "0" of Interstate 10 along the New Mexico-Texas border.
10/16/1996	HAZMAT Incident	BOL: "1 WOODEN CRATE, 680 GRP, ACCESSOR, RQ, RADIOACTIVE MATERIAL,SPECIAL FORM, N.O.S., CLASS 7 U.N. 2974 COBALT 60 99.0 CURIES, T.I. 1.0. 0 UNKNOWN AMOUNT OF COBALT WAS RELEASED TO ATMOSPHERE.
1/6/1997	Heavy Snow	A major winter storm brought snow to most of New Mexico with 3 to 6 inches of snow common at valley locations in the local area and significantly heavier amounts in the mountains. 1280 motorists were stranded in Truth or Consequences as Interstate 25 was closed for most of the distance between Las Cruces and a point about 30 miles north of Socorro. Interstate 10 was also closed between El Paso, Texas and the Arizona border. Several other state or U.S. highways were either closed due to the storm or partially blocked due to traffic accidents. As a result of these road closures, an estimated 400 people were forced stay overnight in the Pan American Center on the Campus of New Mexico State University after a concert.
5/31/1997	Hail	1.75 inch hail event
6/7/1997	Hail	1.5 inch hail event
6/7/1997	Hail	1.5 inch hail event
6/7/1997	Hail	1 inch hail event
8/1/1997	Flood	A severe thunderstorm produced an estimated two inches of rain, significant street flooding, and downed a number of trees in the urban area. In addition, the public reported 3/4 inch hail in the downtown area.
8/1/1997	Hail	0.75 inch hail event
2/24/1998	Severe Wind	Winds gusted briefly to 60 mph at the El Paso International Airport just south of Chaparral, NM with the passage of a cold front. Two roofs were blown off in Chaparral, one from a mobile home and one from a site-built structure.
7/8/1998	Severe Wind	A wet microburst, associated with a strong thunderstorm, produced significant damage to a barn and several mobil homes in addition to several trees. Several utility poles were also damaged and there was localized street flooding. The damage path was roughly 200 yards by 500 yards.
7/22/1998	Severe Wind	A wet microburst produced damage to several mobile homes in a small area about 5 miles west of Organ. Three mobile homes were either tipped over or rolled, with two others shifted off their cinder block foundations. None of the mobile homes were tied down. In at least one case, localized flooding contributed to the damage.
7/29/1998	HAZMAT Incident	TANK TRUCK / HOSE FITTING FAILURE CAUSED RELEASE OF THE PRODUCT THETRUCK WAS TRANSPORTING. 50 GALLON(S) OF FERROUS CHLORIDE SOLUTION (30 PERCENT) WAS RELEASED TO SOIL.
11/9/1998	Severe Wind	A weather spotter reported a wind gust of 72 mph during the passage of a cold front.
1/21/1999	Severe Wind	High winds associated with a strong coldfront moving through the area caused widespread but mostly minor damage.
5/24/1999	Hail	1 inch hail event
5/24/1999	Hail	1.75 inch hail event

6/17/1999	Flood	Three to four inches of rain fell in the East Mesa area of Las Cruces. Water running off the nearby Organ Mountains caused considerable damage to mobile homes, homes and washed out roads. The high water had some residents on the east side of Las Cruces trapped in their homes for several hours. A 70 year old woman had to be rescued after trying to cross a flooded road in her car.
8/3/1999	Hail	0.75 inch hail event
12/14/1999	HAZMAT Incident	A LANCE MISSILE MISSED IT'S TARGET / UNKNOWN IF A RELEASE HAS OCCURRED. 0 UNKNOWN AMOUNT OF UNSYMMETRICAL DIMETHYLHYDRAZINE WAS RELEASED TO PLAYA LAKE?.
5/1/2000	Drought	State declaration of drought disaster primarily for the loss of domestic drinking water
6/1/2000	HAZMAT Incident	THE MATERIAL WAS SPILLED FROM A PIPELINE DUE TO A ROAD GRADER STRIKING THE LINE.. 0 UNKNOWN AMOUNT OF OIL: DIESEL WAS RELEASED TO .
6/19/2000	Severe Wind	A 66 mph wind gust was measured at the National Weather Service office in Santa Teresa.
8/30/2000	Hail	1 inch hail event
10/23/2000	Severe Wind	A low top supercell with a weakly rotating wall cloud was accompanied by 70 mph winds, 1/4 to 1/2 inch hail which completely covered the ground, and 0.9 inches of rain in less than 10 minutes as it passed over the Mesilla Park area.
10/28/2000	Flood	A slow-moving line of thunderstorms dropped heavy rain on southern Dona Ana County, resulting in significant street flooding in Anthony.
1/17/2001	Heavy Snow	A band of heavy snow extended from southwest to northeast across southern New Mexico from the "bootheel" to Elephant Butte Reservoir, mainly below 6000 feet elevation. Oddly, the portion of the cold upper low which favored the production of heavy snow remained between, not over the mountain ranges to either side. The southern bootheel, near the Mexican border, received 6 to 10 inches of snow, while the remainder of the area was blanketed with 2 to 4 inches (with isolated 6 inch reports). The higher mountains to the east and west were left with only 1 to 2 inches of snow.
4/6/2001	Severe Wind	A strong cold front moved eastward across southern New Mexico during the early afternoon hours, bringing numerous wind gusts in the 65 to 75 mph range. Some trees were blown over in the Las Cruces area, along with numerous reports of roof damage. Blowing dust was extensive in southern Otero County.
4/10/2001	Severe Wind	The second high wind event within 5 days occurred in southern New Mexico. This one, although containing slightly lower peak gusts (60 to 70 mph with a few reports of 75 mph), continued for a much longer period and over a larger area. Trees were downed, windows broken, and power poles were blown over. A power outage in southern Dona Ana County lasted for more than 2 hours.
6/19/2001	Severe Wind	A weak F0 tornado (landspout), which began as a dust devil that eventually moved under a developing thunderstorm, stayed on the ground for 15 minutes just east of Las Cruces. It remained over open country but was observed by thousands. Unrelated wind damage from 45 mph thunderstorm outflow elsewhere in the city was falsely attributed to this landspout.
8/25/2001	Severe Wind	A wet microburst blew the roof off a portion of an apartment complex. Some windows were blown out in the downtown area, and several power lines were downed.
1/2/2002	HAZMAT Incident	THE MATERIAL RELEASED OUT OF THE SIX INCH PVC SEWER PIPE LINE DUE TO WATER HAMMER DAMAGE.. 800 GALLON(S) OF RAW SEWAGE WAS RELEASED TO RIGHT OF WAY ON MCNUTT ROAD > DESERT SAND.
2/27/2002	HAZMAT Incident	THE REPORT STATED FOR THE LAST 23 YEARS THIS COMPANY HAS BEEN DUMPING AND BURYING SOLID WASTE AND FLUIDS FROM VEHICLES ON COMPANY PROPERTY AND ON PRIVATE PROPERTY WHICH SURROUNDS THE BUSINESS.. 0 UNKNOWN AMOUNT OF FLUIDS/ SOILD WASTE FROM VEHICLES WAS RELEASED TO SOIL < DONA ANA WATER COMPANY WELL.

3/12/2002	HAZMAT Incident	THE RESPONSIBLE PARTY HAD 6-7 ASBESTOS PIPES 14FT IN LENGTH AND 14 INCHES IN DIAMETER THAT WERE BROKEN UP INTO PIECES AND PLACED INTO A TAN DUMPSTER.. 0 UNKNOWN AMOUNT OF ASBESTOS WAS RELEASED TO RAIN WATER.
5/1/2002	Drought	State declaration of drought disaster primarily for the loss of domestic drinking water. Cost reported is cumulative for period of 1995-2007. The state estimates indirect costs of drought to be between $50 and $100 million for the same period.
5/30/2002	HAZMAT Incident	THE CALLER REPORTED THAT AN EPA INSPECTOR DISCOVERED AN AMMONIUM NITRATE SPILL AT LOCATION DUE TO CORROSSION OF STORAGE SILO.. 1000 POUND(S) OF AMMONIUM NITRATE WAS RELEASED TO SOIL.
7/2/2002	Severe Wind	Thunderstorm outflow winds measured at 63 mph blew down a 63 year old oak tree that narrowly missed a house but crashed down upon a parked car.
7/4/2002	Severe Wind	Winds estimated at 65 mph reduced visibilities to 500 feet in blowing sand in Chaparral.
7/16/2002	Flood	A cluster of thunderstorms dropped nearly 4 inches of rain within an hour according to a RAWS rain gauge located in the Sierra de Las Uvas Mountains. The resulting runoff washed out Highway 185 between Radium Springs and Rincon.
7/30/2002	Flood	Runoff from a thunderstorm over the Franklin Mountains caused an arroyo to fill to a depth of 10 feet. The frontage roads near the arroyo were covered with water, and extensive ponding resulted downstream.
8/2/2002	Severe Wind	A small F0 tornado, most likely a landspout, was observed on the ground for 9 minutes south of U.S. 70 and northeast of the White Sands Missile Range Headquarters.
8/8/2002	Severe Wind	A nearly stationary thunderstorm over downtown Las Cruces produced a 75 mph wet microburst which resulted in structural damage in a very localized area. A roof was lifted from a house and blown over a fence into a neighboring yard, while stop signs were literally flattened. Urban flooding from 1.4 inches of rain in 30 minutes led to the closure of a major intersection as water pushed off a manhole cover.
8/8/2002	Flood	A nearly stationary thunderstorm over downtown Las Cruces produced a 75 mph wet microburst which resulted in structural damage in a very localized area. A roof was lifted from a house and blown over a fence into a neighboring yard, while stop signs were literally flattened. Urban flooding from 1.4 inches of rain in 30 minutes led to the closure of a major intersection as water pushed off a manhole cover.
8/10/2002	Severe Wind	A line of strong to severe thunderstorms moved from northeast to southwest across southern NM with damaging winds and large hail. Trees were downed and a mobile home flipped near Garfield, while 1 1/4 inch diameter hail fell west of Hillsboro. Winds estimated at 60 mph lowered visibilities to near zero causing state police to close Interstate 10 east of Deming. Arroyo flooding led to the closure of Highway 180 northwest of Deming. Finally, as the storms began to exit the southern border of New Mexico, winds blew power poles down in Columbus while wind-driven nickel size hail covered the ground and cracked numerous car windshields.
10/18/2002	Hail	A line of severe thunderstorms, including a low top supercell at the southern end of the line, moved rapidly eastward across southern Dona Ana County. Hailstones from one inch to an inch and a half in diameter fell from the supercell.
3/25/2003	HAZMAT Incident	CALLER STATED THAT A CONTRACTOR DUG INTO A NATURAL GAS PIPELINE (4-INCH) RELEASING NATURAL GAS INTO THE ATMOSPHERE.. 0 UNKNOWN AMOUNT OF NATURAL GAS WAS RELEASED TO ATMOSPHERE.
6/16/2003	Severe Wind	52 knot wind speeds reported
6/16/2003	Severe Wind	57 knot wind speeds reported
6/16/2003	HAZMAT Incident	THE CALLER IS REPORTING A VEHICLE THAT HIT A GAS METER. THE VEHICLE CAUSED THE RELEASE OF MATERIALS. THE DRIVER OF THE VEHICLE DIED AND IT IS UNKNOWN IF THE ACCIDENT OR THE MATERIALS KILLED HIM.. 0 UNKNOWN AMOUNT OF NATURAL GAS WAS RELEASED TO ATMOSPHERE.

6/27/2003	Hail	0.75 inch hail event
7/6/2003	Severe Wind	A severe thunderstorm produced downburst winds of 63 mph at WSMR C-Station, then $1000 in hail damage at Launch Complex 50.
9/9/2003	Severe Wind	50 knot wind speeds reported
10/3/2003	Severe Wind	51 knot wind speeds reported
11/7/2003	HAZMAT Incident	CALLER STATED THAT RESPONSIBLE PARTY HAS AN INADEQUATE SEWAGE SYSTEM, RESULTING IN A RELEASE OF SEWAGE ONTO THE GROUND AND ONTO THE LOCAL ROADS.. 0 UNKNOWN AMOUNT OF RAW SEWAGE WAS RELEASED TO STORM DRAIN>UNKNOWN.
4/3/2004	Hail	A supercell thunderstorm formed just north of northeast El Paso and tracked northward across Chaparral and along the east slopes of the Organ Mountains. Along the way it dropped a large amount of golf ball size hail (with a few hailstones reaching hens egg size) on the town of Chaparral, resulting in extensive damage to mobile home skirting, windows and a few roofs. The hail was driven by 60 mph wind gusts. The hail depth was measured at 13 inches, and hailstones were still 1.25 inches in diameter more than 4 hours after the event.
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5/15/2004	Hail	
6/3/2004	Severe Wind	A merger of two severe thunderstorms resulted in a right-moving supercell affecting an area mainly west and north of Las Cruces, producing damaging winds and hail as large as golf balls. Hardest hit was the Las Cruces Airport, where a wind gust was measured at 62 mph and a tower was knocked down. Golf ball size hail caused extensive damage to some of the aircraft, especially helicopters owned by Southwest Air Ambulance. There was damage to the runway lighting system, and Southwest Aviation had roof damage. Numerous windows and windshields were shattered at a nearby prison facility. Prior to the merger, the northern cell dropped 3 inches of rain near Radium Springs, but only minor flooding occurred.
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6/26/2004	Severe Wind	57 knot wind speeds reported
6/29/2004	Flood	Thunderstorms repeatedly moved over southern and central Dona Ana County, dropping more than 3 inches of rain between Las Cruces and northeast El Paso. Though most areas experienced nuisance flooding, the town of Vado, which lies in a somewhat sunken basin, received the run-off from most of the surrounding area. As a result, 14 houses had to be evacuated. Most of the town was under 2 to 3 feet of water, with a few spots under 6 feet. Governor Richardson later declared Vado a disaster area.
7/11/2004	HAZMAT Incident	TAKEN FROM WEB REPORT / A TANKER TRUCK LOST CONTROL AND ROLLED OVER ON I-10, NEAR ANTHONY, NEW MEXICO, RESULTING IN A SPILL OF APPROXIMATELY 2,500 GALLONS OF DIESEL FUEL ONTO THE ROAD. THE INCIDENT TOOK PLACE SHORTLY ATER 6 PM ON 11 JULY 2004. THE INTER. 2500 BARREL(S) OF OIL, FUEL: NO. 2-D WAS RELEASED TO ROADWAY.
8/13/2004	Hail	A cluster of thunderstorms moved southward into the Las Cruces area, producing nickel size hail and 3 to 5 inches of rain. Flooding was reported throughout Las Cruces, with extensive flooding in the Mesilla Park section.

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8/29/2004	Hail	1 inch hail event
9/29/2004	Hail	1.25 inch hail event
9/29/2004	Hail	1 inch hail event
9/29/2004	Flood	
9/29/2004	Hail	0.75 inch hail event
9/29/2004	Severe Wind	57 knot wind speeds reported
10/1/2004	HAZMAT Incident	CALLER STATED THAT COMPANY IS STRIPPING POWDER COATED MATERIAL OFF OF METALS AND IS WASHING TOXIC MATERIAL FROM IT ONTO THE GROUND. THERE ARE SEVERAL 5 GALLON CONTAINERS WITH OIL IN THEM THAT ARE RELEASING ONTO THE GROUND WHEN IT RAINS.. 0 UNKNOWN AMOUNT OF TOXIC MATERIAL WAS RELEASED TO .
10/5/2004	Hail	1 inch hail event
10/30/2004	HAZMAT Incident	REPORTING A MATERIAL RELEASED FROM A GAS METER SET DUE TO A MOTORCYCLE ACCIDENT.. 100 CUBIC FEET OF NATURAL GAS WAS RELEASED TO ATMOSPHERE.
12/27/2004	HAZMAT Incident	CALLER STATED THE OWNER OF A COMPANY IS DUMPING UNKNOWN TOXIC CHEMICALS ONTO THE GROUND. 0 UNKNOWN AMOUNT OF UNKNOWN MATERIAL WAS RELEASED TO .
2/23/2005	Hail	0.75 inch hail event
4/13/2005	HAZMAT Incident	CALLER STATED THAT A TRUCK DUMPED UNKNOWN LIQUIDS ONTO THE GROUND DUE TO UNKNOWN CAUSES.. 0 UNKNOWN AMOUNT OF UNKNOWN MATERIAL WAS RELEASED TO GROUND.
6/24/2005	HAZMAT Incident	THE CALLER STATED THAT WHILE INVESTIGATING A DEFECT ON A PIPELINE, THE COATING WAS BEING REMOVED FROM THE PIPELINE WHEN THE DEFECT FAILED RELEASING NATURAL GAS.. 11000 MIL CBF OF NATURAL GAS WAS RELEASED TO AIR.
7/5/2005	HAZMAT Incident	INCIDENT MOUNTAIN STANDARD TIME / CALLER REPORTING A VEHICLE ROLLOVER CAUSING AN INJURY AND A RELEASE OF NATURAL GAS FROM A RISER STRUCK BY THE VEHICLE. 0 UNKNOWN AMOUNT OF NATURAL GAS WAS RELEASED TO .
7/30/2005	Flood	Major street flooding occurred from north of Anthony NM into northwestern El Paso County. Numerous stalled cars were observed from Interstate 10.
8/28/2005	Severe Wind	A fast moving thunderstorm produced winds estimated at 60 to 70 mph as it moved through Las Cruces and down to the TX state line. Numerous power poles and trees were knocked down in Las Cruces. Trees were also reported down in Chamberino. Brief heavy rain also caused street flooding in Las Cruces.
8/28/2005	Severe Wind	A fast moving thunderstorm produced winds estimated at 60 to 70 mph as it moved through Las Cruces and down to the TX state line. Numerous power poles and trees were knocked down in Las Cruces. Trees were also reported down in Chamberino. Brief heavy rain also caused street flooding in Las Cruces.
9/6/2005	Flood	Major flooding occurred across most of the Las Cruces area as a thunderstorm complex dropped heavy rain during a 3 hour time frame. Rainfall reports were widespread 2 to 3 inches with isolated amounts around 4 inches. All major roads were flooded with a few intersections under 4 feet of water. Sandbags were put up until resources were exhausted. The rainfall amounts were not extremely unusual, just the areal coverage.
11/29/2005	HAZMAT Incident	CALLER STATED THERE WAS A RELEASE OF MATERIALS FROM A TRUCK ONTO THE GROUND BY A TRUCK REPAIR SHOP. CALLER STATED THE MATERIALS WENT ONTO THE GROUND AND THEN INTO A DRAINAGE DITCH.. 0 UNKNOWN AMOUNT OF OIL, MISC: MOTOR WAS RELEASED TO DRAINAGE DITCH.
3/5/2006	Drought	SANTA FE-Governor Bill Richardson today declared a state of drought in New Mexico, ordering state agencies to implement water-saving strategies and prepare to assist in drought relief

		efforts across the state. The declaration shall remain in place until such time as the governor rescinds it.
5/14/2006	Hail	Penny to nickel size hail fell for at least 15 minutes east of Las Cruces, NM.
7/6/2006	Flood	Up to 2 inches of rain fell within an hour resulting in major street flooding and street closures in Sunland Park, Chaparral and Anthony NM.
7/6/2006	Flood	Heavy rains northwest of town caused the Placitas Arroyo to run out of its banks, with flood waters reaching Hatch. Water was high enough to spill over the Placita Arroyo bridges.
7/7/2006	Flood	Arroyos were running out of banks, with water 1 foot deep on streets 5.5 miles northeast of Las Cruces.
7/8/2006	HAZMAT Incident	CALLER REPORTING OIL SPILLED ON THE GROUND OF THE PROPERTY DUE TO CONSTRUCTION OPERATIONS.. 0 UNKNOWN AMOUNT OF UNKNOWN OIL WAS RELEASED TO .
7/14/2006	Severe Wind	A severe thunderstorm produced wind gusts of 60 mph or more as it moved west from White Sands Missile Range Headquarters to just northeast of Las Cruces. A mesonet site measured a wind gust of 72 mph at WSMR HQ.
8/1/2006	Flood	A cluster of slow moving thunderstorms dropped 1.5 to 3 inches of rain over the southern portion of Dona Ana County, especially near the Rio Grande. Even higher amounts fell over the nearby Franklin Mountains which added to severe runoff problems. Interstate 10 south of Las Cruces was closed for several hours. Hardest hit with damage to roads and structures was Sunland Park, followed by Anthony, Chaparral and La Union. About 1200 residents in Sunland Park were forced to evacuate as the Rio Grande River reached a stage of 9.3 feet, the highest in 50 years. This was one of many flood events during the summer that led to much of New Mexico being declared a federal disaster area.
8/3/2006	Flood	A line of rapidly moving thunderstorms dropped up to an inch and a half of rain in less than 30 minutes during the early morning hours. This was only 36 hours after the extensive flash flooding on August 1st, so runoff was excessive. Roads were impassable in Chaparral, and erosion exposed gas pipes in Vado and Sunland Park.
8/4/2006	Flood	Flash flooding occurred in an area which included Organ, Dona Ana and the east mesa of Las Cruces. Roads were covered by up to 2 feet of water with some closures. Water also flooded backyards and entered homes as retention walls collapsed from water swollen arroyos.
8/13/2006	Lightning	Lightning strike damaged equipment at NMSU
8/15/2006	Flood	Runoff from heavy rains over the nearby Sierra De Las Uvas Mountains caused the Placitas Arroyo to breach, which sent a wall of water into the town of Hatch. Up to 4 feet of water entered business and residences. Mandatory evacuations of several hundred residents took place, including 150 people from an apartment complex which eventually had to be condemned. All roads into and within Hatch were closed.
8/16/2006	Severe Wind	A Skywarn Spotter estimated wind gusts of 70 mph and flooding of roads on the mesa southwest of Las Cruces.
8/21/2006	Flood	Heavy rain in the area caused a breach in the Placitas Arroyo near Hatch. Most of the water flowed north of the town, but about 8 residences were evacuated as a precaution. Highway 187 was covered with water. Most of the damage was to crops.

8/28/2006	Flood	A large cluster of thunderstorms dropped 3 to 5 inches of rain on much of the triangle between Las Cruces, Hatch and Deming, which is an unusually large area for such rainfall amounts in the desert southwest. The Placitas Arroyo near Hatch breached for the third time in 3 weeks, flooding mainly farm land. A flood wave resulted in minor flooding of the Rio Grande River downstream into the El Paso area, the third time this month. Before August 1st, the previous time was August 1999. On the north side of the Sierra De La Uvas Mountains, a huge amount of runoff flooded the desert and led to the closure of Interstate 10 between Deming and Las Cruces for several hours. Closing the interstate along this stretch is not uncommon during dust storms, but extremely rare for flooding. The flooding also did damage to structures in this sparsely populated area.
8/29/2006	Flood	A large cluster of thunderstorms dropped 3 to 5 inches of rain on much of the triangle between Las Cruces, Hatch and Deming, which is an unusually large area for such rainfall amounts in the desert southwest. The Placitas Arroyo near Hatch breached for the third time in 3 weeks, flooding mainly farm land. A flood wave resulted in minor flooding of the Rio Grande River downstream into the El Paso area, the third time this month. Before August 1st, the previous time was August 1999. On the north side of the Sierra De La Uvas Mountains, a huge amount of runoff flooded the desert and led to the closure of Interstate 10 between Deming and Las Cruces for several hours. Closing the interstate along this stretch is not uncommon during dust storms, but extremely rare for flooding. The flooding also did damage to structures in this sparsely populated area.
9/1/2006	Flood	Highway 185 was closed in Placitas (just west of Hatch) due to flooding.
9/1/2006	Flood	Excessive runoff overwhelmed a drain pipe which resulted in a mudslide in Sunland Park. Several homes were flooded, with a storage shed and part of a driveway washed away at one residence.
9/2/2006	Flood	Several roads were flooded with a number of them closed in Las Cruces.
9/3/2006	Flood	Persistent moderate to heavy rainfall on already saturated ground led to flooding across much of south central New Mexico. Dozens of roads were closed across Dona Ana County and Sierra County.
9/4/2006	Flood	Four days of moderate to heavy rainfall due to tropical moisture influx from Hurricane John (which was moving up the Baja Peninsula) led to widespread flooding across much of southern New Mexico. Many roads were flooded in the area with law enforcement agencies reporting numerous closures. A drainage system in Sunland Park once again failed which resulted in homes being flooded.
9/13/2006	Hail	A heavy precipitation supercell thunderstorm tracked from far eastern Luna County eastward along Interstate 10 through Las Cruces. This storm dropped golf ball size hail throughout most of its lifetime, resulting in a 4 car collision on Interstate 10 in far eastern Luna County, and hundreds of damaged roofs and automobiles and destroyed skylights in Mesilla and south Las Cruces. The US Border Patrol Checkpoint was evacuated. Wind damage from a possible tornado occurred at the state fairgrounds west of Las Cruces (mainly to outbuildings and trees), while a tornado was sighted briefly just west of Mesilla. This was the costliest hail storm in the history of the NWS El Paso county warning area, totaling more than $10 million in damage from large hail driven by strong winds. Finally, 2 inches of rain within 30 minutes caused flash flooding in Picacho Hills (far west Las Cruces) and forced the closure of I-10 in western Dona Ana County.

9/13/2006	Severe Wind	A Las Cruces City Police officer sighted an F0 tornado which briefly touched down west of Mesilla. It was in an area with no structures. A heavy precipitation supercell thunderstorm tracked from far eastern Luna County eastward along Interstate 10 through Las Cruces. This storm dropped golf ball size hail throughout most of its lifetime, resulting in a 4 car collision on Interstate 10 in far eastern Luna County, and hundreds of damaged roofs and automobiles and destroyed skylights in Mesilla and south Las Cruces. The US Border Patrol Checkpoint was evacuated. Wind damage from a possible tornado occurred at the state fairgrounds west of Las Cruces (mainly to outbuildings and trees), while a tornado was sighted briefly just west of Mesilla. This was the costliest hail storm in the history of the NWS El Paso county warning area, totaling more than $10 million in damage from large hail driven by strong winds. Finally, 2 inches of rain within 30 minutes caused flash flooding in Picacho Hills (far west Las Cruces) and forced the closure of I-10 in western Dona Ana County.
9/13/2006	Flood	The same heavy precipitation supercell that brought extensive hail damage and a small tornado to the Las Cruces area also dumped more than 2 inches of rain within 30 minutes on the far west section of the city. Catchment basins breached which flooded the Picacho Hills subdivision. Sandbags were requested for Mesilla. Further west, Interstate 10 was closed for 2 hours between Las Cruces and Deming, initially because of a tornado threat, but extended when water flooded the lanes 4 miles east of the US Border Patrol checkpoint.
9/13/2006	Severe Wind	NMSU reported a damage to several buildings and an airplane due to severe wind and hail
10/9/2006	Hail	EVENT NARRATIVE: The fourth and final supercell of the outbreak brought nickel to quarter size hail that piled more than 6 inches high in the southern part of the city. Patches of hail were still visible the next afternoon. EPISODE NARRATIVE: A strong upper trough in the westerlies moved into southern NM and far west TX on October 9th and produced an atmospheric profile with sufficient vertical wind shear and low/mid level moisture for severe weather. Several severe cells including at least 4 supercells developed over the area, most of them in southern NM. One supercell tracked from near Animas in Hidalgo County into the Sacramento Mountains northeast of Alamogordo (Otero County), a distance of more than 200 miles.
1/19/2007	Heavy Snow	EVENT NARRATIVE: Five inches of snow fell in in Hillsboro. EPISODE NARRATIVE: A deep upper low moved from southern California eastward across the desert southwest, with southerly flow tapping abundant subtropical moisture in advance of the system. Cold low level flow did not push southward into southern NM and far west TX as strongly as anticipated, so an area wide heavy snow and ice storm episode did not materialize. However, some northern locations did receive substantial amounts of snow, while the majority of the area experienced heavy rain. Significant ice was limited to northeastern Hudspeth County.
1/23/2007	Heavy Snow	EVENT NARRATIVE: Eleven inches of snow fell at Queen, NM. EPISODE NARRATIVE: Another record breaking snow event for west Texas and southeastern New Mexico as an upper level storm system and a cold front move across the region. Six to eight inches of snow in the Van Horn area resulted in Interstate 10 being closed between Fort Hancock and Fort Stockton and Interstate 20 being closed between Pecos and Fort Hancock. At least 200 tractor trailers were stranded in Van Horn and Pecos when those interstates closed. Schools across west Texas and southeastern New Mexico closed for at least a day. Locations across the region received anywhere from an inch to eleven inches of snow.
3/23/2007	Hail	Hail caused damage to NMSU's Agricultural Science Center
3/23/2007	HAZMAT Incident	A TRACTOR TRAILER TRUCK CARRYING SEVERAL 50 POUND BAGS OF PESTICIDE HAS OVERTURNED ON INTERSTATE 1-10. SOME OF THE BAGS HAVE SPILLED INSIDE OF THE TRAILER. THE AREA HAS BEEN ISOLATED UNTIL THE TRAILER IS SECURED. NO MATERIAL HAS SPILLED OUTSIDE OF THE TRA. 0 UNKNOWN AMOUNT OF PESTICIDE (SUPER TIN FUNGACIDE) WAS RELEASED TO INSIDE OF A TRACTOR TRAILER.

4/26/2007	HAZMAT Incident	//////WEB REPORT////// VARIOUS TYPES OF OIL AND ACCELERANTS, POSSIBLE DIESEL COVERED MUCH OF THE GROUND NEAR THE FRONT/SOUTH EAST FLOOR OUTSIDE THE FACILITY. I WENT THERE TO SEE IF THE BUSINESS HAD A PARTICULAR PART FOR A MUFFLER THAT I WAS WORKING ON.. 0 UNKNOWN AMOUNT OF UNKNOWN OIL WAS RELEASED TO .
4/29/2007	Severe Wind	An F0 funnel cloud briefly touched down north of Interstate 10 near mile marker 112.
5/2/2007	Hail	An upper low moved from southern AZ across southern NM and far west TX over an air mass that was rather moist for early May in this area. The air mass was very unstable, such that any ground based circulation (e.g. gustnadoes) would quickly spin up within strong updrafts. One technician near White Sands missile Range HQ observed a gustnado along a gust front from a storm farther west grow rapidly upward under a strong thunderstorm. Once the landspout had formed, it moved slowly northeast but persisted for more than 40 minutes (52 minutes according to NSSL). It remained over unpopulated desert terrain and thus no damage occurred. The tornado lasted far longer than one would expect for a landspout. It was concluded that since it connected with a cell that had supercellular tendencies, this accounted for the longevity. Due to the somewhat high thunderstorm base and little precipitation around the funnel, the tornado was easily viewed by El Paso residents up to 30 miles away. Several other severe cells developed that afternoon, with another weak tornado briefly touching down about 25 miles to the northeast.
5/2/2007	Severe Wind	Unusually long lasting and large F0 landspout developed under a supercell. It remained over open terrain, so no damage or injuries resulted. EPISODE NARRATIVE: An upper low moved from southern AZ across southern NM and far west TX over an air mass that was rather moist for early May in this area. The air mass was very unstable, such that any ground based circulation (e.g. gustnadoes) would quickly spin up within strong updrafts. One technician near White Sands missile Range HQ observed a gustnado along a gust front from a storm farther west grow rapidly upward under a strong thunderstorm. Once the landspout had formed, it moved slowly northeast but persisted for more than 40 minutes (52 minutes according to NSSL). It remained over unpopulated desert terrain and thus no damage occurred. The tornado lasted far longer than one would expect for a landspout. It was concluded that since it connected with a cell that had supercellular tendencies, this accounted for the longevity. Due to the somewhat high thunderstorm base and little precipitation around the funnel, the tornado was easily viewed by El Paso residents up to 30 miles away. Several other severe cells developed that afternoon, with another weak tornado briefly touching down about 25 miles to the northeast.
5/8/2007	Flood	EVENT NARRATIVE: An apartment complex in Hatch was flooded, requiring the local fire department to pump water out of the apartments. EPISODE NARRATIVE: A slow moving line of strong thunderstorms dumped heavy rain on northwestern Dona Ana County.
5/25/2007	Hail	EPISODE NARRATIVE: A moist southeast flow imported low level moisture while an upper disturbance moved in from the north, triggering numerous severe thunderstorms over the southwest portion of New Mexico.
6/20/2007	Hail	EVENT NARRATIVE: Nickel size hail fell south of Radium Springs. EPISODE NARRATIVE: Moist southeast flow at the lower levels pushed westward into far west Texas and southern New Mexico under a late season southwest flow aloft. The resulting veering shear profile was favorable for severe thunderstorms, more so in the Texas portion.
7/12/2007	Flood	EVENT NARRATIVE: Up to 30 homes were flooded in Anthony. Sandbags were requested for this area as well as nearby Mesquite (just to the north). EPISODE NARRATIVE: Slow moving thunderstorms within a very moist air mass resulted in very heavy rains.
9/28/2007	Flood	EVENT NARRATIVE: Major street flooding occurred in Sunland Park. EPISODE NARRATIVE: The same high precipitation supercell that caused much damage in El Paso, TX brought flooding to Sunland Park, NM (before entering El Paso). A multicell severe storm formed later and dropped large hail on Orogrande, NM.

12/1/2007	Severe Wind	EPISODE NARRATIVE: An upper level low and associated strong subtropical jet brought heavy rain, high elevation snow, severe thunderstorms and high winds to western and central New Mexico during the predawn hours of December 1st. Flooding was observed in the Gila region while severe thunderstorms produced wind damage in the Rio Grande and Estancia Valleys. Strong winds blew across much of the high terrain and just east of the central mountain chain but were the strongest during the daylight hours of the 1st. The winds were occasionally accompanied by snow, which created near blizzard conditions in the higher mountainous terrain. As the trough opened up and moved east across New Mexico and Colorado, snow levels lowered overnight across the northwest. However, the most significant snow accumulations were confined to elevations above 8500 feet in the Chuska, Southern San Juan and Sangre De Cristo Mountains of northern New Mexico. Through dawn of the 2nd, storm total snow accumulations of 5 to 10 inches were common with 1 to 2 feet likely on west facing slopes above 9500 feet.
2/4/2008	Severe Wind	Severe winds blew off an awning at NMSU
2/28/2008	Wildfire	Kanuck Fire - a human caused fire burned an area 8 miles west of Las Cruces, on Fort Bliss, New Mexico. The fire started February 28, 2008 and was controlled by March 7, 2008, burning a total of 450 acres.
3/14/2008	Severe Wind	EPISODE NARRATIVE: Very strong westerly winds aloft were mixed down to the surface. In addition, a surface pressure gradient tightened due to a deepening surface low in the southern plains. This resulted in strong surface winds across southern New Mexico.
3/18/2008	Wildfire	River Fire - a human caused fire that burned an area 7 miles SW of Hatch, New Mexico. The fire started March 18, 2008 and was controlled by March 27, 2008, burning a total 1,050 acres. One home was destroyed and two were damaged.
4/24/2008	HAZMAT Incident	ANHYDROUS AMMONIA HAS RELEASED TO THE ATMOSPHERE FROM A FAILED REFRIGERATION SYSTEM.. 361 POUND(S) OF AMMONIA, ANHYDROUS WAS RELEASED TO ATMOSPHERE.
5/8/2008	HAZMAT Incident	CALLER IS REPORTING A NATURAL GAS RELEASE FROM A METER RISER TO THE AIR WHEN A CAR HIT IT.. 0 UNKNOWN AMOUNT OF NATURAL GAS WAS RELEASED TO ATMOSPHERE.
6/14/2008	Wildfire	Dripping Springs Fire - a human caused fire that burned an area east of Las Cruces, New Mexico at Dripping Springs. The fire started June 14, 2008 and was contained June 19, 2008, burning a total of 1,735 acres. Fire suppression costs were estimated at over $525,000. One outbuilding was damaged.
6/21/2008	Severe Wind	EPISODE NARRATIVE: A back door cold front along with an upper impulse within northerly flow aloft triggered severe thunderstorms with large hail on June 20th. On the 21st, the front was still present but under increasing heights. The resulting warming trend increased dew point depressions and raised the microburst threat.
6/24/2008	Severe Wind	EPISODE NARRATIVE: Low level northeast flow maintained enough moisture for thunderstorm development, while dewpoint depressions were sufficiently large for strong microburst winds and outflows.
7/2/2008	Hail	EPISODE NARRATIVE: An upper impulse within a north to northeast flow moved through a moist, unstable air mass and triggered severe thunderstorms.
7/8/2008	Flood	EVENT NARRATIVE: A Skywarn Spotter reported 3 inches of rain within an hour in Chaparral, and the surrounding neighborhood was flooded. EPISODE NARRATIVE: A weak steering flow within a very moist and unstable air mass resulted in a slow moving thunderstorms in southern New Mexico which dumped very heavy rain.
7/10/2008	Flood	EVENT NARRATIVE: A large cluster of thunderstorms moved over an area already saturated from heavy rain the previous day. Arroyos overflowed and low water crossings were flooded. Highways that were closed included Highway 9 between Columbus and Hachita, Highway 26 between Deming and Hatch, and Highway 27 south of Hillsboro. EPISODE NARRATIVE: A weak steering flow within a very moist and unstable air mass resulted in a slow moving thunderstorms in southern New Mexico which dumped very heavy rain.
7/18/2008	Lightning	Lightning strike damaged the fire panel at the NMSU Observatory

7/26/2008	Flood	EVENT NARRATIVE: The remnants of Dolly brought 2.5 to 3.5 inches of rain to southern Dona Ana County. Water was knee deep in Chaparral, and Highway 28 was flooded south of La Union. EPISODE NARRATIVE: The remnants of Hurricane Dolly moved northwestward into far west Texas, moving directly over west El Paso, then curved north and northeastward into Otero County New Mexico. Moisture from this system spread over most of southern New Mexico and lingered another 36 hours. Storm totals from early the 26th into the 27th peaked at more than 4 inches in the Santa Teresa Country Club area.
7/26/2008	Flood	EVENT NARRATIVE: Residual moisture from the remnants of Dolly led to heavy rainfall and flash flooding in the town of Dona Ana. Several roads were barricaded and water entered numerous homes. EPISODE NARRATIVE: The remnants of Hurricane Dolly moved northwestward into far west Texas, moving directly over west El Paso, then curved north and northeastward into Otero County New Mexico. Moisture from this system spread over most of southern New Mexico and lingered another 36 hours. Storm totals from early the 26th into the 27th peaked at more than 4 inches in the Santa Teresa Country Club area.
7/31/2008	Severe Wind	EVENT NARRATIVE: A wind gust of 58 mph was measured at the Las Cruces Airport during a severe thunderstorm. However, the winds were estimated at 65 mph near Mayfield High School were several trees were blown over and minor structural damage occurred. EPISODE NARRATIVE: An upper impulse within a northeast flow aloft triggered severe thunderstorms over the area.
8/11/2008	Lightning	Lightning strike damaged fire panels, transformer and fuses
12/14/2008	Severe Wind	EVENT NARRATIVE: A gust of 86 mph was measured near Aguirre Springs State Park on the eastern slopes of the Organ Mountains, resulting in a few shingles blown off a roof. Minor building damage occurred in Las Cruces according to a local TV station. EPISODE NARRATIVE: A large, strong upper level trough approached New Mexico from the west. In response, a deep surface trough developed in the southern plains to the northeast of the area. The tight surface pressure gradient and mixing down of strong winds aloft resulted in high winds at the surface.
12/23/2008	Severe Wind	EVENT NARRATIVE: Wind gusts of 60 to 67 mph were measured at White Sands missile Range Headquarters. A gust of 97 mph was measured near San Augustine Pass. Windows were blown out of vehicles at the WSMR main post. EPISODE NARRATIVE: A strong upper level trough moved eastward across the desert southwest and induced a deep surface low in the Texas panhandle. A tight surface gradient and the mixing down of strong winds aloft resulted in high winds at the surface.
12/23/2008	Severe Wind	Severe winds blew a roof off at NMSU
5/22/2009	Flood	EVENT NARRATIVE: Flooding was reported in some homes in the community of Rodey. There was also flooding along Highway 185 southeast of Hatch. EPISODE NARRATIVE: A late season upper low moved slowly northeastward across Arizona and New Mexico, drawing up plenty of moisture in advance within a deep southerly flow.
6/17/2009	HAZMAT Incident	CALLER IS REPORTING A RELEASE OF NATURAL GAS FROM A GAS METER SET DUE TO IT BEING STRUCK BY A ALL TERRAIN VEHICLE.. 0 UNKNOWN AMOUNT OF NATURAL GAS WAS RELEASED TO ATMOSPHERE.
6/24/2009	Severe Wind	EVENT NARRATIVE: A 62 mph wind gust was measured during a severe thunderstorm at the WSMR golf course. The rainfall total was almost an inch. EPISODE NARRATIVE: High pressure aloft was centered over central Texas, which placed southern New Mexico under a moist southeast flow. It was an early start to the North American monsoon in this part of the country.
6/28/2009	Flood	EVENT NARRATIVE: Baylor Canyon Road and Dripping Springs Road were washed out. EPISODE NARRATIVE: A plume of moist tropical air was streaming northward over New Mexico between an upper high to the east and a Pacific upper trough to the west. In addition, a weak backdoor front was stalled across the area. Disturbances within the southerly flow interacting with the front resulted in thunderstorms that were efficient rain producers.

7/1/2009	HAZMAT Incident	CALLER IS REPORTING A STRONG ODOR (CHEMICAL/WOOD LIKE SMELL) COMING FROM HER SINK DUE TO UNKNOWN CAUSES. CALLER STATED THAT HER HOME IS NEWLY BUILT AND THE DEVELOPERS CAN NOT DETERMINED WHERE AND WHAT THIS SMELL IS. CALLER STATED THIS HAS BEEN GONG ON FO. 0 UNKNOWN AMOUNT OF UNKNOWN MATERIAL WAS RELEASED TO ATMOSPHERE.
7/3/2009	Flood	EVENT NARRATIVE: Arroyos in the Santa Teresa area became full and led to flooding on NM Highway 273. EPISODE NARRATIVE: A very moist southerly flow was in place over the area. The atmospheric moisture content was almost twice the normal value for early July. The flow was such that thunderstorm movement was slow, subjecting locations to very heavy rainfall for long periods of time. Occasional wet microbursts were also observed.
7/6/2009	Flood	Thunderstorm rains caused flooding in building at NMSU
8/1/2009	Severe Wind	EVENT NARRATIVE: A wet microburst produced a wind gust of 68 mph at Santa Teresa High School. At least two trees were blown over. EPISODE NARRATIVE: A cool pocket of air aloft along with a weak back door front provided a moist, unstable air mass over southern New Mexico.
9/11/2009	Hail	EPISODE NARRATIVE: A weak upper disturbance moved slowly southward over southern New Mexico and far west Texas within a moist, unstable air mass. An approaching jet streak from the west along with low level easterly flow provided favorable vertical wind shear and sufficient lift for a severe weather outbreak.
9/11/2009	Hail	EPISODE NARRATIVE: A weak upper disturbance moved slowly southward over southern New Mexico and far west Texas within a moist, unstable air mass. An approaching jet streak from the west along with low level easterly flow provided favorable vertical wind shear and sufficient lift for a severe weather outbreak.
9/11/2009	Flood	EVENT NARRATIVE: Homes were flooded near Peachtree Hill northeast of Las Cruces. The U.S. 70 frontage road in this area was covered by up to 3 feet of water, and all major streets on the east mesa of Las Cruces were under water. EPISODE NARRATIVE: A weak upper disturbance moved slowly southward over southern New Mexico and far west Texas within a moist, unstable air mass. An approaching jet streak from the west along with low level easterly flow provided favorable vertical wind shear and sufficient lift for a severe weather outbreak.
9/19/2009	Hail	EPISODE NARRATIVE: A cool pocket of air associated with a weak trough aloft moved over an area of low level convergence, resulting in a line of severe thunderstorms.
9/19/2009	HAIL	EVENT NARRATIVE: Nickel to quarter size hail feel for 10 minutes, along with an inch of rain in 30 minutes. EPISODE NARRATIVE: A cool pocket of air associated with a weak trough aloft moved over an area of low level convergence, resulting in a line of severe thunderstorms.
9/19/2009	Flood	EVENT NARRATIVE: Heavy rain led to the flooding of yards in Anthony, New Mexico. EPISODE NARRATIVE: A cool pocket of air associated with a weak trough aloft moved over an area of low level convergence, resulting in a line of severe thunderstorms.
10/28/2009	Severe Wind	EVENT NARRATIVE: A gust of 73 mph was measured 2 miles southeast of San Augustin Pass. EPISODE NARRATIVE: An unseasonably cold upper low moved across the southern Rockies producing heavy snow in the Sacramento Mountains. In addition, strong winds aloft mixed down to the surface resulting in wind gusts to greater than 70 mph.

12/8/2009	Severe Wind	EVENT NARRATIVE: Peak wind gust reported was 83 mph at the KE28 AWOS site located 19 miles west-northwest of Holloman Air Force Base. Roof was tore off of the Directorate of Plans Training Mobilization and Security building on the White Sands Missile Range. Two persons were treated for minor injuries from falling debris. Other damage on the White Sands Missile Range included downed power lines, uprooted trees, damage to other buildings, including the police station, broken windows in vehicles and overturned trailers.Roof were also blown off buildings along with downed power lines in the Chaparral area. EPISODE NARRATIVE: An upper low/trough centered over the Colorado Rockies with an associated 150kt jet located over southern New Mexico and far West Texas brought wind gusts over 100 mph to areas along and east of I-25. Considerable damage and power outages were reported in the Sacramento Mountains and east of the Organ Mountains.
12/29/2009	Heavy Snow	EVENT NARRATIVE: A maximum snowfall of 6 inches was reported at San Augustin Pass. Other reports included 3.5 inches 3 miles west southwest of Organ and between 1.5 and 2.5 inches in the Las Cruces area. EPISODE NARRATIVE: A Pacific storm system moved across southwestern New Mexico and into far west Texas with cold air already in place at the surface providing a favorable environment for snow.
1/20/2010	HAZMAT Incident	CALLER STATED THAT A VALVE WAS LEFT OPEN ON A TANK ALLOWING 5000-6000 GALLONS OF VEGETABLE OIL TO LEAK OUT, SOME OF WHICH WENT INTO A DRY DITCH. THE REST IS IN THE YARD AND PARKING LOT OF THE RIO VALLEY BIOFUEL COMPANY.. 6000 GALLON(S) OF OIL, EDIBLE: VEGETABLE WAS RELEASED TO PARKING LOT, YARD, DITCH.
1/23/2010	Severe Wind	Severe winds caused damage to scoreboard at NMSU
3/14/2010	Hail	Hail caused damage to a building and 2 parked vehicles at NMSU
4/1/2010	Severe Wind	EVENT NARRATIVE: A peak wind gust of 76 mph was reported at the White Sands missile Range Post Headquarters. Other reports include a gust to 67 mph at Holloman AFB and a gust to 62 mph reported 5 miles northwest of Orogrande at a Mesonet site. EPISODE NARRATIVE: A strong Pacific trough moving into the desert southwest brought a cold front through the region with wind gusts up to 96 mph.
4/29/2010	Severe Wind	EVENT NARRATIVE: A peak gust of 69 MPH was reported at the Truth or Consequences Airport. In addition, numerous power lines were down across the city. EPISODE NARRATIVE: A deep upper low moving across the Rockies had a 130 knot jet streak moving around the base of it into southern New Mexico. A strong surface low deepened over the Oklahoma panhandle with winds ahead of a strong cold front gusting up to 95 MPH.
6/15/2010	Wildfire	Ft. Bliss 2 Fire - a human caused fire that burned an area south of Soledad Canyon, New Mexico. The fire started June 15, 2010 and was contained June 25, 2010, burning a total of 5,160 acres. Fire suppression costs were estimated at over $900,000.
6/20/2010	Wildfire	Long Canyon Fire - a human caused fire that burned an area 4 miles east of Las Cruces, New Mexico in the Organ Mountains. The fire started June 20, 2010 and was contained June 24, 2010, burning a total of 2,582 acres. Fire suppression costs were estimated at over $850,000.
7/11/2010	Flood	EVENT NARRATIVE: Water was reported going over West Canal Road Bridge in Hatch. In the Rincon/Radium Springs area near Santiago Peak Road and Highway 185 flooding pushed cars off of road. EPISODE NARRATIVE: Deep southerly flow provided a deep layer of monsoon moisture to the region with slow moving storms. The high moisture content and slow storm motion contributed to the heavy rain and flash flooding in Dona Ana County.
7/15/2010	Hail	EVENT NARRATIVE: One inch hail was reported 3 miles northwest of Las Cruces and also 2 miles northeast of Las Cruces. EPISODE NARRATIVE: A moderately moist and unstable environment under an upper ridge provided for a pulse severe storm to develop over Las Cruces, NM.

7/25/2010	Flood	EVENT NARRATIVE: Very heavy rain over Las Cruces flooded many buildings and streets across town. New Mexico State University recorded 3.36 inches of rain. At least 6 buildings on the campus had water damage with several roads closed. Several water rescues from stalled vehicles were performed on campus. EPISODE NARRATIVE: A very moist environment was in place under an upper level ridge. A stationary boundary was draped across southern New Mexico providing the lift for slow moving thunderstorms which caused numerous reports of flash flooding.
7/25/2010	Flood	Flooding caused water damage to buildings at NMSU
8/5/2010	Severe Wind	High winds cause a tree to split in two and the debris fell into two yards causing damages
8/12/2010	Severe Wind	EVENT NARRATIVE: Wind gusts were estimated up to 65 MPH in northeast Las Cruces. EPISODE NARRATIVE: A weak disturbance moving through west-southwest flow aloft provided lift for thunderstorms over Dona Ana County. Dew points in the 40s at the surface combined with temperatures in the 90s allowed for severe winds to be produced with these storms.
8/24/2010	Flood	EVENT NARRATIVE: Rainfall totals of up to 2.00 inches were reported in Radium Springs with several inches of standing water on streets and low lying areas. EPISODE NARRATIVE: An upper ridge was centered over the Four Corners area with deep easterly flow across Southern New Mexico allowing for heavy rains to develop over the region.
10/4/2010	Severe Wind	EVENT NARRATIVE: El Paso Electric reported 11 power poles were knocked down causing 11,000 people to be without power for some time. EPISODE NARRATIVE: Easterly winds brought deep moisture into the region. A surface trough extending through the Rio Grande Valley provided the lift for strong to severe thunderstorms to develop.
10/20/2010	Severe Wind	EVENT NARRATIVE: Mesonet site located 18 miles north-northeast of White Sands Main Post reported wind gust of 66 mph. EPISODE NARRATIVE: A strong cutoff low was located over far Southwest Arizona. The nose of a 100 knot jet was rounding the low and moving into Southern New Mexico and Far West Texas. A surface trough was also located near the Rio Grande Valley. All of these features combined to produce severe thunderstorms with hail to the size of baseballs reported.
12/30/2010	Severe Wind	EVENT NARRATIVE: A peak wind gust of 76 mph was reported at the Dripping Springs RAWS. The National Weather Service Office in Santa Teresa, NM recorded a gust to 59 mph and the Las Cruces Airport(KLRU) reported a gust of 58 mph. EPISODE NARRATIVE: A powerful upper low digging out of the Pacific Northwest brought a strong cold front with damaging winds gusts of up to 76 mph to the region.
2/1/2011	Extreme Heat/Cold	EVENT NARRATIVE: High temperatures reported across the area on Feb 2nd included 18F at Las Cruces, 16F in Santa Teresa at the National Weather Service Office, 12F at the White Sands Missile Range Headquarters and 13F at Northrup Landing. Morning low temperatures on Feb 3rd included 0F at Las Cruces, -20F at Jornada, -5F at the National Weather Service in Santa Teresa, -10F at the White Sands Missile Range Headquarters and -15F at Northrup Landing. Numerous frozen and broken pipes were reported, natural gas pressure was at all-time lows and schools were closed for 4 days due to all the problems caused by the cold. EPISODE NARRATIVE: A strong upper low dropped down the Northern Rockies which pushed a back door arctic cold front through the region. An upper level ridge was located over the eastern Pacific with the arctic jet steam diving south to the Mexican border. These two features combined to bring extremely cold air into the Western United States from Alaska and Canada. Numerous areas experienced rolling power outages and natural gas shortages along with burst pipes. The state of New Mexico declared a State of Emergency due to the natural gas shortages.
2/3/2011	Extreme Heat/Cold	Arctic cold air caused campus wide freezing of pipes with gas and electrical outages and water damages to buildings

2/27/2011	Severe Wind	EVENT NARRATIVE: A peak gust of 89 mph was reported at the San Augustin Pass RAWS. Other peak gusts across the area included 75 mph at Salinas Peak, 58 mph at the National Weather Service office in Santa Teresa and 61 mph at the White Sands Missile Range Main Post. EPISODE NARRATIVE: A deep upper low was diving down the west coast while a surface low rapidly deepened over the Texas and Oklahoma panhandle area. A tight pressure gradient setup across the region with strong southwest winds ahead of the upper low.
3/7/2011	Severe Wind	EVENT NARRATIVE: The peak gust at the White Sands missile Range Main Post was 71 mph. EPISODE NARRATIVE: A broad area of zonal flow extended across the U.S. with an approaching shortwave trough moving out of Southern California and into Southern New Mexico. This trough combined with an associated cold front to bring strong winds to the eastern slopes and mountain passes of South Central New Mexico.
5/12/2011	Severe Wind	Severe winds in Hatch blew off roofs and knocked trees over
5/20/2011	Power Outage	Complete blackout in Hatch due to power outage
6/1/2011	Severe Wind	EVENT NARRATIVE: The Northrup Landing Mesonet site reported a wind gust of 66 mph. EPISODE NARRATIVE: An upper trough was moving onshore while a strong ridge was located over the eastern United States. This setup a moist southerly flow at mid-levels and a dry line was located over the Rio Grande Valley, allowing for severe thunderstorms to develop.
6/1/2011	Severe Wind	EVENT NARRATIVE: A 58 mph wind gust was reported 4 miles west of Organ at a New Mexico Environment Department Mesonet site. EPISODE NARRATIVE: An upper trough was moving onshore while a strong ridge was located over the eastern United States. This setup a moist southerly flow at mid-levels and a dry line was located over the Rio Grande Valley, allowing for severe thunderstorms to develop.
7/1/2011	Severe Wind	EVENT NARRATIVE: A dry microburst affected the National Weather Service Office in Santa Teresa with a measured gust of 70 mph. EPISODE NARRATIVE: Temperatures near the century mark and dry surface conditions led to isolated thunderstorm development with a dry microburst affecting Santa Teresa, New Mexico.
7/13/2011	Severe Wind	EVENT NARRATIVE: National Weather Service Employees saw a landspout tornado about 3 miles west of the office with some dust debris on the ground. The tornado did not strike any structures and remained in the rural desert. EPISODE NARRATIVE: A surface low was setup near the bootheel of New Mexico with southeast winds over far South-Central New Mexico and a southerly flow aloft. This allowed for a brief landspout tornado to occur near the Santa Teresa Airport.
7/15/2011	Flood	Flooding due to several dams in the surrounding Hatch area
8/11/2011	Flood	EVENT NARRATIVE: New Mexico State University police reported a large amount of standing water making for hazardous travel on the eastbound lane of College between Knox and Union. EPISODE NARRATIVE: A weak surface low was located near Las Cruces with very little flow aloft allowed very slow moving thunderstorms to develop across the area. Very heavy rain occurred over Las Cruces along with localized flooding.
9/15/2011	Severe Wind	EVENT NARRATIVE: A 58 mph gust was recorded at the National Weather Service office in Santa Teresa. EPISODE NARRATIVE: An upper level trough was located over Western Arizona with a 75+ knot jet streak moving across Southern New Mexico in southwest flow. Some Baja moisture was being tapped with dew points in the mid to upper 50s creating plenty of instability across the region.
3/1/2012	Drought	EVENT NARRATIVE: The far eastern and northern portions of the Tularosa Basin remianed in Severe (D2) drought through the entire month. The Cooperative Observer at Tularosa received 0.14 inches of rain which was 0.29 inches below normal.
3/1/2012	Drought	EVENT NARRATIVE: With the exception of far western portions of the Tularosa Basin which was in Moderate(D1) drought, the remainder of the zone ranged from Severe(D2) drought west to Extreme(D3) drought east. The Cooperative Observer at Orogrande received 0.60 inches of rain which was 0.25 inches above normal.

3/18/2012	Severe Wind	EVENT NARRATIVE: The RAWS site at San Augustin Pass reported a peak gust of 86 mph. A 64 mph gust was also reported 1 mile south of White Sands Missile Range Main Post.
3/18/2012	Severe Wind	EVENT NARRATIVE: A peak gust of 67 mph was reported at a Mesonet site on Phillips Hill on the White Sands Missile Range 1 mile northeast of Northrup Landing.
3/18/2012	Severe Wind	EVENT NARRATIVE: The Dripping Springs RAWS reported a peak gust of 67 mph. The National Weather Service office located 4 miles northwest of Santa Teresa reported a peak gust of 64 mph.
4/1/2012	Drought	EVENT NARRATIVE: The far Northern portion of the zone was in Severe(D2) through the month of April. Elsewhere across the zone, conditions worsened from Moderate(D1) to Severe(D2) drought. The White Sands National Monument COOP station reported 0.00 inches of rain which was 0.30 inches below normal.
4/1/2012	Drought	EVENT NARRATIVE: The eastern half of the zone started in Severe(D2) drought and transitioned to Extreme(D3) drought during the month. The western half of the area started in Moderate(D1) drought and transitioned to Severe(D2) drought on April 24th. The average precipitation for the month at the Cooperative Observer in Orogrande is 0.29 inches and no precipitation was reported.
4/8/2012	Hail	EVENT NARRATIVE: A report from the public indicated 1.25 inch hail fell about 1 mile southeast of the Weather Service Office in Santa Teresa, NM. Quarter size hail was observed at the National Weather Service Office.
4/14/2012	Severe Wind	EVENT NARRATIVE: A peak gust of 66 mph was reported at a mesonet site 27 miles northwest of Northrup Landing. A peak gust of 58 mph was also reported 11 miles southwest of Northrup Landing at 435 AM LST.
4/14/2012	Severe Wind	EVENT NARRATIVE: The peak gust across the zone was 82 mph at San Augustin Pass. Other gusts included 71 mph 5 miles northeast of San Augustin Pass, 62 mph 1 miles west of White Sands Main Post, 60 mph 6 miles east-southeast of White Sands Main Post and 58 mph 1 mile north of the White Sands Main Post.
4/24/2012	Drought	EVENT NARRATIVE: Northern Dona Ana County transitioned from Moderate(D1) drought to Severe(D2) drought late in the month. The COOP observer in Hatch received no precipitation during the month which was 0.28 inches below normal.
4/24/2012	Drought	EVENT NARRATIVE: The entire zone started in Moderate(D1) drought and transitioned to Severe(D2) drought on April 24th. The Cooperative Observer at New Mexico State University in Las Cruces received no precipitation during the month which was 0.22 inches below normal.
5/1/2012	Drought	EVENT NARRATIVE: The far western areas of the zone stayed in Severe(D2) drought through the month of May. The remainder of the zone went from Severe to Moderate(D1) drought on May 15. The Cooperative Observer at the Jornada Range received 0.45 inches of rain which was 0.03 inches above normal.
5/1/2012	Drought	EVENT NARRATIVE: The entire zone transitioned from Severe(D2) to Moderate(D1) drought on May 15.
5/1/2012	Drought	EVENT NARRATIVE: The far eastern portions of the zone went from Extreme(D3) drought to Severe(D2) drought on May 15. The western areas went from Severe(D2) drought to Moderate(D1) drought on May 15. The Orogrande Cooperative Observer received 0.66 inches of rain which was 0.19 inches above normal.
5/1/2012	Drought	EVENT NARRATIVE: The far western portions of the zone remained in Severe(D2) drought while the remainder of the zone went from Severe to Moderate(D1) drought on May 15. The Las Cruces Cooperative Observer at New Mexico State University received 0.61 inches of rain which was almost double the average of 0.33 inches.

5/8/2012	Hail	EVENT NARRATIVE: An upper low was moving through Southern Arizona which allowed a back door cold front to move through Southern New Mexico. The easterly winds behind the front brought a source of moisture to the area with sufficient wind shear as upper level winds turned to the southwest around 35-40 knots.
5/8/2012	Hail	EVENT NARRATIVE: An upper low was moving through Southern Arizona which allowed a back door cold front to move through Southern New Mexico. The easterly winds behind the front brought a source of moisture to the area with sufficient wind shear as upper level winds turned to the southwest around 35-40 knots.
5/8/2012	Hail	EVENT NARRATIVE: An upper low was moving through Southern Arizona which allowed a back door cold front to move through Southern New Mexico. The easterly winds behind the front brought a source of moisture to the area with sufficient wind shear as upper level winds turned to the southwest around 35-40 knots.
5/14/2012	Hail	EVENT NARRATIVE: A stationary boundary remained over Southwest New Mexico into Eastern Arizona keeping some low level moisture in place across the region. An upper trough moved through the region during the afternoon helping to trigger a couple of strong thunderstorms over Dona Ana County which produced up to nickel size hail.
5/14/2012	Hail	EVENT NARRATIVE: A stationary boundary remained over Southwest New Mexico into Eastern Arizona keeping some low level moisture in place across the region. An upper trough moved through the region during the afternoon helping to trigger a couple of strong thunderstorms over Dona Ana County which produced up to nickel size hail.
6/1/2012	Drought	EVENT NARRATIVE: The eastern half of the zone was in Severe(D2) drought through the month while the western half remained in Moderate(D1) drought. The Cooperative Observer in Orogrande recorded 0.02 inches which was 0.92 inches below normal.
6/1/2012	Drought	EVENT NARRATIVE: The eastern half of the zone started in Moderate(D1) drought and transitioned to Severe(D2) drought by the end of the month. The western half of the zone remained in Severe(D2) drought for the entire month. No precipitation was recorded at the Jornada Range Cooperative Observer which was 0.62 inches below normal.
6/1/2012	Drought	EVENT NARRATIVE: The eastern half of the zone started in Moderate(D1) drought and by the end of the month, all but the far southeastern portion of the zone was in Severe(D2) drought. The remainder of the zone remained in Severe(D2) drought. The Cooperative Observer at New Mexico State University recorded no precipitation. The average precipitation for the month is 0.60 inches.
6/26/2012	Drought	EVENT NARRATIVE: The entire zone started in Moderate(D1) drought but on June 26th was upgraded to Severe(D2) drought. The White Sands National Monument Cooperative Observer recorded no precipitation which was 0.73 inches below normal.
7/1/2012	Drought	EVENT NARRATIVE: The entire zone started out in Severe(D2) drought with the southern areas transitioning to Moderate(D1) drought on July 10. The Tularosa cooperative observer recorded 0.98 inches of rain which was 0.64 inches below normal.
7/1/2012	Drought	EVENT NARRATIVE: The western areas of the zone started out in Severe(D2) drought while the eastern half was in Moderate(D1) drought. On July 10th, all of the zone except the far southwest transitioned to Moderate(D1) drought.
7/1/2012	Drought	EVENT NARRATIVE: The entire zone started out in Severe(D2) drought with the southern areas transitioning to Moderate(D1) drought on July 10. The Jornada Range cooperative observer reported 1.18 inches of rain which was 0.71 inches below normal.
7/9/2012	Flood	EVENT NARRATIVE: Thunderstorms continued to form over the region and produce periods of heavy rainfall. Minor flooding was reported along US Highway 70 at Porter road. Meanwhile lightning strikes in the nearby Organ Mountains resulted in the ignition of a small wildfire.
7/9/2012	Flood	EVENT NARRATIVE: Thunderstorms produced flooding along Stern Drive just east of Mesquite, NM. Reports of a water rescue were reported by the Dona Ana County Emergency Manager at this location.

7/24/2012	Dust Storm	EVENT NARRATIVE: Reports came from the public and local broadcast media of near zero visibility in blowing dust across the city of Las Cruces as an outflow boundary from a nearby thunderstorm moved through the city. Mesonet sites in the city of Las Cruces affiliated with local broadcast media registered wind gusts of 57 mph as the outflow boundary moved through.
8/1/2012	Drought	EVENT NARRATIVE: The northern half of the zone was in Severe(D2) drought for the entire month. The southern areas went from Moderate(D1) to Severe(D2) drought on August 14th. The Jornada Range Cooperative Observer reported 0.61 inches of rain. The average rainfall for August is 1.95 inches.
8/1/2012	Drought	EVENT NARRATIVE: The northern half of the zone was in Severe(D2) drought through the month. The southern half went from Moderate(D1) to Severe(D2) drought on August 14th. The White Sands National Monument Cooperative Observer reported 0.45 inches of rain which was 1.30 inches below normal.
8/14/2012	Drought	On August 14th, all areas except the southeast portion of the zone were put into Severe(D2) drought. Only 0.72 inches of rain was reported at the New Mexico State University Cooperative Observer. This was 1.16 inches below normal.
8/14/2012	Drought	The northern half of the zone went from Moderate(D1) to Severe(D2) drought on August 14th. The southern areas remained in Moderate(D1) drought for the entire month. The Cooperative Observer at Orogrande reported 2.27 inches of rain for the month which was 0.30 inches above normal.
8/23/2012	Severe Wind	White Sands Missile Range reported strong thunderstorm winds and .87 inches of heavy rain at one of its SAMS sites as a severe thunderstorm moved through.
9/1/2012	Drought	Severe(D2) drought conditions continued through the month of September across the entire zone. The Cooperative Observer at Jornada Range reported 0.73 inches of rain which was 0.65 inches below normal.
9/1/2012	Drought	The northern half of the zone was in Severe(D2) drought through the month of September while the south remained in Moderate(D1) drought. The Orogrande Cooperative Observer reported 1.67 inches of rain which was 0.24 inches above normal.
9/1/2012	Drought	The eastern half of the zone was in Severe(D2) drought through the month of September while the western half remained in Moderate(D1) drought. The Cooperative Observer at the White Sands National Monument reported 0.87 inches of rain which was 0.40 inches below normal.
9/1/2012	Drought	Severe(D2) drought continued across the entire zone. The Cooperative Observer at New Mexico State University reported 2.07 inches of rain which was 0.79 inches above normal.
9/7/2012	Flood	Heavy rain from a slow moving thunderstorm resulted in flooding of state highway 185 just south of Rincon. State Police reported the road closed shortly before 8pm local time while road crews cleaned up debris.
9/7/2012	Flood	An off duty NWS employee reported a total of 1.23 inches of rain from a slow moving thunderstorm between 10 pm and 11 pm local time. Surrounding COCORAHS sites also reported rainfall totals of between .74 inches and 1.00 inches from the same storm cell.
10/1/2012	Drought	Severe(D2) drought persisted across the area during the month of October.
10/1/2012	Drought	The northern and western portions of the zone were in Severe(D2) drought through the month of October while the other areas remained in Moderate(D1) drought. The Cooperative Observer at Orogrande reported 0.46 inches of rain which was exactly half of the average total which is 0.92 inches.
10/1/2012	Drought	The eastern half of the zone was in Severe(D2) drought through the month, but increased in coverage to the entire zone on October 30. The Cooperative Observer at the White Sands National Monument reported 0.36 inches of rain when the average is 0.91 inches.

10/1/2012	Drought	The western half of the Southern Tularosa Basin remained in Severe(D2) drought during the month of November. The Cooperative Observer in Orogrande reported no precipitation which was 0.45 inches below normal.
11/1/2012	Drought	All of Northern Dona Ana County was in Severe(D2) drought throughout November. The Jornada Range Cooperative Observer reported 0.03 inches of rain which was 0.45 inches below normal.
11/1/2012	Drought	The western half of the Southern Tularosa Basin remained in Severe(D2) drought during the month of November. The Cooperative Observer in Orogrande reported no precipitation which was 0.45 inches below normal.
11/1/2012	Drought	The area of Northwestern Otero County remained in Severe(D2) drought throughout the month of November. The Cooperative Observer at the White Sands National Monument reported 0.03 inches of rain which was 0.39 inches below normal.
11/1/2012	Drought	The western half of the Southern Tularosa Basin remained in Severe(D2) drought during the month of November. The Cooperative Observer in Orogrande reported no precipitation which was 0.45 inches below normal.
11/10/2012	Severe Wind	Some peak gusts across the zone included 76 mph 5 miles northeast of San Augustin Pass, 69 mph at San Augustin Pass and 65 mph 1 mile west of the White Sands Main Post.
11/10/2012	Severe Wind	The peak gust at the National Weather Service Office in Santa Teresa was 60 mph.
12/1/2012	Drought	Severe(D2) drought continued through the month of December. The Cooperative Observer at the White Sands National Monument reported 0.12 inches of precipitation which was 0.53 inches below normal.
12/1/2012	Drought	The northern half of the zone remained in Severe(D2) drought during the month of January. The Cooperative Observer at Orogrande reported 0.30 inches of precipitation which was 0.15 inches below normal.
12/1/2012	Drought	Severe(D2) drought continued through the month of December. The Cooperative Observer at the Jornada Range reported 0.36 inches of rain which was 0.33 inches below normal.
12/1/2012	Drought	The northern half of the zone was in Severe(D2) drought through the month while the southern half remained in Moderate(D1) drought. The Cooperative Observer at Orogrande reported 0.18 inches of precipitation which was 0.43 inches below normal.
12/19/2012	Severe Wind	A peak wind gust of 65 mph was reported 3 miles west-southwest of Holloman Air Force Base. Peak wind gusts of 61 mph were also reported 11 miles southwest of Northrup Landing and at the official observation site at Holloman Air Force Base(KHMN).
12/19/2012	Severe Wind	A peak gust of 86 mph was reported 1 mile southeast of White Sands Main Post. Other peak gusts across the zone included 78 mph 1 mile west of White Sands Main Post, 63 mph 5 miles northeast of San Augustin Pass and 62 mph 6 miles east-southeast of White Sands Main Post.
12/19/2012	Severe Wind	A peak gust of 90 mph was reported at San Augustin Pass. Other areas that saw high wind gusts included 59 mph at both the Las Cruces Airport and Dripping Springs.
1/1/2013	Drought	Severe(D2) drought remained across the zone through the month. The Jornada Range Cooperative Observer reported 0.16 inches of precipitation which was 0.32 inches below normal.
1/1/2013	Drought	The northern half of the zone remained in Severe(D2) drought during the month of January.

		The Cooperative Observer at Orogrande reported 0.30 inches of precipitation which was 0.15 inches below normal.
1/1/2013	Drought	Severe(D2) drought persisted through the month across the entire zone. The Cooperative Observer at White Sands National Monument reported 0.09 inches of precipitation which was 0.41 inches below normal.
1/1/2013	Drought	The entire zone remained in Severe(D2) drought during the month of January. The Cooperative Observer at New Mexico State University reported 0.14 inches which was 0.26 inches below normal.
1/11/2013	Severe Wind	A peak gust of 88 mph was reported 5 miles northeast of San Augustin Pass. Other peak gusts included 82 mph 1 mile west of White Sands Main Post and 78 mph at San Augustin Pass.
2/1/2013	Drought	The entire zone remained in Severe(D2) drought through the month of February. The Cooperative Observer at Jornada Range reported 0.01 inches of precipitation which was 0.42 inches below normal.
2/1/2013	Drought	The northern portions of the zone remained in Severe(D2) drought for the month. No precipitation was reported at the Cooperative Observer in Orogrande which was 0.39 inches below normal.
2/1/2013	Drought	The entire zone started out in Severe(D2) drought but the far northern portion was put into Extreme(D3) drought on February 19th. The White Sands National Monument Cooperative Observer reported 0.01 inches of precipitation which was 0.37 inches below normal.
2/1/2013	Drought	The zone remained in Severe(D2) drought through the month of February. The Cooperative Observer at New Mexico State University reported 0.08 inches of precipitation which was 0.32 inches below normal.
2/9/2013	Severe Wind	A peak wind gust of 79 mph was reported at Salinas Peak in Sierra county.
2/9/2013	Severe Wind	A peak gust of 75 mph was measured a San Augustine Peak. Also a gust of 62 mph was reported 5 miles northeast of San Augustine Peak.
2/20/2013	Severe Wind	A 65 mph wind gust was reported at 12:13 pm at the mesonet site just north of Twin Peaks in Dona Ana county. Later in the afternoon a gust of 63 mph was reported at NWS EPZ around 5:32 pm.
2/20/2013	Severe Wind	Salinas Peak measured a peak wind gust of 69 mph at 2:45 pm.
2/20/2013	Severe Wind	A wind gust of 74 mph was reported at San Augustine Pass at 1:45 pm. Earlier around 1:00 pm a wind gust of 60 mph was reported at a site 5 miles northeast of San Augustine Pass.
2/24/2013	Severe Wind	The mesonet site a Salinas Peak in Sierra county measured a peak wind gust of 64 mph.
2/24/2013	Severe Wind	A 71 mph wind gust was reported at San Augustine Pass at 1:45 pm. Later at 4:30 pm the wind again gusted to 71 mph at this location.
3/1/2013	Drought	The entire region remained in Severe(D2) drought during the month of March. The Jornada Range Cooperative Observer reported no precipitation which was 0.29 inches below normal.

3/1/2013	Drought	The northern half of the zone remained in Severe(D2) drought while the southern areas were in Moderate(D1) drought. The Orogrande Cooperative Observer reported no precipitation which was 0.35 inches below normal.
3/1/2013	Drought	Extreme(D3) drought continued across far northern portions of the zone while the remainder of the area stayed in Severe(D2) drought. The White Sands National Monument Cooperative Observer reported no precipitation which was 0.28 inches below normal.
3/1/2013	Drought	Severe(D2) drought continued through the month for the entire zone. The Cooperative Observer at New Mexico State University reported no precipitation which was 0.30 inches below normal.
3/23/2013	Severe Wind	The Las Cruces Airport reported a peak gust of 60 mph.
3/23/2013	Severe Wind	A mesonet site 1 mile southeast of the White Sands Missile Range Main Post recorded a peak gust of 70 mph.
4/1/2013	Drought	The zone gradually went from being in Severe(D2) drought to Exceptional(D4) drought by the end of the month. The Jornada Range Cooperative Observer reported no precipitation which was 0.21 inches below normal.
4/1/2013	Drought	Extreme(D3) drought was occurring over the far northern areas at the beginning of the month while the remainder of the zone was in Severe(D2) drought. By the end of the month the western areas were in Exceptional(D4) drought and the eastern areas in Extreme(D3) drought. THe Cooperative Observer at the White Sands National Monument recorded no precipitation which was 0.30 inches below normal.
4/1/2013	Drought	THe month started out with Severe(D2) drought across the northern portions of the zone and Moderate(D1) drought south. At the end of the month, the northwestern areas were placed in Exceptional(D4) drought with Extreme(D3) drought over the remainder of the area. The Orogrande Cooperative Observer reported just a trace of precipitation which was 0.28 inches below normal.
4/1/2013	Drought	The month started out with Severe(D2) drought across the entire zone except the far southeast where it was Moderate(D1). By the end of the month, all areas were in Extreme(D3) drought except for the southeast which was in Severe(D2) drought. The Cooperative Observer at New Mexico State University reported no precipitation in April which was 0.22 inches below normal.
4/17/2013	Severe Wind	A peak wind gust of 84 mph was recorded at San Augustin Pass. Additional peak wind gusts reported included 77 mph at Lookout Peak and 64 mph at Twin Peaks.
4/17/2013	Severe Wind	The Northrup Strip Mesonet station reported a peak gust of 65 mph.
4/17/2013	Severe Wind	A Mesonet Site 1 mile west of the White Sands Missile Range Main Post recorded a peak gust of 69 mph. Another Mesonet Station 1 mile southeast of Chaparral recorded a peak gust of 59 mph.
5/1/2013	Drought	The entire zone remained in Exceptional(D4) drought through the month of May. The Jornada Cooperative Observer reported 0.04 inches of precipitation which was 0.48 inches below normal.
5/1/2013	Drought	The northern half of the zone remained in Exceptional(D4) drought while the southern half was in Extreme(D3) drought through the month. The Cooperative Observer at New Mexico State University reported 0.09 inches of rain which was 0.31 inches below normal.

5/1/2013	Drought	The western half of the zone remained in Exceptional(D4) drought while the eastern half was in Extreme(D3) drought during the month of May. The White Sands National Monument Cooperative Observer reported no precipitation which was 0.46 inches below normal.
5/1/2013	Drought	Exceptional(D4) drought was experienced in the northwest portion of the zone with Severe(D2) drought over the far south. The remainder of the zone was in Extreme(D3) drought. The Orogrande Cooperative Observer reported 0.07 inches of precipitation which was 0.56 inches below normal
6/1/2013	Drought	Exceptional(D4) drought continued for the month of June across the entire zone. The Cooperative Observer at the Jornada Range reported 0.04 inches of precipitation which was 0.76 inches below normal.
6/1/2013	Drought	Exceptional(D4) drought continued across the northern half of the zone. Extreme(D3) conditions were noted for the remainder of the zone except the far south where Severe(D2) drought remained in place. The Orogrande Cooperative Observer reported 0.52 inches of precipitation which was 0.65 inches below normal.
6/1/2013	Drought	The entire zone remained in Exceptional(D4) drought through the month. The White Sands National Monument Cooperative Observer reported 0.38 inches of precipitation which was 0.58 inches below normal.
6/1/2013	Drought	Exceptional(D4) drought continued across the northern half of the zone with Extreme(D3) conditions for the south. The Cooperative Observer at New Mexico State University reported 0.04 inches which was 0.62 inches below normal.
6/2/2013	Severe Wind	The Northrup Strip Mesonet site reported a peak gust of 67 mph.
7/1/2013	Drought	The zone transitioned from Exceptional(D4) to Extreme(D3) drought on July 30th. The Jornada Range Cooperative Observer reported 3.02 inches of rain which was 0.83 inches above normal.
7/1/2013	Drought	The month started out with Exceptional(D4) drought over the north down to Severe(D2) drought over the far south. On July 30th, the far northern zreas were in Extreme(D3) drought while the far south was in Abnormally Dry(D0) drought. The Orogrande Cooperative Observer reported 1.59 inches of rain which was 0.50 inches below normal.
7/1/2013	Drought	The entire zone transitioned from Exceptional(D4) to Extreme(D3) drought on July 30th. The White Sands National Monument Cooperative Observer reported 2.81 inches of rain which was 1.29 inches above normal.
7/1/2013	Drought	Exceptional(D4) drought was occurring across the northern half of the zone while Extreme(D3) drought was over the southern half to start the month. On July 30th the northern half was in Extreme(D3) drought while the far southern portion of the zone was in Moderate(D1) drought. The Cooperative Observer at New Mexico State University reported 1.36 inches of rain which was 0.17 inches below normal.
7/1/2013	Severe Wind	Wind gusts were estimated around 60 mph by a NWS Employee near the Hatch exit of Interstate 25.
7/3/2013	Hail	A spotter reported nickel size hail covering the ground.
7/24/2013	Severe Wind	A Mesonet site near Talvera recorded a 70 mph wind gust.
7/24/2013	Severe Wind	An NWS employee reported a tree down in downtown Las Cruces.
7/24/2013	Flood	Reports from 911 said there was a swift water rescue on the corner of Camino Lindo and Sonoma Ranch Blvd in Las Cruces. Flooding was also reported at Sierra Middle School.

7/24/2013	Flood	The Dona Ana Emergency Manager reported 4 families in mobile homes in Vado had to be evacuated due to water coming up to their doorways. A car was also submerged in mud due to the flooding.
7/26/2013	Severe Wind	The San Augustin Pass Mesonet site recorded a peak gust of 84 mph from the north due to a microburst. The peak wind occurred at 1243 pm MST with gussts to 60 mph through 1249 pm MST.
7/26/2013	Flood	Law enforcement reported Interstate 25 impassable between mile markers 51 and 54 even to fire trucks. Dona Ana Road had washout as well as road running straight south out of Hatch.
8/1/2013	Drought	The zone transitioned from Extreme(D3) to Severe(D2) drought on August 20th. THe Jornada Range Cooperative Observer reported 2.55 inches of precipitation which was 0.59 inches above normal.
8/1/2013	Drought	The northern areas started out in Extreme(D3) drought with improving conditions to the far south where Abnormally Dry(D0) conditions were reported. On August 20th, the northern areas transitioned to Severe(D2) drought with no change across the remainder of the area.
8/1/2013	Drought	Northern areas of the zone started out in Extreme(D3) drought while the far southeastern portions were in Abnormally Dry(D0) drought. On August 20th, the northern areas were put into Severe(D2) drought. The New Mexico State University Cooperative Observer reported 1.20 inches of rain which was 0.67 inches below normal.
8/1/2013	Drought	The entire zone started out in Extreme(D3) drought. On August 20th, the southwestern portions of the zone transitioned to Severe(D2) drought while the remainder of the area remained in Extreme(D3) drought. The White Sands National Monument Cooperative Observer reported 1.11 inches of precipitation which was 0.63 inches below normal.
8/15/2013	Flood	Dona Ana Emergency Manager reported a water rescue was necessary in Sunland Park due to flooding with one person transported to an El Paso hospital with unknown injuries.
8/15/2013	Flood	Emergency Manager reported 24 people were displaced due to major flooding that flooded their homes in Vado. The Red Cross established shelters for the families.
9/1/2013	Drought	The northern half of the zone which started in Severe(D2) drought transitioned to Abnormally Dry(D0) drought on September 17th. The New Mexico State University Cooperative Observer reported 3.08 inches of rain which was 1.75 inches above normal.
9/1/2013	Drought	The zone went from Severe(D2) to Abnormally Dry(D0) drought on September 17th. The Cooperative Observer at Jornada reported 2.88 inches of precipitation which was 1.47 inches above normal.
9/1/2013	Drought	All areas started out in Extreme(D3) drought except the southwest which was in Severe(D2) drought. On September 17th, the northeast was put into Severe(D2) drought while the remainder of the zone was in Moderate(D1) drought. The White Sands National Monument Cooperative Observer reported 3.36 inches of precipitation which was 1.91 inches above normal.
9/1/2013	Drought	The northern half of the zone started out in Severe(D2) drought with a gradual decrease to Abnormally Dry(D0) drought far south. On September 17th all areas were in Abnormally Dry(D0) drought or no drought at all. The Orogrande Cooperative Observer reported 4.51 inches of rain which was 2.81 inches above normal.
9/11/2013	Flood	Dona Ana Emergency Manager reported an earthen dam breached and was causing flash flooding in Vado. A small trailer park that was in the path of the breach was evacuated and local street flooding occurred.
9/11/2013	Flood	Emergency Manager reported several reports of flash flooding in the East Mesa area of Las Cruces and around Dona Ana. Rainfall amounts of 1.5 to 2.5 inches were reported via CoCoRaHS in the area.

9/12/2013	Flood	Flooding was reported throughout the cities of Anthony and La Union. CoCoRaHS observations had between 2 to 3 inches of rain having fallen in the area through the morning into the early afternoon. The driest of arroyos were running full at the peak of the event. An earthen dam was breached causing significant flooding of homes and streets in La Union.
10/1/2013	Drought	The northeastern areas of the zone were in Severe(D2) drought while the remainder of the zone was in Moderate(D1) drought. The Cooperative Observer at the White Sands National Monument reported no precipitation which was 0.90 inches below normal.
11/1/2013	Drought	The northeastern portions of the zone remained in Severe(D2) drought while the rest of the area was in Moderate(D1) drought. The Cooperative Observer at the White Sands National Monument reported 0.25 inches of precipitation which was 0.16 inches below normal.
12/1/2013	Drought	The northeast section of the zone was in Severe(D2) drought through the month of December. The remainder of the zone was in Moderate(D1) drought. The White Sands National Monument Cooperative Observer reported 0.53 inches of precipitation which was 0.12 inches below normal.
12/4/2013	Severe Wind	A peak wind gust of 63 mph was reported 1 mile southeast of the White Sands Missile Range Main Post. A 61 mph gust was also reported 1 mile west of the Main Post.
12/4/2013	Severe Wind	The San Augustin Pass Mesonet site reported a peak gust of 77 mph.
12/4/2013	Severe Wind	A peak gust of 58 mph was reported at Lookout Peak.
1/1/2014	Drought	The northeast portion of the zone remained in Severe(D2) drought during the month of January. There was no precipitation reported at the White Sands National Monument which was 0.49 inches below normal.
2/1/2014	Drought	The month started out with Severe(D2) drought conditions over the northeastern portion of the zone and Moderate(D1) drought over the remainder of the area. On February 25th, the entire zone except the far southeastern areas was placed into Severe(D2) drought. The Cooperative Observer at the White Sands National Monument reported no precipitation which was 0.37 inches below normal.
2/25/2014	Drought	The entire zone started out in Moderate(D1) drought, but on February 25th, the southern portion of the zone was placed into Severe(D2) drought. The Cooperative Observer at the Jornada Range reported no precipitation which was 0.38 inches below normal.
2/25/2014	Drought	The entire zone start out in Moderate(D1) drought, but the northern portion of the zone was put into Severe(D2) drought on February 25th. There was no precipitation reported by the Orogrande Cooperative Observer which was 0.39 inches below normal.
2/25/2014	Drought	The zone started out the month in Moderate(D1) drought, but on February 25th, all areas except the southeast were placed in Severe(D2) drought. The Cooperative Observer at New Mexico State University reported no precipitation during the month which was 0.39 inches below normal.
3/1/2014	Drought	The southern half of the zone was in Severe(D2) drought through the month while the northern half was in Moderate(D1). The Jornada Range Cooperative Observer reported 0.34 inches of precipitation which was 0.05 inches above normal.
3/1/2014	Drought	Severe(D2) drought continued over the northern half of the zone while the southern half was in Moderate(D1) drought during the month. The Cooperative Observer at Orogrande reported 0.24 inches of precipitation which was 0.11 inches below normal.
3/1/2014	Drought	Severe(D2) drought continued over the eastern half of the zone while Moderate(D1) drought remained over the west. The Cooperative Observer at the White Sands National Monument reported 0.27 inches of precipitation which was 0.01 inches below normal.

3/1/2014	Drought	Severe(D2) drought persisted for all areas of the zone except the far southeast where Moderate(D1) drought remained. The Cooperative Observer at New Mexico State University reported 0.33 inches of precipitation which was 0.03 inches above normal.
4/1/2014	Drought	Only the southern half of the zone started in Severe(D2) drought, but on April 15th, the entire zone was put into the Severe category. The Cooperative Observer at the Jornada Range reported no precipitation which was 0.22 inches below normal.
4/1/2014	Drought	The northern half of the zone remained in Severe(D2) drought through the month. The Cooperative Observer in Orogrande reported 0.38 inches of precipitation which was 0.09 inches above normal.
4/1/2014	Drought	The eastern half of the zone started the month in Severe(D2) drought and the western half was placed into the category on April 15th. The White Sands National Monument Cooperative Observer reported 0.12 inches of precipitation which was 0.17 inches below normal.
4/1/2014	Drought	Severe(D2) drought continued for all areas except the far southeast where Moderate(D1) drought persisted. The Cooperative Observer at New Mexico State University reported no precipitation which was 0.21 inches below normal.
4/26/2014	Severe Wind	A peak gust of 90 mph was reported at San Augustin Pass. Other gusts in the zone included 66 mph 5 miles northeast of San Augustin Pass, 67 mph 1 mile southeast of the White Sands Missile Range Main Post, 63 mph 6 miles east-northeast of the Main Post, 63 mph at Condron Field, 66 mph at the White Sands Missile Range Main Post, and 62 mph 18 miles northeast of the Main Post.
4/26/2014	Severe Wind	A peak gust of 68 mph was reported at the Twin Peaks Mesonet site. Other gusts across the zone included 61 mph 10 miles northeast of Las Cruces and at the National Weather Service Office in Santa Teresa.
4/26/2014	Severe Wind	A Mesonet site at Salinas Peak reported a peak gust of 79 mph. Other peak gusts across the zone included 60 mph 1 mile north of Capitol Peak, 58 mph 20 miles west-northwest of Tularosa and 61 mph 11 miles southwest of Northrup Strip.
5/1/2014	Drought	Severe(D2) drought remained in place during the month of May. No precipitation was reported at the Jornada Range Cooperative Observer which was 0.41 inches below normal.
5/1/2014	Drought	The northern half of the zone remained in Severe(D2) drought while the south was in Moderate(D1) drought. The Orogrande Cooperative Observer reported 0.03 inches of precipitation which was 0.43 inches below normal.
5/1/2014	Drought	Severe(D2) drought remained in place during the month of May. The Cooperative Observer reported 0.10 inches of precipitation which was 0.27 inches below normal.
5/1/2014	Drought	The zone remained in Severe(D2) drought through the entire month. The Cooperative Observer at New Mexico State University reported no precipitation which was 0.32 inches below normal.
5/11/2014	Severe Wind	The Twin Peaks Mesonet site recorded a peak wind gust of 66 mph.
5/11/2014	Severe Wind	The strongest gust across the entire zone was 64 mph at Salinas Peak. Other gusts included 60 mph 20 miles west-northwest of Tularosa and 59 mph 11 miles southwest of Northrup Strip.
5/11/2014	Severe Wind	The peak gust of 81 mph occurred at San Augustin Pass. Other high wind events reported included 62 mph 1 mile west of the White Sands Missile Range Main Post, 61 mph 1 mile southeast of the Main Post, 60 mph 5 miles northeast of San Augustin Pass and 59 mph 18 miles northeast of the Main Post.

6/1/2014	Drought	The zone remained in Severe(D2) drought through the month of June. The Jornada Range Cooperative Observer reported 0.05 inches of precipitation which was 0.55 inches below normal.
6/1/2014	Drought	The northern half of the zone remained in Severe(D2) drought while the south was just in a Moderate(D1) drought. The Orogrande Cooperative Observer reported no precipitation which was 0.93 inches below normal.
6/1/2014	Drought	Severe(D2) drought remained in place across the entire zone during the month of June. There was no precipitation reported by the Cooperative Observer at White Sands National Monument which was 0.71 inches below normal.
6/1/2014	Drought	Severe(D2) drought continued across the entire zone. There was just 0.04 inches of precipitation reported by the Cooperative Observer at New Mexico State University. This amount was 0.55 inches below normal.
6/13/2014	Severe Wind	Several gusts to near 60 knots occurred at the NWS Office in Santa Teresa with a peak gust of 69 mph. Visibility was also reduced to near zero in blowing dust.
6/13/2014	Severe Wind	A mesonet station reported a peak gust of 59 mph 3 miles southwest of Radium Springs.
6/23/2014	Severe Wind	A peak gust of 58 mph was reported 7 miles east-southeast of the White Sands Main Post.
7/1/2014	Drought	Extreme(D3) drought was reported for the entire zone except the far north where Severe(D2) drought was noted. The Jornada Range Cooperative Observer reported 1.89 inches of precipitation which was only 0.02 inches below normal.
7/1/2014	Drought	Extreme(D3) to Severe(D2) drought remained in place across the entire zone through the month of July. The Orogrande Cooperative Observer reported 6.63 inches of precipitation which was 4.80 inches above normal.
7/1/2014	Drought	The entire zone was in Extreme(D3) drought except the far southeast which was in Severe(D2) drought. The Cooperative Observer at New Mexico State University reported 1.07 inches of precipitation which was 0.45 inches below normal.
7/1/2014	Drought	The zone started with Extreme(D3) drought over the south and Severe(D2) drought across the northern half. On July 29th, the northwest portion of the zone was put into Moderate(D1) drought and the remainder was put into Severe(D2) drought. The White Sands National Monument Cooperative Observer reported 0.94 inches of precipitation which was 0.42 inches below normal.
7/1/2014	Hail	A back door cold front moved into the region with east winds bringing in deep moisture up to about the Rio Grande Valley. Upper level flow was out of the northwest providing sufficient shear for some severe thunderstorms to develop and some isolated flash flooding. Wind gusts up to 66 mph and hail up to an inch and a half in diameter were reported.
7/1/2014	Hail	A back door cold front moved into the region with east winds bringing in deep moisture up to about the Rio Grande Valley. Upper level flow was out of the northwest providing sufficient shear for some severe thunderstorms to develop and some isolated flash flooding. Wind gusts up to 66 mph and hail up to an inch and a half in diameter were reported.
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7/1/2014	Severe Wind	A back door cold front moved into the region with east winds bringing in deep moisture up to about the Rio Grande Valley. Upper level flow was out of the northwest providing sufficient shear for some severe thunderstorms to develop and some isolated flash flooding. Wind gusts up to 66 mph and hail up to an inch and a half in diameter were reported. Mesonet site 6 miles east-southeast of White Sands Main Post.
7/1/2014	Severe Wind	White Sands Missile Range Main Post Mesonet site.
7/1/2014	Flood	Las Cruces Police reported flooding in the Picacho Hills area down by the river.
7/1/2014	Severe Wind	A back door cold front moved into the region with east winds bringing in deep moisture up to about the Rio Grande Valley. Upper level flow was out of the northwest providing sufficient shear for some severe thunderstorms to develop and some isolated flash flooding. Wind gusts up to 66 mph and hail up to an inch and a half in diameter were reported. Twin Peaks Mesonet site just northeast of Las Cruces.
7/1/2014	Severe Wind	A trailer on Paloma Blanca in Chaparral had it's roof removed. Report via Twitter.
7/28/2014	Flood	Over an inch of rain fell quickly in Hill, NM which caused the closing of Dona Ana Road which was underwater. Several houses had water in them, plus damage to trucks and a horse trailer were also reported. Water made it into the basement of the historic St. Mary's at Hill Anglican Church. One resident said that the water was higher than any other time in the 50 years he lived there.
7/30/2014	Hail	A weak upper level trough was moving through the region with sufficient moisture still in place from previous days. The northwest flow aloft and weak south to southwest winds at the surface provided sufficient shear for severe thunderstorms with heavy rain to develop across Otero County.
8/1/2014	Flood	A spotter reported 2.57 inches of rain near San Augustin Pass. Additional reports of over 2 inches were reported by CoCoRaHs observers into southeastern Las Cruces. The was one road closure on the New Mexico State University Campus at Arrowhead Drive.
8/1/2014	Drought	Extreme(D3) drought was observed for all areas except the far southeast where Severe(D2) drought was noted. On August 5th, the entire zone was put into Severe(D2) drought. The New Mexico State University Cooperative Observer reported 2.11 inches of precipitation which was 0.24 inches above normal.
8/1/2014	Drought	The month began with Extreme(D3) drought over all but the far north where Severe(D2) drought was noted. on August 5th, the entire zone was in Severe(D2) drought. The Jornada Range Cooperative Observer reported 2.24 inches of precipitation which was 0.28 inches above normal.
8/1/2014	Drought	The month started with Extreme(D3) drought far west and Severe(D2) drought the remainder of the area. On August 5th, all areas were put into Severe(D2) drought except the far south which improved to Moderate(D1) drought. The Cooperative Observer at Orogrande reported 2.90 inches of precipitation which was 0.92 inches above normal.
8/1/2014	Drought	Besides the northwest corner of the zone which was in Moderate(D1) drought, the remainder of the zone started August in Severe(D2) drought. On August 5th, the southern half of the zone remained in Severe(D2) drought which gradually improved northward to Abnormally Dry(D0)

		drought. The White Sands Missile Range Cooperative Observer reported 2.31 inches of rain which was 0.56 inches above normal.
8/1/2014	Flood	The NMDOT reported mudslides and debris on Frontage Roads 1037 and 1035 between Las Cruces and Vado from overnight rains. Several buildings on the New Mexico State University Campus reported water inside of them, including two rooms in the Health and Social Sciences Building, heavy water in east gymnasium of Activity Center and several Engineering Complex buildings.
8/9/2014	Severe Wind	The Truth or Consequences ASOS reported a peak wind gust of 59 mph from a thunderstorm outflow.
8/10/2014	Flood	A total of 1.55 inches of rain fell in Santa Teresa with most of the rain falling in 20 minutes. Small hail was also reported. Street flooding was reported with water over the curb.
8/19/2014	Lightning	Six people, including several middle school football players were injured from the initial lightning strike from a nearby thunderstorm. No fatalities occurred with this lightning strike, but one student who was closest to the strike suffered significant injuries and was in the hospital for over a week.
8/26/2014	Flood	Several homes were flooded in Rodey on Mariano and Trujillo Streets as well as on Colorado Street.
9/1/2014	Drought	The entire zone started out the month in Severe(D2) drought. On September 23rd, the zone was put into Moderate(D1) drought. The Cooperative Observer at the Jornada Range reported 2.50 inches of precipitation which was 1.08 inches above normal.
9/1/2014	Drought	Severe(D2) drought was reported for all areas except the far south at the beginning of the month. On September 23rd, all areas were put into Moderate(D1) drought or Abnormally Dry(D0) conditions. The Orogrande Cooperative Observer reported 4.69 inches of precipitation which was 3.19 inches above normal.
9/1/2014	Drought	The southern half of the zone started the month in Severe(D2) drought but on September 23rd was put into Moderate(D1) drought. The White Sands National Monument Cooperative Observer reported 3.82 inches of precipitation which was 2.50 inches above normal.
9/1/2014	Drought	The entire zone went from Severe(D2) drought to start the month to Moderate(D1) drought on September 23rd. The New Mexico State University Cooperative Observer reported 3.23 inches of precipitation which was 1.92 inches above normal.
9/16/2014	Flood	A CoCoRaHS Observer reported 3.55 inches of rain between the 16th and early on the 19th.
9/16/2014	Flood	A CoCoRaHS Observer reported a total of 3.49 inches of rain between the 16th and early on the 19th.
9/22/2014	Flood	Dona Ana 911 reported numerous roads flooded around Las Cruces including the intersection of Park Hill Drive and Del Rey. A storm survey performed by the office confirmed about 8 houses which had water run through them, fences knocked down and roads washed out around Rocky Canyon Trail and Shalem Colony Trail area. One of the houses had water up to 3 feet deep inside. Reports of over 2 inches of rain in less than 30 minutes were received around the Dona Ana and extreme north Las Cruces areas.
1/22/2015	Heavy Snow	A CoCoRaHS Observer reported 8.2 inches of snow 16 miles northwest of Las Cruces.
1/22/2015	Heavy Snow	A CoCoRaHS observer reported 5 inches of snow in 5 miles northwest of Las Cruces. Several other observers reported over 4 inches across the city of Las Cruces.
5/14/2015	Severe Wind	A strong upper low was moving into Southern California with deep southwest flow over Southern New Mexico. A disturbance moved out of Northern Mexico where a severe

		thunderstorm developed and moved into the Santa Teresa area and produced a wind gust to 60 mph.
5/30/2015	Hail	An upper trough was moving through the central and southern plains with a back door cold front located near the Rio Grande Valley. A severe thunderstorm developed along this boundary and produced up to one inch diameter hail in the Las Cruces area.
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6/21/2015	Severe Wind	Three large trees were blown down on the NMSU campus at the married housing units.
7/10/2015	Severe Wind	An upper low was located over Northern Nevada with 75kt jet across Central Arizona. Low level winds out of the southeast pumped moisture into the area with dew points in the upper 50s and lower 60s. The moisture combined with moderate instability and deep layer wind shear to produce widespread severe thunderstorms and flash flooding.
7/10/2015	Hail	An upper low was located over Northern Nevada with 75kt jet across Central Arizona. Low level winds out of the southeast pumped moisture into the area with dew points in the upper 50s and lower 60s. The moisture combined with moderate instability and deep layer wind shear to produce widespread severe thunderstorms and flash flooding.
7/11/2015	Hail	An upper high was located over Central Texas and a weak disturbance in southerly flow was moving into New Mexico. Marginal instability allowed a strong thunderstorm with dime size hail to develop over Southern Dona Ana County.
10/3/2015	Hail	A developing upper low was moving into Northern California with strong southwest flow over the Borderland and low level south to southeast winds. Deep moisture for October was in place with dew points into the 50s providing ample instability for severe thunderstorms with up to 2 inch diameter hail reported.
10/3/2015	Hail	A developing upper low was moving into Northern California with strong southwest flow over the Borderland and low level south to southeast winds. Deep moisture for October was in place with dew points into the 50s providing ample instability for severe thunderstorms with up to 2 inch diameter hail reported.
10/3/2015	Hail	Golf ball hail reported near Sonoma Ranch Golf Course.
10/3/2015	Hail	Mainly quarter size, but some stones were up to golf ball size.
10/3/2015	Hail	A developing upper low was moving into Northern California with strong southwest flow over the Borderland and low level south to southeast winds. Deep moisture for October was in place with dew points into the 50s providing ample instability for severe thunderstorms with up to 2 inch diameter hail reported.
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10/3/2015	Hail	Ping pong ball sized hail reported near Mountain View Hospital in Las Cruces.
10/3/2015	Hail	A developing upper low was moving into Northern California with strong southwest flow over the Borderland and low level south to southeast winds. Deep moisture for October was in place with dew points into the 50s providing ample instability for severe thunderstorms with up to 2 inch diameter hail reported.

10/3/2015	Hail	Numerous cars and homes damaged. Sky lights broken.
10/20/2015	Hail	An upper low was moving into the Northern Baja region with an 80 knot jet moving into Southwest New Mexico ahead of it. Dew points were in the 50s across the region with high instability and wind shear to support severe thunderstorm development. Hail up to golf ball size was reported near Deming
10/21/2015	Hail	Strong southerly flow developed ahead of an upper low moving through Southern Arizona. Plenty of moisture was brought into the region with sufficient wind shear and instability to combine with several upper level disturbances. Widespread severe weather was reported across Southern New Mexico with hail up to 2 inches in diameter and some localized flash flooding.
10/21/2015	Hail	Pea to quarter size hail just west of Las Cruces.
10/21/2015	Hail	Strong southerly flow developed ahead of an upper low moving through Southern Arizona. Plenty of moisture was brought into the region with sufficient wind shear and instability to combine with several upper level disturbances. Widespread severe weather was reported across Southern New Mexico with hail up to 2 inches in diameter and some localized flash flooding.
10/21/2015	Hail	Strong southerly flow developed ahead of an upper low moving through Southern Arizona. Plenty of moisture was brought into the region with sufficient wind shear and instability to combine with several upper level disturbances. Widespread severe weather was reported across Southern New Mexico with hail up to 2 inches in diameter and some localized flash flooding.
10/21/2015	Hail	Hail occurred at New Mexico State University.
10/21/2015	Hail	Quarter size hail 6 blocks north of NMSU.
10/21/2015	Hail	Strong southerly flow developed ahead of an upper low moving through Southern Arizona. Plenty of moisture was brought into the region with sufficient wind shear and instability to combine with several upper level disturbances. Widespread severe weather was reported across Southern New Mexico with hail up to 2 inches in diameter and some localized flash flooding.
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10/21/2015	Hail	Strong southerly flow developed ahead of an upper low moving through Southern Arizona. Plenty of moisture was brought into the region with sufficient wind shear and instability to combine with several upper level disturbances. Widespread severe weather was reported across Southern New Mexico with hail up to 2 inches in diameter and some localized flash flooding.
10/21/2015	Flood	Arroyo overflowed from heavy rain. There was a water rescue from a flooded vehicle in Dona Ana.
11/16/2015	Severe Wind	Wind gusts up to 76 mph were reported about 5 miles south of Organ. Other reports across the zone included 60 mph at Dripping Springs and 58 mph at the Las Cruces Airport. A sign at Big 5 Sporting Goods was damaged by the wind as well and a piece landed on a customer's head which lead to that person being transported to the hospital.

11/16/2015	Severe Wind	A peak gust of 97 mph occurred at San Augustin Pass. Other peak wind gusts across the zone included 65 mph five miles northeast of San Augustin Pass, 63 mph six miles east-southeast of the White Sands Missile Range Main Post, 61 mph at the Main Post, and 69 mph at Condron Field.
11/16/2015	Severe Wind	The Northrup Strip Mesonet site reported a peak gust of 63 mph at 130pm.
12/26/2015	Heavy Snow	A wide range of snowfall totals were reported across Southern Dona Ana County. The greatest accumulation was reported in Organ where 13 inches of snow fell. The National Weather Service Office reported 10.4 inches, while most other areas received 4 to 8 inches including Las Cruces.
2/1/2016	Severe Wind	A peak gust of 95 mph was reported at San Augustin Pass. Other strong wind reports included 64 mph eighteen miles northeast of White Sands Missile Range Main Post and 77 mph five miles northeast of San Augustin Pass.
2/1/2016	Severe Wind	A peak gust of 72 mph was reported at Salinas Peak. Other reports of high winds included 63 mph twenty miles west-northwest of Tularosa, 60 mph eleven miles southwest of Northrup Strip, 67 mph at Northrup Strip and 60 mph nineteen miles west-northwest of Tularosa.
3/22/2016	Severe Wind	A peak wind gust was reported at Salinas Peak. Other wind gusts recorded included 69 mph at Northrup Strip and 61 mph sixteen miles north-northwest of Northrup Strip.
3/22/2016	Severe Wind	A peak gust of 78 mph was recorded at San Augustin Pass. Other wind gusts across the zone included 72 mph one mile southeast of the White Sands Main Post, 66 mph at Condron Field and 66 mph 18 miles northeast of White Sands Main Post.
3/29/2016	Severe Wind	A peak wind gust of 85 mph was reported at San Augustin Pass. Other reported gusts included 73 mph at Emre on the White Sands Missile Range and 62 mph at the White Sands Missile Range Museum.
5/18/2016	Hail	Dime to 1 inch hail was reported around Leasburg.
5/18/2016	Hail	Quarter sized hail was falling in sheets at the NMSU bookstore.
5/18/2016	Hail	Half inch to dime size hail fell at the intersection of Carver Road and Turtle Creek Avenue.
5/18/2016	Hail	Quarter sized hail was completely covering the ground.
6/7/2016	Severe Wind	A peak wind gust of 67 mph was reported at the Northrup Landing mesonet site.
6/9/2016	Severe Wind	Pictures were passed along on Facebook of roof damage from a likely microburst.
8/21/2016	Flood	One day rainfall total of 3.83 inches.
8/21/2016	Flood	One day rainfall total of 2.08 inches.
8/21/2016	Severe Wind	Thunderstorm winds blew off a 190 foot long horse barn roof.
8/21/2016	Flood	Flash flooding reported along Alvarez Road with mud and debris across road.
8/21/2016	Flood	Road damage occurred from flash flooding in Leasburg Dam State Park. Water made it into park buildings with over a foot of standing water in the Maintenance yard. Daily rainfall from afternoon and overnight rains totaled 4.04 inches.
9/6/2016	Avalanche	Four feet of water was in Tularosa creek at a low water crossing on Railroad Drive near Tularosa causing the road to be closed.

11/4/2016	Hail	A broad area of high pressure was located through the central part of the country with easterly winds tapping low level moisture from the Gulf of Mexico. Upper level moisture was tapped from an upper low moving out of the Baja region. These two features combined to create unusually high amounts of moisture in the atmosphere for early November and resulted in some localized rainfall amounts over 4 inches in Grant County which resulted in flash flooding. A few severe storms were also able to develop in the afternoon and evening which produced hail up to 2 inches in diameter.
11/4/2016	Hail	A broad area of high pressure was located through the central part of the country with easterly winds tapping low level moisture from the Gulf of Mexico. Upper level moisture was tapped from an upper low moving out of the Baja region. These two features combined to create unusually high amounts of moisture in the atmosphere for early November and resulted in some localized rainfall amounts over 4 inches in Grant County which resulted in flash flooding. A few severe storms were also able to develop in the afternoon and evening which produced hail up to 2 inches in diameter.
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12/16/2016	Severe Wind	Peak winds across the zone included 89 mph at Northrup Strip, 61 mph 19 miles west-northwest of Tularosa and 67 mph 22 miles northwest of Tularosa.
12/16/2016	Severe Wind	A peak gust of 110 mph was reported at San Augustin Pass. Other wind gusts across the zone included 88 mph near the White Sands Missile Range Main Post, 80 mph at Condron Field and 6 miles east-southeast of the Main Post and 60 mph 11 miles northeast of Organ.
12/16/2016	Severe Wind	A peak gust of 85 mph was reported 11 miles southwest of Northrup Strip.
1/14/2017	Hail	A cutoff low was moving through the Baja region with a 90 knot jet approaching the region from the southwest. Low level east to southeast winds were bringing up decent moisture for January. Plenty of wind shear through the atmosphere with moderate instability lead to thunderstorms producing hail bigger than the size of quarters. As the system pushed through, colder air moved in and changed rain over to snow in the mountains where up to 15 inches of snow was reported. In addition to the hail and snow, locally heavy rain amounts of over 2 inches lead to flooding in Dona Ana County.
1/14/2017	Hail	A cutoff low was moving through the Baja region with a 90 knot jet approaching the region from the southwest. Low level east to southeast winds were bringing up decent moisture for January. Plenty of wind shear through the atmosphere with moderate instability lead to thunderstorms producing hail bigger than the size of quarters. As the system pushed through, colder air moved in and changed rain over to snow in the mountains where up to 15 inches of snow was reported. In addition to the hail and snow, locally heavy rain amounts of over 2 inches lead to flooding in Dona Ana County.
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1/15/2017	Flood	New Mexico 154 was closed between Rincon and Hatch due to flooding at two low water crossings. One crossing was located right at mile marker 3 with the other located about 0.7 miles east. The worst of the flooding was around 4 AM when water ran 3 to 4 feet deep.
1/21/2017	Severe Wind	A peak gust of 88 mph was recorded at San Augustin Pass. Other strong wind reports included 71 mph 5 miles northeast of San Augustin Pass and 68 mph at Condron Field.
1/21/2017	Severe Wind	A Mesonet site at Twin Peaks near Las Cruces reported a peak gust of 68 mph. Other gusts included 64 mph 6 miles west-southwest of Las Cruces, 61 mph at the Las Cruces Airport AWOS, 61 mph at the National Weather Service Office in Santa Teresa and 60 mph 2 miles east-southeast of Talavera.
1/21/2017	Severe Wind	A peak gust of 65 mph was reported 1 mile southeast of the White Sands Missile Range Main Post. Other gusts included 61 mph 6 miles east-southeast of the WSMR Main Post, and 60 mph at the Main Post.
2/12/2017	Severe Wind	A peak gust of 68 mph was reported at the Dripping Springs RAWS. Other peak gusts around the area included 65 mph 2 miles east-southeast of Talavera and 61 mph 10 miles northeast of Las Cruces and also at Twin Peaks.
2/12/2017	Severe Wind	A peak gust of 65 mph was recorded by the White Sands Missile Range at San Augustin Pass.
2/23/2017	Severe Wind	A Mesonet site at Twin Peaks just east of Las Cruces reported a peak gust of 66 mph.
2/23/2017	Severe Wind	The Mesonet site at San Augustin Pass by the White Sands Missile Range recorded a peak gust of 81 mph. Other gusts across the zone included 69 mph 1 miles southeast of the White Sands Main Post and 59 mph about 5 miles northeast of San Augustin Pass.
2/23/2017	Severe Wind	A peak wind gust of 68 mph was reported at the Northrup Strip site on the White Sands Missile Range. A peak gust of 59 mph was also reported at Condron Field on the range.
3/23/2017	Severe Wind	A peak gust of 82 mph was reported at San Augustin Pass. Other wind reports across the zone included 70 mph 1 mile southeast of the White Sands Main Post, 64 mph 5 miles northeast of San Augustin Pass and 18 miles northeast of the White Sands Main Post and 59 mph at the White Sands Main Post.
3/23/2017	Severe Wind	A mesonet site just northeast of Las Cruces reported a peak gust of 74 mph. A 59 mph gust was recorded at the National Weather Service Office in Santa Teresa, NM and a 58 mph gust was reported at the Las Cruces Airport and at Dripping Springs.
3/23/2017	Severe Wind	A peak gust of 61 mph was recorded at a mesonet site 16 miles northwest of Northrup Strip. A gust of 59 mph was also recorded 19 miles west-northwest of Tularosa.
3/23/2017	Severe Wind	A peak gust of 65 mph was recorded 5 miles northeast of Road Forks.
4/25/2017	Severe Wind	A peak gust of 87 mph was reported at San Augustin Pass. Other peak gusts included 61 mph one mile southeast of White Sands Missile Range Main Post and 60 mph five miles northeast of San Augustin Pass.
4/25/2017	Severe Wind	A peak gust of 72 mph was reported at the Twin Peaks Mesonet site just northeast of Las Cruces.
5/6/2017	Severe Wind	A 63 mph gust was reported at the Jornada Range mesonet site.

5/16/2017	Severe Wind	A peak gust of 65 mph was reported at two mesonet sites loacated 19 miles west-northwest of Tularosa and 22 miles northwest of Tularosa.
6/19/2017	Hail	An upper ridge was situated over the western United States while an upper trough moved through the central plains. The trough helped to push a back door cold front into the Rio Grande Valley with sufficient shear and instability for isolated severe thunderstorms to develop along surface boundary. Hail up to 1.25 inches and wind gusts to 68 mph were reported with these storms.
6/19/2017	Severe Wind	Wind gust measured at San Augustin Pass.
6/19/2017	Hail	Hail reported at the White Sands Missile Range Main Post.
7/18/2017	Flood	Road crews were required to remove mud, rocks and other debris that were pushed onto roads around the Mesquite area after up to 3.45 inches of rain fell.
7/22/2017	Severe Wind	A 58 mph wind gust was reported at the Santa Teresa Airport.
7/22/2017	Flood	Flash flooding was reported in Hatch.
7/24/2017	Flood	Emergency Operations Center was activated due to heavy rain and flash flooding in the Hatch area where 1.96 inches of rain was reported. About 40 people were evacuated from their residences in Hatch overnight. Heavy equipment was necessary to shore up the banks of the Placitas and Rincon arroyos. There was also a leaking gas main on NM 185.
7/26/2017	Severe Wind	A wind gust to 73 mph was recorded at the NWS office during a wet microburst.
7/26/2017	Severe Wind	A gust of 77 mph was measured at Condron Field observation site on the White Sands Missile Range.
8/13/2017	Hail	Pea to dime size hail with very heavy rainfall.
8/13/2017	Hail	Nickel sized hail at Dona Ana Community College.
8/13/2017	Flood	Total rainfall of 2.80 inches is less than an hour 3 miles north of I-25/Highway 70 interchange.
8/13/2017	Flood	Mud and debris covering Interstate 25 near mile marker 9 causing closure for a couple of hours. One car swept off road. Many roads in Dona Ana flooded and a retention dam in area was close to overflowing.
2/1/2018	Drought	The northern half of the zone started the month of February in D2(severe) drought, and on February 13th was expanded south to include about the northern three-fourths of the zone. The cooperative observer at White Sands National Monument reported 1.04 inches of precipitation which was 0.59 inches above normal.
2/19/2018	Severe Wind	A trained spotter 5 miles southeast of East Mesa recorded a peak wind gust of 82 mph at 649 AM on the 20th.
2/19/2018	Severe Wind	A peak gust of 75 mph was recorded at San Augustin Pass. Other gusts in the zone included 73 mph 5 miles southeast of San Augustin Pass and 71 mph 1 mile southeast of the White Sands Missile Range Main Post.
2/20/2018	Severe Wind	A mesonet site 11 miles southwest of Northrup Strip recorded a peak gust of 60 mph.

3/1/2018	Drought	The northern three-fourths of the zone remained in Severe(D2) drought during the month of March. The Cooperative Observer at White Sands National Monument received just 0.04 inches of precipitation which was 0.22 inches below normal.
3/15/2018	Severe Wind	The Northrup Strip mesonet site recorded a peak gust of 70 mph.
3/15/2018	Severe Wind	San Augustin Pass recorded a peak gust of 90 mph. Other peak gusts included 64 mph 1 mile southeast of the White Sands Missile Range Main Post, 59 mph at Orogrande and 58 mph 5 miles southeast of San Augustin Pass.
3/15/2018	Severe Wind	The Twin Peaks mesonet station recorded a peak gust of 74 mph.
3/24/2018	Severe Wind	A peak gust of 73 mph was recorded at San Augustin Pass.
3/24/2018	Severe Wind	A peak gust of 70 mph was reported at the Twin Peaks mesonet station. The National Weather Service office in Santa Teresa also recorded a peak gust of 59 mph.
4/1/2018	Drought	The northern three-fourths of the zone remained in Severe(D2) drought. The White Sands National Monument didn't record any precipitation when the average for April is 0.32 inches.
4/12/2018	Severe Wind	A peak gust of 69 mph was recorded at the Twin Peaks mesonet station northeast of Las Cruces. In addition, the observation at the NWS office in Santa Teresa recorded a peak gust of 58 mph.
4/12/2018	Severe Wind	A peak gust of 84 mph was recorded at San Augustin Pass. Other peak gusts in the zone included 70 mph at the White Sands Missile Range Main Post, 66 mph 1 miles southeast of the White Sands Main Post, and 61 mph 6 miles east-southeast of the Main Post.
4/13/2018	Severe Wind	A peak gust of 68 mph was recorded at the Condron Field Mesonet station. Other peak gusts included 59 mph 16 miles north-northwest of Northrup Strip, and 58 mph at both the mesonet site 11 miles southwest of Northrup Strip and 22 miles northwest of Tularosa.
5/1/2018	Drought	The northern three-fourths of the zone started in Severe(D2) drought and the entire zone was placed into it on May 15. The White Sands Missile Range received no precipitation which was 0.46 inches below normal.
5/21/2018	Hail	An upper low was digging into southern California with a surface low located over northwest Chihuahua. Southeast winds east of the surface low brought low level gulf moisture into the region with southwest winds aloft helping to produce ample shear for severe thunderstorms with hail up to an inch in diameter and wind gusts over 60 mph. Some flash flooding was also reported in Sunland Park.
5/21/2018	Flood	Water depth reached to about 1.5 feet on streets near intersection of Calle Diaz and Calle Morocco.
6/1/2018	Drought	Severe(D2) drought was across the entire zone to start the month and on June 26th, the western half was placed into Moderate(D1) drought. The White Sands National Monument reported 0.74 inches of precipitation which was 0.22 inches below normal.
7/1/2018	Drought	The eastern half of the zone started the month in Severe(D2) drought and improved to Moderate(D1) drought on July 31. The White Sands National Monument Cooperative Observer reported 0.51 inches of precipitation which was 1.87 inches below normal.

1/21/2019	Severe Wind	A peak gust of 80 mph was reported at San Augustin Pass at 235 PM. Other gusts in the zone included 68 mph one mile southeast and one mile northwest of the White Sands Missile Range Main Post, 60 mph seven miles southwest of Northrup Strip and at Condron Field.
1/21/2019	Severe Wind	A peak gust of 60 mph was reported seven miles southwest of Northrup Strip.
3/8/2019	Severe Wind	A peak gust of 88 mph was reported at San Augustin Pass. Other peak wind gusts included 67 mph a Condron Field, 63 mph at the White Sands Missile Range Main Post, 5 miles northeast of San Augustin Pass, 18 miles northeast of the Main Post and 59 mph 14 miles west-northwest of Orogrande.
3/8/2019	Severe Wind	A peak gust of 64 mph was reported 16 miles north-northwest of Northrup Strip. Other gusts included 63 mph 22 miles northwest of Tularosa, 61 mph 11 miles southwest of Northrup Strip and 60 mph at Northrup Strip.
3/8/2019	Severe Wind	A spotter recorded a peak gust of 81 mph three miles north-northwest of Dripping Springs. A RAWS site at Dripping Springs also recorded a peak gust of 61 mph.
3/13/2019	Severe Wind	A mesonet site at Northrup Strip recorded a peak gust of 71 mph. Other sites in the zone with strong wind gusts included 70 mph 20 miles west-northwest of Tularosa, 69 mph three miles north-northeast of Capitol Peak and 58 mph nine miles west of Tularosa.
3/13/2019	Severe Wind	A mesonet site at San Augustin Pass recorded a peak gust of 104 mph. Other gusts included 76 mph eighteen miles northeast of the White Sands Missile Range Main Post, 75 mph eleven miles northeast of Organ, 69 mph at the White Sands Main Post and 59 mph fourteen miles west-northwest of Orogrande.
3/13/2019	Severe Wind	The Dripping Springs RAWS site recorded a peak gust of 63 mph. The Las Cruces Airport recorded a gust of 60 mph.
4/10/2019	Severe Wind	Extremely strong winds occurred at San Augustin Pass with a peak gust of 102 mph. Other gusts included 78 mph 1 mile northwest of White Sands Missile Range Main Post and 6 miles east-southeast of the Main Post, 66 mph eighteen miles northeast of the Main Post and 61 mph eleven miles northeast of Organ and 14 miles west-northwest of Orogrande.
4/10/2019	Severe Wind	Wind gusts up to 71 mph were reported across the zone with the peak occurring 7 miles southwest of Northrup Strip. Other gusts included 69 mph at Northrup Strip, 63 mph at Holloman Air Force Base and 68 mph 3 miles north-northeast of Capitol Peak.
4/10/2019	Severe Wind	The National Weather Service Office in Santa Teresa recorded a peak gust of 63 mph. Other gusts included the Las Cruces Airport with 61 mph and 59 mph six miles west-southwest of Las Cruces.
4/23/2019	Hail	An upper low moved out of the Baja region to just south of the NM/AZ border region. East-southeast winds at the surface helped to bring low level moisture in and with southwest flow aloft, plenty of shear was present to allow strong to severe storms to develop.
4/23/2019	Hail	An upper low moved out of the Baja region to just south of the NM/AZ border region. East-southeast winds at the surface helped to bring low level moisture in and with southwest flow aloft, plenty of shear was present to allow strong to severe storms to develop.
5/12/2019	Severe Wind	Several trees and structures sustained wind damage at a few locations around Las Cruces.
5/20/2019	Severe Wind	A peak gust of 72 mph was recorded at San Augustin Pass with a couple 60 mph gusts at the White Sands Missile Range Main Post and 5 miles east-northeast of the Main Post.
5/20/2019	Severe Wind	A 61 mph peak gust was recorded 11 miles southwest of Northrup Strip and a 59 mph gust was recorded at Lookout Peak.

5/26/2019	Dust Storm	A 7 vehicle accident occurred near exit 51 on Interstate 25 caused by low visibility due to blowing dust.
5/27/2019	Severe Wind	A Mesonet site 5 miles northeast of San Augustin Pass recorded a peak gust of 82 mph. Other gusts included 77 mph at San Augustin Pass, 67 mph at the White Sands Missile Range Main Post and 58 mph northeast of the Main Post.
5/27/2019	Severe Wind	The Dripping Springs RAWS recorded a peak gust of 58 mph.
6/4/2019	Hail	Upper low was moving into southeastern Arizona with moderately deep low level moisture pushing west toward the Rio Grande. A disturbance in the southwest flow across the Borderland helped to fire off thunderstorms across northern Otero county into northern Dona Ana county. Everything from severe hail to a flash flood and tornado were reported with these storms.
6/10/2019	Flood	Flooding with debris was reported along Interstate 10 from mile post 145 to 151, Frontage 1035-Stern Road and Las Alturas Road. Roads had to be closed for a short while for cleanup.

Appendix F
Approval and Adoption Records

STATE OF NEW MEXICO
COUNTY OF DOÑA ANA

Resolution # 2021-34

WHEREAS Doña Ana County has historically experienced damage from natural hazards such as flooding, wildfire, drought, severe winds, and others on many occasions in the past century, resulting in loss of property and/or life, economic hardship, and threats to public health and safety;

WHEREAS the 2020 Dona Ana County Multi-Jurisdictional Multi-Hazard Mitigation Plan (the Plan) has been developed after more than one year of review, research and update work by Doña Ana County in association and cooperation with the Dona County Multi-Jurisdictional Planning Team for the reduction of hazard risk to the community;

WHEREAS the Plan specifically addresses natural hazard vulnerabilities, mitigation strategies and plan maintenance procedures for Doña Ana County;

WHEREAS the Plan is an update and replacement for the previous hazard mitigation plan for Doña Ana County;

WHEREAS the Plan recommends several hazard mitigation actions/projects that will provide mitigation for specific natural hazards that impact Doña Ana County with the effect of protecting people and property from loss associated with those hazards;

NOW THEREFORE BE IT RESOLVED
by the Board of County Commissioners of Doña Ana County that the Plan is hereby Adopted as an official plan of Doña Ana County and shall be implemented, monitored and maintained by the officials/staff designated in the Plan for a period five (5) years with the full support of this resolution.

This resolution shall become effective immediately

Resolved in this Board session this 9th day of March, 2021

COUNTY COMMISSIONERS SEAL DONA ANA COUNTY NEW MEXICO

BOARD OF COUNTY COMMISSIONERS OF
DOÑA ANA COUNTY, NEW MEXICO

Manuel A. Sanchez, District 5, Chairperson **For/Against**

Diana Murillo-Trujillo, District 2, Vice Chairperson **For/Against**

G2021-0100 MAR 9, 2021 03:27:52 PM PAGES: 2
RESOLUTION Deputy: Edward Kriner
Amanda López Askin, County Clerk, Dona Ana, NM

Lynn J. Ellins, District 1 For/Against

Shannon Reynolds, District 3 For/Against

Susana Chaparro, District 4 For/Against

ATTEST:

Amanda Lopez-Acosta
County Clerk

By Brandi B Delgado
Deputy Clerk

STATE OF NEW MEXICO
COUNTY CLERK
DONA ANA COUNTY

RESOLUTION NO. 2021-013

WHEREAS the **City of Anthony** has historically experienced damage from natural hazards such as flooding, wildfire, drought, severe winds, and others on many occasions in the past century, resulting in loss of property and/or life, economic hardship, and threats to public health and safety;

WHEREAS the 2020 Dona Ana County Multi-Jurisdictional Multi-Hazard Mitigation Plan (the Plan) has been developed after more than one year of review, research and update work by the City of Anthony in association and cooperation with the Dona County Multi-Jurisdictional Planning Team for the reduction of hazard risk to the community;

WHEREAS the Plan specifically addresses natural hazard vulnerabilities, mitigation strategies and plan maintenance procedures for the City of Anthony;

WHEREAS the Plan is an update and replacement for the previous hazard mitigation plan for City of Anthony;

WHEREAS the Plan recommends several hazard mitigation actions/projects that will provide mitigation for specific natural hazards that impact City of Anthony, with the effect of protecting people and property from loss associated with those hazards;

NOW THEREFORE BE IT RESOLVED by the Governing Body of the City of Anthony, New Mexico that:

1. The Plan is hereby adopted as an official plan of the City of Anthony, NM.
2. The plan shall be implemented, monitored and maintained by the officials/staff designated in the Plan for a period five (5) years with the full support of this resolution.

PASSED, APPROVED AND ADOPTED THIS 7TH DAY OF APRIL, 2021.

Diana M. Trujillo, Mayor

City of Anthony New Mexico
July 1, 2010

ATTEST:

Esther Motongo- City Clerk

ROLL CALL VOTE:

Mayor Pro Tem, Fernie Herrera	YES	NO
Trustee Gloria Gameros	YES	NO
Trustee Elva Flores	YES	NO
Trustee Javier Silva	YES	NO

RESOLUTION 21-165

A RESOLUTION ADOPTING THE 2020 DOÑA ANA COUNTY ALL-HAZARD MITIGATION PLAN FOR THE REDUCTION OF HAZARD RISK WITHIN THE CITY OF LAS CRUCES

The City Council is informed that:

WHEREAS, the City of Las Cruces has historically experienced damage from natural hazards such as flooding, wildfire, drought, severe winds, and others on many occasions in the past century, resulting in loss of property and/or life, economic hardship, and threats to public health and safety;

WHEREAS, the 2020 Dona Ana County All Hazard Mitigation Plan (the Plan) has been developed after more than one year of review, research and update work by the City of Las Cruces in association and cooperation with the Dona Ana County Multi-Jurisdictional Planning Team for the reduction of hazard risk to the community;

WHEREAS, the Plan specifically addresses natural hazard vulnerabilities, mitigation strategies and plan maintenance procedures for the City of Las Cruces;

WHEREAS, the Plan is an update and replacement for the previous hazard mitigation plan for the City of Las Cruces;

WHEREAS, the Plan recommends several hazard mitigation actions/projects that will provide mitigation for specific natural hazards that impact the City of Las Cruces, with the effect of protecting people and property from loss associated with those hazards;

NOW, THEREFORE, Be it Resolved by the Governing Body of the City of Las Cruces:

(I)

THAT the Dona Ana 2020 All-Hazard Mitigation Plan as attached in Exhibit A is hereby Adopted as an official plan of the City of Las Cruces

(II)

THAT the plan shall be implemented, monitored, and maintained by the officials/staff designated in the Plan for a period of five (5) years with the full support of this resolution.

(III)

THATCity staff is hereby authorized to do all deeds as necessary in the accomplishment of the hereinabove.

DONE AND APPROVED this 17 day of May 2021

APPROVED

Mayor

ATTEST:

Christine Rivera
City Clerk

Moved by: Yvonne Flores

Seconded by: Gill Sorg

AYES Kasandra Gandara, Gabe Vasquez, Gill Sorg, Ken Miyagishima, Yvonne Flores, Tessa Abeyta-Stuve, Johana Bencomo

NAYS

RESOLUTION NO. 2021-6

APPROVAL OF A RESOLUTION ADOPTING THE 2020 DONA ANA COUNTY MULTI-JURISDICTIONAL MULTI-HAZARD MITIGATION PLAN

The City Council is informed that,

WHEREAS, the City of Sunland Park has historically experienced damage from natural hazards such as flooding, drought, severe winds, and others on many occasions in the past century, resulting in loss of property and/or life, economic hardship, and threats to public health and safety; and,

WHEREAS, the 2020 Dona Ana County Multi-Jurisdictional Multi-Hazard Mitigation Plan (the Plan) has been developed after more than one year of review, research and update work by the City of Sunland Park in association and cooperation with the Dona Ana County Multi-Jurisdictional Planning Team for the reduction of hazard risk to the community; and,

WHEREAS, the Plan specifically addresses natural hazard vulnerabilities, mitigation strategies and plan maintenance procedures for the City of Sunland Park; and,

WHEREAS, the Plan is an update and replacement for the previous hazard mitigation plan for the City of Sunland Park; and,

WHEREAS, the Plan recommends several hazard mitigation actions/projects that will provide mitigation for specific natural hazards that impact the City of Sunland Park, with the effect of protecting people and property from loss associated with those hazards.

NOW, THEREFORE, BE IT RESOLVED by the Governing Body of the City of Sunland Park, New Mexico,

THAT, The Plan is hereby Adopted as an official plan of the City of Sunland Park; and,

THAT, The plan shall be implemented, monitored and maintained by the officials/staff designated in the Plan for a period of five (5) years with the full support of this resolution.

PASSED, APPROVED and ADOPTED this 2nd day of March.

New Mexico State University adopts the *Dona Ana County, City of Anthony, City of Las Cruces, City of Sunland Park, Town of Mesilla, Village of Hatch, Elephant Butte Irrigation District and New Mexico State University All Hazard Mitigation Plan (Mitigation Plan) for the purpose of eligibility to receive federal assistance from the Robert T. Stafford Disaster Relief ACT (Hazards Mitigation Grant Program, Pre-Disaster Mitigation Program and Flood Mitigation Assistance Program).*

WHEREAS, the Dona Ana County Mitigation Planning Committee, comprised of members representing Dona Ana County, City of Anthony, City of Las Cruces, City of Sunland Park, Town of Mesilla, Village of Hatch, Elephant Butte Irrigation District and New Mexico State University, has prepared a Mitigation Plan identifying the natural hazards faced by the county and participating communities; and

WHEREAS, pursuant to the Federal Emergency Management Agency (FEMA), effective October 1, 2013, a mitigation plan needs to be approved by FEMA and the State for any community that wishes to obtain funding from the Robert T. Stafford Disaster Relief Act (Hazards Mitigation Grant Program, Pre-Disaster Mitigation Program and Flood Mitigation Assistance Program; and

WHEREAS the Mitigation Plan is an update and replacement for the previous Multi-Jurisdictional Mitigation Plan for which New Mexico State University is a partner of;

WHEREAS the Mitigation Plan specifically addresses natural hazard vulnerabilities, mitigation strategies and plan maintenance procedures for New Mexico State University, consisting of:

1. Tunnel assessment to identify and correct critical vulnerabilities associated with the essential utilities;
2. Electrical power upgrades to the distribution system to include critical facilities access to emergency power in the event of loss of main power supply;
3. Updating mapping system for improved interoperability and ability to identify critical assets and hazard areas;
4. Develop water drainage master plans and install early detection and warning pump systems to prevent repeated flooding;
5. Develop and enforce water conservation design standards that incorporate sustainable landscape and building features to optimize and reduce water use;
6. Participate in drought related public education and outreach;
7. Establish a land use planning process to regulate and ensure appropriate development in wildfire hazard areas;

8. Participate in county wide education to raise awareness of dams, flooding conditions and provide recommendations for ways to mitigate water run-off;
9. Participate in county wide education to raise awareness of extreme weather conditions and provide recommendations for ways to address hazards caused by extreme weather;
10. Participate in county wide education programs to raise awareness of drought and wildfire conditions.

NOW THEREFORE BE IT RESOLVED BY THE EMERGENCY PLANNING COMMITTEE OF NEW MEXICO STATE UNIVERSITY, that they:

1. Hereby adopt the Dona Ana County, City of Anthony, City of Las Cruces, City of Sunland Park, Town of Mesilla, Village of Hatch, Elephant Butte Irrigation District, and New Mexico State University All Hazard Mitigation Plan;

2. Authorize staff to perform all tasks necessary to accomplish the ten (10) Mitigation Plan action items identified by New Mexico State University;

3. New Mexico State University Administrative Rules and Procedures, 16.10 - Emergency Preparedness and Response recognizes the Chancellor as final approver to sign the Multi-Jurisdictional All Hazard Mitigation Plan on behalf of the University.

RECOMMENDED by

Andrew Bowen, Co- Chair _____

Johnny Carrillo, Co-Chair _____

Katrina Doolittle, Ph. D., Co-Chair _____

APPROVED on this 25 day of MAY, 2021

John Floros Digitally signed by John Floros Date: 2021.05.24 10:57:25 -06'00'

John Floros, Ph. D.
NMSU President

Dan Arvizu Digitally signed by Dan Arvizu Date: 2021.05.25 12:52:54 -06'00'

Dan E. Arvizu
NMSU Chancellor

Appendix

Strategies and Responsible Department

1. Tunnel assessment to identify and correct critical vulnerabilities associated with the essential utilities – Facilities & Services;

2. Electrical power upgrades to the distribution system to include critical facilities access to emergency power in the event of loss of main power supply – Facility & Services;

3. Updating mapping system for improved interoperability and ability to identify critical assets and hazard areas – Facilities & Services;

4. Develop water drainage master plans and install early detection and warning pump systems to prevent repeated flooding – Facilities & Services;

5. Develop and enforce water conservation design standards that incorporate sustainable landscape and building features to optimize and reduce water use – Facilities & Services design guidelines;

6. Participate in drought related public education and outreach – Marketing & Communications;

7. Establish a land use planning process to regulate and ensure appropriate development in wildfire hazard areas – Fire Department;

8. Participate in county wide education to raise awareness of dams, flooding conditions and provide recommendations for ways to mitigate water run-off – Marketing & Communications;

9. Participate in county wide education to raise awareness of extreme weather conditions and provide recommendations for ways to address hazards caused by extreme weather – Marketing & Communications;

10. Participate in county wide education programs to raise awareness of drought and wildfire conditions – Marketing & Communications.

ATTEST

Daniel Carranco, City Clerk

SEAL

Mayor Javier Perea

Roll Call:

Councilor Donald McBride	Aye
Councilor Olga Nunez	Aye
Councilor Alberto Jaramillo	Aye
Councilor Daisy Lira	Aye
Councilor Bertha Salmon	Aye
Councilor Jessica Avila	Aye

Elephant Butte Irrigation District
Dona Ana All-Hazards Mitigation Plan
Resolution 2021-02

WHEREAS the Elephant Butte Irrigation District has historically experienced damage from natural hazards such as flooding, wildfire, drought, severe winds, and others on many occasions in the past century, resulting in loss of property and/or life, economic hardship, and threats to public health and safety;

WHEREAS the 2020 Dona Ana County Multi-Jurisdictional Multi-Hazard Mitigation Plan (the Plan) has been developed after more than one year of review, research and update work by the Elephant Butte Irrigation District in association and cooperation with the Dona County Multi-Jurisdictional Planning Team for the reduction of hazard risk to the community;

WHEREAS the Plan specifically addresses natural hazard vulnerabilities, mitigation strategies and plan maintenance procedures for Elephant Butte Irrigation District;

WHEREAS the Plan is an update and replacement for the previous hazard mitigation plan for the Elephant Butte Irrigation District;

WHEREAS the Plan recommends several hazard mitigation actions/projects that will provide mitigation for specific natural hazards that impact the Elephant Butte Irrigation District, with the effect of protecting people and property from loss associated with those hazards;

NOW THEREFORE BE IT RESOLVED by the Board of Directors of the Elephant Butte Irrigation District that:

1. The Plan is hereby Adopted as an official plan of the Elephant Butte Irrigation District.

2. The plan shall be implemented, monitored and maintained by the officials/staff designated in the Plan for a period five (5) years with the full support of this resolution.

PASSED on this 14th day of April, 2021.

Michael McNamee, President **Sam Salopek, Secretary**

Town of Mesilla, New Mexico

RESOLUTION NO. 2021-06

A RESOLUTION ADOPTING THE 2020 DONA ANA COUNTY MULTI-JURISDICTIONAL ALL HAZARD MITIGATION PLAN

WHEREAS the Town of Mesilla has historically experienced damage from natural hazards such as flooding, wildfire, drought, severe winds, and others on many occasions in the past century, resulting in loss of property and/or life, economic hardship, and threats to public health and safety; and

WHEREAS the 2020 Dona Ana County Multi-Jurisdictional Multi-Hazard Mitigation Plan ("the Plan") has been developed after more than one year of review, research, and update work by the Town of Mesilla in association and cooperation with the Dona County Multi-Jurisdictional Planning Team for the reduction of hazard risk to the community; and

WHEREAS the Plan specifically addresses natural hazard vulnerabilities, mitigation strategies and plan maintenance procedures for Town of Mesilla; and

WHEREAS the Plan is an update and replacement for the previous hazard mitigation plan for Town of Mesilla; and

WHEREAS the Plan recommends several hazard mitigation actions/projects that will provide mitigation for specific natural hazards that impact Town of Mesilla, with the effect of protecting people and property from loss associated with those hazards: and

NOW THEREFORE, BE IT RESOLVED BY the Board of Trustees that the Town of Mesilla determines, resolves, and orders as follows:

1. The Plan is hereby Adopted as an official plan.

2. The plan shall be implemented, monitored, and maintained by the officials/staff designated in the Plan for a period five (5) years with the full support of this resolution.

PASSED, APPROVED and ADOPTED by the Board of Trustees at its meeting of March 8, 2021.

Nora L. Barraza

Nora L. Barraza
Mayor

ATTEST:

Cynthia Stoehner-Hernandez
Town Clerk-Treasurer

(seal)

Roll Call Vote:

Mayor Barraza	Y
Trustee Johnson-Burick	Y
Trustee Arzabal	Y
Trustee Caro	Y
Trustee Garcia	Y

VILLAGE OF HATCH
P.O. BOX 220 • HATCH, NEW MEXICO 87937 • (575) 267-5216

RESOLUTION NO. 1012

A RESOLUTION ADOPTING THE VILLAGE OF HATCH, DONA ANA COUNTY, NEW MEXICO, MULTI-JURISDICTION MULTI-HAZARD MITIGATION PLAN

WHEREAS, the Village of Hatch has historically experienced damage from natural hazards such as flooding, wildfire, drought, severe winds, and others on many occasions in the past century, resulting in loss of property and/or life, economic hardship, and threats to public health and safety;

WHEREAS, the 2020 Dona Ana County Multi-Jurisdictional Multi-Hazard Mitigation Plan (the Plan) has been developed after more than one year of review, research and update work by the Village of Hatch in association and cooperation with the Dona County Multi-Jurisdictional Planning Team for the reduction of hazard risk to the community;

WHEREAS, the Plan specifically addresses natural hazard vulnerabilities, mitigation strategies and plan maintenance procedures for the Village of Hatch;

WHEREAS, the Plan is an update and replacement for the previous hazard mitigation plan for the Village of Hatch;

WHEREAS, the Plan recommends several hazard mitigation actions/projects that will provide mitigation for specific natural hazards that impact the Village of Hatch, with the effect of protecting people and property from loss associated with those hazards;

NOW THEREFORE BE IT RESOLVED
by the Village of Hatch Board of Trustees of the Village of Hatch that:

1. The Plan is hereby Adopted as an official plan of the Village of Hatch.
2. The plan shall be implemented, monitored and maintained by the officials/staff designated in the Plan for a period five (5) years with the full support of this resolution.

PASSED, APPROVED AND ADOPTED this 13th day of April 2021.

ATTEST:

Elizabeth J. Porras, Clerk/Treasurer

Moved by: Trustee Whitlock
Seconded by: Trustee Atencio

Andy Nuñez, Mayor

VOTE: **Trustee Torres** **Aye**
Trustee Whitlock **Aye**
Trustee Crist **Aye**
Trustee Atencio **Aye**

Appendix G

Plan Maintenance Review Memorandums & Worksheets

DONA ANA COUNTY HAZARD MITIGATION PLAN
ANNUAL REVIEW HAZARD WORKSHEET

1. *Hazard Identification: Have the risks and hazards changed? The current Plan hazards are provided in the form below. Please review and consider the impact of these hazards on your community. For each hazard, review your jurisdictions CPRI results in Section 3.3 of the plan, along with the development trends that were indicated. For each hazard evaluate and document in the space provided that: 1) the hazard ranking is still appropriate (or if not how should it change), 2) the areas at risk remain the same as indicated within the plan (or if not, where unanticipated development has occurred), and 3) indicate whether there is any natural hazard not listed that your jurisdiction feels should be considered within the plan.*

Current Plan Hazards	
Dam Failure	Drought
Extreme Cold	Flooding
Severe Winds	Thunderstorms (Lightning & Hail)
Wildfire	
Are all hazard CPRI results still appropriate (Section 3.3)?	
Explain:	
Are identified areas at risk from each hazard still valid?	
Explain:	

Are there any hazards not in the current Plan that your jurisdiction feels need to be profiled ?
Explain:

ANNUAL REVIEW HAZARD WORKSHEET

2. ***Goals & Objectives:*** *Are the goals and objectives still able to address current and expected conditions?* The currently stated plan goals and objectives are provided below. Based upon the Annual Review Hazard Worksheet and conditions in your jurisdiction over the past year, do the goals and objectives still address the current and expected conditions? If no, please provide an explanation and recommendations for any changes that are necessary.

Current Plan Goals
Goal 1 – Improve hazard mitigation communication and collaboration with federal, state, local, and other governmental agencies, and private sector organizations and stakeholders. **Goal 2** – Promote disaster-resistant future development. **Goal 3** – Promote public understanding, support, and demand for hazard mitigation. **Goal 4** – Reduce or eliminate the risk to people and property from natural hazards by developing community resiliency. **Goal 5** – Explore all internal and external avenues to fund mitigation activities.
Please summarize any comments, concerns, or alterations to the Plan's stated goals in the space provided.

DONA ANA COUNTY HAZARD MITIGATION PLAN
ANNUAL REVIEW PROJECT WORKSHEET

3. ***Mitigation Projects and Actions:*** For each community reviewing the document, review your jurisdictions list of mitigation projects and actions. The following form can be used to summarize this review. Submit to County Primary Point of Contact when complete.

Project	**Complete?** *(yes or no)*	**In Progress?** *(% complete)* *(Remaining work)*	**Changes to Scope of Work** (*if yes, explain)*