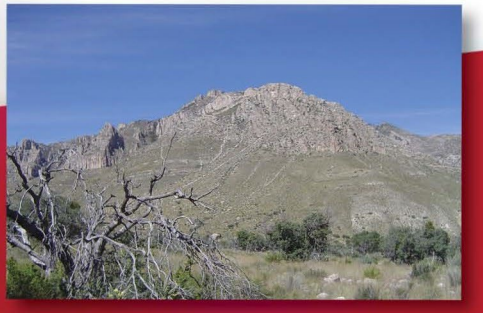
2022

Presidio County, Texas

Multi-Hazard Mitigation Action Plan



To be adopted in 2022 by

Presidio County, TX

City of Marfa, TX

City of Presidio, TX

Presidio ISD

Marfa ISD

Prepared by

Rio Grande Council of Governments

8037 Lockheed Drive, Suite 100

El Paso, TX 79925

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1. Introduction

Facilitated by the Rio Grande Council of Governments (RGCOG), residents of Presidio County and the incorporated municipalities in the County worked with representatives of neighboring jurisdictions to update this Hazard Mitigation Plan. Jurisdictions participating in plan development are Presidio County and the Cities of Marfa and Presidio; these three jurisdictions participated in the development of the previous hazard mitigation plan and adopted it.

This section explains the purpose of hazard mitigation, the intent of the plan, and the Federal regulations that guide the content of the plan. This section also defines the planning area and describes the organization of the plan.

1.1. Purpose of Hazard Mitigation

Hazard mitigation reduces or eliminates the potential for damage to property or for injury or loss of life due to a hazard. The benefits of mitigating the potential impacts of hazards include making an area more sustainable and less vulnerable to damage, facilitating recovery and redevelopment following occurrence of a natural hazard, and establishing eligibility for Hazard Mitigation Assistance funding.

1.2. Intent of the Plan

The intent of the plan is to recommend cost-effective and appropriate actions that will permanently reduce the potential for loss. Hazard mitigation planning requires coordination and collaboration among multiple agencies, organizations, and local jurisdictions.

Furthermore, the intent of the plan is to update the previous hazard mitigation action plan that was adopted by the participating jurisdictions in 2013. The RGCOG began development of the previous hazard mitigation plan for Presidio County and the cities of Marfa and Presidio in 2004. The RGCOG began the process of updating this hazard mitigation plan for Presidio County in 2020. Figure 1 shows the location of the six Texas counties that belong to the RGCOG.

Figure 1: Counties that are Members of the RGCOG

1.3. Authority

The plan will be adopted by participating prior to implementation and after FEMA Region VI indicates that the plan is approvable. An approvable plan complies with the requirements of Title 44 of the Code of Federal Regulations Section 201.6.

1.4. The Planning Area

This multi-hazard mitigation plan is for Presidio County, the City of Marfa, the City of Presidio, Marfa ISD and Presidio ISD. These jurisdictions participated in development of the previously adopted hazard mitigation plan. Figure 2 shows the locations of the municipalities, Big Bend Ranch State Park, the School Districts boundaries and major highways in the planning area.

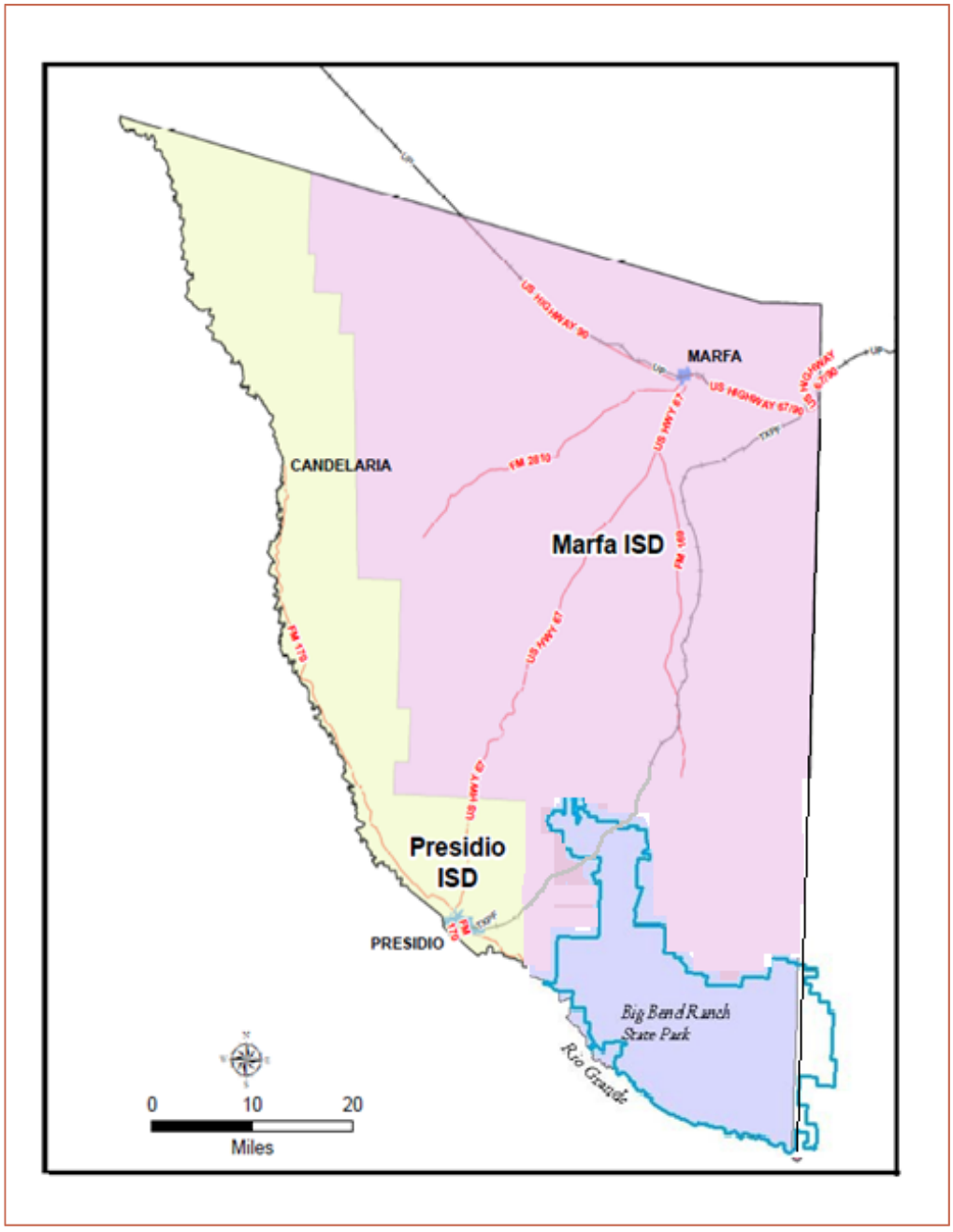

Figure 2: Presidio County showing locations of the Cities of Presidio and Marfa And the Presidio and Marfa ISDs

1.5. Organization of the Plan

The Presidio County Hazard Mitigation Plan Update, referred to as the "plan," has eight major sections.

- **Section 1** introduces hazard mitigation planning and this updated plan.
- **Section 2** summarizes the planning process followed to develop the previous plan, which was adopted in 2007, and provides details about the process implemented to develop this plan. This information will facilitate the process the next time the plan is updated.
- **Section 3** identifies the natural hazards that can occur in the planning area and profiles or describes the characteristics of each hazard as a first step in analyzing risk. This information is used to develop an understanding of how natural hazards can lead to damage in the planning area.
- **Section 4** summarizes community capabilities and resources that may facilitate the implementation of hazard mitigation actions. This information is important foridentifying mitigation actions that are appropriate for each participating jurisdiction.
- **Section 5** describes a systematic assessment of risk and concludes with short descriptions of potential problems. This information is important for developing mitigation actions that respond to precise threats or vulnerabilities in the planning area.
- **Section 6** presents specific recommendations for solving the identified problems through a variety of mitigation actions. Recommendations include strategies for maintaining the plan so that it remains scientifically accurate and relevant to participating jurisdictions. After the plan is adopted, responsible parties will implement the mitigation actions.
- **Section 7** lists sources of information consulted for the development of this plan update. This information will be particularly helpful when the plan is next updated.
- **Section 8** includes copies of documents prepared for and used during the plan update process and, after the plan is adopted by participating jurisdictions, it will also include copies of the resolutions of adoption.

2. The Planning Process

This section provides details of the planning process for development of both the previous plan, which was adopted in 2015, and this updated plan, which was developed in 2020 - 2022. The two planning processes were substantially similar to include an online survey in 2021.

2.1. 2013 Planning Process Summary

Beginning in August 2013, the RGCOG Regional Services Director and representatives of RGCOG member governments gathered and analyzed data to develop the previous hazard mitigation plan.

2.1.1. 2013 Planning Team

The Planning Team identified hazards and provided data for plan development to RGCOG. RGCOG led the planning process throughout the review of existing planning mechanisms, hazard identification and analysis, assessment of risk and vulnerability, identification, evaluation, and prioritization of mitigation actions, and development of mitigation strategies. As proposed in the plan, RGCOG was responsible for monitoring and evaluating the plan as the participating jurisdictions implemented the mitigation actions and for initiating the plan update process. Table 1 lists Planning Team participants.

Table 1: 2013 Planning Team

Jurisdiction/ Agency Represented	Planning Team Participant for 2013 Plan Update	Contributions
City of Marfa	Mr. Dan Dunlap, Mayor, City of Marfa Mr. Jim Mustard, City Administrator	Participated in December 2012 meeting
City of Presidio	Mr. Marco Baeza, City Administrator	Participated in December 2012 meeting; Reviewed draft plan
Presidio County	Judge Paul Hunt, Presidio County Mr. Eddie Montezuma, Project Coordinator, Presidio County Chief Gary Mitschke, Marfa Volunteer Fire Department, Presidio County Emergency Management Coordinator Mr. Jerry Castellano, Tri-County Juvenile Probation	Replied to November 2012 survey; Participated in December 2012 meeting; Reviewed draft plan
Texas Department of Emergency Management	Mr. Martin Widtfeld Mr. Ray Resendez	Replied to November 2012 survey; Participated in December 2012 meeting; Reviewed draft plan
RGCOG	Ms. Marisa Quintanilla, Regional Services Director Ms. Catherine Crumpton	Managed the plan update process; Facilitated public participatory process; Reviewed draft plan; Made maps for plan

2.1.2. 2013 Stakeholder and Public Involvement

Public involvement was encouraged through the previous plan development process. Information about hazard mitigation was updated regularly on the RGCOG Web site (www.riocog.org). Planning Team

meetings were announced in the local newspaper and posted in city/county office buildings, and were open to the public. All residents of the six-county Far West Texas region were invited to offer comments on the draft plan. A final public comment period was held prior to plan adoption.

2.1.3. 2013Technical Assistance

RGCOG did not contract with an outside firm for technical assistance to develop the initial local hazard mitigation plan. RGCOG relied on the FEMA Series 306, the How-To guides, as well as input from Texas Division of Emergency Management and FEMA Region VI for developing the previous plan.

2.1.4. 2013 Participation of Neighboring Jurisdictions

The multi-jurisdictional nature of the planning process ensured the involvement of neighboring jurisdictions, including Brewster, Jeff Davis, Hudspeth, and Culberson Counties.

2.1.5. 2013 Plan Adoption

The previous plan was submitted to the Texas Division of Emergency Management for initial review in July 2015. The plan was revised as required by the State and by FEMA Region VI. The Presidio County plan was adopted by the County, the City of Marfa, and the City of Presidio in 2007.

2.2 2020–2022 Planning Process Summary

The plan update process began in 2020 with the re-establishment of the Planning Team. RGCOG contacted leaders of each jurisdiction that adopted the previous plan and requested that they assign a representative to the Planning Team. The RGCOG staff contacted representatives of neighboring jurisdictions, universities, and Texas state agencies to invite them to be part of the Planning Team.

2.2.1 2020–2022 Planning Team

The RGCOG scheduled an initial Planning Team meeting on April 8, 2021. Planning Team participants are listed in Table 2, which also briefly notes how individuals contributed throughout the plan development process.

Table 2: Plan Update Team

Jurisdiction	Name	Contribution
Presidio County	EMC Gary Mitschke	Organized and Participated in 2021/22 meetings, reviewed draft plan, provided input
Presidio County	County Judge Cinderela Guevara	Participated in 2021/22 meetings, reviewed draft plan, provided input
City of Marfa	EMS Director Bert Lagarde	Participated in 2021 meeting, reviewed draft plan, provided input
City of Presidio	Chief Financial Officer Malynda Richardson	Participated in 2021/22 meetings, reviewed draft plan, provided input
City of Presidio	City Manager Brad Newton	Participated in 2021 meeting, reviewed draft plan, provided input

Presidio	Director Public Works Cesar Leyva	Participated in 2021 meeting, reviewed draft plan, provided input
Presidio County Appraisal District	County Chief Appraiser Cynthia Ramirez	Participated in 2021 meeting, reviewed draft plan, provided input
Texas Parks & Wildlife	Game Warden Eric Wilmarth	Participated in 2021 meeting, reviewed draft plan, provided input
City of Marfa	Police Chief Estevan Marquez	Participated in 2021 meeting, reviewed draft plan
City of Marfa	Director of public Works Jeff Boyd	Participated in 2021 meeting, reviewed draft plan, provided input
City of Marfa	Presidio County ground Water Jim Mustard	Participated in 2021 meeting, reviewed draft plan, provided input
City of Presidio	Mayor John Ferguson	Participated in 2021 meeting, reviewed draft plan, provided input
City of Marfa	City Manager Mandy Roane	Participated in 2021 meeting, reviewed draft plan, provided input
City of Marfa	Mayor Manny Baeza	Participated in 2021 meeting, reviewed draft plan, provided input
City of Presidio	Chief of Police Margarito Hernandez	Participated in 2021 meeting, reviewed draft plan, provided input
Marfa I.S.D.	Superintendent Oscar Aguero	Participated in 2021 meeting, reviewed draft plan, provided input
County of Presidio	County Auditor Patricia Roach	Participated in 2021 meeting, reviewed draft plan, provided input
City of Presidio	Fire Chief Saul Prado	Participated in 2021 meeting, reviewed draft plan, provided input
Presidio I.S.D.	Superintendent Ray Vasquez	Participated in 2021 meeting, reviewed draft plan, provided input
CBP.DHS	Agent Todd Mitchell	Participated in 2021 meeting, reviewed draft plan, provided input
TDEM	District Coordinator Al Talavera	Participated in 2021 meeting, reviewed draft plan, provided input
Rio Grande Council of Governments	Hazard Mitigation Coordinator Ray Resendez	Coordinated the update of the plan

2.2.2 2020–2022 Stakeholder and Public Involvement

Stakeholder and public involvement is critical for a planning process. Stakeholders and the public provide valuable information about hazards and potential losses. These participants must evaluate proposed actions because implementation requires the dedication of community resources, including time and money.

RGCOG has a great deal of experience in scheduling and conducting public meetings throughout the six counties in Far West Texas. Established procedures for announcing and holding meetings have been very effective in obtaining participation of representatives, which included elected and appointed officials from Presidio County, the City of Marfa, the City of Presidio, Marfa ISD, Presidio ISD and the public at meetings. Therefore, Stakeholder and Public Involvement processes followed were: 1) In person and email notifications 2) Planning Team meetings were announced in the local newspaper, 3) meetings were posted in county office buildings, and 3) were open to the public. Lastly, all residents of the five-county Far West Texas region, including Presidio County, the City of Marfa, the City of Presidio, Marfa

ISD and Presidio ISD, were invited to offer comments on the draft plan. A final public comment period was held prior to plan adoption. The only addition to the process used to increase involvement of stakeholders and the public was the use of an online survey. The planning process used derived from the "Mitigation Planning How-To Guide #2 (FEMA 386-2)" and "Local Mitigation Planning Handbook March, 2013 (FEMA)."

October 28, 2020 Initial meeting (virtual)

RGCOG staff hosted an initial meeting for the Hazard Mitigation Plan update. Due to COVID 19 restrictions, the meeting was conducted virtually using the GOTOMEETING platform. The meeting was combined with a first responders meeting for all six counties in the RGCOG's area. Representatives from four of the six counties attended to included Hudspeth County's, Emergency Management Coordinator / County Administrator, responsible for mitigation plan update. The meeting included discussion on the 2020 Threat and hazard Identification (THIRA) and risk assessment plan review, the 2020 Stakeholder Preparedness Review (SPR) plan review. The group received a presentation on the overview of the Hazard Mitigation planning process. The presentation provided direction in building the planning teams and organizing the requirements of updating the mitigation plan

April 8, 2021 Planning Team Meeting

On April 8, 2021, Meeting was held virtually due to COVID 19 restrictions. RGCOG staff described to members of the Planning Team the scope of work and expectations for participation. The Planning Team discussed a proposed schedule and determined a method for obtaining participation during the planning process. Section 8.1.1 displays:

- List of people invited to attend the meeting
  - Public announcement of the meeting
  - Meeting agenda
  - Copy of the sign-in sheet for the meeting
- Five members of the Presidio County Planning Team attended
- All meeting participants were invited to participate throughout the meeting and to ask questions, offer observations, and provide information
- Information provided by members of the public and by committee members was used to finalize the planning process and to identify hazards

May 24, 2021 Planning Team Meeting

On May 24, 2021, Meeting was held virtually due to COVID 19 restrictions. RGCOG staff described to members of the Planning Team the scope of work and expectations for participation. The Planning Team discussed a proposed schedule and determined a method for obtaining participation during the planning process. Section 8.1.1 displays:

- List of people invited to attend the meeting
    - Public announcement of the meeting
    - Meeting agenda
    - Copy of the sign-in sheet for the meeting
- Five members of the Presidio County Planning Team attended
- All meeting participants were invited to participate throughout the meeting and to ask questions, offer observations, and provide information
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July 15, 2021 Public input planning meeting in Marfa

On July 15, 2021 RGCOG, staff facilitated a meeting in Marfa open to the public to get public input. In the meeting we reviewed the Hazard Mitigation Plan update process, discussed and sought agreement on designated hazards, discuss the status of updating building codes, Identify technical resources, confirm critical facilities, review previous mitigation Action plans, and create new mitigation action strategies. Five people participated and provided valuable information towards updating the plan.

July 19, 2021 Public input planning meeting in the City of Presidio

On July 15, 2021 RGCOG, staff facilitated a meeting in Presidio open to the public to get public input. In the meeting we reviewed the Hazard Mitigation Plan update process, discussed and sought agreement on designated hazards, discuss the status of updating building codes, Identify technical resources, confirm critical facilities, review previous mitigation Action plans, and create new mitigation action strategies. Seven people participated and provided valuable information towards updating the.

July 26, 2021 Presentation and discussion to City of Marfa City council

On July 26, 2021 RGCOG, staff provided a presentation to the City of Marfa's City Council and staff. The meeting was open to the public to get public input. In the meeting, we discussed and sought agreement on designated hazards, discuss the status of updating building codes, Identify technical resources, confirm critical facilities and review mitigation Action plans. 15 people participated and provided valuable information towards updating the plan.

August 11, 2021 Presentation and discussion to Presidio County Commissioner's Court

On August 11, 2021 RGCOG, staff provided a virtual presentation to the Presidio County Commissioner's court and staff. The meeting was open to the public to get public input. In the meeting, we discussed and sought agreement on designated hazards, discuss the status of updating building codes, Identify technical resources, confirm critical facilities and review mitigation Action plans. Approximately 10-people participated and provided valuable information towards updating the plan.

August 19, 2021 Planning team review and designation of Mitigation actions workshop

On August 19, 2021 RGCOG, staff facilitated a meeting in Marfa open to the public to get public. In the meeting, we reviewed the Hazard Mitigation Plan update process, reviewed previous mitigation Action plans, and create new mitigation action strategies. Six people participated and provided

valuable information towards updating the plan.

On-line Survey

The planning team reviewed and analyzed the data gathered from the public with the on-line survey. Some examples of information gathered from the survey include the following:

- Top 4 hazards of concern 1. Wildfire 2. Drought 3. Extreme Heat and 4. Hail
- Top 4 hazards actually experienced 1. Hail 2. Winter Storm, 3.Drought 4.Wildfire
- 58% respondents have experienced a natural disaster
- 67% have received information for a safer home during a natural disaster.
- Top 3 methods to receive safety information 1. News Media, 2. Utility co. mail outs, 3. Social Media
- Most trusted information comes from 1. Government Agency, 2. Utility Co. 3. University Research groups

The survey assisted in promoting input from the community to assure we included the community's priorities. The planning team reviewed and analyzed data and assured the list of hazards, resources and actions in this plan reflected the concerns of the planning area. Copies of the results can be viewed in section 8.1.5 of this plan. Planning team was able to analyze

2.2.3 2020–2021 Technical Assistance

RGCOG provide technical assistance throughout the process of updating the hazard mitigation plan.

2.2.4 2020–2021 Participation of Neighboring Jurisdictions

The plan was developed as part of a multi-county planning effort and facilitated by RGCOG. Plans were developed simultaneously for the five counties in the RGCOG area and their 6 incorporated jurisdictions.

Stakeholders including local officials, residents, and business owners from all six counties were invited to each Planning Team meeting during the plan development process to share information about hazards and suggestions for mitigation. Each meeting of the Planning Team was open to the public; meeting notices were posted as is the practices of the RGCOG on the Web site of the Texas Secretary of State.

2.2.5 Existing Information

Existing plans, studies, reports, and technical information were consulted early in the planning process to identify any changes in development that have occurred in the planning area since the previous plan was developed and to gather better information about hazards that have occurred in the area. As appropriate, information gleaned from existing documents was incorporated into the plan and used in the Risk Assessment. No major changes in density of development or locations of development were identified for Presidio County, the City of Marfa, the City of Presidio, Marfa ISD and Presidio ISD. since the previous mitigation plan was written that affect vulnerability to the effects of identified hazards.

The RGCOG and Planning Team identified some documents that had been developed in the past 6 years. Plan developers reviewed the document and searched the Internet for other relevant reports and articles. Plan developers from RGCOG reviewed the documents by reading them and noting information relevant to the planning area. In general, existing documents provided some information about the

planning area, but did not provide details about previous occurrences of hazards or ongoing hazard mitigation programs. Section 7 contains a detailed list of references consulted for the development of this updated plan. Of particular relevance to the plan and key sources of information incorporated into the assessment of risk are:

- Big Bend National Park
    - U.S. Forest Service Web site provides emergency preparedness information
- National Climactic Data Center (2020)
    - The database provides information about previous occurrences of storms and associated fatalities, injuries, property damages, and crop losses
- RGCOG
    - Comprehensive Economic Development Strategy for the West Texas Economic Development District (2017)
- Spatial Hazard Events and Losses Database for the United States (SHELDUS) (2018)
    - The database includes information about previous occurrences of storms and associated fatalities, injuries, property damages, and crop losses
- Texas Division of Emergency Management Hazard Mitigation Plan (2017)
    - The State plan provides an overview of hazards that can affect the area

Presidio County as well as the City of Marfa and the City of Presidio participate in the National Flood Insurance Program (NFIP). Each has an ordinance that governs development in FEMA identified Special Flood Hazard Areas, is enforced by local officials, and that meets NFIP requirements.

Other documents consulted during the planning process include articles about recent wildfires and the 2011 ice storm, books and articles about earthquakes, reports by Texas and Federal agencies about the behavior of various hazards in the region, and scales used to quantify the magnitude of hazards.

2.2.6 2022 Plan Adoption

When FEMA Region VI and the Hazard Mitigation Officer for the State of Texas indicate to the RGCOG that the plan meets all Federal planning regulations and is approvable, the plan will be submitted according to established practices to Presidio County, the City of Marfa, the City of Presidio, Marfa ISD and Presidio ISD elected officials for adoption. Each participating jurisdiction will be given adequate time in order to allow and receive public input from their citizens prior to plan approval. Copies of resolutions of adoption will be included in Section 8.2.

3. Hazard

In this section of the plan, hazards that can occur in the County are identified and described. For each hazard type, the plan describes the locations that can be affected, the potential severity, and previous occurrences of the hazard in the County. This information is used to estimate the probability of an occurrence of the hazard in any given year. The plan describes the impact of each hazard, and reviews changes in development that have occurred over the past few years as well as mitigation

accomplishments that may have changed the impact of the hazard. For each hazard, a brief description is also included about ways in which future development will be at risk of damage.

There have been 14 Disaster Declarations for Presidio County from 1953 to present.

- 6 fire
- 3 Hurricane
- 2 Biological
- 2 Severe Ice Storm
- 1 Severe Storm

3.1 Hazards Identification

Identification of hazards began by reviewing the hazards listed in the previous plan; this led to two changes:

1. **Hurricane or Tropical Storm**, In the previous plan the RGCOG and the Planning Team determined it was not useful to identify the weather phenomenon Hurricane/Tropical Storm as a separate hazard because damage associated from hurricanes or tropical storms such as flooding from rain, high winds, tornadoes, or hail, could be classified under other listed hazards identified in the plan. But as indicated a by the FEMA historical data showing 3 disaster declarations in which hurricanes affected Presidio county the team agreed to list Hurricanes/Tropical Storms as a separate hazard.

2. **Disease,** added as the risk of a global influenza pandemic has increased over the last several years. This disease is capable of claiming thousands of lives and adversely affecting critical infrastructure and key resources. Pandemic has the ability to reduce the health, safety, and welfare of the essential services workforce. This hazard has been added due to the current COVID 19 outbreak and will include community mitigation aims to slow the spread of a novel virus in our community.

3.2 Hazard Profiles

3.2.1 Methodology

Five sources of data were used to profile each hazard:

1. The **National Climactic Data Center** (NCDC) information, which was used in the previous plan to examine flood or flash flood, hail, wind, and tornado, was updated using the July 2021 NCDC data.

2. The most recent version of the **Spatial Hazard Events and Losses Database** for the United States (SHELDUS) was used to update information about other hazards. SHELDUS data cover the period 1960 to 2021

3. The FEMA Disaster Declarations database was consulted.

4. The Planning Team and local officials provided data at meetings and through the **May 2021**

Survey

5. Resources published on the Internet provided further information about hazards.

The plan discusses the six different characteristics of each identified hazard listed in Figure3.

Figure 3: Characteristics of Each Hazard Addressed in the Plan

3.2.2 Flash Flooding

Description:

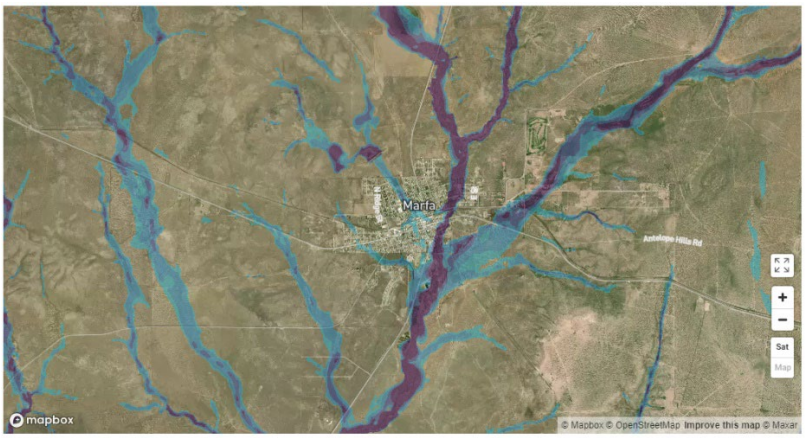
The inundation of normally dry land caused by an increase in the water level in an established watercourse such as a river, stream, or drainage ditch, or by water ponding.

Location

Flooding does not affect the entire County in a similar manner. The potential for flooding exists in low-lying parts of the County, particularly along the Rio Grande River. The County also floods along undeveloped arroyos, which are generally dry but carry water, sometimes a great deal of fast-moving water, during heavy rains. The area most at risk of flood damage is agricultural land to the south of the City of Presidio and the high school recreation field in the City of Presidio; areas that are prone to flooding elsewhere in Presidio County, the City of Marfa, the City of Presidio, Marfa ISD and Presidio ISD are undeveloped.

Figure 4 indicates the agricultural area to the south of the City of Presidio that is most vulnerable to flooding.

Figure 5 provides evidence of the fact that the arroyos around the City of Marfa do have some flood potential.



The Federal Emergency Management Agency (FEMA) produces maps for the National Flood Insurance Program (NFIP) that designate locations with at least a 1-percent chance of flooding in any given year. These maps are called Flood Insurance Rate maps (FIRMs).

Extent

The magnitude or severity of flooding varies across the County. Anecdotal evidence indicates that low-lying areas can experience slow-moving water or ponding, to a depth of less than eight inches, whereas steep slopes can have fast-moving floodwaters carrying mud or rocks. Areas where water moves quickly are not developed.

There is scientific evidence suggesting that heavier than previously experienced precipitation is likely in the future; this would lead to more severe floods in the planning area (FEMA, 2011).

Data provided by FEMA is limited to the locations prone to flooding; there is no FIRM for the City of Marfa. FIRMs do not indicate the Base Flood Elevation or the level of flooding in feet above sea level that can be expected to be met or exceeded in any given year.

Previous Occurrences

Table 3 lists 25 previous occurrences of flooding and flash flooding in the County (SHELDUS, 2021). These 25 floods and flash floods occurred over the 59-year period from 1962 through 2021.

Table 3: Flooding in Presidio County

County	Date	Location	Property Dmg(ADJ)	Remarks
Presidio	9/1/1962	Presidio County	$41,574.01	Heavy rain/ flooding
Presidio	7/5/1968	S Valentine/ Presidio County	$0.00	Flooding
Presidio	7/7/1968	Presidio/ Presidio County	$360,785.92	Flooding
Presidio	10/4/1969	SOUTHWEST	$205,264.58	FLASH FLOODING
Presidio	8/11/1971	SOUTHERN EDWARS PLATEAU/ SOUTHWEST TEXAS	$64,585.34	FLOODING
Presidio	8/5/1978	Redford/ Presidio County	$192,566.72	Flood
Presidio	9/25/1978	Presidio County	$192,566.72	Flooding
Presidio	6/10/1980	Central Panhandle and S Plains	$692,594.34	Flood
Presidio	9/8/1980	Southern West Texas	$423,252.09	Flood
Presidio	10/9/1985	West TX	$4,667.42	Flood
Presidio	8/4/1988	Presidio County	$1,061.31	Flash Flooding
Presidio	5/17/1990	Marfa	$96,062.36	Flash Flooding
Presidio	8/1/1990	Presidio and Brewster Counties	$4,803.12	Flood
Presidio	8/5/1990	21ESE Presidio	$0.00	Flash Flood
Presidio	9/21/1990	Presidio and Brewster Counties	$48.03	Flood
Presidio	10/1/1990	Presidio and Brewster Counties	$1,921,247.13	Flood
Presidio	9/25/1991	Presidio	$921,831.86	Flood
Presidio	10/1/1991	Presidio	$921.83	Flood
Presidio	6/4/1997	PRESIDIO VALLEY; TXZ079	$15,645.30	FLOODS
Presidio	7/28/1999	PAISANO	$15,072.45	FLASH FLOOD
Presidio	6/10/2002	Marfa	$27,916.29	Flooding
Presidio	6/20/2002	Presidio	$139,581.43	Flooding
Presidio	4/4/2004	TOYAH	$1,329,311.81	Flooding
Presidio	9/9/2008	3 NW Presidio	$1,166,295.87	Flash Flood
Presidio	6/28/2021	Marfa	UNK	Flash Flood

Table 1 in the Attachment provides additional detail about the upstream and downstream locations of various recorded flood events.

Probability

Twenty-five floods were identified in the County and in the City of Presidio over the 59-year period from 1962 through 2021. This suggests that, overall, the probability of a flood in any given year is 25/59 or 42 percent.

The probability of flooding can also be estimated as 1 percent in any given year for locations within the County shown as flood hazard areas on the FIRMs.

Vulnerability

Critical infrastructures identified in table 16 may be vulnerable to flooding in the Presidio County, the City of Marfa, the City of Presidio, Marfa ISD and Presidio ISD., if the Planning area exceeds their average range of 1" or

greater of precipitation. Agricultural fields, a golf course, and recreational ball fields in the flood plain in the City of Presidio are vulnerable to flooding. A few residential and agricultural structures in the City of Presidio in the floodplain are vulnerable to flooding. Scattered parcels of undeveloped, rural land in Presidio County are vulnerable to flooding.

Impact

Flooding may impact the City of Marfa and Marfa ISD. Flooding will benefit agricultural fields, a golf course, and recreational ball fields in the City of Presidio and Presidio ISD as grass and crops are watered. Flooding may cause some damage in the City of Presidio if it reaches the first floor of a residential or commercial structure. Minor repairs and replacement of some contents would be necessary. Vehicles may also be damaged if left in areas that flood.The 1990 flood led to the greatest amount of damage; the estimated cost of damages in 2018 dollars is $1,921,247.13. No injuries or fatalities have been attributed to flooding in the County since 1996.

Repetitive Flood Loss Properties

Presidio County, the City of Marfa, and the City of Presidio participate in the NFIP so that residents and business owners can purchase flood insurance. Each jurisdiction has adopted and enforces a flood damage prevention ordinances. Building inspectors verify compliance with each flood damage prevention ordinance when new structures are constructed and when structures are modified or repaired.

The NFIP identifies a property that has had at least two paid flood losses of more than $1,000 each in any 10-year period as a “Repetitive Flood Loss Property.” As when the previous plan was developed, there are no Repetitive Flood Loss Properties in any of the participating jurisdictions (FEMA, 2012). The Repetitive Loss database is cumulative and goes back to the beginning of the NFIP in 1978.

Future Conditions

Since the previous plan was adopted, there has been some development in the vicinity of Cibolo Creek in the City of Presidio; this includes housing developed for Federal employees of the U.S. Customs and Border Protection service.

Since the previous plan was developed, some flood risk has been alleviated through mitigation:

- The previous plan proposed improved maintenance of arroyos to ensure that flow of water would not be impeded by debris, and this is an ongoing action by Presidio County.
- The City of Presidio completed two drainage improvement projects since the previous plan was adopted.

Because the population of the County is expected to remain relatively constant over the next several years, future development is expected to replace existing development or to be located adjacent to existing development. Structures and infrastructure are protected against flood damage through enforcement of local flood damage prevention ordinances. Each participating jurisdiction adopted a flood damage prevention ordinance when it joined the NFIP. Development has not affected vulnerability for the planning area.

3.2.3 Wildfire

Description:

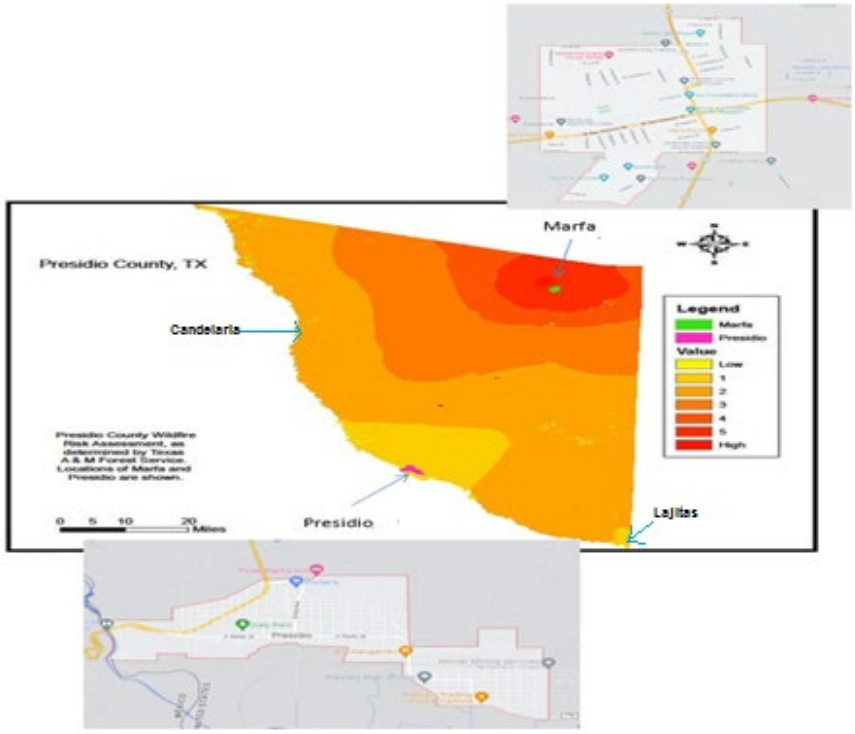
Wildfire is any outdoor fire is not controlled or prearranged. The spread of wildfire may cause destructive conflagration, which can result in widespread damage to property and loss of life.

As Presidio County residents move farther into “natural” areas to advantage of raising cattle, privacy, natural beauty, recreational opportunities, and affordable living; fire departments are increasingly fighting fires along the wild land Urban Interface (WUI). WUI is defined as areas where homes are built near or among lands that may be prone to wild land fire. Depending on the community fire departments might refer to wild land fires as brush fires, range fires or something else; all pose the same threat to local assets.

Location

The areas of concern for wildfire are the central to northeastern part of the county. This area includes the city of Marfa and along the Rio Grande levees from Candelaria to Lajitas to include the area along the city of Presidio. The rest of the county is mostly uninhabited and in many areas completely undeveloped. Undeveloped areas or remote areas with very sparse development of planning area add to the threat due to various factors of fuels, weather, topography and risk combine to the daily fire potential. Any fires that are quickly reported within and close to the boundaries of the City of Marfa or the City of Presidio for the most part can be controlled by local volunteer fire departments before they spread.

Figure 6: Presidio County wildfire risk



Extent

The extent or severity of a wildfire depends on a number of different variables. Key factors that affect the severity of wildfire in Presidio County are:

- Fuel
- Temperature
- Wind
- Humidity
- Topography

According to the *State of Texas Hazard Mitigation Plan* (Texas Department of Public Safety, 2018), wildfires are fueled almost exclusively by natural vegetation in Presidio County, which is an arid region and fuel for fires is relatively sparse.

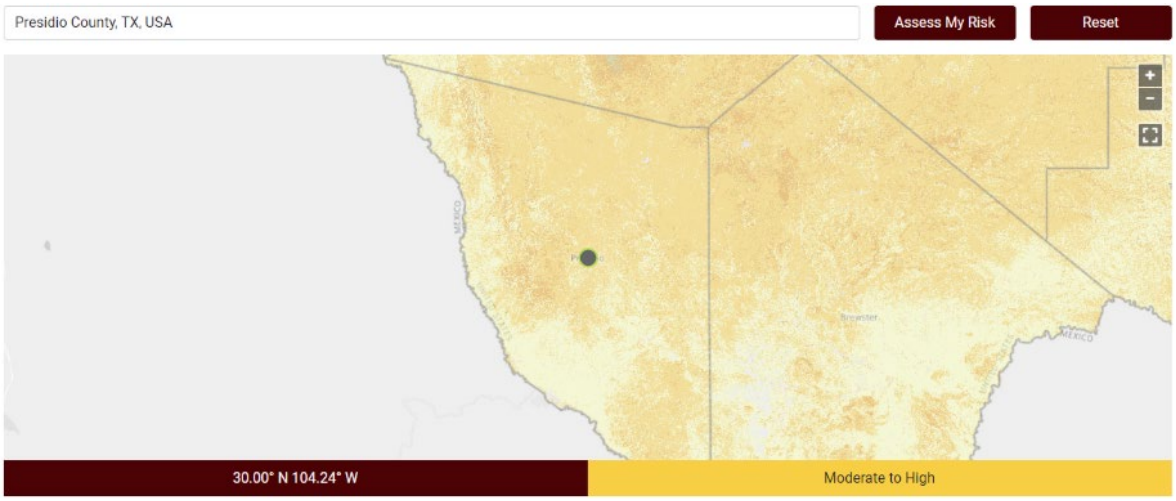
Temperature or the time of year can affect the extent of wildfires. In Presidio to include the City of Marfa and City of Presidio extreme drought conditions coupled with lighting make the probability likely for the County and two municipalities experience wildfires. According to the *State of Texas Hazard Mitigation Plan*, wildfires are most common in the spring and summer months, but can occur at any time (Page 62). In the spring and summer months, there is more fuel for wildfires and the fuel is pre-heated and dried by the sun. Warm, dry brush burns more rapidly than cold, damp brush.

Another factor that affects the severity of wildfire is wind, which can cause a wildfire to spread. The stronger the wind, the more quickly a fire can spread. Wind is a critical factor in determining the severity of wildfires in Far West Texas.

Humidity or the amount of water vapor in the air can also affect the severity of a wildfire; wildfire will be more severe when the air is dry than when the air is humid.

The severity of wildfire depends on topography, as fire tends to move up steep slopes and to move more quickly the steeper the slope.

There is scientific evidence suggesting that longer periods of drought are likely in the future; this would lead to more severe wildfires in the planning area (FEMA, 2011). For current wildfire conditions, residents of Presidio County and the cities of Marfa and Presidio tend to be in the range between moderate (class 3) to high (class 4) on the Fire Intensity Scale available at https://texaswildfirerisk.com/; Figure 3 in the Attachment shows that Presidio County was at moderate risk of wildfire. In addition, the County along with the City of Marfa and Presidio consider a reading of moderate FDI 01-11 (action-review and rehearse the bush fire survival plan) to high FDI 12-24 (action-ensure that you and your family, home and property are well for the risk of bush fire). Both of these categories indicate that fires can be easily controlled but can still present a threat as per the Fire Danger Rating system. The worst-case scenario for this planning area would be a fire rating 4 or higher on the Fire Intensity Scale (FIS).



Characteristic Fire Intensity Scale

- 1 (Very Low)
- 1.5
- 2 (Low)
- 2.5
- 3 (Moderate)
- 3.5
- 4 (High)
- 4.5
- 5 (Very High)

Previous Occurrences

Marfa Public Radio reported the Rock House Fire remains the largest grassland fire in Texas history. On Saturday, April 9, 2011, it began its rampage across Far West Texas, affecting many residents. They also reported of at least 3 other major wildfires in 2015, 2016 and 2018. (Source: Texas A&M Forest Service retrieved January 2021,)

Table 4 Previous occurrences of Wildfires

Date	County	Fire Name	Acres	Cause
5/31/10 16:00	Presidio	Brite Ranch	11590	Lightning
6/22/10 17:00	Presidio	Brite Ranch Rim	4670	Lightning
6/2/10 13:00	Presidio	Bar-lite Fire	2246	Lightning
4/14/10 17:00	Presidio	Orphan Hill	2125	Lightning
6/16/10 12:00	Presidio	Petan Ranch	1200	Lightning
6/18/10 20:00	Presidio	Chipotle Flats	500	Lightning
5/6/10 15:45	Presidio	Livingston Fire	443	Miscellaneous
6/16/10 23:00	Presidio	Petan Brite	400	Lightning
6/6/10 8:00	Presidio	Barrel Springs	240	Arson
6/22/10 16:00	Presidio	Donnell	239	Lightning
3/26/10 16:00	Presidio	Ruidosa Fire	200	Miscellaneous
6/24/10 15:00	Presidio	Betan Ranch Rim	150	Lightning
5/6/10 16:30	Presidio	Childress Hill #2	20	Miscellaneous
5/6/10 16:30	Presidio	Childress Hill #1	12	Miscellaneous
8/7/11 14:00	Presidio	Brad Kelley (Cibola Creek) Fire	3435	Lightning
4/9/2011 12:00	Presidio	Rock House Fire	300,000+	House fire
4/26/11 20:00	Presidio	Shirley Ranch Fire	3000	Power Lines
3/23/11 18:00	Presidio	Dipper Ranch Fire	2500	Debris burning
8/10/11 15:00	Presidio	Fletcher Complex	2406	Lightning
8/19/11 16:00	Presidio	Shirley Ranch	1255	Lightning
7/21/11 16:00	Presidio	Crowley Fire	1205	Lightning
7/4/11 18:00	Presidio	Brite Ranch Fire	1050	Lightning
7/21/11 17:00	Presidio	NE Marfa Fire	500	Lightning
5/31/11 16:00	Presidio	Crown X	220	Lightning
7/28/11 15:00	Presidio	Hip-O Fire	217	Lightning
7/30/11 12:00	Presidio	Lobo Canyon Fire	158	Lightning
8/8/11 18:00	Presidio	Dasani	56	Lightning
5/31/11 18:00	Presidio	Waterwell	25	Lightning
8/14/11 14:00	Presidio	Perdez Creek	21	Lightning
2/11/11 12:00	Presidio	Hwy 117 Fire	16.3	Equipment use
8/7/11 18:00	Presidio	Kellum Ranch	15	Lightning
8/12/11 17:00	Presidio	Salcedo	15	Lightning
6/7/2015 14:30	Presidio	Petan Ranch Fire	200	Lightning
6/9/2016 15:30	Presidio	Greenlee Ranch Fire	1181	Lightning
4/30/2018 16:00	Presidio	McDannald Fire	18966	Lightning
7/18/19 14:40	Presidio	Petan	1273	Lightning
2/22/19 16:51	Presidio	Alamito Creek	600	Debris burning
3/24/19 16:00	Presidio	Rattler	230	Debris burning

Probability

With at least Thirty-eight instances of wildfire, occurring in the County in the last 11 years the probability of a wildfire in Presidio County is estimated to be 38/11 or over 100 percent in any given year. The probability of a

wildfire within the jurisdictional boundaries of the City of Marfa or the City of Presidio is estimated to be close to zero as there is no history of a fire within the boundaries of either city and because both cities have fire fighters and firefighting equipment.

Another way of examining the probability of wildfire is to consider drought conditions at a particular point in time using the Keetch-Byram Drought Index, which was developed in 1968. Inputs used to develop the index include latitude, mean annual precipitation, and the last 24 hours of rainfall (U.S. Forest Service, 2012). Measures on the Keetch-Byram Drought Index vary from the 0-to-200 category, indicating moisture level is high and the probability of wildfire is relative low, to the 600-to-800 category, indicating severe drought conditions and an increased potential for wildfire.

Vulnerability

Critical infrastructures in the Presidio County, the City of Marfa, the City of Presidio, Marfa ISD and Presidio ISD. as identified in table 16 may be vulnerable to wildfires. In addition, rural residential structures and agricultural structures are vulnerable to damage by wildfire in Presidio County.

Transmission lines in remote areas that bring power generated outside of the County to each of the participating jurisdictions are vulnerable to damage due to wildfire.

Impact

The 2011 wildfire reportedly burned approximately 2,500 acres (Marfa Public Radio, 2011). However, the 2011 wildfire did not lead to structural damage because it occurred in a remote area south of Marfa along U.S. Route 67. Nevertheless, there is the potential for a wildfire to cause some property damage, especially in the unincorporated parts of the County.

Transmission lines and structures in remote areas are vulnerable to damage due to wildfire. Wildfire can heat transmission lines, causing them to malfunction, or can damage or destroy other components of the transmission system. With power outages, there may be economic losses associated with wildfire due to closure of businesses.

Wildfire is a natural phenomenon that can benefit a natural area. As with all natural hazards, problems or losses occur when a severe hazard interacts with the built environment. Previous occurrences of wildfire did not lead to property losses.

Future Conditions

Since the previous plan was adopted, widespread public education about the risk of wildfire and about preventing wildfire has been accomplished through the distribution of printed materials prepared by the Texas Forest Service and posters in public spaces about the wildfire hazard.

Presidio County provides further information to residents and business owners through the Fire Wise program. The City of Marfa updated their ordinance regarding the design of fire breaks.
Development has not affected vulnerability for the planning area

3.2.4 Drought

Description:

Drought, a deficiency of moisture caused by a natural reduction in the amount of precipitation received over an extended period of time.

Location

Drought can affect all or any part of the Far West Texas region including Presidio County, the City of Marfa, and the City of Presidio.

Extent

The magnitude or severity of drought can be measured objectively using the Palmer Drought Severity Index (see attachment figure 9a), which was developed in 1965 to measure duration and intensity of long-term drought conditions. Measurements depend on the cumulative effects of both precipitation and temperature and vary from -4.0 for extreme drought conditions, to +4.0 for extremely wet conditions. A measurement between -0.49 and +0.49 indicates that moisture conditions are near normal for Presidio County to include the City of Marfa and City of Presidio.

Presidio County and participating jurisdictions have experienced as many as 100 days without rain in recent years and up to 200 days without rain in the 1930s.

For current drought conditions, residents of Presidio County and the cities of Marfa and Presidio can refer to the U.S. Drought Monitor available at http://droughtmonitor.unl/edu/DM_state.htm?TX,S. The Attachment provides additional information about drought conditions in participating jurisdictions on particular dates.

Previous Occurrences

The mean annual precipitation in Presidio County is 15 inches per year (Texas Counties.net). Because the region is normally very dry, few instances of drought conditions occur. The previous plan mention 2 occurrences of drought. The U.S. Drought Monitor database (https://droughtmonitor.unl.edu/DmData/DataDownload/WeeksInDrought.aspx) lists 7 different instances of long term drought occurring in Presidio County since 2000:

Table 6 Previous Occurrences of Drought

FIPS	Start Date	End Date	Consecutive Weeks	State	County
48377	11/12/2015	5/12/2016	26	TX	Presidio County
48377	10/12/2017	6/7/2018	34	TX	Presidio County
48377	1/3/2008	9/4/2008	36	TX	Presidio County
48377	7/5/2018	5/2/2019	43	TX	Presidio County
48377	12/15/2005	3/22/2007	66	TX	Presidio County
48377	9/2/2010	12/18/2014	220	TX	Presidio County
48377	1/6/2000	8/12/2004	234	TX	Presidio County

Although crops are lost due to drought, no fatalities, injuries, or damage to structures or infrastructure are attributed to these periods of drought.

Probability

With seven identified occurrences of drought in Presidio County and participating jurisdictions over the 21-year period from 2000 through 2021, probability of drought in any given year is estimated as 7/21 or about 33 percent. There is scientific evidence suggesting that prolonged periods of drought are increasingly likely in the future in the planning area (FEMA, 2011).

Vulnerability

Agriculture and wildlife are vulnerable to the effects of drought.

Critical infrastructures identified in table 16 may become vulnerable if drought conditions persist.

Impact

Drought has negative consequences for crops and wildlife, but has not caused damage to structures or the infrastructure in the County or in the cities of Marfa or Presidio.

The economic impact of drought would be loss of income for agricultural enterprises.

Future Conditions

The previous plan recommended community education so that residents can prepare for the effects of hazards including drought. This mitigation action is accomplished through the Texas AgriLife Disaster Education Network, which posts information about preparing for weather conditions in Far West Texas on its Web site.

Widespread drought conditions in the region may contribute to an inadequate supply of water for the population because the County depends on well water. Development has not affected vulnerability for the planning area

3.2.5 Extreme Temperatures

This section addresses extreme temperatures. Extreme heat in Presidio County is addressed first. This is followed by a discussion of extreme cold as experienced in Presidio County.

3.2.5.1 EXTREME HEAT

Description

Extreme Heat, persistent and unusually high temperatures and high humidity or temperatures that are above average.

Location

Extreme heat affects all of Presidio County uniformly and does not vary by location.

Extent

The highest temperature recorded in the region that includes Presidio County, the City of Presidio, and the City of Marfa is **106 degrees** Fahrenheit (°F), which occurred in June 1994 (weatherbase.com 2022).

The previous plan defined extreme heat as occurring when temperatures hover 10 degrees or more above the average high temperature for the region for several weeks.

Previous Occurrences

Presidio County normally experiences very hot weather; extreme heat is defined as a departure from the norm. SHELDUS lists three occurrences of extreme heat in the County:

- July 1980
- June 1990
- June 1994

The previous plans also identified Presidio County as having experienced

- 53 consecutive days with temperatures of 100 degrees or greater in 1983
- 108 consecutive days with temperatures of 100 degrees or greater in 1959
- 3 consecutive days with temperatures of 115 degrees or greater in 1957

Probability

Data on six previous occurrences of periods of extreme heat cover the 61-year period from 1957 through 2021. The probability of extreme heat occurring in any given year in the planning area is estimated as 6/61 or 9 percent. However, there is scientific evidence suggesting that prolonged periods of extreme heat are increasingly likely in the future in the planning area (FEMA, 2011).

Vulnerability

People in poor health are vulnerable to the negative effects of extreme heat. Some livestock and crops may also be vulnerable to the effects of extreme heat.

Critical infrastructures identified in table 16 may become vulnerable if extreme heat temperatures exceed 10 degrees above the average of 87 degrees.

Impact

Extreme heat can have negative effects on the health of people and animals such as dehydration or heat exhaustion as well as agricultural productivity. To explain the relationship between extreme heat and humidity, NOAA provides a graphic showing how a combination of high heat and humidity lead to the likelihood of a heat disorder. The graphic is provided in the Attachment.

Businesses and residents may experience higher than normal charges for electricity consumption due to the higher cost of operating air-conditioning equipment during periods of extreme heat.

Future Conditions

The previous plan recommended community education so that residents can prepare for the effects of extreme heat. This action is routinely implemented when Texas AgriLife posts information about preparing for weather conditions in the Far West Texas region, which includes Presidio County, on its Web site.

Future development and new utility systems can be protected against damage from extreme heat and can increase energy efficiency with insulation. Development has not affected vulnerability for the planning area

3.2.5.2 EXTREME COLD

Description:

Extreme Cold, persistent and unusually low temperatures that are near or below freezing.

Location

Extreme cold affects all of the planning area uniformly and does not vary by location.

Extent

The lowest temperature recorded anywhere in planning area, **is -2°F,** which occurred in January 1962 (weatherbase.com 2022). This means that frostbite can occur within 30 minutes or less depending on wind chill effects.

Previous Occurrences

The previous plan did not list previous occurrences of extreme cold, but SHELDUS lists eight occurrences of extreme cold weather in Presidio County, as shown in Table 4 (SHELDUS, 2021).

Table 6: Previous Occurrences of Extreme Cold

State	County	Hazard	Date	PropertyDmg (in 2018 dollars)
TEXAS	Presidio	COLD WAVE	1/9/1962	$163,681.35
TEXAS	Presidio	Extreme Cold	1/2/1979	$0.00
TEXAS	Presidio	Extreme Cold	3/2/1980	$0.00
TEXAS	Presidio	Extreme Cold	3/18/1980	$0.00
TEXAS	Presidio	Extreme Cold	4/14/1980	$0.00
TEXAS	Presidio	Extreme Cold	3/29/1987	$0.00
TEXAS	Presidio	BITTER COLD	12/21/1989	$40,501.13
TEXAS	Presidio	Extreme Cold	12/27/1990	$384.25

Probability

Data on eight occurrences of extreme cold cover the 59-year period from 1962 through 2021. The probability of extreme cold occurring in any given year in the planning area is estimated as 8/56 or 13 percent.

Vulnerability

Planning area residents, businesses, governmental entities, and critical infrastructures as identified in Table 16 may be vulnerable when extreme cold reaches temperatures 10 degrees below the average cold. People who lack proper shelter are vulnerable to the effects of extreme cold. Crops are vulnerable to damage due to extreme cold.

Structures identified in table 16 may become vulnerable if they are exposed or poorly protected water pipes may be damaged when pipes freeze during periods of extreme cold.

Impact

People exposed to extreme cold may suffer frostbite of hypothermia. No injuries or fatalities have been identified in association with extreme cold temperatures in the planning area by SHELDUS (2021).

To explain the relationship between cold temperatures and wind as referenced by figure 11 “The Wind Chill Chart”, NOAA provides a graphic showing how a combination of wind and cold temperatures can have negative health impacts. The graphic is provided in the Attachment.

Crops can freeze during periods of extreme cold leading to business losses.

Property damages attributed by SHELDUS to extreme cold may have been caused by water pipes that froze and then burst causing flooding inside of structures.

Businesses and residents may experience higher than normal charges for electricity consumption due to the higher cost of operating heating systems during periods of extreme cold.

Future Conditions

The previous plan recommended community education so that residents can prepare for the effects of hazards including extreme cold weather. This action is routinely implemented when Texas AgriLife posts information about preparing for weather conditions in the Far West Texas region, which includes Presidio County, on its Web site.

Future development and new utility systems can be protected against damage from extreme cold and can increase energy efficiency with insulation.

Summary of Extreme Temperatures: The County of Presidio to include both of its municipalities (City of Marfa and City of Presidio) experience an average of 54.8 degrees of cold temperatures. During the summer, the average heat for both cities is 87 degrees. The planning area considers that any temperature above or below 10 degrees the average range to be extreme. Development has not affected vulnerability for the planning area

3.2.6 Snow

Description

Snow, heavy, frozen precipitation.

Location

Snow can affect any part of planning area.

Extent

As much as 2 inches of snow has been recorded in the southern end of Presidio County (Texas Commission on Environmental Quality, 2012). The tables provided in the Attachment shows that snow of this depth is considered "minimal" and not damaging. The Regional Snowfall Index is included in the Attachment and is available at http://www.ncdc.noaa.gov/snow-and-ice/rsi/?nesis

Previous Occurrences

The previous plan listed no occasions when a measurable quantity of snow fell in the County. The update includes data from NOAA and SHELDUS (2021) and other Internet sources.

SHELDUS lists seven occurrences of snow falling in Presidio County over the 48-year period from 1961 through 2008. Table 5 lists the seven separate occurrences of snow falling in the planning area.

Table 5: Previous Occurrences of Snow in Presidio County

County	Hazard	Date	Property Damage	Type
Presidio	Winter Weather	12/7/1960	$42,416.72	Ice/ Snow
Presidio	Winter Weather	1/3/1971	$31,000.86	BLIZZARD
Presidio	Winter Weather	12/10/1972	$1,182.55	ICE STORM
Presidio	Winter Weather	1/8/1973	$11,132.98	SNOW & ICESTORM
Presidio	Winter Weather	10/30/1979	$1,572,170.03	Winter Storm
Presidio	Winter Weather	11/16/1980	$60,948.30	Heavy Snowstorm
Presidio	Winter Weather	11/24/1980	$60,948.30	Heavy Snowstorm
Presidio	Winter Weather	4/4/1983	$0.00	snowstorm
Presidio	Winter Weather	1/12/1985	$16,910.94	Snow
Presidio	Winter Weather	12/16/1989	$9,204.79	Snow
Presidio	Winter Weather	1/3/1991	$40.08	Ice Storm
Presidio	Winter Weather	1/17/1992	$1.95	Heavy Snow
Presidio	Winter Weather	12/13/1992	$182.63	Heavy Snow
Presidio	Winter Weather	1/15/2007	$4,844.31	Winter Storm
Presidio	Winter Weather	12/11/1998	unk	Heavy Snow
Presidio	Winter Weather	1/3/2013	unk	Heavy Snow
Presidio	Winter Weather	12/27/2015	unk	Heavy Snow
Presidio	Winter Weather	2/5/2020	unk	Heavy Snow
Presidio	Winter Weather	12/30/2020	unk	Heavy Snow
Presidio	Winter Weather	2/14/2021	unk	Heavy Snow

Probability

There are fourteen identified occurrences of snow falling in Presidio County over the 60-year period 1960 to 2022. Thus, the probability of snow in the planning area in any given year is estimated at 20/60 or 33 percent.

Vulnerability

In the planning area, only vehicles are vulnerable to sliding when snow accumulates on roadways. Critical infrastructures identified in table 16 may become vulnerable if a category 5, RSI value of 18.0+ snowfall event were to occur in Presidio County.

Impact

The American Society of Civil Engineers (ASCE) provides recommendations for building to support the weight of snow. Many different factors affect the way snow will collect on roofs, including the slope and shape of the roof and the way the snow drifts. The winter storm category scale is included in the Attachment. With snowfall not expected to exceed two inches in Presidio County or the cities of Marfa and Presidio, structural damage due to snowfall is not anticipated.

Taking all relevant factors into account, engineering studies have led the ASCE to conclude that roofs in the planning area do not need to be designed to handle snow loads because snow is not expected to lead to structural failure (ASCE, 2006). However, even a small amount of snow can lead to traffic accidents and associated vehicle damage.

No injuries or fatalities are identified in association with snow by SHELDUS (2021). The 1979 snow storm led to the greatest amount of damage; the estimated cost of damages in 2018 dollars is $1,572,170.03.

The only potential economic loss anticipated in conjunction with snowfall is the closing of schools and businesses, governmental offices, repair to vehicles, and repair to roads.

Future Conditions

The previous plan recommended community education so that residents can prepare for the effects of all hazards including snow. The impact that snow can cause on Presidio County in the future may lead to significant economic loss for business owners, governmental entities, school systems, and citizens. This action is routinely implemented through Texas AgriLife, which posts information about preparing for weather conditions in the Far West Texas region on its Web site.

According to the American Society of Civil Engineers report, structures built in the County will not be at risk of damage due to snowfall (ASCE, 2006). Development has not affected vulnerability for the planning area

3.2.7 Wind

Description

Wind, horizontal movement of the air.

Location

Wind can affect any part of Presidio County. A table showing specific locations of wind events recorded by NCDC in Presidio County and participating jurisdictions is included in the Attachment. The NCDC data do not provide location of every wind event.

Extent

The magnitude or severity of a windstorm can be measured using the Beaufort wind scale. The Beaufort scale rates the force of wind from category 0 for calm winds of less than 1 mile per hour to category 12 for violent storms with winds of more than 74 miles per hour. Table 6 provides further description of the conditions experienced on land for various classifications in the Beaufort scale (Rowlett, 2001).

Table 8: Beaufort Wind Scale

Rating	Wind Speed in Miles per Hour	Description	Conditions on Land
0	<1	Calm	Smoke rises vertically
1	1-4	Light air	Smoke drifts, leaves rustle
2	5-7	Light breeze	Wind felt on face
3	8-11	Gentle breeze	Flags extended, leaves move
4	12-18	Moderate breeze	Dust and small branches move
5	19-24	Fresh breeze	Small trees begin to sway
6	25-31	Strong breeze	Large branches move, wires whistle, umbrellas difficult to control
7	32-38	Near gale	Inconvenience in walking; whole trees in motion
8	39-46	Gale	Difficult to walk against the wind; twigs and small branches blown off trees
9	47-54	Strong gale	Minor structural damage (e.g., shingles blown off roofs)
10	55-63	Storm	Trees uprooted, structural damage likely
11	64-73	Violent storm	Widespread structural damage
12	74+	Hurricane	Severe structural damage to buildings

Data provided by the National Climactic Data Center for magnitude of winds show that high winds in the region have been measured at **up to 78 knots** or, using the conversion factor of 1 knot = 1.15078 miles per hour, 90 miles per hour, which can cause severe structural damage (NCDC, July 2012). This means that wind has the potential to cause severe structural damage in planning area.

Previous Occurrences

Data provided in the previous plan on occurrences of and data on high wind have been updated with NCDC as presented in Table 7. The NCDC reports no fatalities or injuries associated with wind.

Table 9: Previous Occurrences of Wind in Presidio County

Name	Hazard	Date	Property Damage	Remarks
Presidio	Wind	8/11/1961	$41,991.14	Wind
Presidio	Wind	1/25/1965	$0.00	Dust storm
Presidio	Wind	2/3/1971	$632.67	Wind and Dust storm
Presidio	Wind	2/22/1977	$82,873.60	Wind Storm/ Dust Storm
Presidio	Wind	3/10/1977	$38,367.41	Wind/ Dust Storm
Presidio	Wind	1/20/1979	$1,235.27	High Wind
Presidio	Wind	6/3/1979	$172,938.70	Windstorm
Presidio	Wind	3/31/1980	$6,094.83	wind
Presidio	Wind	4/7/1980	$13,851.87	wind
Presidio	Wind	3/17/1981	$476,285.03	Wind and Dust storm
Presidio	Wind	4/2/1982	$52,042.90	wind/dust storm
Presidio	Wind	4/1/1983	$0.00	High Wind
Presidio	Wind	3/26/1991	$3,687.33	High Wind
Presidio	Wind	1/17/1996	UNK	High Wind
Presidio	Wind	6/10/1998	$7,702.67	DRY MICROBURST
Presidio	Wind	4/13/1999	UNK	High Wind
Presidio	Wind	2/10/2009	$2,194.61	High Wind
Presidio	Wind	1/22/2012	UNK	High Wind
Presidio	Wind	3/28/2017	UNK	High Wind
Presidio	Wind	4/13/2018	UNK	High Wind
Presidio	Wind	4/10/2019	UNK	High Wind
Presidio	Wind	5/20/2019	UNK	High Wind
Presidio	Wind	11/26/2019	UNK	High Wind
Presidio	Wind	1/2/2020	UNK	High Wind
Presidio	Wind	2/23/2020	UNK	High Wind
Presidio	Wind	5/8/2020	UNK	High Wind
Presidio	Wind	1/30/2021	UNK	High Wind
Presidio	Wind	3/13/2021	UNK	High Wind
Presidio	Wind	3/22/2021	UNK	High Wind

Table 2 in the Attachment provides additional detail on the exact location of recorded wind events.

Probability

NCDC data show a total of 29 instances of high winds occurring in the County or participating jurisdictions over the 59-year period from 1961 through 2022. This suggests that, overall, the probability of winds in any given year is 29/59 or 25 percent.

Vulnerability

Power lines and trees that are in poor health are at risk of damage due to wind.

Critical infrastructures identified in table 16 may become vulnerable if winds exceed more than their average of 74+ within Presidio County. Roofs of residential and commercial structures in the County and in the cities of Marfa and Presidio are at some risk of damage due to wind.

Vehicles are vulnerable to damage due to wind as they may be struck by flying debris.

Impact

Not all winds cause property damage. When wind does cause damage, the types of property damage in the region generally includes trees and power poles being knocked over and roofs and vehicles being damaged by flying debris.

The greatest amount of damage associated with a single wind storm is $172,413.79 in 1981 dollars, which is equal to $476,285.03 in 2018 dollars. In that event, winds of hurricane strength, which can cause severe structural damage, were recorded.

Over the course of 59 years, no fatalities or injuries have been attributed to winds.

Economic losses due to the occurrence of wind would be the costs of some residential, businesses and governments' roof repair, replacement of windows damaged by wind or by wind-borne debris, repair of damage to vehicles, and repair of power lines and power poles.

Future Conditions

Wind is a meteorological phenomenon and is not affected by changes in development. Structures built or mobile homes installed in the planning area in the future will be at risk of damage due to winds unless the structure is properly anchored to a foundation and the roof is properly attached to the structure.

The previous plan recommended public education to reduce the negative effects of wind. Texas AgriLife provides information on a variety of hazards including wind. Development has not affected vulnerability for the planning area.

3.2.8 Ice

Description:

Ice, the accumulation of frozen precipitation on cold surfaces.

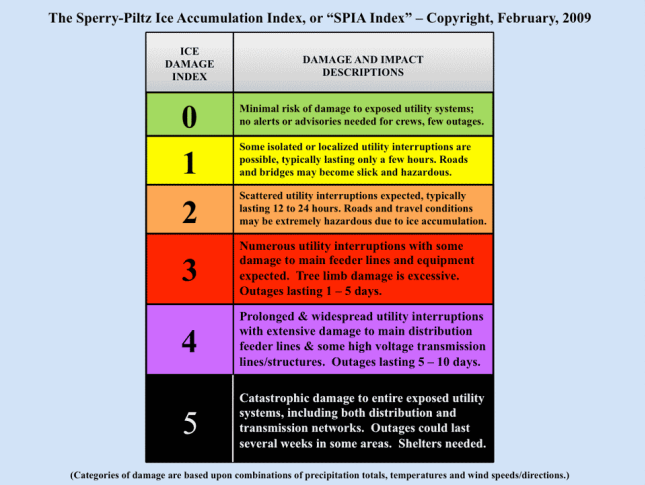
Location

Ice storms can affect the entire region.

Extent

Ice storms in the region are not severe, as the accumulation of ice is generally less than an eighth of an inch.

The Sperry-Piltz Accumulation Index describes the effect of ice accumulation; it shows that ice accumulation of less than one fourth of an inch can, in combination with winds, lead to utility interruption. The index is included in the Attachment and is available at https://www.spia-index.com/#:~:text=The%20Sperry%E2%80%93Piltz%20Ice%20Accumulation,total%20ice%20accumulation%2C%20and%20resulting



The Sperry-Piltz Ice Accumulation Index, or "SPIA Index" – Copyright, February, 2009

ICE DAMAGE INDEX	DAMAGE AND IMPACT DESCRIPTIONS
0	Minimal risk of damage to exposed utility systems; no alerts or advisories needed for crews, few outages.
1	Some isolated or localized utility interruptions are possible, typically lasting only a few hours. Roads and bridges may become slick and hazardous.
2	Scattered utility interruptions expected, typically lasting 12 to 24 hours. Roads and travel conditions may be extremely hazardous due to ice accumulation.
3	Numerous utility interruptions with some damage to main feeder lines and equipment expected. Tree limb damage is excessive. Outages lasting 1 – 5 days.
4	Prolonged & widespread utility interruptions with extensive damage to main distribution feeder lines & some high voltage transmission lines/structures. Outages lasting 5 – 10 days.
5	Catastrophic damage to entire exposed utility systems, including both distribution and transmission networks. Outages could last several weeks in some areas. Shelters needed.

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

Previous Occurrences

Table 8 presents NOAA and SHELDUS data regarding seven previous occurrences of ice storms in the County for the period 61-year period from 1960 through 2021. Additionally, costly ice storms occurred in February 2011; this is also listed in Table 7, but as it is not listed in SHELDUS or NOAA's database. Comparable estimates of damages are not available.

Table 10: Previous Occurrences of Ice in Presidio County

Date	Property Damage (in 2018 dollars)
12/7/1960	$42,416
12/10/1972	$1,182
1/8/1973	$11,132
1/3/1991	$40.08
2/2/2011	Not available
11/2013	UNK
10/08/2000	UNK

Probability

With seven ice storms identified over the 61-year period from 1960 through 2021, the probability of an ice storm occurring in the County or participating jurisdictions in any given year is 7/61 or 11 percent.

Vulnerability

Critical infrastructures identified in table 16 may become vulnerable if the City of Presidio and City of Marfa exceed a level three (3) as described on the Sperry-Piltz Ice Accumulation Index (SPIA Index).

Impact

No injuries or fatalities are identified in association with ice by SHELDUS (2008). The most property damage associated with a single ice storm was $37,143 in 2011 dollars. The data do not specify the types of damage, but the RGCOG and the Planning Team are of the opinion that damages are primarily for vehicles due to icy roads. The 1960 ice storm led to the greatest amount of damage; the estimated cost of damages in 2018 dollars is $42,416.

Future Conditions

Changes in development that have occurred in the County, where the population has increased slightly since the previous plan was developed, may slightly increase the level of damage caused by ice because there is the potential for more vehicles and road repairs due to on ice on roadways.

The previous plan recommended community education so that residents can prepare for weather events such as an ice storm. This mitigation action is accomplished through the Texas AgriLife, which posts information about preparing for weather conditions on its Web site. Development has not affected vulnerability for the planning area.

3.2.9 Hail

Description

Hail, precipitation in the form of small balls or lumps of clear ice and compact snow.

Location

Hail can occur at any location in the planning area. The Attachment includes a table showing the locations of hail recorded by NCDC in the County; the data do not include the location of every hail event.

Extent

Hail has been measured in Presidio County ranging **up to 2.5 inches in diameter**. The average size of hail in the County is 1.2 inches. The TORRO Hailstorm Intensity Scale rates the potential for damage caused by different size hail. The labels H0 through H10 denote categories of hail, and potential impacts are

described in Table 11. Presidio County, the City of Marfa, the City of Presidio, Marfa ISD and Presidio ISD may experience extensive structural damage due to hail. Worst-case scenario is a storm category H5 or greater.

Table 11 TORRO Hailstorm Intensity Scale

Category	Intensity	Maximum diameter in inches	Impacts
H0	Hard Hail	0.2	No damage
H1	Potentially Damaging	0.6	Slight general damage to plants, crops
H2	Significant	0.8	Significant damage to fruit, crops, vegetation
H3	Severe	1.2	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	1.6	Widespread glass damage, vehicle bodywork damage
H5	Destructive	2.0	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	2.4	Bodywork of grounded aircraft dented, brick walls pitted
H7	Destructive	3.0	Severe roof damage, risk of serious injuries
H8	Destructive	3.5	Severe damage to aircraft bodywork
H9	Super Hailstorms	3.9	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open.
H10	Super Hailstorms	>3.9	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open.

The County can experienced damage ranging from the H0 through the H10 categories.

Previous Occurrences

Table 10 lists 23 previous occurrences of hail in the County for the 54-year period from 1964 through 2018 (SHELDUS, 2018).

Table 12: Previous Occurrences of Hail

TEXAS	Presidio	Hail	6/11/1964		$4,050.11
TEXAS	Presidio	Hail	6/9/1966		$0.00
TEXAS	Presidio	Hail	5/10/1975		$4,667.42
TEXAS	Presidio	Hail	9/27/1976		$760,884.18
TEXAS	Presidio	Hail	10/29/197		$0.76
TEXAS	Presidio	Hail	4/23/1980		$6,094.83
TEXAS	Presidio	Hail	5/28/1980		$380,926.88
TEXAS	Presidio	Hail	6/10/1980		$6,925.95
TEXAS	Presidio	Hail	6/18/1980		$2,539,512.53
TEXAS	Presidio	Hail	5/17/1990		$960.62
TEXAS	Presidio	Hail	4/4/1991		$92.18
TEXAS	Presidio	Hail	4/14/1992		$8,948.93
TEXAS	Presidio	Hail	5/25/1992		$89.49

TEXAS	Presidio	Hail	6/7/1992		$89.49
TEXAS	Presidio	Hail	7/17/1992		$89.49
TEXAS	Presidio	Hail	6/15/1997		$0.00
TEXAS	Presidio	Hail - Wind	5/22/1999		$0.00
TEXAS	Presidio	Hail/ Severe Storm/Thunder Storm	4/3/2004		$0.00
TEXAS	Presidio	Hail/ Severe Storm/Thunder Storm	4/3/2004		$0.00
TEXAS	Presidio	Hail/ Severe Storm/Thunder Storm/ Wind	6/2/2005		$0.00
TEXAS	Presidio	Hail/ Wind	6/3/2005		$0.00
TEXAS	Presidio	Hail/ Wind	6/3/2005		$0.00
TEXAS	Presidio	Hail/ Wind	5/8/2012		$0.00
TEXAS	Presidio	Hail/ Wind	6/21/2013		$0.00

Table 3 in the Attachment provides additional detail on the exact location of recorded hail events.

Probability

The NCDC lists 63 occurrences of hail in the County for the 71-year period from 1950 through 2021. The probability of hail occurring in any given year is estimated as 63/71 or 88 percent.

Vulnerability

Critical infrastructures identified in table 16 may become vulnerable if Presidio County, the City of Marfa, the City of Presidio, Marfa ISD and Presidio ISD experience/receive a category H10 (intensity) "super hailstorm" with hail in diameter of 3.9 inches or greater. Roofs and windows of residential, commercial, and agricultural structures are vulnerable to hail damage, as are the bodies of motor vehicles.

Impact

The 1980 hailstorm led to the greatest amount of damage; the estimated cost of damages in 2018 dollars is $$2,539,512.53.

Property damage include roof damage and damage to windows and the bodies of motor vehicles. Property damage would occur primarily in the cities of Marfa and Presidio where the majority of the population of the County live and work.

No injuries or fatalities were reported by the NCDC or SHELDUS in

association with hail.

Future Conditions

The population of the County has increased since the previous plan was developed. New development

and the addition of vehicles mean that property damages may increase in the future as more structures and vehicles are exposed to hail.

The previous plan recommended that windows and roofs of public buildings be reinforced to limit damage due to hail, but these mitigation actions were deferred until funding is available.

The previous plan proposed development of a Reverse 9-1-1 system to alert residents of imminent danger due to hail. This action has been completed. Development has not affected vulnerability for the planning area.

3.2.10 Earthquake

Description :

Earthquake, the shaking or trembling of the earth.

Location

Earthquakes that have been recorded in the six Far West Texas counties have been centered along fault lines located in the Franklin Mountains, which is in El Paso County; Valentine, TX, which is in Jeff Davis County; and in Alpine, TX, which is in Brewster County. There are also several smaller faults located in Culberson County; these are East Sierra Diablo fault, West Delaware Mountains fault, West Lobo Valley (Fay, Mayfield, and Neal sections) faults, and West Wylie Mountains fault (USGS, 2012). No fault lines have been identified in Presidio County, the City of Marfa, or the City of Presidio. Although no fault lines have been identified in Presidio County, any location within the County, which includes the City of Marfa and the City of Presidio, may nevertheless experience some shaking if an earthquake were to occur in the region.

Extent

The previous plan indicated that the **maximum expected magnitude of an earthquake associated with the East Franklin Mountain fault line is 6.8 on the Richter scale**. Table 11 summarizes the types of damage caused by earthquakes of various categories on both the Richter and Mercalli scales. Should such an earthquake occur. Being the planning area is located between 150 and 250 miles from the fault line and because the strongest tremor recorded in the planning area is 5.7. The people in the planning area can expect at most to experience difficulty standing and moderate impacts such as: hanging objects quiver; furniture may break; masonry cracks; weak chimneys break at roof line; plaster, loose bricks, stones, tiles, and cornices fall; waves appear on standing water; large bells ring; and concrete irrigation ditches damaged.

Table 13: Categories of Earthquakes

Mercalli Scale	Richter Scale	Description of Impact
I	1.0 to 1.9	People are generally not aware of the earthquake
II	2.0 to 2.9	Earthquake is noticed by people at rest or on upper floors

III	3.0 to 3.9	Earthquake is felt indoors; hanging objects swing
IV	4.0 to 4.3	Vibration is similar to that of heavy trucks passing; vehicles rock; windows, dishes, doors rattle; glasses clink; wooden walls creak
V	4.4 to 4.8	Earthquake is felt outdoors; sleepers awake; liquids are disturbed; doors swing; small objects are displaced
VI	4.9 to 5.4	Earthquake is felt by all; persons walk unsteadily; windows, dishes, glassware is broken; books and other objects fall off shelves; pictures fall off walls; furniture moves; small bells ring; trees shake
VII	5.5 to 6.1	People have difficulty standing; hanging objects quiver; furniture may break; masonry cracks; weak chimneys break at roof line; plaster, loose bricks, stones, tiles, and cornices fall; waves appear on standing water; large bells ring; concrete irrigation ditches are damaged
VIII	6.2 to 6.5	It is difficult to steer a vehicle; stucco and some masonry walls fall; chimneys, factory stacks, monuments, towers, and elevated tanks twist and collapse; frame houses move on foundations; branches fall from trees; cracks appear in wet ground and on steep slopes
IX	6.6 to 6.9	There is general panic; masonry structures are destroyed or heavily damaged; reservoirs are damaged; underground pipes break; cracks appear in ground
X	7.0 to 7.3	Most masonry and frame structures are destroyed along with their foundations; dams, levees, and embankments are seriously damaged; landslides occur; water is thrown out of canals, rivers, and lakes; sand and mud shift horizontally on beaches; rails bend slightly
XI	7.4 to 8.1	Rails bend greatly; underground pipelines are destroyed
XII	8.1 or greater	Damage is nearly total; large rock masses are displaced; objects are thrown into the air

Previous Occurrences

Presidio County, TX has a moderate earthquake risk, with a total of 14 earthquakes since 1931. The USGS database shows that there is a 20.85% chance of a major earthquake within 50km of Presidio County, TX within the next 50 years. Some of the largest earthquake within 30 miles of Presidio County, TX were a 5.8 Magnitude in 1931, 5.7 Magnitude in 1995 and 4.6 Magnitude in 2011. Table 12 lists earthquakes that have been recorded in the region since 1889 (USGS, 2022; Texas State Historical Association, 2021).

Table 12: Previous Occurrences of Earthquakes felt in Presidio County

Date	Time of Day	Magnitude (Richter Scale)
31-May 1889	8:00 PM	3.6
07-March 1923	5:03 AM	4.7
02-October 1931	Not available	3.2
08-August 1936	1:40 AM	3.0
16-August 1931	Not available	5.8
15-October 1936	6:00 PM	3.0
31-March 1937	11:45 PM	3.0
12-May 1969	8:26 AM	3.9
12-May 1969	8:49 AM	3.6

09-December 1972	5:58 AM	3.0
09-December 1972	2:37 PM	3.0
14-April 1995	Not available	5.7
15-April 1998	Not available	3.6
16-April 2018	Not available	2.8

Probability

Fourteen earthquakes have been recorded in the region in the past 132 years since 1889. The probability of an earthquake occurring in any given year and affecting any or all portions of the planning area is estimated to be 14/132 or 10 percent.

Vulnerability

Structures to include critical infrastructures identified in table 16, especially very old residential structures built before either the City of Marfa or the City of Presidio adopted a building code would be vulnerable to damage should a powerful (magnitude greater than 6.8 on the Richter scale) earthquake occur.

Impact

Because there is no history of a powerful earthquake in any of the participating jurisdictions and no history of damage due to earthquakes, no damage due to an earthquake is anticipated in the planning area.

Damage identified in previous earthquakes in the broader West Texas region includes a building being badly cracked, some rocks sliding down the mountains, an adobe house collapsing, windows breaking, and cracks in a ceiling and on a driveway. However, the adobe house that collapsed led to one fatality in Juarez, Mexico, was approximately 200 miles from Presidio County.

An earthquake of magnitude 6.8 on the Richter scale in this region would cause considerable damage in ordinary buildings and partial collapse of some structures. Damage would be greater in poorly built structures, especially in unreinforced masonry structures. Chimneys, monuments, columns, and walls may fall, and furniture may be overturned. The alignment of even well-designed structures, such as those with reinforced masonry walls, could become skewed and buildings may shift off foundations.

Future Conditions

There has been little new development in the County since the previous plan was adopted in 2007.

The previously proposed mitigation action related to the earthquake hazard was to study the seismic hazard. The University of Texas at El Paso is currently conducting research on fault lines in the region.

Future development will be protected from damage from earthquakes by complying with the adopted building codes. However, building codes do not address how objects are arranged inside of a structure. Falling objects such as ceiling fans, light fixtures, and tall bookcases and cabinets can cause injury and damage. Development has not affected vulnerability for the planning area.

3.2.11 Tornado

Description

Tornado, a rapidly rotating vortex or funnel of air extending to the ground.

Location

A tornado can occur anywhere in the planning area.

Extent

Magnitude or severity of a tornado is measured on either the Enhanced Fujita (EF) scale, which assign tornadoes to categories based on wind speed. Tornadoes that have occurred in Presidio County in the past have been in the EF-0 category. Thus a tornado in the E**F-0 category is the strongest tornado expected to occur in Presidio County or the cities of Marfa and Presidio.** Table 13 compares the two scales and describes the types of damage typically associated with each category.

Table 13: Categories of Tornadoes

EF SCALE	
EF Rating	**3 Second Gust (mph)**
0	65-85
1	86-110
2	111-135
3	136-165
4	166-200
5	Over 200

Assigning a Tornado Rating Using the EF Scale

The NWS is the only federal agency with authority to provide 'official' tornado EF Scale ratings. The goal is assign an EF Scale category based on the highest wind speed that occurred within the damage path. First, trained NWS personnel will identify the appropriate damage indicator (DI) [see list below] from more than one of the 28 used in rating the damage. The construction or description of a building should match the DI being considered, and the observed damage should match one of the 8 degrees of damage (DOD) used by the scale. The tornado evaluator will then make a judgment within the range of upper and lower bound wind speeds, as to whether the wind speed to cause the damage is higher or lower than the expected value for the particular DOD. This is done for several structures not just one, before a final EF rating is determined.

Enhanced Fujita Scale Damage Indicators

NUMBER (Details Linked)	DAMAGE INDICATOR	ABBREVIATION
1	Small barns, farm outbuildings	SBO
2	One- or two-family residences	FR12
3	Single-wide mobile home (MHSW)	MHSW
4	Double-wide mobile home	MHDW
5	Apt, condo, townhouse (3 stories or less)	ACT
6	Motel	M
7	Masonry apt. or motel	MAM
8	Small retail bldg. (fast food)	SRB
9	Small professional (doctor office, branch bank)	SPB
10	Strip mall	SM
11	Large shopping mall	LSM
12	Large, isolated ("big box") retail bldg.	LIRB
13	Automobile showroom	ASR
14	Automotive service building	ASB
15	School - 1-story elementary (interior or exterior halls)	ES
16	School - jr. or sr. high school	JHSH
17	Low-rise (1-4 story) bldg.	LRB
18	Mid-rise (5-20 story) bldg.	MRB
19	High-rise (over 20 stories)	HRB
20	Institutional bldg. (hospital, govt. or university)	IB
21	Metal building system	MBS
22	Service station canopy	SSC
23	Warehouse (tilt-up walls or heavy timber)	WHB
24	Transmission line tower	TLT
25	Free-standing tower	FST
26	Free standing pole (light, flag, luminary)	FSP
27	Tree - hardwood	TH
28	Tree - softwood	TS

Previous Occurrences

No tornadoes have occurred in the County since the previous plan was developed (NCDC, 2022). Five previous occurrences of F0 tornadoes are listed by the NCDC showing that two tornadoes occurred on the same day in 1965:

- 12-MAY-65
- 17-MAY-65
- 17-MAY-65
- 27-FEB-90
- 07-JUN-92

Probability

Five tornadoes have been identified in the County for the 71-year period from 1950 through 2021. The probability of a tornado in any given year in the planning area is estimated as 5/71 or 7 percent.

Vulnerability

Critical infrastructures identified in table 16 may become vulnerable if the planning area experiences/receives a category F-2 tornado or greater. In addition, Trees, chimneys, gutters, siding, and road and commercial signs are vulnerable to damage by a tornado in planning area.

Impact

The impact of an EF-0 tornado, the greatest magnitude of a tornado ever recorded in the planning area, would include damage to tree branches, chimneys, gutters, siding, and signs. Damage to these structural elements would not represent a large economic loss to any of the participating jurisdictions.

No injuries or fatalities were reported in association with tornadoes in the County and no property damage was reported (NCDC, 2021).

Future Conditions

The population in the County has grown slowly since the previous plan was written, and exposure to damage or injury by tornado has not changed.

The previous plan recommended an emergency preparedness action to implement a Reverse 9-1-1 system to alert residents of immediate danger posed by a tornado. Implementation of this action is completed. Given that previous tornadoes did not cause property damage in the planning area, it is believed that future development will not be damaged by tornadoes. Development has not affected vulnerability for the planning area.

3.2.12 Lightning

Description

Lightning, a massive electrostatic discharge associated with a thunderstorm.

Location

A severe lightning storm can occur anywhere in the planning area.

Extent

A typical lightning bolt contains 1 billion volts, but Internet sources indicate that a lightning bolt **measuring 6 billion volts** was recorded as the strongest (Answers.com, 2012). Lightning in Presidio County and the cities of Marfa and Presidio is generally infrequent with 6 to 10 ground strikes in a 5 minute period. This is considered to be in the mid-range of frequency of lightning. The Attachment includes the Lightning Activity Level scale, which describes levels of lightning activity and is available at http://www.nws.noaa.gov/forecasts/wfo/definitions/defineLAL.html. Lightning in Presidio County and participating jurisdictions is generally in the mid-range on the Lighting Scale with six to ten strikes in a five minute period.

Previous Occurrences

The NCDC (2021) lists one instance of a severe lightning strike in the City of Presidio; the occurrence was on May 15, 2004.

Probability

One lightning storm was identified by the NCDC in the County for the 71- year period from 1950 through 2021. The probability of a severe lighting strike in any given year is estimated as 1/55 or 1 percent.

Vulnerability

Critical infrastructures identified in table 16 may become vulnerable if the County of Presidio, City of Presidio and City of Marfa experiences/receives a high-range of frequency of lightning than their average mid-range. In addition, electrical equipment is vulnerable to damage due to lightning.

Impact

Lightning strikes can cause a surge in electrical power, which can damage unprotected electrical equipment such as water pumps. Economic losses, should large water pumps be damaged could be several thousands of dollars. NCDC reported the 2004 lightning strike struck an insulator pole in the southern part of Presidio county causing damage and an 11 hour power outage in the Redford area. Lightning can also be the cause or ignite wildfires.

Future Conditions

There have been few changes in development since the previous plan was developed.

The previous plan recommended public education to minimize loss, injury, or death due to lightning. Public education occurs through the distribution, including on-line distribution, of Texas AgriLife publications, and in public schools.

The previous plan recommended the installation of lightning rods and surge protectors at all critical facilities. This action has not been completed due to a lack of funding.

The City of Presidio completed an emergency preparedness action in response to the loss of electric power due to lightning. The City of Presidio built the world's largest sodium-sulfur battery in 2010 so that a full supply of electric power is available for about 8 hours when power the power from the grid is not available. (NPR, 2010; Popular Science, 2010). Development has not affected vulnerability for the planning area.

3.2.13 Hazardous Material Spill

Description

Hazardous Material Spill, an accidental spill of toxic, radioactive, or other harmful material.

Location

A hazardous material spill occurring along railroad tracks and major highways near population centers in the County is of concern to local emergency managers. Trains and trucks can carry a variety of materials that in large quantity, threaten the health and safety of people and the natural environment near a spill.

Of particular concern is the U.S. 67 corridor through the Cities of Presidio and Marfa, U.S. 90 through the City of Marfa, and the railroad tracks running through both cities.

Extent

The extent of a hazardous material spill depends on both the type and quantity of material spilled and the location where the spill occurs. Even small quantities of highly toxic materials can be very dangerous. If a spill occurs in a heavily populated or heavily travelled area, the impacts can be more difficult to manage than if it occurs in a remote area.

Previous Occurrences

There is no record of a major spill of a hazardous material in a developed part of the County or participating jurisdictions.

Probability

As there is no record of a major spill, the probability of such an event occurring in Presidio County or either participating municipality is estimated to be less than 1 percent in any given year.

Vulnerability

Residents and workers in the vicinity of a hazardous material spill as well as emergency responders who clean up a spill or direct traffic away from a spill are potentially vulnerable to negative health effects.

The natural environment in any of the planning jurisdictions may be negatively affected by a spill.

Critical infrastructures identified in table 16 may become vulnerable if a hazardous spill would occur within the City of Presidio and City of Marfa.

Impact

While the probability of a hazardous material spill in a developed part of the County such as the cities of Marfa or Presidio is estimated to be quite low, the consequences of such a spill could be very costly. A hazardous material spill may require temporary or long-term evacuation of an area and sheltering, as well as a medical response to treat people affected by the spill.

A hazardous material spill may have long-term negative effects on the quality of the air and the safety of the soil and groundwater.

A hazardous material spill on the railroad tracks in the City of Marfa would split the city in half, and it would be impossible to move emergency response equipment through the City if needed.

Future Conditions

This hazard was not identified in the previous plan. Emergency preparation and emergency response actions, rather than hazard mitigation actions, are appropriate for dealing with a spill of a hazardous material. Development has not affected vulnerability for the planning area.

3.2.14 Hurricanes/Tropical Storms

Definition

Hurricanes and tropical storms are classified as cyclones and are developed by counter-clockwise circulation of winds around a low-pressure center in the Northern Hemisphere. Latent heat from condensation of warm water is the key energy source for these storms.

Location

All geographic locations of Presidio County are equally at risk of the effects of Hurricanes and tropical storms.

Extent

The potential for hurricanes to penetrate far inland has been understood for over a century. In the year 1900, a Category 4 hurricane made landfall in Galveston, Texas, before traveling deep into the U.S. interior. The storm maintained tropical cyclone status as it moved into the Upper Midwest, bringing damaging winds to more than half a dozen states, including Illinois, Indiana, and even Vermont. Killing an estimated 8000 people, the 1900 Galveston hurricane remains the deadliest natural disaster in U.S. history. Were this event to recur with present-day exposures, estimates insured losses to onshore properties would reach about 38.5 billion USD. Approximately 1.3 billion USD of this modeled loss belongs to inland states. In total, of the 88 storms for which PCS issued losses from 1950 to the present, 16% have caused insured losses in inland states. These are Hazel (1954), Agnes (1972), Eloise (1975), Frederic (1979), Gloria (1985), Opal (1995), Fran (1996), Floyd (1999), Isabel (2003), Ivan (2004), Katrina (2005), Rita (2005), Gustav (2008), and Ike (2008).

Previous occurrences

Presidio County, TX is in a very low risk hurricane zone. Remnants of 8 hurricanes have been recorded in the Presidio County, TX since 1930. The largest hurricane was Allen in 1980. The most recent hurricane to affect the planning area was Dolly in 2008.

Major Hurricanes And Storms To Hit Presidio County, TX (within 150 miles)

Name	Start Date	End Date	Landfall	Max Status	Max Wind (Knots)	Max Pressure (Bars)
Dolly	7/20/2008	7/27/2008	7/23/2008	HU	85	1016
Claudette	7/7/2003	7/17/2003	7/15/2003	HU	80	1016
Rachel	9/27/1990	10/3/1990	10/2/1990	TS	55	1010
Gilbert	9/8/1988	9/20/1988	9/16/1988	HU	160	1008
Allen	7/31/1980	8/11/1980	-	HU	165	1010
Celia	7/31/1970	8/5/1970	-	HU	110	1008
Naomi	9/9/1968	9/13/1968	-	HU	75	0
Alice	6/24/1954	6/27/1954	6/25/1954	HU	95	0

Homefacts.com/hurricanes/Texas/Brewster-County.html

Finally, see a list of **hurricanes** that have occurred in **Presidio County,Texas**.

Year of Declaration Date	Declaration Title	Disaster Number
2005	HURRICANE KATRINA EVACUATION	3216
	HURRICANE RITA	1606
		3261

FEMA.gov/data

Impact

Storms can travel hundreds of miles after landfall and although it only happens in a small percentage of storms, the remnants of hurricanes can sometimes intensify after transitioning into extratropical cyclones or combining with pre-existing mid-latitude storms. Furthermore, the exposed inland properties tend to be more vulnerable compared to coastal construction that is subject to stricter building codes. For all these reasons, a robust hurricane model needs to extend far beyond coastal counties, and even coastal states, to reflect the full spatial extent of potential losses.

Probability

Based on historical occurrences of significant hurricane events, the probability of future events with nine Hurricane/Tropical Storm events identified in the past 86 years, the probability of a Hurricane/Tropical Storm event effecting the County is estimated to be 9/86 or 11 percent.

Future Conditions

Fully understanding inland risk requires consideration of regional variations in the vulnerability of structures to the observed winds. To that end, changes in building materials and construction practices, structural aging and mitigation features, as well as other factors that affect vulnerability need to be taken into consideration. Understanding of the regional variability in building vulnerability in the area, including the fact that inland properties are relatively more vulnerable than coastal ones because they are subject to less stringent building codes. Development has not affected vulnerability for the planning area.

3.2.15 Disease Outbreak

Description

The risk of a global influenza pandemic has increased over the last several years. This disease is capable of claiming thousands of lives and adversely affecting critical infrastructure and key resources. Pandemic has the ability to reduce the health, safety, and welfare of the essential services workforce; immobilize core infrastructure; and induce fiscal instability. Pandemic influenza is different from seasonal influenza (or "the flu") because outbreaks of seasonal flu are caused by viruses that are already among people. Pandemic influenza is caused by an influenza virus that is new to people and is likely to affect many more people than seasonal influenza. In addition, seasonal flu occurs every year, usually during the winter season, while the timing of an influenza pandemic is difficult to predict. Pandemic influenza is likely to affect more people than the seasonal flu, including young adults. A severe pandemic could change daily life for a time, including limitations on travel and public gatherings (Barry-Eaton District Health Department 2013).

Extent

The extent, or severity, of an outbreak can be classified as endemic, epidemic, or pandemic. An endemic outbreak is the constant presence of diseases or infectious agents within a given geographic area or population group. An epidemic occurs when a there is a sudden increase in the number of cases of a diseases that exceeds what is normally expected. A pandemic is a disease outbreak that has

spread across regions and countries (WebMD 2014).

Previous occurrences

many sources provided historical information regarding previous occurrences and losses associated with disease outbreak. With so many sources reviewed for the purpose of this HMP, loss and impact information for many events could vary depending on the source. Therefore, the accuracy of monetary figures discussed is based only on the available information identified during research for this HMP. Generally, these disasters cover a wide region of the State; therefore, they may have impacted many counties. However, not all counties were included in the disaster declarations. Therefore, the accuracy of monetary figures discussed is based only on the available information identified during research for this HMP Update

Probability

It is difficult to predict the next disease outbreak. There are several factors that increase the probability of future occurrences that include population growth and increase of populations that do not have access to healthcare. Based on all available information and available data regarding mosquito populations, it is anticipated that mosquito-borne diseases will continue to be a threat.

Impact

The entire population of Brewster County is vulnerable to a disease outbreak hazard.
Healthcare providers and first responders have an increased risk of exposure due to their frequent contact with infected populations. The impact disease outbreaks have on the economy and estimated dollar losses are difficult to measure and quantify. Costs associated with the activities and programs implemented to conduct surveillance and address disease outbreaks have not been quantified in available documentation.

Future Conditions

Historical evidence shows that all populations like the City of Alpine and Brewster County are vulnerable to disease outbreak, and the probability of future infectious disease or pandemic events is possible. Local and State public health officials maintain surveillance in hopes of identifying disease prominence and containing potential threats before they become epidemics. Of particular concern is the reduction and treatment of the COVID 19 virus. The probability of an infectious disease epidemic or pandemic in the County planning area is occasional and an event has the probability of occurring again.

4. Capabilities and Resources

A review of capabilities and resources is an essential part of the planning process so that recommended mitigation actions are appropriate for each participating jurisdiction.

This section of the plan identifies the existing capabilities and resources of Presidio County, the City of Marfa, and the City of Presidio that can be activated or leveraged to support actions that will mitigate the negative effects of the identified natural hazards.

For this plan, two categories of local government capabilities were reviewed:

- Planning and Regulatory Mechanisms
- Technical and Financial Resources

Information is based on data provided by local government officials as part of the November 2012 survey, as well as a review of other local plans, policies, and regulations.

4.1. Planning and Regulatory Mechanisms

Planning and regulatory mechanisms include policies, regulations, ordinances, programs, and local laws that provide the legal authority for local government to manage development and growth. The City of Marfa does have a Master Plan which outlines growth and economic development. The City of Presidio currently does not have Master Plan. However, they are taking the necessary steps in order to development and implement for such plan(s). Participating jurisdictions have, at a minimum, the following planning and regulatory capabilities:

- Emergency Operations Plan
    - Presidio County has a plan for managing community resources to prepare for a storm or other hazard and for responding to needs of residents following the event.
    - Texas Education Code chapter 37, Sec. 37.108. MULTIHAZARD EMERGENCY OPERATIONS PLAN; SAFETY AND SECURITY AUDIT. (a) Each school district or public junior college district shall adopt and implement a multihazard emergency operations plan for use in the district's facilities. The plan must address prevention, mitigation, preparedness, response, and recovery as defined by the Texas School Safety Center in conjunction with the governor's office of homeland security and the commissioner of education or commissioner of higher education, as applicable
- Threat and Hazard Identification (THIRA)
    - The January 2020 THIRA is an all-hazards capability-based assessment of local threats/hazards and their impacts, which may vary according to time occurrence, season, location, and other community factors.
- Building Code
    - The City of Marfa and the City of Presidio enforce a building code, which is a set of rules specifying minimum acceptable levels of safety for construction. The main purpose of the building code is to protect the public safety, health, and general welfare.
- Building Permit Process
    - The City of Marfa and the City of Presidiorequire building permits to ensure that new construction and reconstruction is in compliance with building codes.
- Flood Damage Prevention Ordinance
    - **Each of the participating jurisdictions participates in the NFIP** and has adopted and enforces a Flood Damage Prevention Ordinance.

- Because the City of Marfa does not have any Special Flood Hazard Areas (i.e., FEMA-designated floodplains), the Marfa ordinance does not restrict development in any areas due to the potential for flooding. The City participates in the NFIP so that any resident or business owner who wishes to purchase a flood insurance policy through the NFIP has the opportunity to do so.
- Ordinances for Presidio County and the City of Presidio meet NFIP standards for flood damage prevention in an area for which no base flood elevation (BFE) has been estimated by FEMA. In particular:
    - No encroachment (e.g., structures or fill) is permitted in an area up to twenty feet of the ordinary high water mark of a stream or arroyo shown on a FIRM unless the jurisdiction receives certification by a licensed professional engineer that the encroachment will not result in an increase of flooding.
    - The ordinances require that the lowest floor of an enclosed area for a new structures in the designated special flood hazard area or an existing structure in such an area that is substantially improved (i.e., the cost of the improvement is greater than half of the pre-improvement value of the structure) must be elevated no less than two feet above the highest adjacent grade and must allow water to move unimpeded below the first floor.

- Presidio County building inspector and City of Presidio emergency manager must verify compliance with flood damage prevention ordinances during bi-annual inspections of structure in special flood hazard areas. Table 14 summarizes the planning mechanisms currently used by participating jurisdictions.

Table 16: Available Planning Mechanisms

Jurisdiction	Emergency Operations Plan	Building Code	Building Permit Process	Flood Damage Prevention Ordinance
Presidio County	X			X
City of Marfa		X	X	X
City of Presidio		X	X	X
Presidio ISD	X			
Marfa ISD	X			

None of these planning mechanisms has been updated since the previous hazard mitigation plan was adopted; therefore, there is no record of integrating mitigation goals and objectives into other planning mechanisms.

Planning mechanisms are not updated regularly or frequently in Presidio County, the City of Marfa, or the City of Presidio. Codes and plans can be updated at any time by elected officials of each of the participating jurisdictions with involvement of legal counsel and through a process of public

involvement, which includes a formal planning hearing. Emergency managers in each participating jurisdiction meet with elected officials annually to discuss needed projects and anticipated expenditures over the next year when the annual budget is developed; these annual meeting provide opportunities for officials to recommend modifications to established plans and codes.

4.2. Technical and Financial Resources

Existing resources include the technical expertise and knowledge of RGCOG and local government staff as well as financial resources and opportunities to obtain grants to support mitigation actions.

Technical resources include the administrative abilities and knowledge that will be necessary to implement mitigation actions. Technical resources are provided through the RGCOG as well as State of Texas and County and municipal government agencies or departments.

The RGCOG is a voluntary association of local units of governments who work together to address issues of common concern and to pursue opportunities that will benefit the region. In January 1967, elected officials in El Paso County formed the El Paso Council of Governments. The purpose of the Council was to further intergovernmental cooperation and coordination in the planning, development, and delivery of governmental services within El Paso County. In 1971, it became a regional organization by including the counties of Hudspeth, Culberson, Jeff Davis, Presidio, and Brewster and was renamed West Texas Council of Governments. In 1987, by vote of the membership, Doña Ana County in New Mexico joined the organization and the name was changed to the Rio Grande Council of Governments. RGCOG provides numerous social services, environmental services, GIS mapping, and training for all participating jurisdictions.

The RGCOG includes the Office of Regional Services, which provides Geographic Information Systems (GIS) mapping services, support for hazard mitigation, and emergency preparedness and response actions.

The County is served by the University of Texas at El Paso and Sul Ross State University in Alpine. Both supply venues and experts to present current information about hazards and how to protect people and property to reduce damage caused by hazards. The County is served by Texas AgriLife, which is an advisory and educational agency offering practical education based on university research.

Table 15 summarizes the staff resources available to support hazard mitigation actions in each of the participating jurisdictions.

Table 17: Technical Resources

Jurisdiction	Police Department	Volunteer Fire Department	Emergency Manager	Emergency Medical Services	School Districts and Nonprofit Organizations	Texas Public Health Preparedness Specialist
Presidio County			X			X
City of Marfa	X	X	X	X	X	

City of Presidio	X	X	X	X	X	
Presidio ISD			X		X	
Marfa ISD			x		x	

The planning area has about 6,975people. The 2020
U.S. Census data show that approximately 39 percent of the population lives at or below the established poverty level (Data USA, 2022). Thus, the County and municipalities can support a very limited number of hazard mitigation activities.

At this time, all plan participants could improve their hazard mitigation capabilities through the following efforts: budgeting for mitigation actions and support, passing policies and procedures to implement mitigation actions, adopting and implementing stricter mitigation regulations, approving the hiring and training of staff for mitigation activities, and approving mitigation updates and additions to existing plans as new needs are recognized. The plan participants could further improve their capabilities by creating and adopting regularly updated comprehensive plans.

Financial resources are necessary for implementing mitigation actions and projects. In addition to regular operating budgets, participating jurisdictions can fund hazard mitigation activities, at a minimum, through:

- Community Development Block Grants (CDBG) Disaster Recovery Assistance
    - In response to disasters, Congress may appropriate additional funding as CDBG Disaster Recovery grants to rebuild the affected areas and provide money to start the recovery process.
- Hazard Mitigation Assistance Grant Program
    - The Hazard Mitigation Grant Program (HMGP) is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. It provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration.

5. Risk Assessment

The Risk Assessment builds on findings related to the nature of hazards and their potential impacts. The purpose of conducting a systematic Risk Assessment is to objectively compare the hazards that can occur in the County and identify those for which mitigation action to reduce or eliminate exposure to damage is a top priority.

This section first describes community assets that are at risk of damage or loss due to natural hazards. The section next compares losses experienced in previous occurrences of hazards to develop an understanding of the potential for losses in the future. The section includes a presentation of specific problems faced by the community that can be addressed through hazard mitigation actions and

concludes by identifying mitigation priorities.

Change from Previous Plan

To this point in this updated plan, hazards have been discussed in the order in which hazards were discussed in the previous plan. For the remainder of this plan, hazards are presented in alphabetical order to make it easier to track the various mitigation alternatives that were proposed in the previous plan, evaluated for inclusion in this plan, and proposed for implementation in Section 6.3,.

5.1. Community Assets

Community assets include people, components of the economy, the built environment including structures and infrastructure, and natural resources.

People

People are our most important asset. With an estimated population of about 9,300 and an area of 3,856 square miles, the County is sparsely populated with an overall density of just over 2.4 persons per square mile (Texas Association of Counties, 2012). The population of the County is concentrated in the incorporated municipalities.

Built Environment

The built environment includes housing, infrastructure, critical facilities, commercial and industrial facilities, and cultural resources. All components of the built environment are important for the normal functioning of the region.

Of particular importance to the full functioning of the planning area are critical facilities and cultural resources. The critical facilities identified below estimate an approximate value in the amount of $42,301,054. The County, City of Marfa and Presidio could be crippled if two or more critical facilities are destroyed or damaged during any mentioned hazard.
The critical facilities identified below estimate an approximate value in the amount of $42,301,054. The County, City of Marfa and Presidio could be crippled if two or more critical facilities are destroyed or damaged during any mentioned hazard.

Table 18: Critical Facilities

Critical Facility Name	Location	Facility Type	Structure Type	Value	Vulnerable
Sheriff Department	320 N. Highland Ave, Marfa Texas	Public Safety	Metal Structure	Approximately: $2,700,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
Marfa I.S.D.	401 N. Gonzalez St, Marfa, Texas	Shelter	Metal Structure	Approximately: $867,070	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane

Presidio County Courthouse Presidio	310 N. Highland Ave Marfa, Texas	Judicial		Approximately: $2,800,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
Presidio I.S.D.	100 Market St, Presidio, Texas	Shelter	Metal Structure	Approximately: $3,055,570	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
City of Marfa	113 N. Highland Ave, Marfa, Texas	Administration	Metal Structure	Approximately: $930,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
City of Presidio	507 O'Reilly Street, Presidio, Texas	Administration	Metal Structure	Approximately: $300,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
Marfa Volunteer Fire/EMS Dept.	110 E. Lincoln Street, Marfa, Texas	Public Safety	Metal Structure	Approximately: $330,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
Presidio Police Department	507 East O'Reilly Street, Presidio, Texas	Public Safety	Metal Structure	Approximately: $200,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
U.S. Customs and Border Protection Station	Highways 170 and 67, Presidio, Texas	Public Safety	Metal Structure	Approximately: $797,624	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
U.S. Port of Entry at Presidio	99400 Highway 67, Presidio, Texas	Commence	Bridge/Port of Entry	Approximately: 1,000,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
Marfa Municipal Airport	Marfa, Texas	Airport	Airport	Approximately: $500,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
Lely International Airport	Presidio, Texas	Airport	Airport	Approximately: $200,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
USO Building	210 Summer Street, Marfa, Texas	Shelter	Metal Structure	Approximately: $588,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
Presidio County Medical Clinic	501 O'Reilly Street, Presidio, Texas	Health Center	Metal Structure	Approximately: $150,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
Marfa Water and Wastewater	Marfa, Texas	Utilities	Metal Structure	Approximately: $2,300,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning,

Treatment					earthquake, tornado and hurricane
Presidio Water and Wastewater Treatment	Presidio, Texas	Utilities	Metal Structure	Approximately: $12,000,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
Candelaria Water Treatment	Presidio, Texas	Utilities	Metal Structure	Approximately: $450,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
Redford Water Treatment	Presidio, Texas	Utilities	Metal Structure	Approximately: $300,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
MAC Building	Presidio, Texas	Shelter	Metal Structure	Approximately: $2,131,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
Presidio Senior Citizen Activity/ Center	Presidio, Texas	Shelter	Metal Structure	Approximately: $10,000,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
West Texas Gas	Marfa, Texas	Utilities	Metal Structure	Approximately: $196,790	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
Presidio County Annex	300 East O'Reill y, Presidio, Texas	Administration	Metal Structure	Approximately: $505,000	Flood, wildfire, drought, extreme weather, wind, hail, lightning, earthquake, tornado and hurricane
			Total Value	$42,301,054	

Natural Resources

Natural resources in the planning area include mountains, arroyos, and desert areas. As natural hazards are part of the natural process of a natural area, no long-term negative effects of natural hazards are expected for natural resources. Natural resources will recover from damage caused by a natural hazard, albeit with slightly altered characteristics such as with younger plants or a different slope.

5.2. Potential Losses

People

People have not been harmed or killed by the identified hazards in the County according to available sources of data (SHELDUS, 2021; NCDC, 2021).

Economic

Presidio County's economic is dependent upon the major employers below. In the event of an all-hazards incident, Presidio County could suffer a major economic loss if businesses and governmental agencies closed due to the disaster. Data.USA https://datausa.io/profile/geo/presidio-county-tx

Table 19: Economic Loss

Industries	Presidio
Agriculture, Forestry, Fishing & Hunting	554
Arts, Entertainment & Recreation	122
Health Care & Social Assistance	173
Public Administration	194
Education Services	343
Administrative & Support & Waste Management	9
Retail Trade	220
Manufacturing	12
Construction	222
Accommodation & food services	311
Transportation & Warehousing	18
Information	57
Wholesale Trade	7
Finance & Insurance	111
Other Services Except Public Administration	78

Built Environment

This plan does not provide a prediction of future losses. Rather, the plan compares losses due to identified hazards in the past as one step in the process of determining how best to utilize limited community resources to mitigate the potential for future damage. Estimates of the greatest previous loss due to a single occurrence of a hazard have been converted to 2012 dollars using the Inflation Calculator provided by the U.S. Bureau of Labor Statistics and displayed in Table 16.

Table 20: Estimates of Greatest Previous Loss

Hazard	Greatest Single Amount of Damage to Structures and Infrastructure in 2018 Dollars
Drought	$0
Disease	$0
Earthquake	$0
Extreme heat / cold	Extreme heat $0 Extreme cold $163,681.35
Flooding	$1,921,247.13
Hail	$2,539,512.53
Hazardous material spill	$0
Hurricane / Tropical Storm	$0
Ice	42,416.00
Lightning	$0
Tornado	$0
Wildfire	Not available
Wind	$476,285.03
Winter storm	$1,572,170.03

Natural Resources

As natural hazards are a normal environmental condition, no long-term negative effects are expected for natural resources. Natural resources will recover from damage caused by a natural hazard, even if with slightly altered characteristics such as with younger plants or a different slope.

5.3. Summary Statements

Because of the identified hazards, the residents, structures, and infrastructure in the planning area are vulnerable to losses. The key problems or issues that have been identified in association with each hazard are listed in Table 17.

Table 21: Problems Associated with Each Hazard

[2]

Hazard	Summary of Problems
Drought	Drought does not threaten residents or the built environment.
Disease	Capable of claiming thousands of lives and adversely affecting critical infrastructure and key resources
Earthquake	Earthquakes do not threaten residents or the built environment.
Extreme heat / Cold	Extreme heat does not threaten residents or the built environment. Extreme cold may lead to water pipes freezing and bursting.
Flooding	Presidio County and the City of Presidio flood maps do not provide estimates of the base flood elevation (BFE). With more detailed scientific information about flood risk, such as the BFE, regulation of development in flood-prone areas would be more effective.
Hail	Hail may cause damage to vehicles and roofs.
Hazardous material spill	Hazardous material spills are not likely to cause damage to structures or infrastructure but will require an emergency response.
Hurricane	threaten residents or the built environment in areas in Presidio County and the City of Presidio prone to flooding .

Ice	Ice may cause road hazards and may need treatment prior and during the event. Special populations to include tourists may require additional assistance.
Lightning	Lightning may cause electrical equipment, including water pumps at water treatment facilities, to fail.
Snow	Snow may cause road hazards and may need treatment prior and during the event. Special populations to include tourists may require additional assistance.
Tornado	Tornadoes do not threaten residents or the built environment.
Wildfire	Wildfire can spread rapidly in remote sections of the County because it would take quite a while for fire-fighting equipment to reach rural residences and farms.
Wind	Wind may cause damage to structures and utility lines.

5.4. Prioritization of Actions

As a result of the Risk Assessment, hazards were grouped into two categories: 1) Hazards that have a high probability of occurrence and/or the potential to result in costly damage, and 2) Hazards for which there is no history of extensive damage in the planning area or the probability of occurrence in any given year is less than 30 percent. The first category should be addressed as soon as possible and the second should be addressed when opportunities arise or funding is available.

The hazards that should be addressed as soon as resources permit are:

- Wildfire
- Hail
- Flooding
- Wind

Hazards that should be addressed when opportunities arise are:

- Drought
- Disease
- Earthquake
- Extreme cold
- Extreme heat
- Hazardous material spill
- Hurricane / Tropical Storm
- Ice
- Lightning
- Tornado
- Snow

The Planning area will consider actions that reduce risk to existing and future development. The

identified actions in the final action plan have been analyzed for technical feasibility, political acceptance, lack of funding and by estimated benefit-cost review (BCA), including qualitative and quantitative benefits. Evaluation(s) criteria include analyze of life safety, property protection, technical, and political alternatives.

6. Mitigation Strategy

The purpose of examining the characteristics and potential impacts of hazards in the planning area is to determine a reasonable course of action that will reduce the potential for loss, injury, damage, and interruption of business when a hazard occurs in the future.

In this section of this updated plan, a strategy for mitigating the potential effects of hazards is presented. It begins by identifying the goals of the participating jurisdictions and presenting the alternative courses of actions that were considered during the planning process, and concludes with a proposed action plan. By adopting this updated plan, participating jurisdictions make a commitment to implement the proposed action plan as resources permit.

6.1. Goals

As in the previous plan, the goals of this plan are for each participating jurisdiction to:

A. Reduce the impact of natural hazards on public and private property

Mitigation actions that will reduce the negative impacts of natural hazards include construction projects and strengthening of ordinances that affect the location and components of the built environment.

B. Improve community safety

Mitigation actions that will improve safety include outreach programs to increase awareness of hazards and of emergency preparedness.

These goals are consistent with the vision of the RGCOG Regional Services Division to “create a prosperous, safe, healthy, and economically viable region.” Priorities of participating jurisdictions have not changed since the previous plan was approved and adopted.

As the County works toward realizing each of these mitigation goals, it will become more resilient or safer, healthier, and more economically viable as the population will suffer fewer injuries and public, Nonprofit, and private sector businesses will be better able to resume normal functioning after a natural hazard occurs.

<u>Changes from Previous Plan</u>

Goals and priorities for protecting people and property from damage have not changed from the previous plan. A few changes have been made in the presentation.

The RGCOG and the Planning Team eliminated one goal statement from the updated plan. A goal of the previous plan was to “Build capacity for hazard mitigation through technical and financial assistance.” It was decided that this statement is an implementation strategy rather than a goal.

The two goal statements were slightly reworded by changing the term “natural disasters” to “natural hazards,” by adding a reference to public property, and by removing a reference to health because hazard mitigation actions do not generally improve public health by reducing the incidents of disease. Public health issues and needs in the County are addressed by the Texas Department of State Health Services.

Objectives listed in the previous plan were eliminated because they were a restatement of the goals and did not add new information or a better structure to the plan.

6.2. Alternatives

Based on the results of the risk assessment and the statements of problems, a variety of mitigation actions were considered during the planning process. Mitigation actions are designed to reduce or eliminate the potential for injuries, fatalities, or property damage. Mitigation actions include modification of plans and regulations, structure and infrastructure projects, natural systems protection, and public education programs.

Alternatives include actions recommended in the previous plan, actions suggested by responses to problem statements, and ongoing actions identified in the review of existing planning documents.

Figure 4 explains the three-stage process used to develop the mitigation action plan:

- First, a comprehensive range of mitigation alternatives were identified. These include actions from the previous plan as well as new alternatives. Alternatives are listed in Section 6.2.1.
- Second, the ongoing, previously deferred, and new alternatives were evaluated; the results of the evaluation are presented in Section 6.2.2.
- Third, the alternatives that were determined to be feasible and appropriate for the participating jurisdictions are listed in an Action Plan, which briefly outlines how the actions will be initiated. The Action Plan is presented in Section 6.3.

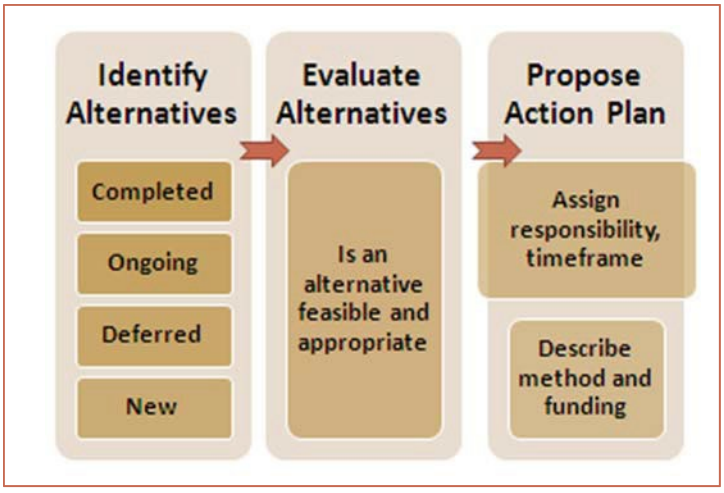


Figure 7: Process for Developing the Action Plan

6.2.1. Range of Alternatives

Table 22 shows the status of previously recommended mitigation, preparedness, and response actions.

Table 22: Actions Recommended in Previous Plan

Hazard	Previously Proposed Action	Status of Previously Recommended Action	Jurisdiction
Dam Failure, Drought, Earthquake, Extreme Heat/Cold, Flooding, Hail, Hazardous material spill, Ice, Lightning, Tornado, Wildfire, and Wind	Provide public education about hazards	Ongoing	Presidio County, City of Marfa & City of Presidio
Dam failure / flooding	Provide water storage detention	Deferred	City of Presidio
Drought	Implement water conservation measures during periods of drought	Ongoing	Presidio County, City of Marfa & City of Presidio
Drought	Provide information about crop insurance to farmers	Ongoing	Presidio County
Earthquake	Improve data on seismic hazards	Deferred	Presidio County, City of Marfa & City of Presidio
Extreme cold	Conduct campaign by inserting pamphlets in the utilities monthly statements each fall in order to reach all area residents informing them about how they can contact the community service organization for heating assistance	Ongoing	Presidio County
Extreme cold	Inspect pipes in public buildings Replace damaged pipes and/or install insulation to prevent freezing	Ongoing	Presidio County Office of Emergency Management
Extreme heat	Inspect insulation in public buildings Replace worn insulation and/or increase amount of insulation to improve ability of structures to prevent loss of cooling	Ongoing	Presidio County
Extreme heat	Evaluate building code and update as appropriate so that new buildings conserve consumption of energy for cooling with insulation; are not prone to roof damage by hail, tornado, or wind	Ongoing	Presidio County

Flooding	Adopt and enforce ordinance that meet minimum Federal and state requirements to comply with NFIP.	Deleted	City of Presidio
Flooding	Improve storm water drainage along U.S. Route 67 to reduce flooding by filling low spots prone to ponding and by elevating surface of roadway.	Ongoing	Presidio County, City of Presidio
Flooding	Formalize (new action) a program to inspect on a monthly bases locations low-lying bridges and coverts where debris may have collected and to remove it	Ongoing	Presidio County, City of Presidio
	Acquire easements for temporary water retention and drainage		
Hail	Strengthen ordinance to require interlocking roof shingles/tiles	Deferred	Presidio County
Hail, tornado	Implement a Reverse 9-1-1 system to alert residents of imminent danger	Completed	Presidio County
Tornado, wind	Retrofit critical infrastructure to reduce possibility of damage due to tornadoes	Deferred	Presidio County
Wind	Require anchoring of mobile homes	Deferred	Presidio County
Wind	Strengthen building code	Deferred	Presidio County

Additional alternatives suggested by the Risk Assessment are listed in Table 19.

Table 23: New Mitigation Alternatives

Hazard	New Mitigation Action for Evaluation	Status	Jurisdictions
Disease	Develop and implement multi agency plans and resource stockpiles related to outbreaks of communicable illnesses and vector control	New alternative	Presidio County, City of Marfa, City of Presidio, Presidio ISD and Marfa ISD
Disease	Conduct a large-scale public education program on the home care and treatment of individuals and family members during a pandemic	New alternative	Presidio County, City of Marfa, City of Presidio, Presidio ISD and Marfa ISD
Earthquake	Work with other jurisdictions in Far west Texas and participate in an earthquake study to help determine the increasing levels of risk and mitigation strategies	New alternative	Presidio County, City of Marfa, City of Presidio
Flooding	Work with TX DOT to secure studies for flood prone roads and identify strategies to mitigate flooding and provide secure safe passage	New alternative	Presidio County, City of Marfa, City of Presidio
Flooding	Install high water warning signs on East Dallas Street, south Nevill Street and East Waco Street.	New alternative	City of Marfa
Flooding	Secure a study and resources to build a bridge on Nevill street over Alomito creek to prevent vehicle traffic crossing roads with swift rain runoff	New alternative	Presidio County, City of Presidio
Flooding	Continue to work with TX DOT on FM 170 study and plans to reduce flooding and closing of road during heavy rain storms	New alternative	Presidio County, City of Presidio

Hazard	New Mitigation Action for Evaluation	Status	Jurisdiction
Flooding	Install high water warning sign	New alternative	Presidio County, City of Presidio
Hail	Conducting outreach activity to increase public awareness of hail dangers by inserting pamphlets in the gas and electric statements encouraging residents to replace deteriorated roofing to resist the impact of hail	New alternative	Presidio County, City of Marfa, City of Presidio, Presidio ISD and Marfa ISD
Wildfire	Build fire breaks in rural communities	New alternative	Presidio County

6.2.2. Evaluation of Alternatives

The alternatives were evaluated by RGCOG and the Planning Team for suitability in the planning area using a number of criteria to examine the **relative costs and benefits of each action. Monetary and non-monetary costs and benefits were considered**. Alternatives were reviewed relative to:

- Technical benefits by asking the question: Will this action solve a problem?
- Social costs by asking the questions: Will the public support this action? Will this action have any negative effects on a portion of the population?
- Administrative costs by asking the question: Does our local government have the capacity to implement this action?
- Political feasibility by asking the question: Do our elected leaders support the use of community resources to implement this action?
- Legal feasibility by asking the question: Do any statutes or existing policies prohibit the implementation of this action?
- Economic costs and benefits by asking the questions: Is it possible for our community to fund this action or to secure outside sources of funding? Will this action savethe community money in the long run?
- Environmental costs and benefits by asking the questions: Will this action have negative consequences on the natural environment? Will this action have beneficial impacts onthe natural environment?

Many actions were acceptable or feasible relative to many of these criteria. Table 20 summarizes the key findings about the alternatives based on the evaluation of relative costs and benefits. Actions that have been completed were not evaluated and are not proposed in the action plan in Section 6.3.

Table 24: Evaluation of Alternatives

Hazard	Alternative	Status of Alternative	Jurisdiction	Evaluation of Alternative
All Hazards	Provide public education about hazards	Ongoing	Presidio County, City of Marfa & City of Presidio	Action can be effective; continue this action
Dam failure	Provide water storage detention basin(s)	Deferred	City of Presidio	Change action to "Conduct study to estimate the volume of water that may be released due to dam failure. And: ; as appropriate, design a detention or diversion project"
Drought	Implement water conservation measures during periods of drought	Ongoing	Presidio County, City of Marfa & City of Presidio	Continue this action
Drought	Provide information about crop insurance to farmers	Ongoing	Presidio County	Delete as this is not a mitigation action and is implemented by Texas AgriLife
Earthquake	Improve data on seismic hazards	Ongoing	Presidio County, City of Marfa & City of Presidio	Continue this action as funding has been obtained and action is ongoing at University of Texas at El Paso
Earthquake	Provide public education on the benefits of anchoring objects and utilities within structures to prevent falling	Ongoing	Presidio County	Action is part of the all hazards public education; do not include in plan as a separate action

Earthquake	Recommend that utility companies use of flexible piping when extending water, sewer, or natural gas service	Ongoing	Presidio County, City of Marfa, City of Presidio	County and city managers have working relationships with utility companies and can make this recommendation. Include action in plan. Do not make this a requirement of utility companies as they make their own decisions and standards for mitigating losses.
Extreme cold	Conduct blanket drive and distribute as needed during periods of extreme cold	Ongoing	Presidio County	This is an emergency preparedness action; delete from mitigation plan
Extreme cold	Open warming shelters during periods of extreme cold	Ongoing	Presidio County Office of Emergency Management	This is an emergency response action; delete from mitigation plan
Extreme cold	Insulate exposed water pipes	Ongoing	Presidio County, City of Presidio, City of Marfa	Not high cost; feasible and effective; include in plan
Extreme heat	Strengthen Property Maintenance Code to require that new buildings have adequate cooling system	Deferred	Presidio County	Action may not be supported as written because it sounds like air conditioning will be required; revise to say "Evaluate building code and update as appropriate"
Extreme heat	Insulate attics of public buildings	New alternative	Presidio County, City of Presidio, City of Marfa	Not high cost; feasible and effective; include in plan

Flooding	Improve storm water drainage	Ongoing	Presidio County, City of Presidio	Continue this action as each drainage project reduces the potential for localized flooding; clarify that this will be accomplished by ensuring that channels and arroyos are maintained regularly to allow discharge of stormwater
Flooding	Maintain arroyos by removing debris to ensure water will flow freely	January 1, 2014-Ongoing	Presidio County, City of Presidio	Continue this action as it is effective; formalize it by saying: Maintain arroyos by removing debris annually to ensure water will flow freely; formalize a program for monthly visual surveys to identify locations where debris has collected and to remove it
Flooding	Improve storm water drainage along U.S. Route 67 to reduce flooding by filling low spots prone to ponding and by elevating surface of roadway	New alternative	Presidio County	Action is needed because if Route 67 floods, there would be no way to evacuate the City of Presidio; include in plan
Flooding	Strengthen Flood Damage Prevention Ordinance to require elevation of 3 to 6 inches above BFE	Deferred	Presidio County, City of Presidio	Delete this action as BFE has not been calculated
Flooding	Update Flood Damage Prevention Ordinance to meet current NFIP standards for jurisdictions with no identified base flood elevations	New alternative	Presidio County, City of Marfa & City of Presidio	Action would be low cost and would draw attention to possibility of purchase of an NFIP policy in all jurisdictions

Flooding	Update flood maps and develop estimates of BFE	New alternative	Presidio County, City of Presidio	Action would be funded through State and/or FEMA; include in updated plan
Hail	Construct garages to protect vehicles during hailstorms	New alternative	Presidio County, City of Marfa & City of Presidio	Action would be very costly and would not be effective if vehicles are on the road; do not include in updated plan
Hail	Strengthen ordinance to require interlocking roof shingles/tiles	Deferred	Presidio County, City of Marfa & City of Presidio	Action is very specific; expect greater support for an action to "Evaluate building code and update as appropriate"
Hail	Inspect roofing to determine if hail resistant	New alternative	Presidio County, City of Presidio, City of Marfa	Not high cost; feasible and effective; include in plan
Hazardous material spill	Prepare for emergency response to a hazardous material spill	Ongoing emergency preparedness alternative	Presidio County, City of Marfa & City of Presidio	Although this is an emergency preparedness action, include in mitigation plan as is it important; add that preparation will include training exercises
Lightning	Install adequate surge protection for major electrical equipment in public buildings Encourage provision of adequate surge protection for major public utility electrical equipment	New alternative	Presidio County, City of Marfa & City of Presidio	Action will be low cost; information should be available through the State; include in updated plan
Lightning	Install lightning rods on public buildings	New alternative	Presidio County, City of Presidio, City of Marfa	Not high cost; feasible and effective; include in plan
Tornado	Retrofit critical infrastructure to reduce possibility of damage due to tornadoes	Deferred	Presidio County	Delete this action as probability of a tornado is only 8 percent and action would be very costly

Hazard	Alternative	Status of Alternative	Jurisdiction	Evaluation of Alternative
Tornado, hail	Install safe rooms in public schools	New alternative	Presidio County, City of Presidio, City of Marfa	Not high cost; feasible and effective; include in plan
Wildfire	Develop guidelines and standards for development in unincorporated areas of the County with the involvement of volunteer fire fighters Involve volunteer fire departments in determining guidelines and standards for development in unincorporated areas of the County	New alternative	Presidio County	Action is of interest to volunteer fire fighters; include in updated plan
Wind	Require anchoring of mobile homes	Deferred	Presidio County	Revise this action to say: "Evaluate building code and update as appropriate" and include in plan
Wind	Strengthen building code	Deferred	Presidio County	Revise this action to say: "Evaluate building code and update as appropriate"

State of Texas and FEMA Region VI comments on the initial draft of this plan led to further refinement and clarification of actions included in the plan

6.3. Action Plan

The Action Plan summarizes how recommended actions will be implemented over the next 5 years. Four different types of actions are recommended for implementation. These are:

- Mitigation actions that will eliminate or ameliorate the negative effects of natural hazards
- Actions to integrate mitigation with other plans
- Actions to continue to involve the public in achieving hazard mitigation goals

- Actions to maintain the plan so that it continues to be relevant to the participating jurisdictions

6.3.1. Mitigation Actions

After evaluating the alternatives, 37 mitigation actions are proposed. These actions and the strategies for implementing them are listed in Table 21.

Table 25: Action Plan

Action Number	Hazard	Action	Jurisdiction	Implementation Strategy
1	All Hazards	Conduct Countywide education campaign to raise awareness on emergency alert systems available in the county to include Emergency Alert System(EAS), NOAA weather radios and Integrated Public Alert & Warning System (IPAWS)	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County Emergency Management Coordinator • Timeframe: 2022-2027 • Method: Distribute information about through print, radio, and television • Funding: Grants, annual operating budgets, $5,000
2	All Hazard	Increase the ability of residents and schools to receive early warning from the National Weather Service. This will be accomplished by purchasing and distributing NOAA All Hazard Radios to each household and school	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County Emergency Management Coordinator Timeframe: 2022-2027 • Method: Distribute information about through print, radio, and television • Funding: Grants, annual operating budgets, $10,000
3	Flooding	Conduct a countywide education campaign to raise awareness of dams, drainage and flooding conditions and provide recommendations for ways to mitigate threats from water run-off	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County Judge, City of Presidio Mayor, IBWC • Timeframe: 2013-2014 • Method: Work through State of Texas to obtain funding to conduct hydrology and hydraulic study • Funding: HMGP-Estimated cost: $10,000

4	Flooding	Bring jurisdictions into compliance of NFIP the County of Presidio, City of Marfa and the City of Presidio will identify and assign a floodplain administrator for their communities.	Presidio County, City of Marfa & City of Presidio	• Responsibility: City Councils & County commissioners • Timeframe: Ongoing • Method: Comply with NFIP requirements • Funding: Budget • Estimated cost: minimal
5	Disease	Develop and implement multi agency plans and resource stockpiles related to outbreaks of communicable illnesses and vector control	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County Emergency Manager; Marfa, Presidio administration, School district nurses. and Volunteer Fire/EMS Departments • Timeframe: On going • Method: Develop and exercise plan and procure PPE materials • Funding: Grants and annual operating budget- Estimated cost: $50,000
6	Disease	Conduct a large-scale public education program on the home care and treatment of individuals and family members during a pandemic	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County Emergency Manager; Marfa, Presidio administration, School district nurses. and Volunteer Fire/EMS Departments • Timeframe: On going • Method: Develop and exercise plan and procure PPE materials • Funding: Grants and annual operating budget- Estimated cost: $5,000

7	Drought	Implement water conservation measures during periods of drought	Presidio County, City of Marfa & City of Presidio	• Responsibility: Presidio County Emergency Manager • Timeframe: Ongoing • Method: Continue this ongoing action • Funding: Annual operating budget-Estimated cost: $2,500
8	Drought	Provide public education about implementing water conservation measures by including water conservation suggestions insert in the utility bills.	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County Emergency Manager, City Administrator, and water company • Timeframe: Ongoing • Method: Public Service Announcements and distribution of State publications for public education; • Funding: Annual operating budget-Estimated cost: $2,500
9	Drought	Conduct annual inspection of water systems in public buildings to check for leaks and make needed repairs to reduce water supply losses	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County, City of Marfa, City of Presidio Engineer, school maintenance staff • Timeframe: Each April • Method: Inspect water pumps and pipes in public buildings; if leaks are identified, take action to repair promptly • Funding: Annual operating budget-Estimated cost: $2,500 per jurisdiction
10	Earthquake	Install shutoff valves and emergency connector hoses where water mains cross fault lines	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: County Manager, City managers, school maintenance staff and property owners • Timeframe: Ongoing • Method: Conduct town hall meetings to inform area residents of area hazards with elected officials regarding the processes which will need to take place • Funding: Property owners and local funds not to exceed $5,000

11	Earthquake	Replace rigid piping with flexible piping that serves public buildings	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: County Manager, City managers and school superintendents • Timeframe: For new construction or when remodeling • Method: Conduct meetings with business and elected officials regarding the processes which will need to take place • Funding: as funding comes available • Estimated: $100,000
12	Extreme cold	Inspect pipes in public buildings. Replace damaged pipes and/or install insulation to prevent freezing	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County, City of Marfa, City of Presidio Engineer and school maintenance • Timeframe: Each April • Method: Inspect water pipes for exposure to cold temperatures; if insulation needs to be replaced or installed, take action to install promptly • Funding: Annual operating budget-Estimated cost: $1,500 per jurisdiction
13	Extreme heat	Inspect insulation in public buildings Replace worn insulation and/or increase amount of insulation to improve ability of structures to prevent loss of cooling	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County, City of Marfa, City of Presidio Engineer, school maintenance • Timeframe: Each April • Method: Inspect attics for content and quality of insulation; if insulation needs to be replaced or increased, take action to install promptly • Funding: Annual operating budget-Estimated cost: $1,500 per jurisdiction

14	Extreme heat Hail Tornado Wind	Evaluate building code and update as appropriate so that new buildings conserve consumption of energy for cooling with insulation; are not prone to roof damage by hail, tornado, or wind	Presidio County, City of Marfa, City of Presidio	• Responsibility: Presidio County Administrator, Mayors of City of Marfa and City of Presidio • Timeframe: 2022-2026 • Method: Compare existing building codes to recommended codes; work with County/City Attorney to modify as needed • Funding: Operating budgets-Estimated cost: $5,000
15	Flooding	schedule with IBWC and city/county officials in order to clean flood conveyance channels and arroyos annually and after large rain storms to ensure that they are clear for discharge of storm water	City of Presidio, City of Marfa, Presidio County	• Responsibility: City of Presidio and Marfa Department of Public Works. County Public works • Timeframe: Ongoing • Method: Work through State of Texas to obtain funding for storm water drainage improvements • Funding: HMGP-Estimated cost: $50,000
16	Flooding	Formalize (new action) a program to inspect on a monthly bases locations low-lying bridges and coverts where debris may have collected and to remove it	City of Marfa & City of Presidio; Presidio County	• Responsibility: Presidio County Roads and Bridges; City of Presidio Department of Public Works • Timeframe: Ongoing • Method: Include action as part of routine maintenance • Funding: Annual operating budgets-Estimated cost: $5,000
17	Flooding	Improve storm water drainage by increasing the capacities of each drainage system	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County Roads and Bridges; City of Presidio Department of Public Works, School Superintendents • Timeframe: Ongoing • Method: Include action as part of routine maintenance • Funding: Annual operating budgets-Estimated cost: • $10,000

18	Flooding	Improve storm water drainage along U.S. Route 67 and FM 170 to reduce flooding working with TX DOT by Continue to work with TX DOT on FM 170 and US 67study and plans to reduce flooding and closing of road during heavy rain storms	City of Marfa, City of Presidio, Presidio County	• Responsibility: Presidio County Roads and Bridges • Timeframe: Ongoing • Method: Design roadway improvements and elevate sections of the road or expand capacity of storm water conveyance system • Funding: State of Texas Department of Transportation funding- Estimated cost: $10,000,000
19	Flooding	Develop, adopt, and enforce the building codes for new subdivisions and any new public facilities that will require elevation during platting.	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: City Council & County commissioners, school boards • Timeframe: Ongoing • Method: Adoption of building codes • Funding: Budget, Bonds, Grants • Estimated cost: $5,000
20	Flooding	Build bridge over low water crossing on South Nevil Street at Alamito creek, Marfa, Texas	City of Marfa, Presidio County	• Responsibility: Presidio County Roads and Bridges; City of Presidio Department of Public Works • Timeframe: Ongoing • Method: Include action as part of routine maintenance • Funding: Annual operating budgets- Estimated cost: • $1,500,000
21	Flooding	Install high water warning signs on East Dallas Street, south Nevill Street and East Waco Street in Marfa	City of Marfa, Presidio County	• Responsibility: City Council & City Administrator • Timeframe: Ongoing • Method: Obtain funding for storm water improvements • Funding: Grants, annual budget • Estimated cost: $300,00

22	Hail	Improving roof sheathing in public buildings to prevent hail penetration Inspect public buildings and determine if improved roof sheathing is required to prevent hail penetration	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County, City of Marfa, City of Presidio Engineer and school maintenance • Timeframe: Each April • Method: Improve attics for content and quality of insulation; if insulation needs to be replaced or increased, take action to install promptly • Funding: Annual operating budget-Estimated cost: $1,500 per jurisdiction
23	Hail Tornado Hurricane	Conducting outreach activity to increase public awareness of hail dangers and encouraging residents to Inspect and replace deteriorated roofs to resist the impact of hail by inserting pamphlets in the utility statements and posting on social media	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County, City of Marfa, City of Presidio Engineer, School Superintendents • Timeframe: 2021-2026 • Method: Office of Emergency Managements outreach and training • Funding: Operating budgets-Estimated cost $4,000
24	Hazardous material spill	Prepare for emergency response to a hazardous material spill by attending training and exercises offered by the State	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County Emergency Manager; Local Volunteer Fire Departments, School safety officers • Timeframe: Ongoing • Method: Presidio County Emergency Manager: work with State of Texas to provide training opportunities • Local Volunteer Fire Departments: attend training workshops or exercises • Funding: Annual operating budgets-Estimated cost: $5,000

25	Hazardous material spill	Provide public education about reacting to messages from emergency managers about protecting people from the effects of hazardous materials or about using alternative roadways when necessary	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County Emergency Manager; Local Volunteer Fire Departments • Timeframe: 2022-2027 • Method: Presidio County Emergency Manager: work with State of Texas to obtain pamphlets about response of the public to hazardous material spill • Funding: Annual operating budgets-Estimated cost: $500
26	Lightning	Install adequate surge protection for major electrical equipment in new and existing public buildings	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County, City of Marfa, City of Presidio and school maintenance staff. • Timeframe: Ongoing • Method: continue to work with utility companies to obtain information about feasible approaches and distribute information. • Funding: Annual operating • budget-Estimated cost: $10,000
27	Lightning	Install surge protection for new and existing major public utility electrical equipment	Presidio County, City of Marfa & City of Presidio	• Responsibility: Presidio County, City of Marfa, City of Presidio Emergency Managers, and TDEM • Timeframe: Ongoing • Method: Work through State of Texas and First Responders in assisting to protect public utility electrical equipment Funding: State Homeland Security Grant Program budget-Estimated cost: • $15,000

28	Lightning	Inspect public buildings and install lightning rods on public buildings where needed	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Presidio County, City of Marfa, City of Presidio and school maintenance staff. • Timeframe: Each April • Method: Inspect public buildings; if lightning rods are missing or have been damaged, begin process of securing funds to install them • Funding: Annual operating budget-Estimated cost:$20,000

Action Number	Hazard	Action	Jurisdiction	Implementation Strategy
29	Tornado	Install tornado safe room in each public school building	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County EMC ,School Superintendents • Timeframe: 2022-2027 • Method: Design safe-room appropriate for size of school populations and develop cost estimate; apply for mitigation funding through State of Texas • Funding: Potential for HMGP funding
30	Wildfire	Provide public education about how to monitor current conditions and to reduce the potential for damage on private property	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County Emergency Manager; City of Marfa and City of Presidio Volunteer Fire Departments, School Superintendents • Timeframe: May of each year • Method: Obtain printed materials from State and Federal sources and distribute to the public • Funding: Annual operating budget-Estimated cost: $250
31	Wildfire	Pursue Fire wise USA site certification to help residents reduce wildfire risk.	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County Emergency Manager; Local Volunteer Fire Departments • Timeframe: 2022-2027 • Method: Presidio County Emergency Manager: work with Texas Forest Service and NFPA • Funding: Annual operating budgets-Grants
32	wildfire	Build fire breaks in rural communities	Presidio County, City of Marfa & City of Presidio,	• Responsibility: Presidio County Emergency Manager; City of Marfa and City of Presidio Volunteer Fire Departments • Timeframe: May of each year • Method: Working with Texas Forest Service meet and design a plan with land owners to identify and maintain fire breaks in rural communities • Funding: Grants Annual operating budget-Estimated cost: $10,000

33	Wind	Adopt building codes that require anchoring of mobile and portable buildings	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County Judge; City of Marfa Mayor; City of Presidio Mayor, School Superintendents • Timeframe: 2022-2027 • Method: Work with legal counsel to draft and adopt regulation requiring anchoring of mobile homes • Funding: Annual operating budget: Estimated cost: $10,000
34	Tornado Hurricane/Tropical Storm Wind	Anchor roof mounted air conditioning units on mobile homes, thus reducing damage caused by severe winds or tornado	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Presidio County Judge; City of Marfa Mayor; City of Presidio Mayor • Timeframe: 2022-2027 • Method: Work with legal counsel to draft and adopt regulation requiring anchoring of mobile homes • Funding: Annual operating budget: Estimated cost: $2,500
35	Extreme cold Ice Snow	Heating Centers: Activate area shelters to ensure that the vulnerable population do not freeze or remain in cold homes	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Office of Emergency Management, School Superintendents • Timeframe: ongoing • Method: Work with the Area Agency on Aging and others to identify the elderly and vulnerable population • Funding: Annual budgets, donations • Estimate costs: $5,000
36	Ice	Wrapping of pipes	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	•Responsibility: Presidio County Public Works, City and school Maintenance staff •Timeframe: 2022-2027 •Method: Work with area businesses and governmental entities •Funding: Private/public donations •Estimate Cost: $5,000

37	All Hazards	Supplying critical facilities with generators for backup power	Presidio County, City of Marfa & City of Presidio, Marfa ISD, Presidio ISD	• Responsibility: Office of Emergency Management • Timeframe: 2022-2027 • Method: Work with Managers who operate critical facilities and identify, procure and install backup generators • Funding: Office of Emergency Management and Homeland Security Grant Program • Funding : Grants, annual budgets • Estimate Cost: $500,000

Table 25 summarizes the actions proposed for implementation by each jurisdiction for each hazard.

Table 26: Summary of Action Plan by Hazard and Jurisdiction

HAZARD	Presidio County	City of Marfa	City of Presidio	Presidio ISD	Marfa ISD
All Hazards	1,2,36	1,2,36	1,2,36	1,2,36	1,2,36
Disease	4,5	4,5	4,5	4,5	4,5
Drought	6,7,8	6,7,8	6,7,8	7,8	7,8
Earthquake	9,10	9,10	9,10	9,10	9,10
Extreme Cold	11,34	11,34	11,34	11,34	11,34
Extreme Heat	12,13	12,13	12,13	12	12
Flooding	3,14,15,16,17,18,19,20	3,14,15,16,17,18,19,20	3,14,15,16,17,18,19,20	3,15,16,17,18	3,15,16,17,18
Hail	21,22	21,22	21,22	21,22	21,22
Hazardous Material Spill	23,24	23,24	23,24	23,24	23,24
Hurricane/Tropical Storm	22,33	22,33	22,33	22,33	22,33
Ice	34,35	34,35	34,35	34,35	34,35
Lightning	25,26,27	25,26,27	25,26,27	25,27	25,27
Snow	34	34	34	34	34
Tornado	22,28,33	22,28,33	22,28,33	22,28,33	22,28,33
Wildfire	29,30,31	29,30,31	29,30,31	29,30	29,30
Wind	32,33	32,33	32,33	32,33	32,33

Table 25 distinguishes between actions that will mitigate the potential effects of a hazard on new buildings or infrastructure and on existing buildings or infrastructure. Table 25 does not list study actions because study, while a necessary first step for some mitigation actions, will not by itself reduce the potential for damage. Similarly, actions designed to provide training, protect people, or conserve natural resources, but not to reduce the potential for damage to structures or infrastructure, are not part of Table 27.

Table 27 Actions Mitigation New or Existing Buildings/Infrastructure

Action Number	Hazard	Action	Mitigates New or Existing Buildings/Infrastructure
05	Drought	Conduct annual inspection of water systems in public buildings to check for leaks and make needed repairs to reduce water supply losses	Existing
07	Earthquake	Meet with representatives of utility companies to encourage use of flexible piping when extending or providing new water, sewer, or natural gas service Replace rigid with flexible piping that serves public buildings	New and Existing
09	Extreme cold	Inspect pipes in public buildings Replace damaged pipes and/or install insulation to prevent freezing	Existing
10	Extreme heat	Inspect insulation in public buildings Replace worn insulation and/or increase amount of insulation to improve ability of structures to prevent loss of cooling	Existing
11	Extreme heat Hail Tornado Wind	Evaluate building code and update as appropriate so that new buildings conserve consumption of energy for cooling with insulation; are not prone to roof damage by hail, tornado, or wind	New
13	Flooding	Clean flood conveyance channels and arroyos annually and after large rain storms to ensure that they are clear for discharge of stormwater Improve stormwater drainage	Existing
14	Flooding	Maintain arroyos by removing debris to ensure water will flow freely Formalize a program for monthly visual surveys to identify locations where debris has collected and to remove it	New and Existing
15	Flooding	Improve stormwater drainage along U.S. Route 67 to reduce flooding by filling low spots prone to ponding and by elevating surface of roadway.	Existing

Action Number	Hazard	Action	Mitigates New or Existing Buildings/Infrastructure
18	Hail	Inspect public buildings and determine if improved roof sheathing is required to prevent hail penetration	Existing
19	Hail	Replace deteriorated roofing to resist the impact of hail	Existing
22	Lightning	Install adequate surge protection for major electrical equipment in new and existing public buildings Encourage provision of adequate surge protection for new and existing major public utility electrical equipment	New and Existing
23	Lightning	Inspect public buildings and install lightning rods on public buildings where needed	Existing
24	Tornado Hail	Install tornado safe room in each public school building	
25	Wildfire	Involve volunteer fire departments in determining guidelines and standards for development in unincorporated areas of the County	New
26	Wildfire	Provide public education about how to monitor current conditions and to reduce the potential for damage on private property	New and Existing
27	Wind	Require anchoring of mobile homes	New and Existing
28	Tornado Wind	Assess the vulnerability of public buildings to damage by severe winds or tornado Retrofit public buildings (e.g., replace roofs; anchor HVAC equipment) as necessary	Existing
31	Snow	Encourage businesses and government entities to wrap the facility's pipes in order to avoid pipes freezing	New
32	Ice	Provide and install generators in critical infrastructure in order to provide redundancy to critical structures during any and all hazards	New

6.3.2. Action to Integrate with Other Plans

Please note, within the last five years the plan was not intergraded with any other regional or local plans. As proposed in the previous plan, actions will be taken to further integrate hazard mitigation actions into other community planning mechanisms. Presidio County, the City of Marfa, the City of Presidio, Marfa ISD and Presidio ISD will use the hazard mitigation plan's data, information, and hazard mitigation goals and actions in their County/City emergency preparedness plans, training and/or exercise and school emergency response plans. In particular:

- Responsibility: RGCOG Director of Regional Services

- Timeframe: Ongoing
- Method: Attend County meetings concerning revision of development ordinance (buildingcode) and emergency operations plan. Identify opportunities for linking mitigation actions with other community objectives. For example, identify opportunity to adopt code for roofing that will better withstand high winds or opportunity for emergency operations plan to address response to hazardous material spill or wildfire. Director of Regional Services will work with the County Administrator, the City Manager of Marfa and the City Manager of Presidio. Director of Regional Services will meet annually with County and City emergency managers to recommend that hazard mitigation be part of meeting agendas developed for their annual budget meetings with elected officials of Presidio County, the City of Marfa, the City of Presidio, Marfa ISD or Presidio ISD.
- Funding: RGCOG operating budget

6.3.3. Actions to Continue Public Involvement

It is important that the mitigation planning process be open and accessible by the public. Therefore, included in the mitigation strategy are actions to continue public involvement.

Changes Since Last Plan

This process is identical to the process recommended in the previous plan. However, the process is described in greater detail in this updated plan.

Continue Public Involvement

As in the past, the RGCOG will continue to involve the public about hazard mitigation plans and accomplishments. As in the past, to provide opportunities for continued public involvement, the mitigation strategy is:

- Responsibility: RGCOG Director of Regional Services
- Timeframe: Ongoing
- Method:
    - Post documents on RGCOG Web site (http://riocog.org/REGSVCS/rs.htm#hazard.htm) for review and invite the public to ask the RGCOG Regional Services Director questions about the plan or to suggest modifications to the plan at any time.
    - Maintain a file with comments and suggestions provided by the public and provide them for consideration at the annual plan evaluation meetings.
    - Post notices of annual mitigation plan evaluation meetings using the usual methodsfor posting meeting announcements in the region to invite the public to participate.
    - RGCOG will provide a copy of the Presidio County's Hazard Mitigation Action to the five jurisdictions (Presidio County, City of Marfa, Presidio ISD, Marfa ISD and City of Presidio) in order to allow for public comment for thirty days prior to the formal jurisdictional adoption. RGCOG will disseminate public notice flyer to each jurisdiction for posting in public venues. A copy of the flyer will be included in the attachment

segment of the plan.

- Funding: RGCOG operating budget

6.3.4. Actions to Maintain the Plan

It is important to maintain the plan so that it continues to be accurate and appropriate for participating jurisdictions. Maintenance entails monitoring, evaluation, and further updating. This section describes a process for regular monitoring of mitigation actions, evaluating the planning process, reviewing the information used for the risk assessment, reviewing community priorities, and updating the plan again within 5 years.

Changes since Last Plan

The plan maintenance process recommended in this updated plan includes more detail about responsibilities, timeframes, and approach or method than did the previous plan, but the process is essentially the same. Responsibility for plan maintenance is assigned to the RGCOG Regional Services Director along with Presidio County/City Office of Emergency Management. Monitoring and evaluation meetings were not held subsequent to adoption of the previous plan. In addition, Presidio County's Hazard Mitigation Action Plan will be made available to the public through the Rio Grande Council of Governments website. The website has contact information available to the public for commentary. Future meetings will also be posted on the Rio Grande Council of Governments Online Calendar and under the Notices/Meetings link.

Monitor the Plan

- Responsibility: RGCOG Regional Services Director and Presidio County/City Office of Emergency Management
- Timeframe: Annually on or about the anniversary date of adoption of this updated plan
- Method:
    - The RGCOG Regional Services Director will contact the Emergency Management Coordinator of each participating jurisdiction by telephone or e-mail and ask for information about mitigation accomplishments as well as changes in hazard vulnerability and mitigation priorities.
    - Presidio County, City of Marfa, City of Presidio, Marfa ISD and Presidio ISD will advertise hazard mitigation meeting(s) in public venues.
    - Use of local web sites, social and traditional media platforms to inform the public of any maintenance or periodic review activities taking place.
    - If progress is not made by a jurisdiction with plan implementation, the RGCOG Regional Services Director will contact responsible parties to identify obstacles and discuss strategies for overcoming the obstacles.
- Funding: RGCOG operating budget

Evaluate the Plan

- Responsibility: RGCOG Regional Services Director
- Timeframe: Within a year of receiving a disaster declaration or every other year, approximately one month after the annual monitoring of mitigation actions
- Method:
    - RGCOG Regional Services Director will facilitate a meeting of representatives of participating jurisdictions
    - The meeting will include a presentation of the results of the monitoring, and attendees will be asked to address the following questions:
    - Are new sources of data available that will improve the risk assessment?
    - Have conditions in the County changed so that findings of the Risk Assessment should be updated?
    - Do mitigation goals and objectives reflect current community concerns?
    - For each mitigation action that has not been completed, what are the obstacles to implementation? What are potential solutions for overcoming these obstacles?
    - Is each completed mitigation action effective in reducing risk? What action is required to further reduce the risk addressed by the completed action?
    - What mitigation actions should be added to the plan and proposed for implementation?
    - Based upon the evaluation, should the plan be updated as soon as possible or should the plan be updated as scheduled 5 years after it was adopted?
    - Documentation of the annual evaluation meeting will be attached to the paper and electronic files of this plan within 1 month for accessibility when the plan is next updated.
    - Funding: RGCOG operating budget Update the Plan

This plan must be updated within 5 years and again adopted by the County and participating jurisdictions in order to maintain compliance with the regulations stated in 44 CFR Part 201.6 and ensure eligibility for applying for and receiving certain Federal mitigation grant funds. The action of updating the plan will be accomplished using the following strategy:

- Responsibility: RGCOG Regional Services Director and Presidio County/City Office of Emergency Management
- Timeframe: Within 3 years of plan adoption or at the discretion of RGCOG and participants of the annual plan evaluation meeting
- Method: Develop a schedule and identify responsibilities for updating the plan
- Funding: RGCOG operating budget or other source of funding as available

7. Sources of Information

Sources of information used to updated the hazard mitigation plans for the six counties in the Far West Texas region are provided in this section of the plan so that residents and public officials can find additional information about hazards, verify the data presented, and use these or similar sources of information to update the plan in the future.

Texas Counties.Net, 2022
http://www.texascounties.net/statistics/precipitation.htm

U.S. Drought Monitor, 2022
https://droughtmonitor.unl.edu/DmData/DataDownload/WeeksInDrought.aspx

American Society of Civil Engineers (ASCE), 2006, *Minimum Design Loads for Buildings and Other Structures*, United States of America: American Society of Civil Engineers.

*Answers.com, 2022, Atmospheric Science Questions, http://wiki.answers.com/Q/How_many_volts_are_in_a_lightning_bolt, retrieved December, 2021.

Center for Disease Control, 2022, Extreme Cold, https://www.cdc.gov/disasters/winter/guide.html, retrieved November 2021.

City of Marfa, 2021, City Ordinances, https://cityofmarfa.com/codes-ordinances, retrieved December 2021.

FEMA, 2021, Disaster Declarations database, https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties, retrieved December 2021.

Frohlich, Cliff and Scott D. Davis, 2002, *Texas Earthquakes*, University of Texas Press.

*International Boundary and Water Commission, 2021, http://www.ibwc.gov/Recovery/RGF.html , retrieved November 2021.

*International Boundary and Water Commission, 2008, Storage and Flood Conditions in the Rio Grande Basin, http://www.ibwc.gov/Files/CF_LRG_Fld_Cndtns_102908.pdf, retrieved December, 2021.

Marfa Public Radio, 2011, Fire in Presidio County Update, https://marfapublicradio.org/?s=Jeff+Davis+wildfires retrieved January 2022.

National Bureau of Economic Research, 2007, U.S. Decennial Population 1900 – 1990, https://www.nber.org/research/data/census-us-decennial-county-population-data-1900-1990, retrieved January 2022.

National Climactic Data Center, 2021, https://www.ncdc.noaa.gov/cdo-web/search, retrieved

November 2021.

National Park Service, 2021, Conditions and Closures, https://www.nps.gov/index.htm Retrieved December 2021.

*National Public Radio (NPR), 2010, http://www.npr.org/templates/story/story.php?storyId=125561502, 2021.

Research News, 2012, Average Annual Precipitation for Texas, https://www.currentresults.com/#google_vignettehttp://www.currentresults.com/Weather/Texas/average retrieved November 2021.

*Spatial Hazard Events and Losses Database for the United States (SHELDUS), 2018,https://cemhs.asu.edu/sheldus retrieved October 20, 2021.

Texas A&M University, 2012, Office of the State Climatologist: Severe Weather 1980s,https://climatexas.tamu.edu/products/severe-weather-summaries/index.html , retrieved December 2021.

*Texas AgriLife, 2021 Extension Disaster Education Network, http://texashelp.tamu.edu/disaster-information-main.php, retrieved January 10, 2021.

Texas Association of Counties, 2021,https://www.county.org/Population-Bracket-Map , retrieved November 2021.

Texas Department of State Health Services (TX DSHS), 2021, Natural Disasters, http://www.dshs.state.tx.us/preparedness/nat_public.shtm, retrieved January 2022.

Texas Division of Emergency Management, *State of Texas Hazard Mitigation Plan*, 2018, https://txdem.sharepoint.com/sites/TDEMWebsiteFiles/Shared%20Documents/Forms/AllItems.aspx?id=%2Fsites%2FTDEMWebsiteFiles%2FShared%20Documents%2FPlanning%2FTexas%2DSHMP%2DFINAL%2DRevised%2D5%2E14%2E2021%281%29%2Epdf&parent=%2Fsites%2FTDEMWebsiteFiles%2FShared%20Documents%2FPlanning&p=true, retrieved October 2021.

Texas Parks and Wildlife, 2012, https://tpwd.texas.gov/, retrieved November 2021.

*Texas State Historical Association, 2021, *Earthquakes,* http://www.tshaonline.org/handbook/online/articles/yde01, retrieved February 2021.

*Texas State Library and Archives Commission, 2021, https://www.tsl.state.tx.us/ref/abouttx/popcity12000.html, retrieved January 23, 2021.

Texas Water Development Board, 2011, Far West Texas Water Plan,https://www.twdb.texas.gov/waterplanning/rwp/plans/2021/index.asp , retrieved January 2022.

U.S. Bureau of Labor Statistics (BLS), 2012, *CPI Inflation Calculator*, https://www.bls.gov/data/inflation_calculator.htm , retrieved multiple dates between

October 2020 and January 2022.

U.S. Bureau of Reclamation, ,https://www.usbr.gov/museumproperty/art/hurd.html , retrieved November 2021.

U.S. Census Bureau (Census), 2020, https://data.census.gov/cedsci/profile?g=0500000US48043, retrieved October, 2021.

United States Geological Survey (USGS), 2022,https://www.usgs.gov/,

8. Documentation

This section contains documentation of the planning process undertaken to update these plans as well as a sample Resolution of Adoption. The sample Resolution of Adoption or a form that is regularly used by a participating jurisdiction will be signed when the plans are adopted by the governing body. A copy of the signed Resolutions of Adoption will be inserted into the updated plans at that time.

Public participation:

Public participation in the development of the plan occurred at two levels: (1) the planning team which consisted of stakeholders, subject matter experts, and elected officials. (2) In addition, 4 public meetings were held in order to present the previous plan, explain to citizens and elected officials the need for updating the plan and process, and to solicit input. The community was notified of the meeting and request for community input through newspaper ads, Texas Register posting, and web posting at www.riocog.org/Notices/Meetings.htm.

The planning team utilized a public on-line survey in order to gather community input, see attached. The planning team worked with the community in obtaining information for the Presidio County Hazard Mitigation Plan. Once the draft plan was available, the plan was sent electronically to participants soliciting comments. In addition, the Rio Grande Council of Governments' Board of Directors was given an update regarding each of the plans.

8.1. Planning Process

8.1.1. October 28, 2021 Meeting

Invitation to participate

Ray Resendez

Subject:	GoToMeeting - RGCOG: First Responders Preparedness Planning Group Meeting 10-19-20
Location:	GoToMeeting
Start:	Mon 10/19/2020 1:00 PM
End:	Mon 10/19/2020 3:30 PM
Recurrence:	none)
Meeting Status:	Accepted
Organizer:	Cynthia Mendez
Required Attendees:	Cynthia Mendez; Al Talavera; Annette Gutierrez; Assistant Fire Chief Jorge A. Rodriguez; Captain Matthew Scales; Chief Mario D'Agostino; Commander Humberto Talamantes ; Commander Ryan Urruta ; David Marquez; Gary Mitschke; Josh Garcia; Judge Carlos Urias; Judge Cinderela Guevara; Judge Eleazar Cano; Judge Ricardo Samaniego; Judge Thomas Neely ; Lt. Pete Hensger; Mar; Sandra Gonzalez; Sheriff Oscar Carrillo; Tribal Governor E. Michael Silvas; Wanda Helgesen
Optional Attendees:	ISanchez@umcelpaso.org; 'Laura Grolla '; Luis Moreno; Robert C Rojas (Lt.); Kebschull Terry K.; Ray Resendez; 'Jessica Valles'

RGCOG: Hazard Mitigation & Emergency Preparedness Planning
Wed, Oct 28, 2020 9:00 AM - 10:30 AM (MDT)
Wed, Oct 28, 2020 10:00 AM - 10:30 AM (CDT)

Please join my meeting from your computer, tablet or smartphone.

https://global.gotomeeting.com/join/342481989

You can also dial in using your phone.
(For supported devices, tap a one-touch number below to join instantly.)

United States: +1 (571) 317-3112
Access Code: 342-481-989

New to GoToMeeting? Get the app now and be ready when your first meeting starts:
https://global.gotomeeting.com/install/342481989

Agenda

RGCOG Hazard Mitigation & Emergency Preparedness Planning Wednesday,
October 28, 2020
9 am (MDT)
Webinar/Conference Call

Please join my meeting from your computer, tablet or smartphone.
https://global.gotomeeting.com/join/342481989
United States: +1 (571) 317-3112
Access Code: 342-481-989

1. Welcome

2. Introductions

3. Hazard Mitigation Plan Kick-Off Meeting

4. 2020 Threat and Hazard Identification and Risk Assessment (THIRA) Plan Review

5. 2020 Stakeholder Preparedness Review (SPR) Plan Review

6. New Business

7. Adjournment

Attendance

RGCOG Hazard Mitigation and Emergency Preparedness Planning
Wednesday, October 28, 2020
9 am (MDT)
Webinar/Conference Call

ATTENDANCE SHEET		PRESENT	
		YES	NO
Brewster County			
Judge Eleazar Cano			
Stephanie Elmore, EMC		✓	
Culberson County			
Judge Carlos Urias			
Efrain Ornelas, EMC			
Cody Davis, Asst. EMC			
Hudspeth County			
Judge Thomas Neely			
Joanna (JoJo) Mackenzie, EMC		✓	
Jeff Davis County			
Judge Larry Francell		✓	
Jim Chandler, EMC Laura Grella		✓	
Presidio County			
Judge Cinderella Guevara		✓	
Gary Mitschke, EMC		✓	
City of El Paso			
Judge Ricardo Samaniego			
Assistant Fire Chief Jorge Rodriguez, Emergency Management Coordinator/El Paso City-County Office of Emergency Management			
TDEM			

RGCOG Hazard Mitigation and Emergency Preparedness Planning
Wednesday, October 28, 2020
9 am (MDT)
Webinar/Conference Call

Al Talavera, District Coordinator DC08 TDEM		✓	
Tim Frere, Hazmat Mitigation Planner		✓	
RGCOG			
Ray Resendez, RGCOG		✓	
Marisa Quintanilla, RGCOG		✓	
Cynthia Mendez, RGCOG		✓	

8.1.2. April 8, 2021 Initial Planning Meeting(Virtual)

Ray Resendez

Subject:	Presidio County Hazard Mitigation Planning Team Meeting
Location:	Online Go to meeting
Start:	Thu 4/8/2021 1:00 PM
End:	Thu 4/8/2021 2:30 PM
Recurrence:	(none)
Meeting Status:	Meeting organizer
Organizer:	Ray Resendez
Required Attendees:	Ray Resendez; Al Talavera; Bert Lagarde; Brad Newton; Cesar Leyva; Cinderela Guevara; Cynthia Ramirez; Estevan Marquez; Gary Mitschke; Jeff Boyd (pwdirector@cityofmarfa.com); Jim Mustard; John Ferguson; Malynda Richardson; Mandy Roane; Manny Baeza; Margarito Hernandez; Oscar Aguero; Patricia Roach; Ray Vasquez; Saul Pardo; Todd Michell; Timothy Frere
Optional Attendees:	rvasquez@presidio-isd.net; marfavfd@bigbend.net

Rio Grande Council of Governments invites you to participate in Presidio County's Hazard Mitigation Planning Team Meeting

Thu, Apr 8, 2021 2:00 PM - 3:30 PM (CDT)

Please join my meeting from your computer, tablet or smartphone.
https://global.gotomeeting.com/join/743987405

You can also dial in using your phone.
United States: +1 (872) 240-3412

Access Code: 743-987-405

New to GoToMeeting? Get the app now and be ready when your first meeting starts:
https://global.gotomeeting.com/install/743987405

If you have any questions please contact Gary Mitschke at gjm@mztv.net or me,

Ray Resendez
Hazard Mitigation Coordinator
Rio Grande Council of Governments
8037 Lockheed, Ste. 100
El Paso, Texas 79925
O-(915) 533-0998 X153
C-(915) 487-1025
rayr@riocog.org

Agenda

Presidio County Hazard Mitigation Planning Team Meeting
Thursday, April 8, 2021
2:00 pm (CDT)

Webinar/Conference Call

I. Introductions

II. Planning Team Responsibilities
   a. Provide facilities for meetings
   b. Attend meetings
   c. Collect data
   d. Manage administrative details
   e. Make decisions on plan process and content
   f. Submit mitigation action implementation worksheets
   g. Review drafts
   h. Coordinate and assist with public involvement and plan adoptions

III. Outreach
   a. Survey
   b. Suggestions

IV. Grant requirements
   a. In-kind Match

V. Adjourn

Attendance

APR
8

Hazard Mitigation
12:55 PM - 2176 min
ID: 743987405
Attendees
Diagnostics

Attendee	Join & leave times	Location
GA Gary Mitschke gjm@mztv.net	12:55 PM - 1:57 PM	Richardson
JE Jesus	12:55 PM - 1:57 PM	Alpine
MA Marisa Quintanilla marisaq@riocog.org	12:55 PM - 1:10 AM	El Paso
CI Cinderela Guevara	1:00 PM - 1:57 PM	Alpine
AL AL Talavera al.talavera@tdem.texas.gov	12:59 PM - 1:57 PM	Chicago
OS Oscar Aguero ggbinojos@marfaisd.com	12:58 PM - 1:57 PM	Midland (Indus Park Reg Air Term)
TI	12:57 PM - 1:57 PM	Austin

Attendee	Join & leave times	Location
Tim Frere timothy.frere@tdem.texas.gov		
MA Marisa Quintanilla marisaq@riocog.org	1:08 PM - 1:57 PM	El Paso
MA Marisa Quintanilla marisaq@riocog.org	1:05 PM - 1:07 PM	El Paso
MA Malynda Richardson	1:03 PM - 1:52 PM	Fort Stockton
CO County 2 presidiocountyjudge@gmail.com	1:00 PM - 1:10 PM	Alpine

8.1.3. May 24, 2021 Planning Team Meeting

Invite

Ray Resendez

Subject:	Second meeting of the Presidio County Hazard Mitigation Planning Team
Location:	Webinar
Start:	Mon 5/24/2021 9:00 AM
End:	Mon 5/24/2021 10:30 AM
Recurrence:	(none)
Meeting Status:	Meeting organizer
Organizer:	Ray Resendez
Required Attendees:	Ray Resendez; Al Talavera; Bert Lagarde; Brad Newton; Cesar Leyva; Cinderela Guevara; Cynthia Ramirez; Estevan Marquez; Gary Mitschke; Jeff Boyd (pwdirector@cityofmarfa.com); Jim Mustard; John Ferguson; Malynda Richardson; Mandy Roane; Manny Baeza; Margarito Hernandez; Oscar Aguero; Patricia Roach; Saul Pardo; Superintendent Ray Vasquez; Todd Michell; Timothy Frere; Marisa Quintanilla
Optional Attendees:	Eric Wilmarth

The Rio Grande Council of Governments and the Presidio County Office of Emergency Management invite to participate in the second meeting of the Presidio County Hazard Mitigation Planning Team.

If you cannot attend we would like to suggest you assign a proxy to take your place so that we can make sure your interests are addressed as we move forward updating the plan.

Mon, May 24, 2021 10:00 AM - 11:30 AM (CDT)

Please join my meeting from your computer, tablet or smartphone.
https://global.gotomeeting.com/join/313554357

You can also dial in using your phone.
United States: +1 (786) 535-3211

Access Code: 313-554-357

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https://global.gotomeeting.com/install/313554357

Ray Resendez
Hazard Mitigation Coordinator
Rio Grande Council of Governments
8037 Lockheed, Ste. 100
El Paso, Texas 79925
O-(915) 533-0998 X153
C-(915) 487-1025
rayr@riocog.org

1

Attendance

MAY¶
24¶

Presidio County P ¶
8:52 AM - 42 min¶
ID: 313554357¶
Attendees¶
Diagnostics¶

Attendee	Join & leave times	Location
+1¶ +14322950143 Judge Guevara	9:04 AM - 9:27 AM	-
+1¶ +14322303127 Eric Wilmarth	8:59 AM - 9:34 AM	-
RA¶ Ray Resendez¶ marisaq@riocog.org	8:52 AM - 9:34 AM	Chicago
CI¶ Cinderela Guevara	8:52 AM - 9:16 AM	Alpine
GA¶ Gary Mitschke¶ gim@mztv.net	8:52 AM - 9:34 AM	Marfa
TI¶ Tim Frere¶ timothy.frere@tdem.texas.gov	8:59 AM - 9:34 AM	Austin
MA¶ Mandy Roane¶ assistantcm@cityofmarfa.com	8:57 AM - 9:34 AM	Richardson

Attendee	Join & leave times	Location
MA¶ Malynda Richardson	9:09 AM - 9:34 AM	New York
AL¶ AL Talavera¶ al.talavera@tdem.texas.gov	8:59 A	

¶

Agenda

Presidio County Hazard Mitigation Planning Team Meeting
Monday, May 24, 2021
10:00 am (CDT)

Webinar/Conference Call

I. Introductions

II. Review Hazard Mitigation Plan update process

III. Discussion and agreement on designated hazards

IV. Discuss status of updating building code

V. Identify technical resources

VI. Confirm critical facilities

VII. Review previous mitigation Action plans

8.1.4. July 15, 2021 Public Input Planning Meeting (Marfa)

Invite

Ray Resendez

From: Ray Resendez
Sent: Monday, July 12, 2021 10:22 AM
To: Al Talavera; Bert Lagarde; Brad Newton; Cesar Leyva; Cinderela Guevara; Cynthia Ramirez; Eric Wilmarth; Estevan Marquez; Gary Mitschke; Jeff Boyd (pwdirector@cityofmarfa.com); Jim Mustard; John Ferguson; Malynda Richardson; Mandy Roane; Manny Baeza; Margarito Hernandez; Oscar Aguero; Patricia Roach; Saul Pardo; Superintendent Ray Vasquez; Todd Michell
Subject: HMP Public meetings
Attachments: Presidio County Hazard Mitigation Planning Team Public Meeting agenda (Marfa).docx; Presidio County Hazard Mitigation Planning Team Public Meeting agenda (Presidio).docx; Presidio County's Mitigation Actions.docx; Presidio Critical Facilities.docx

Greetings HMP Team,
We would like to invite all Hazard Mitigation Plan planning team members to participate in one of the following two meetings. The first meeting will be on July 15, 2021 at 6:00 PM. It will be at the USO/Visitors Center, 302 S. Highland, Marfa, Texas. The second meeting will be on July 19, 2021 at 5:00 PM in the Presidio Activities Center, 1400 E. O'Reilly (agendas are attached). These meetings are to get public input from the community and more important get your input to finalize the plan.

Attached are the critical facilities and the mitigation actions from the current plan for you to review. We need to make sure to identify all critical facilities and any mitigation actions that you feel are important so that if or when mitigation grants are made available your actions have been addressed in your plan. Some examples are, if a school district wants to apply for a mitigation grant to obtain generators for facilities used as shelters, you need to show the need was documented in your mitigation plan. If the city wants to apply for a mitigation grant to address flooding issues in a neighborhood, it needs to be documented as an action item. The actions we submit in this plan will be your supporting documentation for the next five years.

Let me know if you have any questions and remember to keep track of the time you spend working on the plan and report it as soon as you can.

Respectfully,

Ray Resendez
Hazard Mitigation Coordinator
Rio Grande Council of Governments
8037 Lockheed, Ste. 100
El Paso, Texas 79925
O-(915) 533-0998 X153
C-(915) 407-1085
rayr@riocog.org

RIO GRANDE COUNCIL OF GOVERNMENTS WILL HOLD A PUBLIC MEETING ON THE UPDATE OF PRESIDIO COUNTY'S MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

The Rio Grande Council of Governments (RGCOG) in collaboration with the Presidio County Hazard Mitigation Planning team will hold a public meeting on Thursday, July 15, 2021 from 6:00 p.m. to 7:30 p.m. (CDT) at City of Marfa, USO/Visitors Center 302 S. Highland, Marfa, Texas 79843. The intent of the meeting is to discuss and receive input from the community on the potential impact of natural hazards and determine mitigation action strategies that may reduce potential for loss, injury, damage and interruption of businesses when hazards occur in the future.

For additional information, please call Hazard Mitigation Coordinator, Ray Resendez at (915) 533-0998 x 153, or email at rayr@riocog.org or Presidio County Emergency Management Coordinator, Gary Mitschke emc@co.presidio.tx.us.

Stella Rodriguez Log Off

Open Meeting Submission

TRD:	2021004033
Date Posted:	07/07/2021
Status:	Accepted
Agency Id:	0792
Date of Submission:	07/07/2021
Agency Name:	Rio Grande Council of Governments
Board:	Rio Grande Council of Governments
Committee:	Presidio County Hazard Mitigation Planning
Date of Meeting:	07/19/2021
Time of Meeting:	05:00 PM **(##:## AM Local Time)**
Street Location:	1200 E. O'Reilly St., Presidio's Activity Center
City:	Presidio
State:	TX
Liaison Name:	Stella Rodriguez
Liaison Id:	7
Additional Information Obtained From:	Ray Resendez, Hazard Mitigation Coordinator
Agenda:	RIO GRANDE COUNCIL OF GOVERNMENTS WILL HOLD A PUBLIC MEETING ON THE UPDATE OF PRESIDIO COUNTY'S MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN The Rio Grande Council of Governments (RGCOG) in collaboration with the Presidio County Hazard Mitigation Planning team will hold a public meeting on Monday, July 19, 2021 from 5:00 p.m. to 6:00 p.m. (CDT) at Presidio's Activity Center, 1200 E. O'Reilly St., Presidio, Texas 79845. The intent of the meeting is to discuss and receive input from the community on the potential impact of natural hazards and determine mitigation action strategies that may reduce potential for loss, injury, damage and interruption of businesses when hazards occur in the future.

Agenda

Presidio County Multi-Jurisdictional Hazard Mitigation Plan
Public Meeting
USO/Visitors Center
302 S. Highland, Marfa, TX 79843

Thursday, July 15, 2021

6:00 pm (CDT)

- **I.** Introductions
- **II.** Review Hazard Mitigation Plan update process
- **III.** Discussion and agreement on designated hazards
- **IV.** Discuss status of updating building code (last update 2005)
- **V.** Identify technical resources
- **VI.** Confirm critical facilities
- **VII.** Review previous mitigation Action plans
- **VIII.** Create new mitigation Action plans
- **IX.** Adjourn

Sign-in sheet

Rio Grande Council of Government's
Presidio County Multi-Jurisdictional Hazard Mitigation Plan
Public Meeting
USO/Visitors Center
302 S. Highland, Marfa, TX 79843

Thursday, July 15, 2021

6:00 pm (CDT)

Name (Please Print)	Organization/Entity	Physical Address	Phone Number	E-mail
Gary Mitsenke				GJM@MZTV.NET
Abbie Perrault				abbie@bigbendsentinel.com
Estelia R. Bowman (Beth)				None
Peggy OBrien				Peggyo@riocog.org
Cinderela Guevara				Countyjudge@co.presidio.tx.us

8.1.5. July 19, 2021 Public Input Planning Meeting (Presidio) Invite

City of Presidio

Notice of Town Hall & Public Meeting

Video call link: https://meet.google.com/dae-zpad-eko
Dial: +1 352-462-3946 PIN: 158118996

Notice is hereby given that City of Presidio will hold a Town Hall & Public Meeting on July 19, 2021. The hearing is scheduled for July 19, 2021 5:00 p.m., at Presidio Activity Center, 1200 E. O'Reilly St., Presidio, TX 79845. The public is encouraged to participate.

RIO GRANDE COUNCIL OF GOVERNMENTS WILL HOLD A PUBLIC MEETING ON THE UPDATE OF PRESIDIO COUNTY'S MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

The Rio Grande Council of Governments (RGCOG) in collaboration with the Presidio County Hazard Mitigation Planning team will hold a public meeting on Monday, July 19, 2021 from 5:00 p.m. to 6:00 p.m. (CDT) at Presidio's Activity Center, 1200 E. O'Reilly St., Presidio, Texas 79845. The intent of the meeting is to discuss and receive input from the community on the potential impact of natural hazards and determine mitigation action strategies that may reduce potential for loss, injury, damage and interruption of businesses when hazards occur in the future.

For additional information, please call Hazard Mitigation Coordinator, Ray Resendez at (915) 533-0998 x 153, or email at rayr@riocog.org or Presidio County Emergency Management Coordinator, Gary Mitschke emc@co.presidio.tx.us.

I CERTIFY THE ABOVE NOTICE OF A PUBLIC HEARING WAS POSTED IN THE DISPLAY CASE NEAR THE FRONT DOOR OF CITY HALL ON OR BEFORE JULY 16, 2021 AT 5:00 P.M. AND IN THE DISPLAY CASE NEAR THE DOOR OF THE PRESIDIO ACTIVITY CENTER LOCATED AT 1200 E. O'REILLY ST, PRESIDIO, TEXAS ON OR BEFORE JULY 16, 2021 AT 5:00 P.M. I FURTHER CERTIFY THAT THE NOTICE WAS ALSO POSTED IN THE CITY OF PRESIDIO WEBSITE. www.presidiotx.us

CERTIFICO QUE EL AVISO ANTERIOR DE UNA AUDIENCIA PÚBLICA FUE PUBLICADA EN EL CASO DE VISUALIZACIÓN CERCA DE LA PUERTA DEL AYUNTAMIENTO DE LA CIUDAD O ANTES DEL 16 DE JULIO DE 2021 A LAS 5:00 P.M. Y EN LA CAJA DE VISUALIZACIÓN CERCA DE LA PUERTA DEL CENTRO DE ACTIVIDADES PRESIDIO UBICADO EN 1200 E. O'REILLY ST, PRESIDIO, TEXAS EN O ANTES DEL 16 DE JULIO DE 2021 A LAS 5:00 P.M. ADEMÁS CERTIFICO QUE EL AVISO TAMBIÉN FUE PUBLICADO EN EL SITIO WEB DE LA CIUDAD DE PRESIDIO. www.presidiotx.us

Brenda Ornelas-Acuña
City of Presidio Secretary

Mon 7/12/2021 10:22 AM

Ray Resendez

HMP Public meetings

To Al Talavera; Bert Lagarde; Brad Newton; Cesar Leyva; Cinderela Guevara; Cynthia Ramirez; Eric Wilmarth; Estevan Marquez; Gary Mitschke; Jeff Boyd (pwdirector@cityofmarfa.com); Jim Mustard; John Ferguson; Malynda Richardson; Mandy Roane; Manny Baeza; Margarito Hernandez; Oscar Aguero; Patricia Roach; Saul Pardo; Superintendent Ray Vasquez; Todd Michell

Presidio County Hazard Mitigation Planning Team Public Meeting agenda (Marfa).docx 35 KB

Presidio County Hazard Mitigation Planning Team Public Meeting agenda (Presidio).docx 34 KB

Presidio County's Mitigation Actions.docx 27 KB

Presidio Critical Facilities.docx 22 KB

Greetings HMP Team,
We would like to invite all Hazard Mitigation Plan planning team members to participate in one of the following two meetings. The first meeting will be on July 15, 2021 at 6:00 PM. It will be at the USO/Visitors Center, 302 S. Highland, Marfa, Texas. The second meeting will be on July 19, 2021 at 5:00 PM in the Presidio Activities Center, 1400 E. O'Reilly (agendas are attached). These meetings are to get public input from the community and more important get your input to finalize the plan.

Attached are the critical facilities and the mitigation actions from the current plan for you to review. We need to make sure to identify all critical facilities and any mitigation actions that you feel are important so that if or when mitigation grants are made available your actions have been addressed in your plan. Some examples are, If a school district wants to apply for a mitigation grant to obtain generators for facilities used as shelters, you need to show the need was documented in your mitigation plan. If the city wants to apply for a mitigation grant to address flooding issues in a neighborhood, It needs to be documented as an action item. The actions we submit in this plan will be your supporting documentation for the next five years.

Let me know if you have any questions and remember to keep track of the time you spend working on the plan and report it as soon as you can.

Respectfully,

Ray Resendez
Hazard Mitigation Coordinator
Rio Grande Council of Governments
8087 Lockheed, Ste. 100
El Paso, Texas 79925
O-(915) 533-0998 X153
C-(915) 487-1025
rayr@riocog.org

Agenda

City of Presidio

City Council
Regular Council Meeting,
July 19, 2021

Notice is hereby given that the City Council of the City of Presidio, Texas will hold a Regular City Council meeting, **at 6:00 p.m. on Monday, July 19, 2021 at the Presidio Activity Center, (PAC) 1200 East O'Reilly St, in the City of Presidio, Texas** for the purpose of considering the attached agenda. This notice is posted pursuant to the Texas Open Meetings Act. (Section 551.043, Texas Government Code).

Video call link: https://meet.google.com/dae-zped-eko
Dial: +1 352-462-3946 PIN: 158118996

1. Call meeting to order
2. Quorum Check
3. Pledge of Allegiance
4. Public Comments *(Comments are limited only to matters that are not included in any item that has been posted on the agenda. Speakers are limited to a maximum of five minutes per speaker. Before addressing the City Council each speaker will state their name and address clearly before making comments)*
5. Department Reports
6. City of Presidio Business (New/Old)
    a. Discussion / update on Presidio County's Multi-Jurisdictional Hazard Mitigation Plan, Mr. Ray Resendez Rio Council of Governments Hazard Mitigation Coordinator.
    b. Discussion / update on 911 address compliance and where we are with such matters.
    c. Discussion /action reviewing and approving of Ordinance 2021-7 providing for the regulation of structures Commercial/Residential numbering in the City of Presidio, Texas.
    d. Discussion / action approve contract between the City of Presidio and Presidio County for 2020-2021 Fiscal Year Dispatch Services.
    e. Discussion / action authorize City Attorney to draft an agreement with local towing company regarding impounding of ceased vehicles and sharing revenue of said vehicles with local towing company.
    f. Discussion / action to review and accept CPA proposal letters for fiscal years 2019 and 2020.
        1. Adjourn into executive session as Authorized by the Texas Government Code including, but not limited to section 551.074 (Personnel Matters), regarding agenda item 6f.
        2. Reconvene into open session and take such action as appropriate.
    g. Discussion / action review the pool of applicants from the City Administrator applications and make a determination accordingly for the best interest of the City of Presidio.
        1. Adjourn into executive session as Authorized by the Texas Government Code including, but not limited to section 551.074 (Personnel Matters), regarding agenda item 6g.
        2. Reconvene into open session and take such action as appropriate.
    h. Discussion / action monthly evaluation of the City of Presidio City Administrator Intern, Mr. Brad Newton.
        1. Adjourn into executive session as Authorized by the Texas Government Code including, but not limited to section 551.074 (Personnel Matters), regarding agenda item 6h.
        2. Reconvene into open session and take such action as appropriate.
7. Administrative Updates (NO ACTION)
    a. City Administrator's Report
    b. City Mayor's Report
    c. City Council Report
    d. City Attorney's Report

1

City of Presidio

8. Adjourn

I certify that the above notice of regular city council meeting was posted in the display case near the front entrance of City Hall on or before July 16, 2021 at 6:00 p.m. and at the display case near the door of the Presidio Activity Center located at 1200 E. O'Reilly St, Presidio, Texas on or before July 16, 2021 at 6:00 p.m. I further certify that this agenda was also posted in the City of Presidio website www.presidiotx.us –Public Notices City Secretary on or before July 16, 2021 at 6:00 p.m.

Brenda Lee Acuña
City Secretary

All items on the agenda are for discussion and/or action by the Presidio City Council. The Presidio City Council Reserves the Right to Adjourn Into Executive Session at Any Time During the Course of this Meeting to Discuss Any of the Matters Listed Above, as Authorized by the Texas Government Code including, but not limited to, Sections 551.071 (Consultation with Attorney), 551.072 (Deliberations About Real Property), 551.073 (Deliberations about Gifts and Donations), 551.074 (Personnel Matters), 551.076 (Deliberations about Security Devices), 551.087(Economic Development) and 418.183 (Deliberations about Homeland Security Issues) Council will make a tape recording of the proceedings of a closed meeting to deliberate this information. This facility is wheelchair accessible and parking spaces are available. Request for accommodations must be made 48 hours prior to this meeting. Please contact City Hall at 432/229-3517, FAX 432/229-3505, or email bornelas@presidiotx.us for further information.

RIO GRANDE COUNCIL OF GOVERNMENTS WILL HOLD A PUBLIC MEETING ON THE UPDATE OF PRESIDIO COUNTY'S MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

The Rio Grande Council of Governments (RGCOG) in collaboration with the Presidio County Hazard Mitigation Planning team will hold a public meeting on Monday, July 19, 2021 from 5:00 p.m. to 6:00 p.m. (CDT) at Presidio's Activity Center, 1200 E. O'Reilly St., Presidio, Texas 79845. The intent of the meeting is to discuss and receive input from the community on the potential impact of natural hazards and determine mitigation action strategies that may reduce potential for loss, injury, damage and interruption of businesses when hazards occur in the future.

For additional information, please call Hazard Mitigation Coordinator, Ray Resendez at (915) 533-0998 x 153, or email at rayr@riocog.org or Presidio County Emergency Management Coordinator, Gary Mitschke emc@co.presidio.tx.us.

ENGLISH NEWS

Campaign stops
(Continued from page 1)

The Bean
(Continued from page 1)

LETTERS TO THE EDITOR

Trial
(Continued from page 1)

OBITUARY

Hernandez

RIO GRANDE COUNCIL OF GOVERNMENTS WILL HOLD A PUBLIC MEETING ON THE UPDATE OF PRESIDIO COUNTY'S MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

THIS WEEK:
GIANT DENIM SALE!
15% OFF ALL MEN'S & WOMEN'S JEANS
OUT WEST FEED & SUPPLY
• ALPINE, TX •
OUTWESTSHOPPING.COM
2600 EAST US-90, ALPINE TX 79830

Sign in sheet

Rio Grande Council of Government's
Presidio County Multi-Jurisdictional Hazard Mitigation Plan
Public Meeting
Presidio's Activity Center
1200 E. O'Reilly Street
Monday July 19, 2021
5:00 PM (CDT)

Name (Please Print)	Organization/Entity	Physical Address	Phone Number	E-mail
JERRY & JEAN STEPHENS	CITIZENS	[illegible] PRESIDIO, TX	254-541-7475	[illegible]
Jesse Valles	Code Enforcement	602 Cassell St.	903 422-6559	jvalles@presidiotx.us
Anna Velazquez-Orellana	President/Convention Visitor Bureau-1601 E Santa Fe Blvd		432-295-1155	av.anv99@yahoo.com
Victoria Cisneros	Municipal Judge		432-295-2144	judge@presidotx.us
Adele Jancovich	Presidio Cultural District Association	702 O'Reilly St	ADELE@LLANYC.COM	
Brad Newton	City of Presidio	507 W O'Reilly	432-229-3179	bnewton@presidiotx.u
Margarito Hernandez	Chief of Police	501 O'Reilly St.	432-294-0655	mhernandez@presidio-pd

8.1.6. July 27, 2021 Presentation and discussion to Marfa City Council

NOTICE OF SPECIAL MEETING AND WORKSHOP OF THE CITY COUNCIL OF THE CITY OF MARFA

Notice is hereby given that a Special Called Meeting and Workshop of the Marfa City Council will be held on Tuesday July 27, 2021 at 6:00 p.m., both in person at the Casner Room, located in Marfa City Hall, 113 South Highland Avenue, Marfa Texas 79843, and via Zoom (meeting details below).

The meeting shall be open to the public at all times during which subjects are discussed, considered or formally acted upon as required by Texas Open Meetings Act, Chapter 551 of the Government Code. This Notice of Meeting and Agenda in detail was posted at least 72 hours prior to the beginning of said meeting in a location at City Hall readily accessible to the public at all times and is on the website www.cityofmarfa.com.

Open to the Public: This meeting will be conducted both in person and virtually. Individuals wishing to observe the meeting or provide public comment may appear in person at the meeting, or may access it through the Zoom app on a laptop or smart phone as specified in the box at the end of this Notice.

1) Call the Meeting to order and establish a quorum.

2) Pledge of Allegiance.

3) Citizen Comment Period.

   a) At this time, any person may address the Council for a limited time concerning any matter and should limit their remarks to a period of three minutes. The Council is not allowed to take action on any subject presented, nor is the Council required to provide any response. As allowed in Texas Attorney General Opinion KP-0300, all public comments should be presented during this citizen comment period.

Presentations.

4) Presentation by Ray Resendez of Rio Grande Council of Governments regarding the Presidio County Hazard Mitigation Plan.

Old Business: None.

New Business:

5) Workshop with City Engineer Ramon Carrasco regarding potential flood hazard warning systems and/or mitigation measures for low water crossings in the City of Marfa.

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6) Discussion with action as appropriate to authorize City Engineer and staff to proceed as authorized.

7) Council Members' Comments

8) Announcements

9) Adjourn

Hon. Manuel V. Baeza, Mayor

I, the undersigned authority, do hereby certify that the above notice of meeting of the governing body of the above-named City of Marfa is a true and correct copy of said notice, and accessible to the general public at all times, and said notice was posted on or before the 72 hours required by the Texas Open Meetings Act.

Amanda Roane, City Manager

POSTED: 07/23/2021

TIME OF POSTING: 4:30 P.M.

MEETING INFORMATION

Topic: Marfa City Council Regular Meeting

Date & Time: July 27, 2021 06:00 PM Central Time

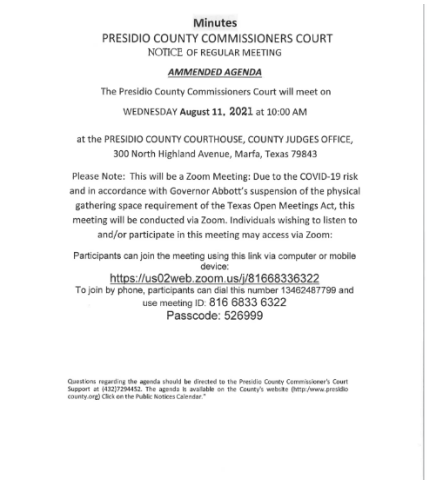
Please go to **Zoom.us** and click **Join Meeting**. Enter the following meeting ID and passcode:

Meeting ID: 827 5011 5972

Password: 104327

Dial-In Number: (346) 248-7799

8.1.7. August 11, 2021 Presentation and discussion to Presidio County Commissioner



Minutes
PRESIDIO COUNTY COMMISSIONERS COURT
NOTICE OF REGULAR MEETING

AMMENDED AGENDA

The Presidio County Commissioners Court will meet on

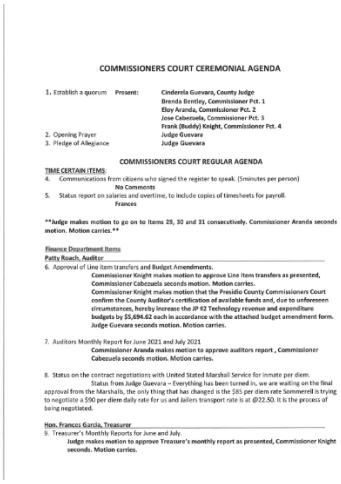
WEDNESDAY **August 11, 2021** at 10:00 AM

at the PRESIDIO COUNTY COURTHOUSE, COUNTY JUDGES OFFICE,
300 North Highland Avenue, Marfa, Texas 79843

Please Note: This will be a Zoom Meeting: Due to the COVID-19 risk and in accordance with Governor Abbott's suspension of the physical gathering space requirement of the Texas Open Meetings Act, this meeting will be conducted via Zoom. Individuals wishing to listen to and/or participate in this meeting may access via Zoom:

Participants can join the meeting using this link via computer or mobile device:
https://us02web.zoom.us/j/81668336322
To join by phone, participants can dial this number 13462487799 and use meeting ID: 816 6833 6322
Passcode: 526999

Questions regarding the agenda should be directed to the Presidio County Commissioner's Court Support at (432)7294452. The agenda is available on the County's website (http://www.presidio county.org) Click on the Public Notices Calendar."



COMMISSIONERS COURT CEREMONIAL AGENDA

1. Establish a quorum — **Present:** **Cinderela Guevara, County Judge**
Brenda Bentley, Commissioner Pct. 1
Eloy Aranda, Commissioner Pct. 2
Jose Cabezuela, Commissioner Pct. 3
Frank (Buddy) Knight, Commissioner Pct. 4
2. Opening Prayer — **Judge Guevara**
3. Pledge of Allegiance — **Judge Guevara**

COMMISSIONERS COURT REGULAR AGENDA

TIME CERTAIN ITEMS:
4. Communications from citizens who signed the register to speak. (5minutes per person)
No Comments
5. Status report on salaries and overtime, to include copies of timesheets for payroll.
Frances

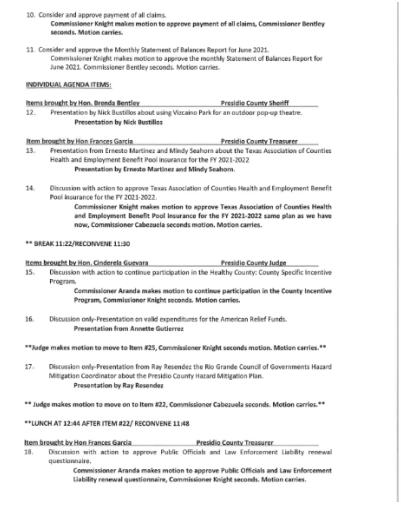
****Judge makes motion to go on to Items 29, 30 and 31 consecutively. Commissioner Aranda seconds motion. Motion carries.****

Finance Department Items
Patty Roach, Auditor
6. Approval of Line item transfers and Budget Amendments.
Commissioner Knight makes motion to approve Line Item transfers as presented, Commissioner Cabezuela seconds motion. Motion carries.
Commissioner Knight makes motion that the Presidio County Commissioners Court confirm the County Auditor's certification of available funds and, due to unforeseen circumstances, hereby increase the JP #2 Technology revenue and expenditure budgets by $5,694.62 each in accordance with the attached budget amendment form. Judge Guevara seconds motion. Motion carries.

7. Auditors Monthly Report for June 2021 and July 2021
Commissioner Aranda makes motion to approve auditors report , Commissioner Cabezuela seconds motion. Motion carries.

8. Status on the contract negotiations with United Stated Marshal Service for inmate per diem.
Status from Judge Guevara – Everything has been turned in, we are waiting on the final approval from the Marshalls, the only thing that has changed is the $85 per diem rate Sommerell is trying to negotiate a $90 per diem daily rate for us and Jailers transport rate is at @22.50. It is the process of being negotiated.

Hon. Frances Garcia, Treasurer
9. Treasurer's Monthly Reports for June and July.
Judge makes motion to approve Treasure's monthly report as presented, Commissioner Knight seconds. Motion carries.



10. Consider and approve payment of all claims.
Commissioner Knight makes motion to approve payment of all claims, Commissioner Bentley seconds. Motion carries.

11. Consider and approve the Monthly Statement of Balances Report for June 2021.
Commissioner Knight makes motion to approve the monthly Statement of Balances Report for June 2021. Commissioner Bentley seconds. Motion carries.

INDIVIDUAL AGENDA ITEMS:

Items brought by Hon. Brenda Bentley — Presidio County Sheriff
12. Presentation by Nick Bustillos about using Vizcaino Park for an outdoor pop-up theatre.
Presentation by Nick Bustillos

Item brought by Hon Frances Garcia — Presidio County Treasurer
13. Presentation from Ernesto Martinez and Mindy Seahorn about the Texas Association of Counties Health and Employment Benefit Pool insurance for the FY 2021-2022
Presentation by Ernesto Martinez and Mindy Seahorn.

14. Discussion with action to approve Texas Association of Counties Health and Employment Benefit Pool insurance for the FY 2021-2022.
Commissioner Knight makes motion to approve Texas Association of Counties Health and Employment Benefit Pool insurance for the FY 2021-2022 same plan as we have now, Commissioner Cabezuela seconds motion. Motion carries.

**** BREAK 11:22/RECONVENE 11:30**

Items brought by Hon. Cinderela Guevara — Presidio County Judge
15. Discussion with action to continue participation in the Healthy County: County Specific Incentive Program.
Commissioner Aranda makes motion to continue participation in the County Incentive Program, Commissioner Knight seconds. Motion carries.

16. Discussion only-Presentation on valid expenditures for the American Relief Funds.
Presentation from Annette Gutierrez

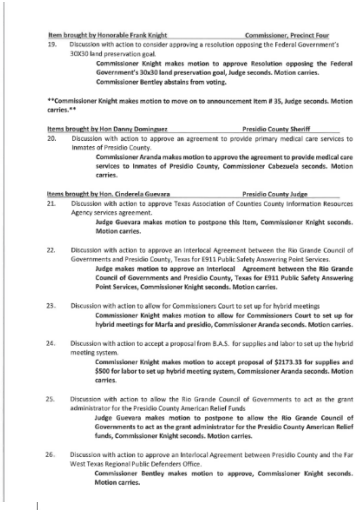
****Judge makes motion to move to Item #25, Commissioner Knight seconds motion. Motion carries.****

17. Discussion only-Presentation from Ray Resendez the Rio Grande Council of Governments Hazard Mitigation Coordinator about the Presidio County Hazard Mitigation Plan.
Presentation by Ray Resendez

**** Judge makes motion to move on to Item #22, Commissioner Cabezuela seconds. Motion carries.****

****LUNCH AT 12:44 AFTER ITEM #22/ RECONVENE 11:48**

Item brought by Hon Frances Garcia — Presidio County Treasurer
18. Discussion with action to approve Public Officials and Law Enforcement Liability renewal questionnaire.
Commissioner Aranda makes motion to approve Public Officials and Law Enforcement Liability renewal questionnaire, Commissioner Knight seconds. Motion carries.



Item brought by Honorable Frank Knight — Commissioner, Precinct Four
19. Discussion with action to consider approving a resolution opposing the Federal Government's 30X30 land preservation goal.
Commissioner Knight makes motion to approve Resolution opposing the Federal Government's 30x30 land preservation goal, Judge seconds. Motion carries.
Commissioner Bentley abstains from voting.

****Commissioner Knight makes motion to move on to announcement item # 35, Judge seconds. Motion carries.****

Items brought by Hon Danny Dominguez — Presidio County Sheriff
20. Discussion with action to approve an agreement to provide primary medical care services to inmates of Presidio County.
Commissioner Aranda makes motion to approve the agreement to provide medical care services to Inmates of Presidio County, Commissioner Cabezuela seconds. Motion carries.

Items brought by Hon. Cinderela Guevara — Presidio County Judge
21. Discussion with action to approve Texas Association of Counties County Information Resources Agency services agreement.
Judge Guevara makes motion to postpone this Item, Commissioner Knight seconds. Motion carries.

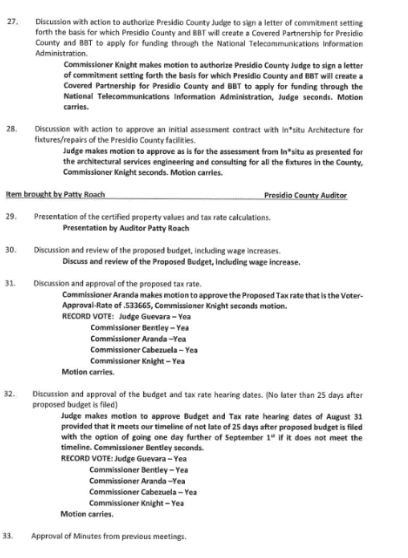
22. Discussion with action to approve an Interlocal Agreement between the Rio Grande Council of Governments and Presidio County, Texas for E911 Public Safety Answering Point Services.
Judge makes motion to approve an Interlocal Agreement between the Rio Grande Council of Governments and Presidio County, Texas for E911 Public Safety Answering Point Services, Commissioner Knight seconds. Motion carries.

23. Discussion with action to allow for Commissioners Court to set up for hybrid meetings
Commissioner Knight makes motion to allow for Commissioners Court to set up for hybrid meetings for Marfa and presidio, Commissioner Aranda seconds. Motion carries.

24. Discussion with action to accept a proposal from B.A.S. for supplies and labor to set up the hybrid meeting system.
Commissioner Knight makes motion to accept proposal of $2173.33 for supplies and $500 for labor to set up hybrid meeting system, Commissioner Aranda seconds. Motion carries.

25. Discussion with action to allow the Rio Grande Council of Governments to act as the grant administrator for the Presidio County American Relief Funds
Judge Guevara makes motion to postpone to allow the Rio Grande Council of Governments to act as the grant administrator for the Presidio County American Relief funds, Commissioner Knight seconds. Motion carries.

26. Discussion with action to approve an Interlocal Agreement between Presidio County and the Far West Texas Regional Public Defenders Office.
Commissioner Bentley makes motion to approve, Commissioner Knight seconds. Motion carries.



27. Discussion with action to authorize Presidio County Judge to sign a letter of commitment setting forth the basis for which Presidio County and BBT will create a Covered Partnership for Presidio County and BBT to apply for funding through the National Telecommunications Information Administration.
Commissioner Knight makes motion to authorize Presidio County Judge to sign a letter of commitment setting forth the basis for which Presidio County and BBT will create a Covered Partnership for Presidio County and BBT to apply for funding through the National Telecommunications Information Administration, Judge seconds. Motion carries.

28. Discussion with action to approve an initial assessment contract with In*situ Architecture for fixtures/repairs of the Presidio County facilities.
Judge makes motion to approve as is for the assessment from In*situ as presented for the architectural services engineering and consulting for all the fixtures in the County, Commissioner Knight seconds. Motion carries.

Item brought by Patty Roach — Presidio County Auditor

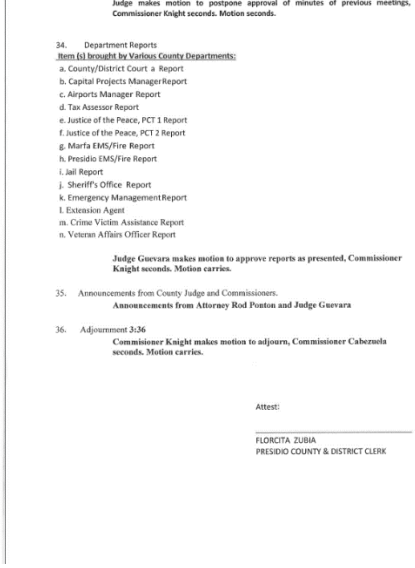
29. Presentation of the certified property values and tax rate calculations.
Presentation by Auditor Patty Roach

30. Discussion and review of the proposed budget, including wage increases.
Discuss and review of the Proposed Budget, including wage increase.

31. Discussion and approval of the proposed tax rate.
Commissioner Aranda makes motion to approve the Proposed Tax rate that is the Voter-Approval-Rate of .533665, Commissioner Knight seconds motion.
RECORD VOTE: Judge Guevara – Yea
Commissioner Bentley – Yea
Commissioner Aranda –Yea
Commissioner Cabezuela – Yea
Commissioner Knight – Yea
Motion carries.

32. Discussion and approval of the budget and tax rate hearing dates. (No later than 25 days after proposed budget is filed)
Judge makes motion to approve Budget and Tax rate hearing dates of August 31 provided that it meets our timeline of not late of 25 days after proposed budget is filed with the option of going one day further of September 1st if it does not meet the timeline. Commissioner Bentley seconds.
RECORD VOTE: Judge Guevara – Yea
Commissioner Bentley – Yea
Commissioner Aranda –Yea
Commissioner Cabezuela – Yea
Commissioner Knight – Yea
Motion carries.

33. Approval of Minutes from previous meetings.



Judge makes motion to postpone approval of minutes of previous meetings, Commissioner Knight seconds. Motion seconds.

34. Department Reports
Item (s) brought by Various County Departments:
a. County/District Court a Report
b. Capital Projects Manager Report
c. Airports Manager Report
d. Tax Assessor Report
e. Justice of the Peace, PCT 1 Report
f. Justice of the Peace, PCT 2 Report
g. Marfa EMS/Fire Report
h. Presidio EMS/Fire Report
i. Jail Report
j. Sheriff's Office Report
k. Emergency Management Report
l. Extension Agent
m. Crime Victim Assistance Report
n. Veteran Affairs Officer Report

Judge Guevara makes motion to approve reports as presented, Commissioner Knight seconds. Motion carries.

35. Announcements from County Judge and Commissioners.
Announcements from Attorney Rod Ponton and Judge Guevara

36. Adjournment 3:36
Commissioner Knight makes motion to adjourn, Commissioner Cabeznela seconds. Motion carries.

Attest:

FLORCITA ZUBIA
PRESIDIO COUNTY & DISTRICT CLERK

8.1.8. August 19, 2021 Planning Team review and designation of mitigation actions workshop

Invite

Ray Resendez

From: Ray Resendez
Sent: Wednesday, August 18, 2021 8:41 AM
To: Al Talavera; Bert Lagarde; Brad Newton; Cesar Leyva; Cinderela Guevara; Cynthia Ramirez; Eric Wilmarth; Estevan Marquez; Gary Mitschke; Jeff Boyd (pwdirector@cityofmarfa.com); Jim Mustard; John Ferguson; Malynda Richardson; Mandy Roane; Manny Baeza; Margarito Hernandez; Oscar Aguero; Patricia Roach; Saul Pardo; Superintendent Ray Vasquez; Todd Michell
Subject: Hazard Mitigation Planning Team meeting

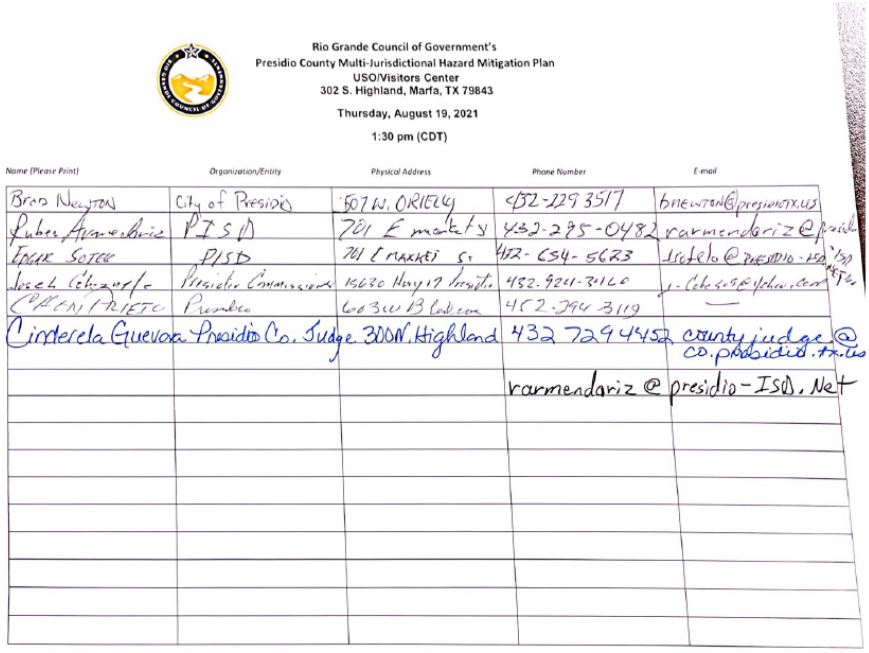
Hazard Mitigation Planning team.
We would like to invite you to a meeting tomorrow Thursday, August 19, 2021 at 1:30 PM. USO/Visitors Center 302 S. Highland, Marfa, TX 79843. It will be a workshop where we will identify and document the Hazard Mitigation Plan's "Mitigation Strategies". The strategy is heart of the mitigation plan. It serves as the long-term blueprint for reducing the potential losses identified in the risk assessment. The mitigation strategy describes how the community will accomplish the overall purpose or mission of the planning process.

We need your assistance in identifying the areas of the community that have been affected this past winter's ice storm, the recent rains and any other natural hazards that have affected the safety and wellbeing of the community. This plan will be in place for the next 5 years and will be used to confirm the need for any mitigation grants that may come available.

For additional information, please call Hazard Mitigation Coordinator, Ray Resendez at (915) 533-0998 x 153, or email at rayr@riocog.org or Presidio County Emergency Management Coordinator, Gary Mitschke emc@co.presidio.tx.us

Ray Resendez
Hazard Mitigation Coordinator
Rio Grande Council of Governments
8037 Lockheed, Ste. 100
El Paso, Texas 79925
O-(915) 533-0998 X153
C-(915) 487-1025
rayr@riocog.org

Sign-in sheet



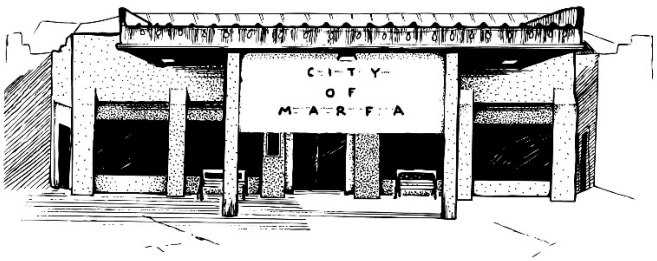
Rio Grande Council of Government's
Presidio County Multi-Jurisdictional Hazard Mitigation Plan
USO/Visitors Center
302 S. Highland, Marfa, TX 79843
Thursday, August 19, 2021
1:30 pm (CDT)

Name (Please Print)	Organization/Entity	Physical Address	Phone Number	E-mail
Brad Newton	City of Presidio	507 N. ORIENTE	(432-229 3517	bnewton@presidiotx.us
Ruben Armendariz	PISD	701 E market st	432-295-0482	rarmendariz@presidio-isd.net
Frank Soto	PISD	701 E market St	432-654-5623	fsoto@presidio-isd.net
Israel Chavarria	Presidio Commissioner	15630 Highway Marfa	432-9241-3160	j.chavarria@yahoo.com
[illegible]	Presidio	603 W Brown	452-394 3119	—
Cinderela Guevara	Presidio Co. Judge	300 N. Highland	432 729 4452	county judge@co.presidio.tx.us
				rarmendariz@presidio-ISD.Net

8.1.9 News paper articles

NEWS

Marfa council takes action to combat flash flooding risks



BY ABBIE PERRAULT

JULY 28, 2021 146 PM

Share to FacebookPrint this articleEmail this article

MARFA — Marfa City Council proposed a sweeping set of actions in response to last month's flash flooding event, calling a special meeting on Tuesday to learn about potential infrastructure improvements from the city engineer and to make updates to the area hazard mitigation plan at the same time.

City Engineer Ramon Carrasco walked the council through a variety of options to fight the hazards posed by flood waters in Alamito Creek. While the creek is most often completely dry, when waters rise rapidly or storms set in upstream in the Fort Davis area, the water poses a danger at four low water crossings in the city at Lincoln, Dallas, Nevill and Waco streets in the southeast edge of town.

That section of the city has no available public roadway in or out of their area, so emergency services would need permission to use a private road to reach people in case of a medical emergency. High flood waters last month also posed a danger at the four road crossings, and ultimately swept away a vehicle, taking the life of one Marfa community member.

The city discussed some of the prevalent issues at those crossings: low lighting makes it difficult to gauge water level. There isn't signage warning of potential flood or water gauges to indicate how deep flood waters are. Ingress and egress are difficult with no publicly accessible roadway out of the area when floods rise.

Carrasco's safety recommendations included educating the public, adding flood warning signage, implementing flood warning systems like sensors and barricades and changing the engineering with upstream retention or a bridge.

Each of those plans require various amounts of labor and money, and the council determined its best path forward would be to pursue a variety of the options.

"Educating the people, having these pamphlets out, putting it in the website and making people aware of flooding situations at the water crossings is what's going to help," Carrasco told council, who later voted to add flood information to the city website.

Ahead of the meeting, the city had already ordered eight 5-foot water gauge signs, which will be installed on each side of the city's four low water crossings. Carrasco said water gauges could help, but also acknowledged that in such high flooding like the storm that happened in June, the 5-foot signs could be completely underwater when a driver arrived at the crossing.

It will cost the city $70,000 to $100,000 to install signage at all four crossings. That would include software that would gauge flood levels, trigger lights to flash when there was water flowing and send data to the city for their website.

An additional $15,000 would get automated gates that would drop like railroad crossing gates, blocking the roadway when water levels were too high for crossing.

"If there's anything I know from 25 years of water planning, just put it in the plan," City Attorney Teresa Todd said. With that in mind, Councilmember Johnston added that the city should put a bridge in the plan, despite the high price tag of such infrastructure.

Earlier in the meeting, the Rio Grande Council of Governments' hazard mitigation coordinator Ray Resendez gave a presentation to Marfa City Council about the region's five-year hazard mitigation plan, which is currently going through a round of updates. An up-to-date plan can be a crucial tool for the city and county to access funding for infrastructure improvements that combat natural hazards.

The plan addresses floods, fire, hail, winds and more, documenting hazard mitigation tactics that could be put into action if a hazard struck the area. If a hazardous event hits somewhere in the United States and the Federal Emergency Management Agency opens up funds for the disaster, a percentage of that funding is sent into other communities so they can preemptively mitigate that hazard — but only if they have included that hazard in their five-year plan.

"If monies become available, counties and cities can only tap into that mitigation funding if the hazard is included in their five-year plan," Resendez explained. "If you have a flood issue, you need to build an action on it."

“The hazards are getting worse, the flooding is getting worse,” Resendez said. “These communities need as much help as they can get.”

Todd and Johnson’s recommendations to include water monitoring sensors, signage and a bridge in the hazard mitigation plan could help the city eventually get FEMA funding to purchase and install the system.

The cost to construct a bridge, Carrasco estimated, could be up to $3 million. If the city pursued that plan, Carrasco said, they would likely need to seek funding from the Texas Department of Transportation to create a feasibility study, looking into whether a bridge is the best solution and how that construction might impact the environment and the flow of water through the creek below it. Feasibility studies can open up TxDOT funding for something like bridge construction or other engineered alternatives.

“There’s dams we can build upstream that can try to mitigate this, but that requires more cost and maintenance,” the city engineer said. Carrasco believed the high waters in Marfa last month were potentially worsened by trash, trees and brush downstream, which could have bottlenecked the water, pushing the water level higher upstream. He recommended downstream maintenance to clean up the creek bed.

Marfa resident and Tourism Director Abby Boyd attended the meeting and spoke up about how dark the crossings are at night. Mayor Manny Baeza responded in agreement, advocating for improved lighting at the four crossings. The city attorney indicated there is an exception in the city lighting ordinance for lighting at the water crossings.

Wrapping up the meeting, Councilmember Yoseff Ben-Yehuda motioned, and council unanimously approved, that city staff and the city engineer will solicit bids for a system that would include lighted signage and a monitored alert system at four water crossings, including gate systems that would activate when sensors detected high water. At the same time, the city will contact TxDOT and their area engineer, Chris Weber, to seek opportunities to fund a bridge feasibility study through TxDOT funding.

Another motion by Irma Salgado urged action to improve lighting at all four crossings, to add flood safety information to the city website, and to generate letters to representatives like state Senator Cesar Blanco asking for support on flash flood mitigation projects in Marfa. The message Salgado said she hoped to convey to Sen. Blanco was, “We’re making progress, we’re trying to get it done, but funding is what we need. That a death was caused by this, maybe he might push it forward a little.”

8.1.10 Example of May 2021 Survey public outreach

Please Participate
Presidio County Hazard Mitigation update survey

The Presidio County Office of Emergency Management in collaboration with the Rio Grande Council of Governments are in the process of updating the FY 2015-2020 Presidio County Hazard Mitigation Plan.

Mitigation is most effective when it is based on a comprehensive, long-term plan that is developed before a disaster occurs. The purpose of mitigation planning is to identify local policies and actions that can be implemented over the long term to reduce risk and future losses from hazards. These mitigation policies and actions are identified based on an assessment of hazards, vulnerabilities, and risks and the participation of a wide range of stakeholders and the public in the planning process.

We are asking that you please log on to the link below and answer a short survey which should take you 4 to 6 minutes to complete and provide your input in updating this valuable plan for your County.

https://www.surveymonkey.com/r/N2TQ6RM

La Oficina de Manejo de Emergencias del Condado de Presidio, en colaboración con el Concilio de Gobiernos de Rio Grande, están en el proceso de actualizar el Plan de Mitigación de Riesgos del Condado de Presidio para el año fiscal 2015-2020.

La mitigación es más efectiva cuando se basa en un plan integral a largo plazo que se desarrolla antes de que ocurra un desastre. El propósito de la planificación de la mitigación es identificar políticas y acciones locales que se pueden implementar a largo plazo para reducir el riesgo y las pérdidas futuras por peligros. Estas políticas y acciones de mitigación se identifican en base a una evaluación de peligros, vulnerabilidades y riesgos y la participación de una amplia gama de partes interesadas y el público en el proceso de planificación.

Le pedimos que inicie sesión en el enlace a continuación y responda una breve encuesta que le llevará de 4 a 6 minutos completar y proporcionar su opinión para actualizar este valioso plan para su condado.

https://www.surveymonkey.com/r/N2TQ6RM

8.1.11 May 2021 Survey

May 2021 Survey

November 2021 Survey Response Summary

The survey was sent to officials and the community of 11 different jurisdictions in the Far West Texas region:

- Hudspeth County, City of Dell City
- Culberson County, Town of Van Horn
- Jeff Davis County, City of Valentine
- Presidio County, Cities of Marfa and Presidio
- Brewster County, City of Alpine

Responses was received from each of the 11 jurisdictions plus the State of Texas:

May 2021 Survey

RGCOG Hazard Mitigation Plan Update Survey

Natural Hazard Survey

Please respond to the following questions about natural hazards. Questions pertain to the occurrence of hazards, losses due to natural hazards, and projects or actions that have been taken to reduce or mitigate the effects of a hazard.

The survey addresses the following hazards identified in the 2015 Far West Texas Hazard Mitigation Plan: Flooding, Extreme Heat, Hail Storms, Winter Storms/Snow, Dam/ Levee failures, Wildfires/Grass Fires, Wind Storms/Downbursts, Earthquakes, Drought, Ice Storms, and Tornadoes.

Introduction

In order to update the Rio Grande Council of Governments Hazard Mitigation Plan, which covers your jurisdiction, it is necessary to identify the occurrence of hazards, losses due to those natural hazards, and projects or actions that have been taken to reduce or mitigate the effects of those hazards. It is also necessary to develop a comprehensive understanding of local community capabilities.
OK
1. Please indicate which jurisdiction you represent:

- ☐ Hudspeth County
- ☐ City of Dell City, Hudspeth County
- ☐ Culberson County
- ☐ Town of Van Horn, Culberson County
- ☐ Jeff Davis County
- ☐ City of Valentine, Jeff Davis County
- ☐ Presidio County
- ☐ City of Marfa, Presidio County

- [ ] City of Presidio, Presidio County
- [ ] Brewster County
- [ ] City of Alpine, Brewster Count

2. Please indicate how concerned you are about the following natural disasters affecting your jurisdiction:

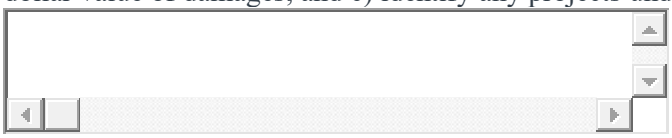
- [ ] Flooding
- [ ] Extreme Heat
- [ ] Hail Storm
- [ ] Winter Storm/Snow
- [ ] Dam/Levee Failure
- [ ] Wildfire/Grass Fire
- [ ] Wind Storm/Downburst
- [ ] Earthquake
- [ ] Drought
- [ ] Ice Storm
- [ ] Tornado
- [ ] Hurricane
- [ ] None o

3. For the hazards that have occurred in your jurisdiction, please indicate which hazard occurrences resulted in damage:

- [ ] Flooding
- [ ] Extreme Heat
- [ ] Hail Storm
- [ ] Winter Storm/Snow
- [ ] Dam/Levee Failure
- [ ] Wildfire/Grass Fire
- [ ] Wind Storm/Downburst
- [ ] Earthquake
- [ ] Drought
- [ ] Ice Storm
- [ ] Tornado
- [ ] None of the above

If damage resulted from a hazard not listed above, please indicate the type of hazard

4. For the hazards where damage occurred, please a) describe the damage; b) provide an estimate of the dollar value of damages; and c) identify any projects undertaken to mitigate potential damage:



Capability Assessment Survey

It is necessary to develop a comprehensive understanding of your local community capabilities. Please respond to the following questions to provide information about your jurisdiction's existing authorities, policies, programs and resources.

5. Please indicate which of the following types of codes, ordinances, or plans are in place in your jurisdiction:

- ☐ Building Code
- ☐ Building Permit
- ☐ Floodplain Management Ordinance
- ☐ Growth Management Ordinance
- ☐ Subdivision Ordinance
- ☐ Zoning Ordinance
- ☐ Capital Improvement Plan
- ☐ Comprehensive Plan
- ☐ Conservation or Natural Resource Protection Plan
- ☐ Economic Development Plan
- ☐ Historic Preservation Plan
- ☐ Local Emergency Operations Plan
- ☐ Parks or Open-Space Plan
- ☐ Post-disaster Recovery Plan
- ☐ Smart Growth Plan
- ☐ Storm Water Management Plan
- ☐ Transportation Management Plan
- ☐ None of the above

If another code, ordinance or plan not listed above exists in your jurisdiction, please indicate the type of code, ordinance or plan:

6. Please indicate which of the following types of staff position or role exist in your jurisdiction:

- [ ] Building Official
- [ ] City Engineer
- [ ] Community Planner
- [ ] Director of Public Works
- [ ] Emergency Manager
- [ ] Floodplain Administrator
- [ ] GIS Specialist
- [ ] Grant Writer
- [ ] Zoning Administrator
- [ ] None of the above

If another staff position or role not listed above exists in your jurisdiction, please indicate the type of staff position or role:

7. During the past five years in the county you currently reside in, have you or someone in your household directly experienced a natural disaster:

- ○ Yes
- ○ No

8. Have you ever received information about how to make members of your household and your home safer from natural disasters?

- ○ Yes
- ○ No

9. If "YES", how recently?

- [ ] Within the last 6 months
- [ ] Between 6 and 12 months
- [ ] Between 1 and 2 years
- [ ] Between 2 and 5 years
- [ ] 5 years or more

10. From whom did you last receive information about how to make members of your household and your home safer from natural disasters?

(Please check only one)

- [ ] News Media
- [ ] Governmental Agency
- [ ] Insurance Agent or Company
- [ ] Utility Company

- ☐ University or Research Institution
- ☐ Neighbor/Friend/Family Member
- ☐ Elected Official
- ☐ American Red Cross
- ☐ Other Non-Profit Organization
- ☐ Social Media (e.g. Facebook)
- ☐ Not Sure

Other (please specify)

11. Whom would you MOST TRUST to provide you with information about how to make your household and home safer from Natural disasters?

(Please check up to three)

- ☐ News Media
- ☐ Governmental Agency
- ☐ Insurance Agent or Company
- ☐ Utility Company
- ☐ University or Research Institution
- ☐ Neighbor/Friend/Family Member
- ☐ Elected Official
- ☐ American Red Cross
- ☐ Other Non-Profit Organization
- ☐ Social Media (e.g. Facebook)
- ☐ Not Sure

Other (please specify)

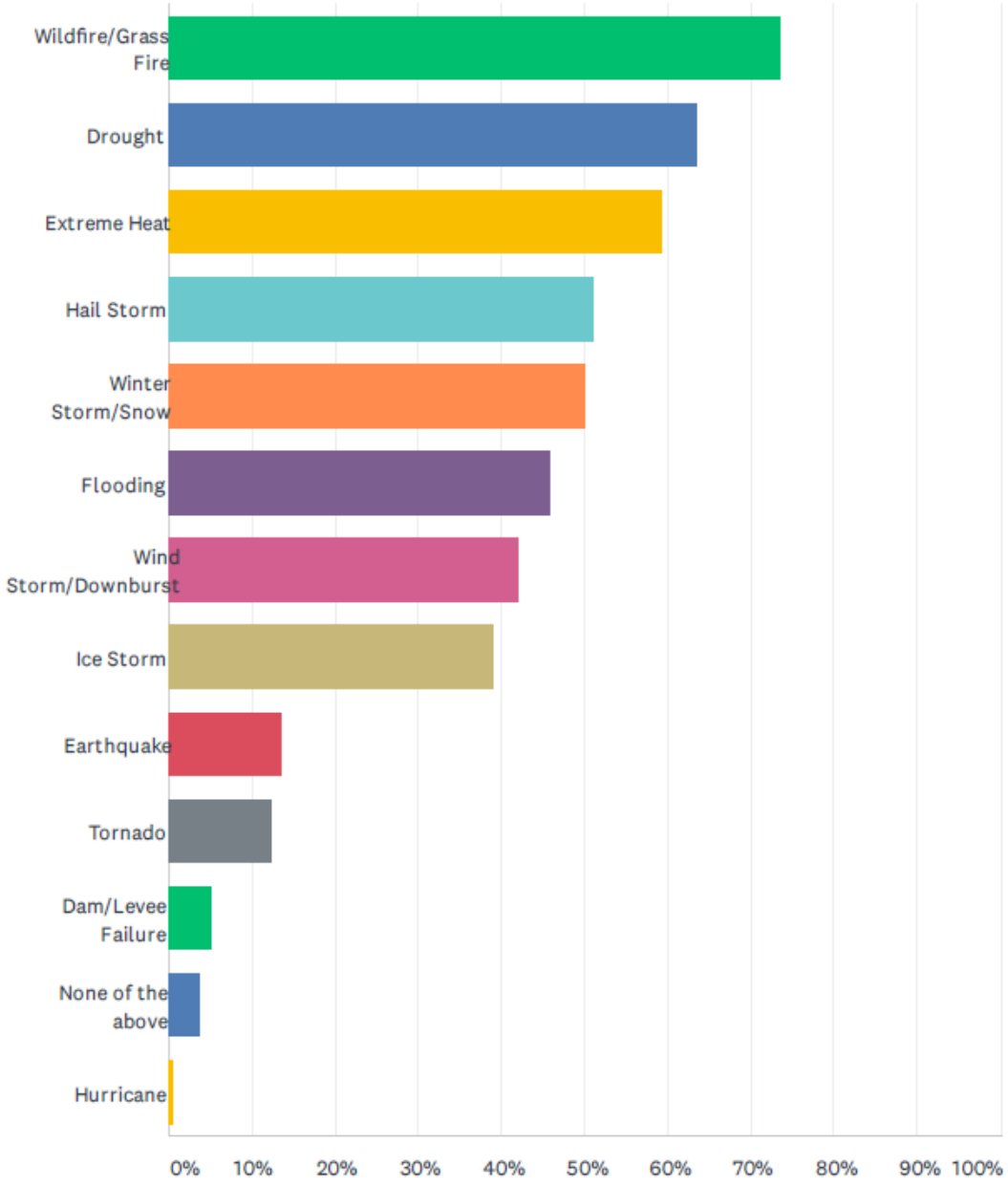
12. What is the **MOST EFFECTIVE** way for you to receive information about how to make your household and home safer from Natural disasters?

(Please check up to three)

- ☐ Newspaper Stories
- ☐ Newspaper Ads
- ☐ Television News
- ☐ Television Ads
- ☐ Radio News
- ☐ Radio Ads
- ☐ Email Newsletters

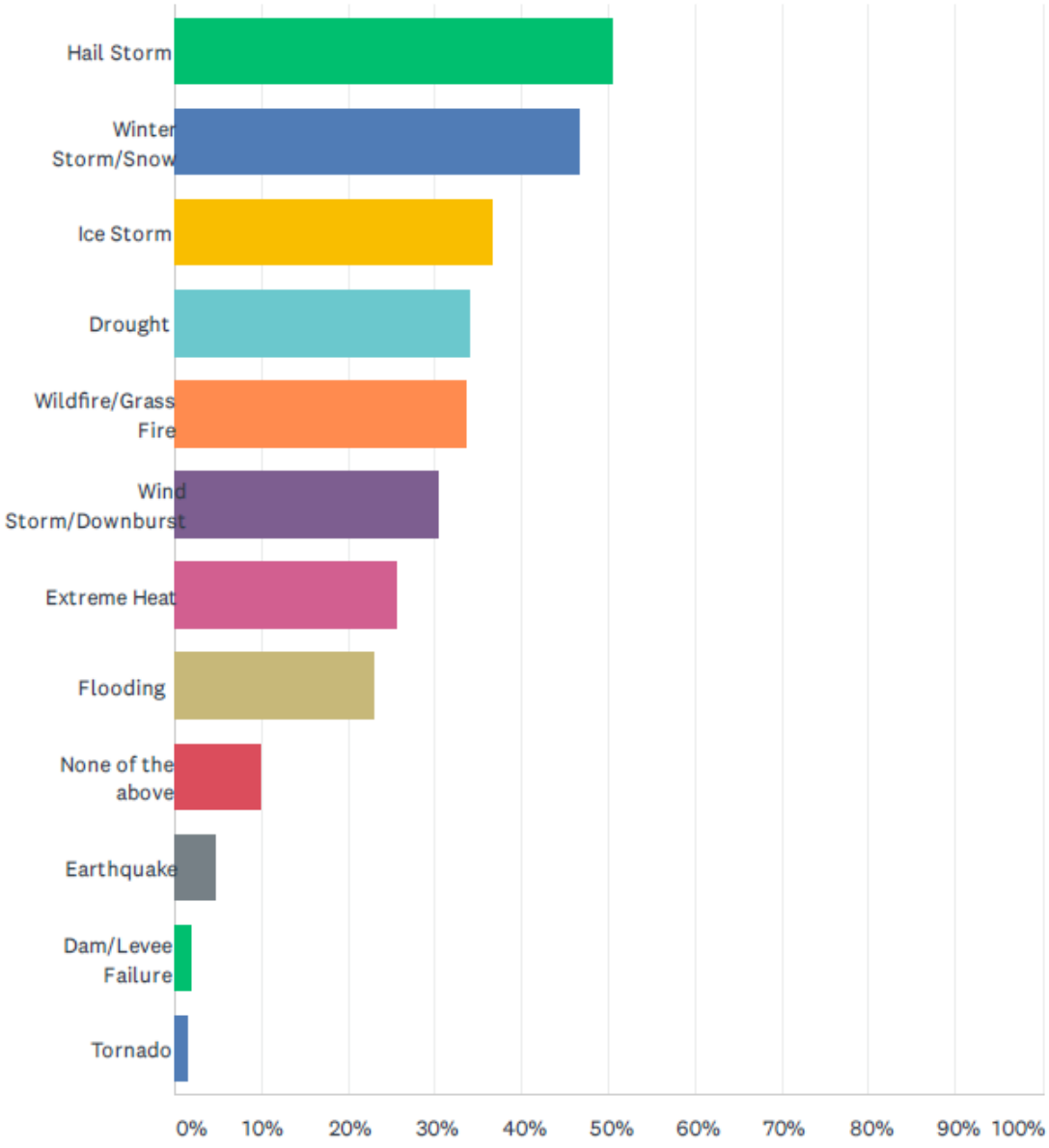
Please indicate how concerned are you about the following natural disasters affecting your jurisdiction:

Answered: 212 Skipped: 1



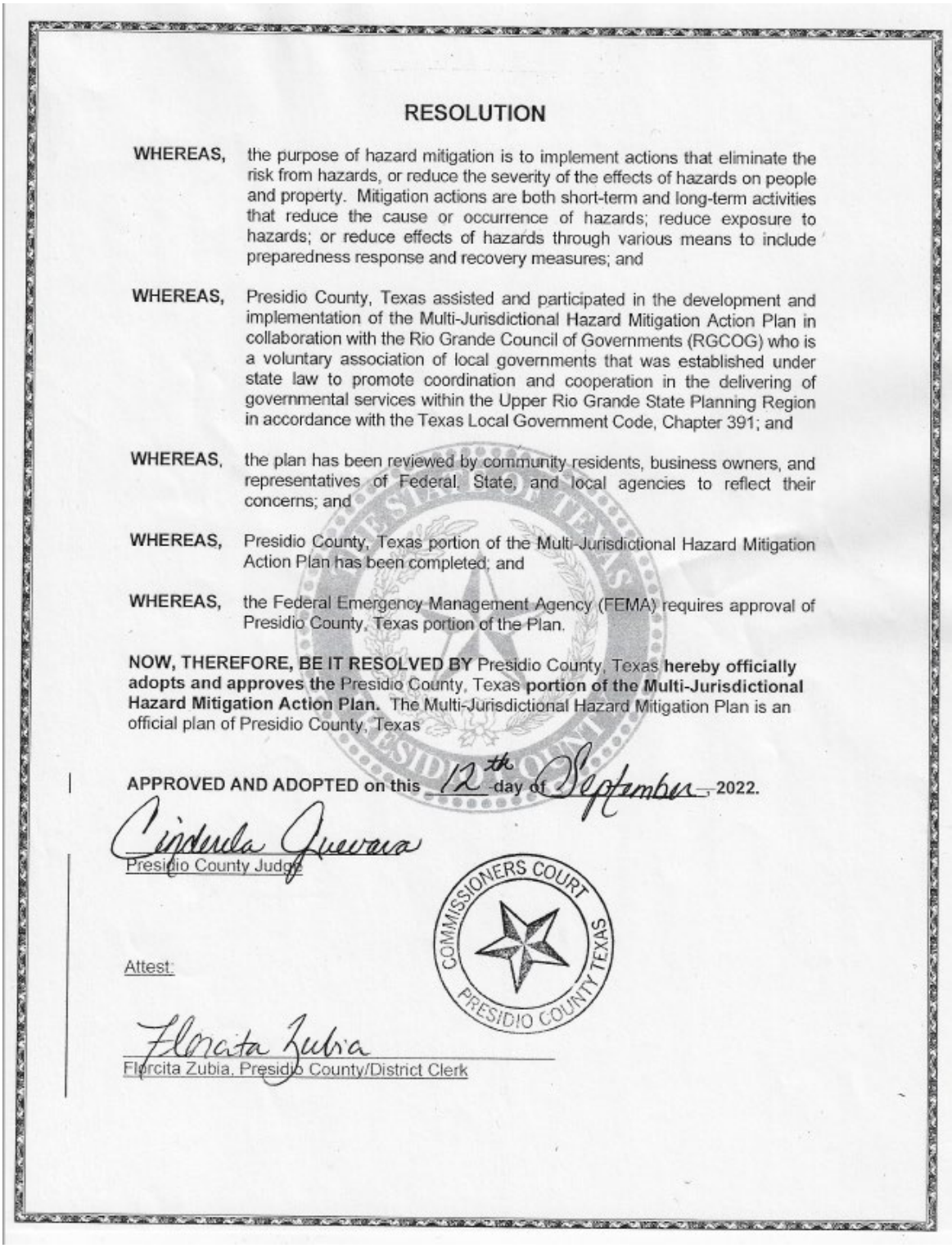
For the hazards that have occurred in your jurisdiction, please indicate which hazard occurrences resulted in damage:

Answered: 208 Skipped: 5



8.2. Plan Adoption

Adopted and signed resolution inserted here.



RESOLUTION

WHEREAS, the purpose of hazard mitigation is to implement actions that eliminate the risk from hazards, or reduce the severity of the effects of hazards on people and property. Mitigation actions are both short-term and long-term activities that reduce the cause or occurrence of hazards; reduce exposure to hazards; or reduce effects of hazards through various means to include preparedness response and recovery measures; and

WHEREAS, Presidio County, Texas assisted and participated in the development and implementation of the Multi-Jurisdictional Hazard Mitigation Action Plan in collaboration with the Rio Grande Council of Governments (RGCOG) who is a voluntary association of local governments that was established under state law to promote coordination and cooperation in the delivering of governmental services within the Upper Rio Grande State Planning Region in accordance with the Texas Local Government Code, Chapter 391; and

WHEREAS, the plan has been reviewed by community residents, business owners, and representatives of Federal, State, and local agencies to reflect their concerns; and

WHEREAS, Presidio County, Texas portion of the Multi-Jurisdictional Hazard Mitigation Action Plan has been completed; and

WHEREAS, the Federal Emergency Management Agency (FEMA) requires approval of Presidio County, Texas portion of the Plan.

NOW, THEREFORE, BE IT RESOLVED BY Presidio County, Texas **hereby officially adopts and approves the** Presidio County, Texas **portion of the Multi-Jurisdictional Hazard Mitigation Action Plan.** The Multi-Jurisdictional Hazard Mitigation Plan is an official plan of Presidio County, Texas

APPROVED AND ADOPTED on this 12th **day of** September **2022.**

Cinderela Guevara
Presidio County Judge

COMMISSIONERS COURT PRESIDIO COUNTY TEXAS

Attest:

Florcita Zubia
Florcita Zubia, Presidio County/District Clerk

CITY OF MARFA
P. O. BOX 787 or 113 S. HIGHLAND STREET
MARFA, TEXAS 79843
432-729-4315 or FAX 432-729-3158

RESOLUTION 2022-17

WHEREAS, the purpose of hazard mitigation is to implement actions that eliminate the risk from hazards, or reduce the severity of the effects of hazards on people and property. Mitigation actions are both short-term and long-term activities that reduce the cause or occurrence of hazards; reduce exposure to hazards; or reduce effects of hazards through various means to include preparedness response and recovery measures; and

WHEREAS, City of Marfa, Texas assisted and participated in the development and implementation of the Multi-Jurisdictional Hazard Mitigation Action Plan in collaboration with the Rio Grande Council of Governments (RGCOG) who is a voluntary association of local governments that was established under state law to promote coordination and cooperation in the delivering of governmental services within the Upper Rio Grande State Planning Region in accordance with the Texas Local Government Code, Chapter 391; and

WHEREAS, the plan has been reviewed by community residents, business owners, and representatives of Federal, State, and local agencies to reflect their concerns; and

WHEREAS, City of Marfa, Texas portion of the Multi-Jurisdictional Hazard Mitigation Action Plan has been completed; and

WHEREAS, the Federal Emergency Management Agency (FEMA) requires approval of City of Marfa, Texas portion of the Plan.

NOW, THEREFORE, BE IT RESOLVED BY City of Marfa, Texas **hereby officially adopts and approves the** City of Marfa, Texas **portion of the Multi-Jurisdictional Hazard Mitigation Action Plan.** The Multi-Jurisdictional Hazard Mitigation Plan is an official plan of the City of Marfa, Texas

APPROVED AND ADOPTED on this date 13TH day of September, 2022.

Hon. Manuel V Baeza, Mayor

ATTEST:

Amanda T Roane, City Secretary

RESOLUTION 2022-15R

WHEREAS, the purpose of hazard mitigation is to implement actions that eliminate the risk from hazards, or reduce the severity of the effects of hazards on people and property. Mitigation actions are both short-term and long-term activities that reduce the cause or occurrence of hazards; reduce exposure to hazards; or reduce effects of hazards through various means to include preparedness response and recovery measures; and

WHEREAS, City of Presidio, Texas assisted and participated in the development and implementation of the Multi-Jurisdictional Hazard Mitigation Action Plan in collaboration with the Rio Grande Council of Governments (RGCOG) who is a voluntary association of local governments that was established under state law to promote coordination and cooperation in the delivering of governmental services within the Upper Rio Grande State Planning Region in accordance with the Texas Local Government Code, Chapter 391; and

WHEREAS, the plan has been reviewed by community residents, business owners, and representatives of Federal, State, and local agencies to reflect their concerns; and

WHEREAS, City of Presidio, Texas portion of the Multi-Jurisdictional Hazard Mitigation Action Plan has been completed; and

WHEREAS, the Federal Emergency Management Agency (FEMA) requires approval of City of Presidio, Texas portion of the Plan.

NOW, THEREFORE, BE IT RESOLVED BY City of Presidio, Texas **hereby officially adopts and approves the** City of Presidio, Texas **portion of the Multi-Jurisdictional Hazard Mitigation Action Plan.** The Multi-Jurisdictional Hazard Mitigation Plan is an official plan of the City of Presidio, Texas

APPROVED AND ADOPTED on this date 29th day of August, 2022.

CITY OF PRESIDIO, TEXAS

John Ferguson
Mayor

ATTEST:

Brenda Lee Ornelas-Acuña
City Secretary

MARFA INDEPENDENT SCHOOL DISTRICT

Marfa Schools
400 W Lincoln St
PO Box T
Marfa, TX 79843
432-729-5500

RESOLUTION

WHEREAS, the purpose of hazard mitigation is to implement actions that eliminate the risk from hazards, or reduce the severity of the effects of hazards on people and property. Mitigation actions are both short-term and long-term activities that reduce the cause or occurrence of hazards; reduce exposure to hazards; or reduce effects of hazards through various means to include preparedness response and recovery measures; and

WHEREAS, *Marfa ISD* assisted and participated in the development and implementation of the Multi-Jurisdictional Hazard Mitigation Action Plan in collaboration with the Rio Grande Council of Governments (RGCOG) who is a voluntary association of local governments that was established under state law to promote coordination and cooperation in the delivering of governmental services within the Upper Rio Grande State Planning Region in accordance with the Texas Local Government Code, Chapter 391; and

WHEREAS, the plan has been reviewed by community residents, business owners, and representatives of Federal, State, and local agencies to reflect their concerns; and

WHEREAS, *Marfa ISD* portion of the Multi-Jurisdictional Hazard Mitigation Action Plan has been completed; and

WHEREAS, the Federal Emergency Management Agency (FEMA) requires approval of *Marfa ISD* portion of the Plan.

NOW, THEREFORE, BE IT RESOLVED BY Marfa ISD hereby officially adopts and approves the Marfa ISD portion of the Multi-Jurisdictional Hazard Mitigation Action Plan. The Multi-Jurisdictional Hazard Mitigation Plan is an official plan of Marfa ISD. Minor revisions of a nature that will not require funding to implement which are recommended by the Federal Emergency Management and/or the Texas Division of Emergency Management, Mitigation Section, may be incorporated by the Superintendent or his designee without further action of the board of Trustees

APPROVED AND ADOPTED on this date 25 **day of** Aug **, 2022.**

Superintendent

One Team, One Dream - Excellence Every Day

PRESIDIO INDEPENDENT SCHOOL DISTRICT

Presidio Independent School District does not discriminate on the basis of race, color, gender, national origin, disability or age in its programs and activities.

RESOLUTION

WHEREAS, the purpose of hazard mitigation is to implement actions that eliminate the risk from hazards, or reduce the severity of the effects of hazards on people and property. Mitigation actions are both short-term and long-term activities that reduce the cause or occurrence of hazards; reduce exposure to hazards; or reduce effects of hazards through various means to include preparedness response and recovery measures; and

WHEREAS, *Presidio ISD* assisted and participated in the development and implementation of the Multi-Jurisdictional Hazard Mitigation Action Plan in collaboration with the Rio Grande Council of Governments (RGCOG) who is a voluntary association of local governments that was established under state law to promote coordination and cooperation in the delivering of governmental services within the Upper Rio Grande State Planning Region in accordance with the Texas Local Government Code, Chapter 391; and

WHEREAS, the plan has been reviewed by community residents, business owners, and representatives of Federal, State, and local agencies to reflect their concerns; and

WHEREAS, *Presidio ISD* portion of the Multi-Jurisdictional Hazard Mitigation Action Plan has been completed; and

WHEREAS, the Federal Emergency Management Agency (FEMA) requires approval of *Presidio ISD* portion of the Plan.

NOW, THEREFORE, BE IT RESOLVED BY Presidio ISD hereby officially adopts and approves the Presidio ISD portion of the Multi-Jurisdictional Hazard Mitigation Action Plan. The Multi-Jurisdictional Hazard Mitigation Plan is an official plan of Presidio ISD. Minor revisions of a nature that will not require funding to implement which are recommended by the Federal Emergency Management and/or the Texas Division of Emergency Management, Mitigation Section, may be incorporated by the Superintendent or his designee without further action of the board of Trustees

***

APPROVED AND ADOPTED on this date 21th day of September, 2022.

Superintendent

P.O. Box 1401
Presidio, Texas 79845

701 E. Market Street
Presidio, Texas 79845

(432) 229-3275

Fax (432) 229-4228

Attachment to Presidio County Hazard Mitigation Plan

This attachment contains figures and other data that can be used to further argue that identified hazards have the potential to occur in Presidio County, the City of Marfa, and/or the City of Presidio. This attachment augments information presented in Section 3.2: Hazard Profiles for some, but not all, of the hazards

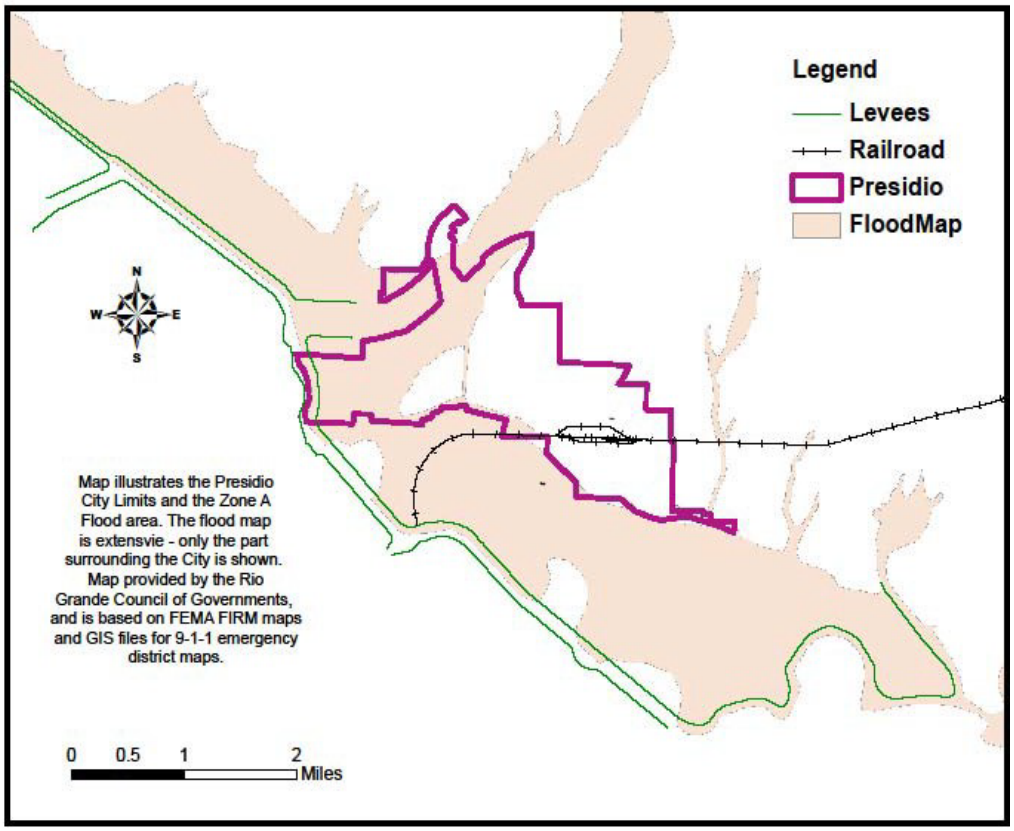
Flooding

Should more detailed information about the propensity of a particular location to flood, Flood Insurance Rate Maps for the participating jurisdictions are available to the public and can be accessed through the FEMA Map Service Center located at https://msc.fema.gov/portal/search?AddressQuery=Marfa%2C%20Texas

Figure 1 show the area most prone to flooding to be to the south of the City in darkest blue color. This is also the dam failure inundation area discussed in the plan.

The areas within the City of Presidio prone to flood are along Bridge Street, the southwest of Dupuy Avenue, southwest of Beach Avenue, and southwest of River Avenue. Flooding along these streets occurred on September 18, 2008 when the food control levee in the County of Presidio near Alamito Creek downstream of the City of Presidio overtopped and failed. Floodwaters went onto farmland and a golf course. This also caused for the water to begin to "back up" on the land side of the Rio Grande levee towards the City of Presidio causing for the streets closer to the Rio Grande River (also known as the Rio Bravo) to flood. Approximately 4,800 acres were affected during this period.

Figure 1: City of Presidio Floodplain Map



FLOOD FACTOR- https://floodfactor.com/city/presidio-texas/4859396_fsid

City of Presidio

City of Marfa

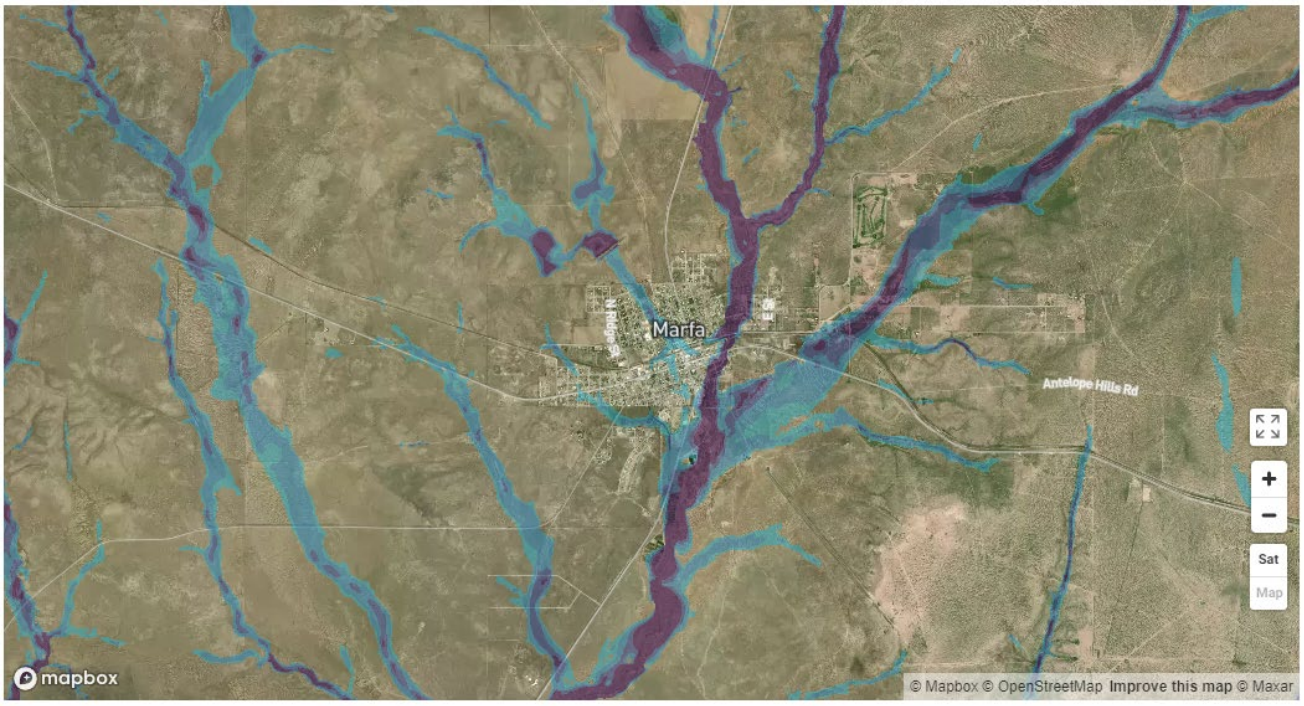


Table 1 presents NCDC data about flood locations in Presidio County

Table 1: Locations of Floods recorded by NCDC in Presidio County:

Flooding within the City of Marfa and County of Presidio have occurred in open and unpopulated areas.

Date	Description of Event	Location Upstream	Location Downstream
29-AUG-96	FLASH FLOOD	PRESIDIO	PRESIDIO
11-SEP-96	FLASH FLOOD	MARFA	MARFA
04-JUN-97	FLASH FLOOD	PRESIDIO	PRESIDIO
24-MAY-99	FLASH FLOOD	MARFA	MARFA
28-JUL-99	FLASH FLOOD	PAISANO	PAISANO
10-JUN-02	FLASH FLOOD	SHAFTER	SHAFTER
10-JUN-02	FLASH FLOOD	MARFA	MARFA
10-JUN-02	FLASH FLOOD	MARFA	MARFA
20-JUN-02	FLASH FLOOD	PRESIDIO	PRESIDIO
20-JUN-02	FLASH FLOOD	PRESIDIO	PRESIDIO
02-JUL-02	FLASH FLOOD	PRESIDIO	PRESIDIO
29-JUL-02	FLASH FLOOD	MARFA	MARFA
28-JUL-04	FLASH FLOOD	MARFA	MARFA
15-NOV-04	FLASH FLOOD	PRESIDIO	PRESIDIO
27-JUL-05	FLASH FLOOD	PRESIDIO	PRESIDIO
09-JUN-07	FLASH FLOOD	PRESIDIO	
09-SEP-08	FLASH FLOOD	PRESIDIO	PRESIDIO
17-JUN-00	FLOOD	CASA PIEDRA	CASA PIEDRA
13-SEP-02	Flood	PRESIDIO	PRESIDIO
08-SEP-08	FLOOD	PRESIDIO BIG BEND AR	REDFORD

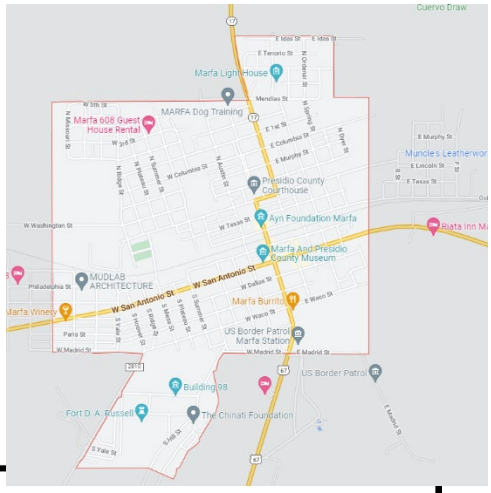
Wildfire

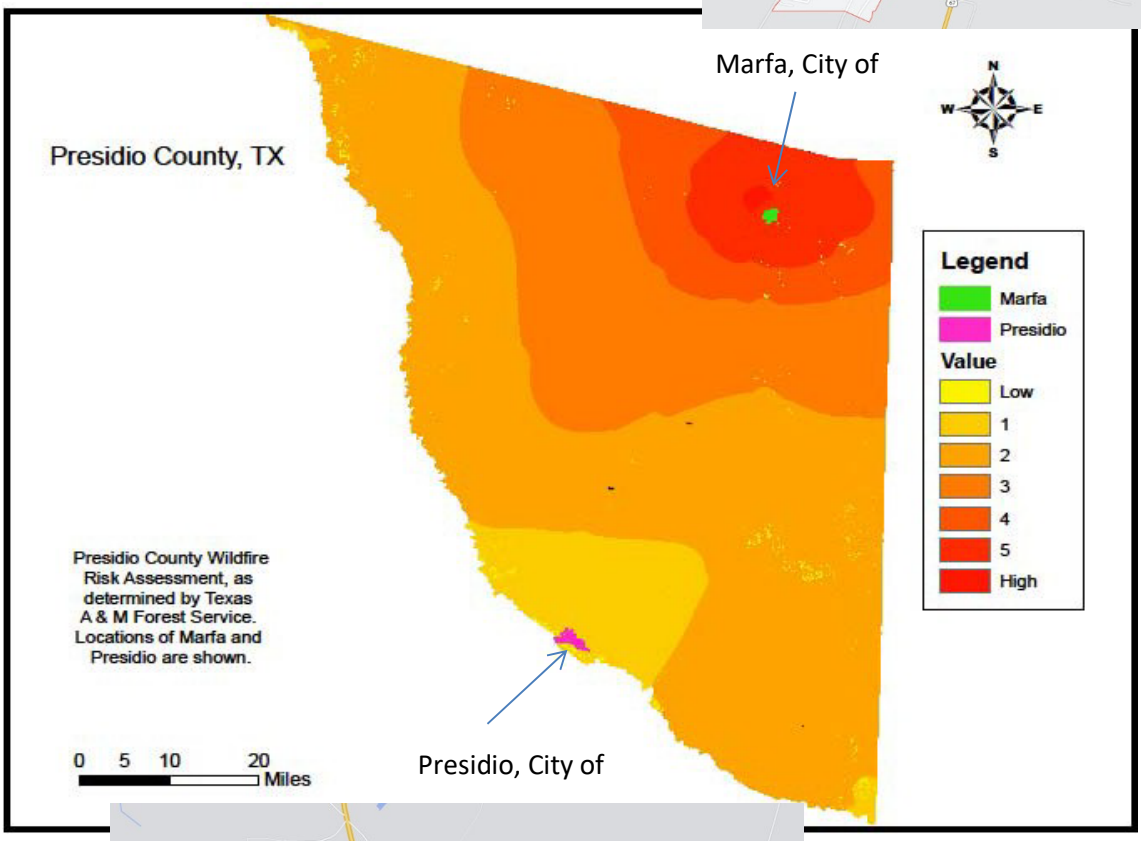
Figure 3 shows most of Presidio County including the City of Presidio and the City of Marfa to be at moderate to high risk of wildfire. A small portion of the County along the western border is shown to be at low risk. As conditions change, the appearance of this graphic will change on the Internet. (Source: http://www.texaswildfirerisk.com/map)

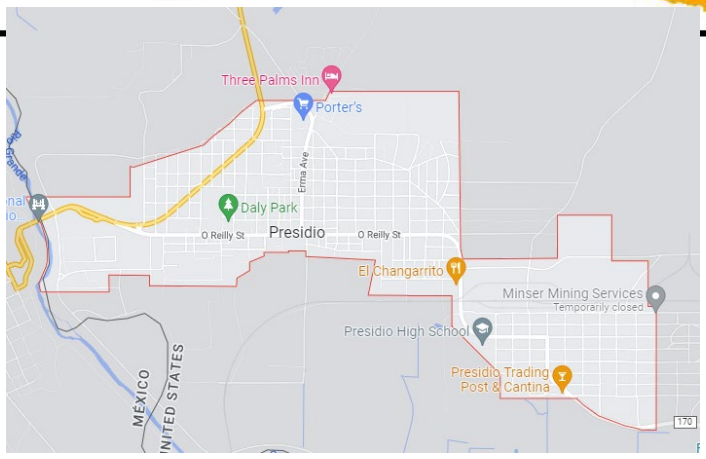
The State of Texas Wildfire Risk Assessment user manual (Texas A7M Forest Service, October 2012, pages 60 and 61, accessed January 26, 2014 at http://www.texaswildfirerisk.com/help/txwrap_user_manual.pdf) defines five classes of wildfire risk:

1. **Class 1, Very Low:** Very small, discontinuous flames, usually less than 1 foot in length; very low rate of spread; no spotting. Fires are typically easy to suppress by firefighters with basic training and non-specialized equipment.
2. **Class2, Low:** Small flames, usually less than two feet long; small amount of very short range spotting possible. Fires are easy to suppress by trained firefighters with protective equipment and specialized tools.
3. **Class 3, Moderate:** Flames up to 8 feet in length; short-range spotting is possible. Trained firefighters will find these fires difficult to suppress without support from aircraft or engines, but dozer and plows are generally effective. Increasing potential for harm or damage to life and property
4. **Class 4, High:** Large Flames, up to 30 feet in length; short-range spotting common; medium range spotting possible. Direct attack by trained firefighters, engines, and dozers is generally ineffective, indirect attack may be effective. Significant potential for harm or damage to life and property
5. **Class 5, Very High:** Very large flames up to 150 feet in length; profuse short-range spotting, frequent long-range spotting; strong fire-induced winds. Indirect attack marginally effective at the head of the fire; great potential for harm or damage to life and property

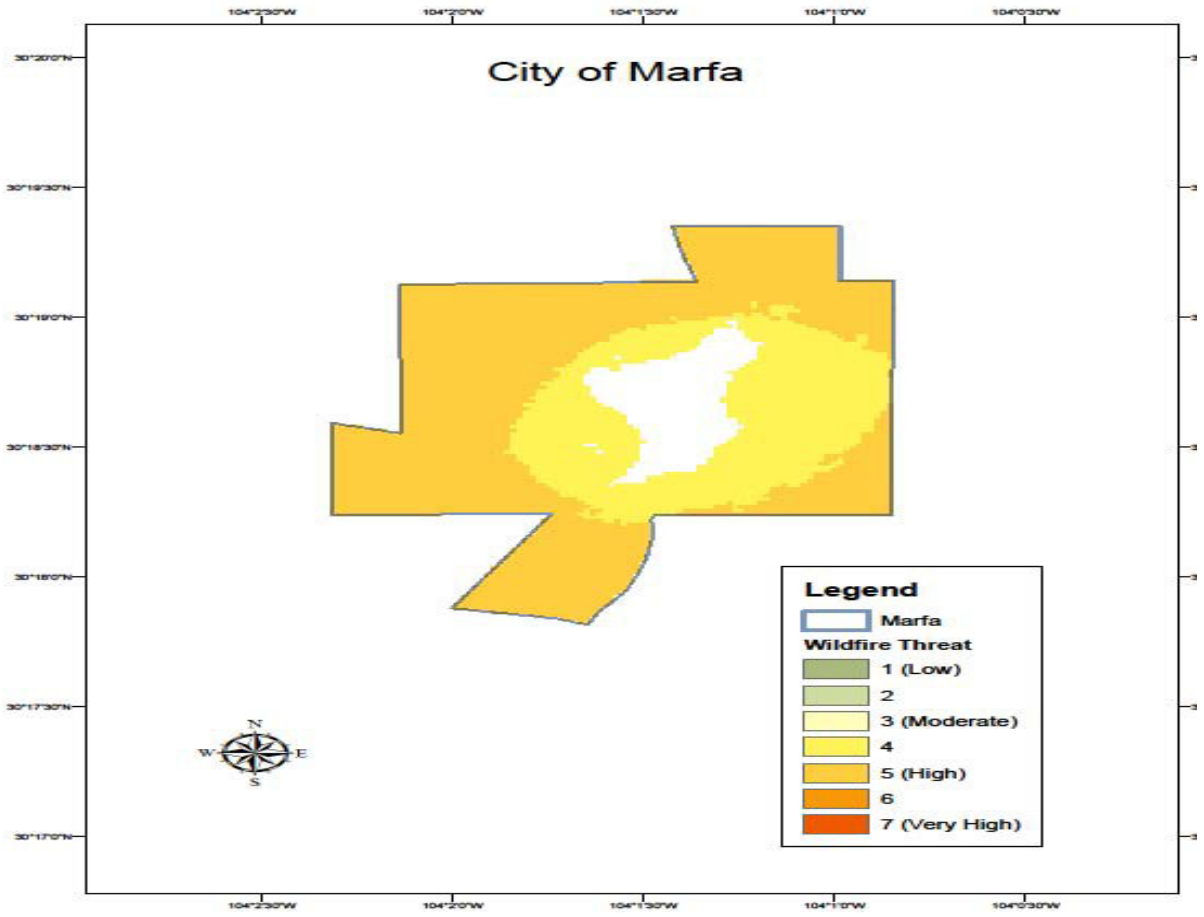
Figure 3: Fire Intensity Scale







Zooming in on the City of Marfa, Figure 4 shows that risk of wildfire on January 26, 2014 was very low but that wildfire risk in the surround undeveloped area was moderate.



Zooming in on the City of Presidio, Figure 5 shows that the risk of wildfire on January 26, 2014 was very low but that the wildfire risk in the agricultural land just to the south of the City was moderate.

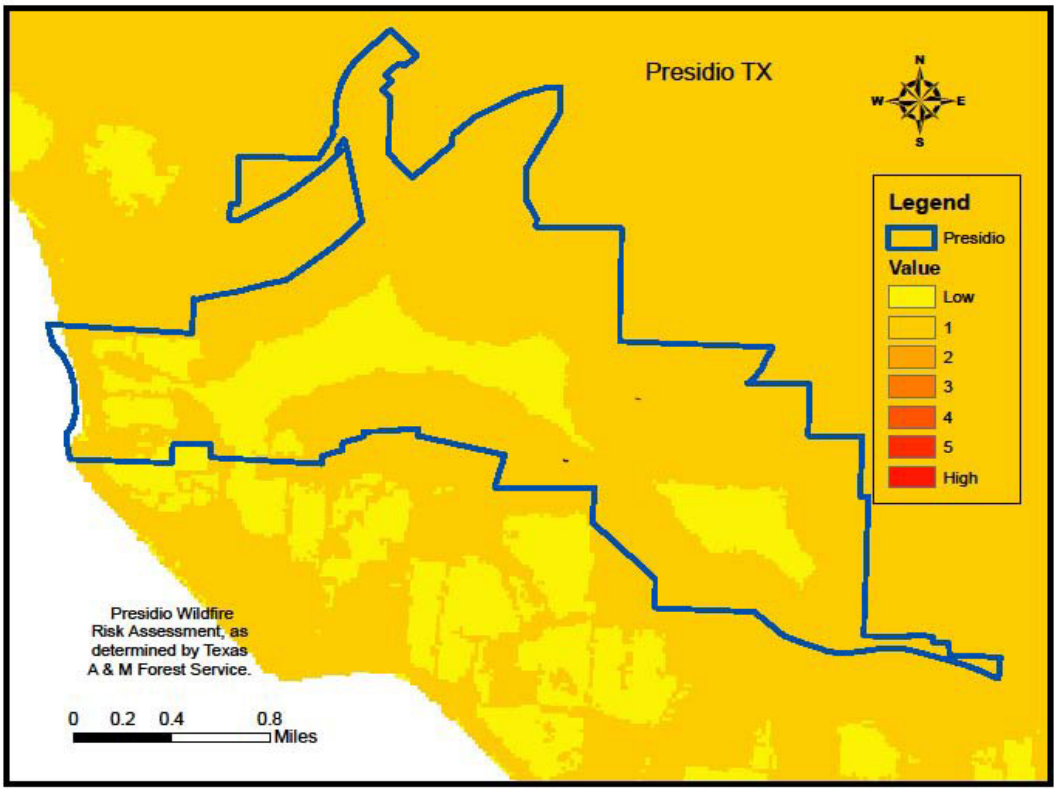


Figure 5: City of Presidio wildfire risk

Drought

The Keetch-Byram Index is another way of identifying current drought conditions in a location.

The Keetch-Byram scale is:

- KBDI = 0 - 200: Soil moisture and large class fuel moistures are high and do not contribute much to fire intensity. Typical of spring dormant season following winter precipitation.
- KBDI = 200 - 400: Typical of late spring, early growing season. Lower litter and duff layers are drying and beginning to contribute to fire intensity.
- KBDI = 400 - 600: Typical of late summer, early fall. Lower litter and duff layers actively contribute to fire intensity and will burn actively.
- KBDI = 600 - 800: Often associated with more severe drought with increased wildfire occurrence. Intense, deep burning fires with significant downwind spotting can be expected. Live fuels can also be expected to burn actively at these levels.

The Keetch-Byram index shown in Figure 6 for January 25, 2014 shows that Presidio County, the City of Presidio, and the City of Marfa are generally in the 301 to 400 range, typical of late spring.

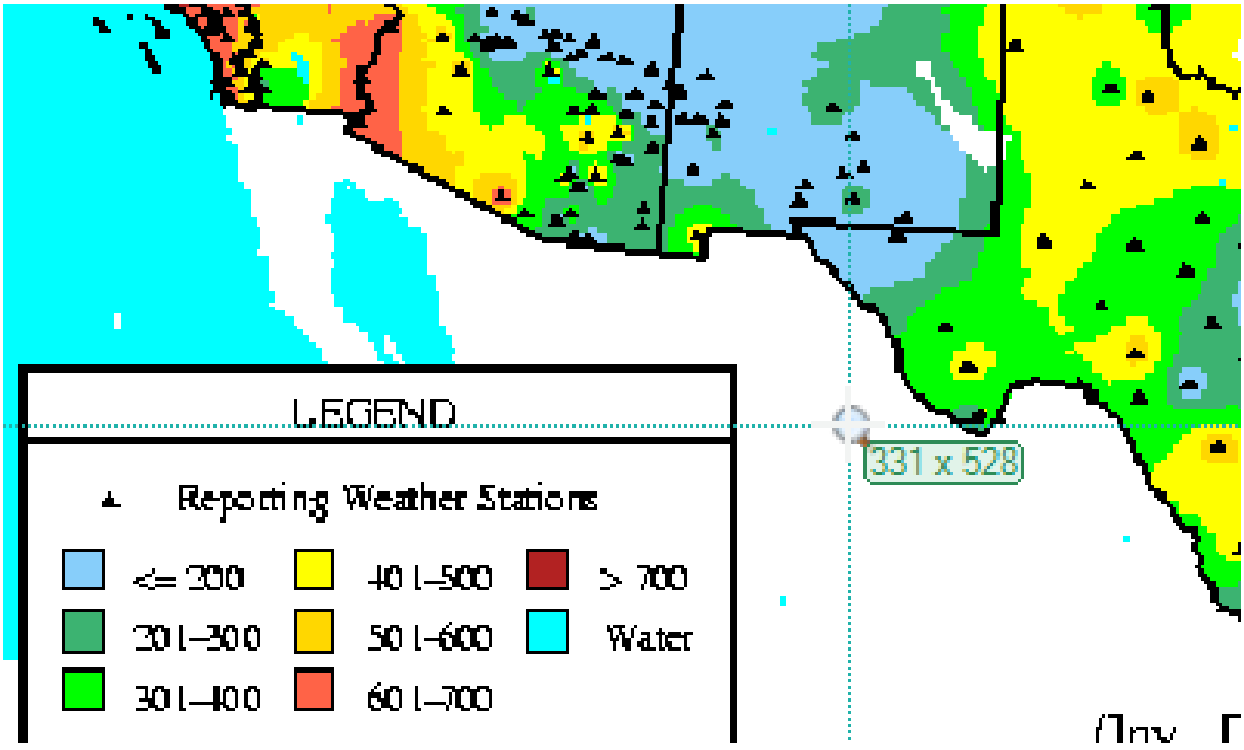


Figure 6: From http://www.wfas.net/index.php/keetch-byram-index-moisture--drought-49, January 25, 2014

Figure 7 shows Presidio County to be generally abnormally dry with moderate drought conditions at the southern end of the County on August 18, 2021. The graphic will change on the Internet as conditions change. (Source https://droughtmonitor.unl.edu/Maps/MapArchive.aspx) Meaning of colors used on the Drought Monitor are shown more clearly in Figure 9.

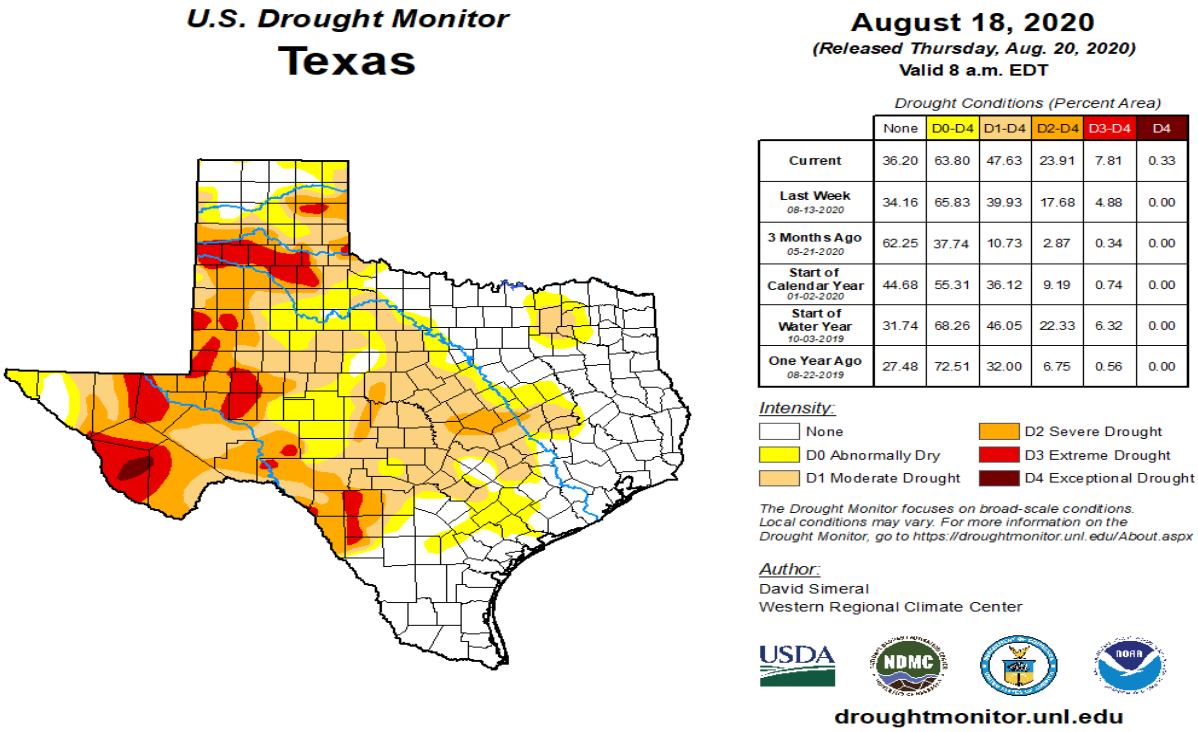


Figure 8: Texas Drought Monitor January 25, 2014 showing Presidio County

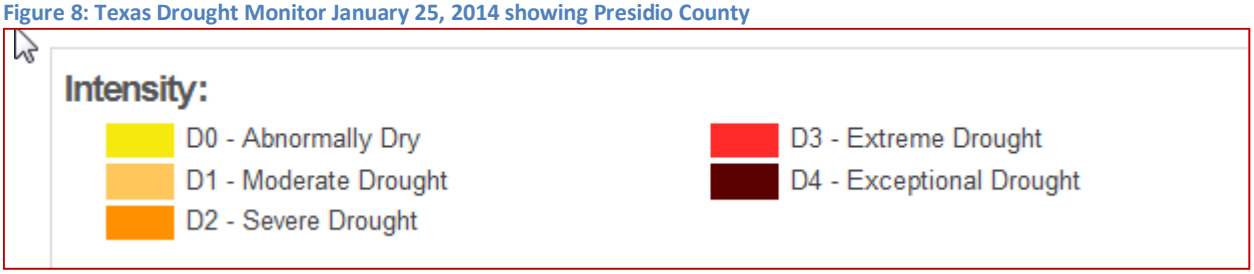


Figure 9: Texas Drought Monitor Legend

The magnitude or severity of drought can be measured objectively using the Palmer Drought Severity Index, which was developed in 1965 to measure duration and intensity of long-term drought conditions.

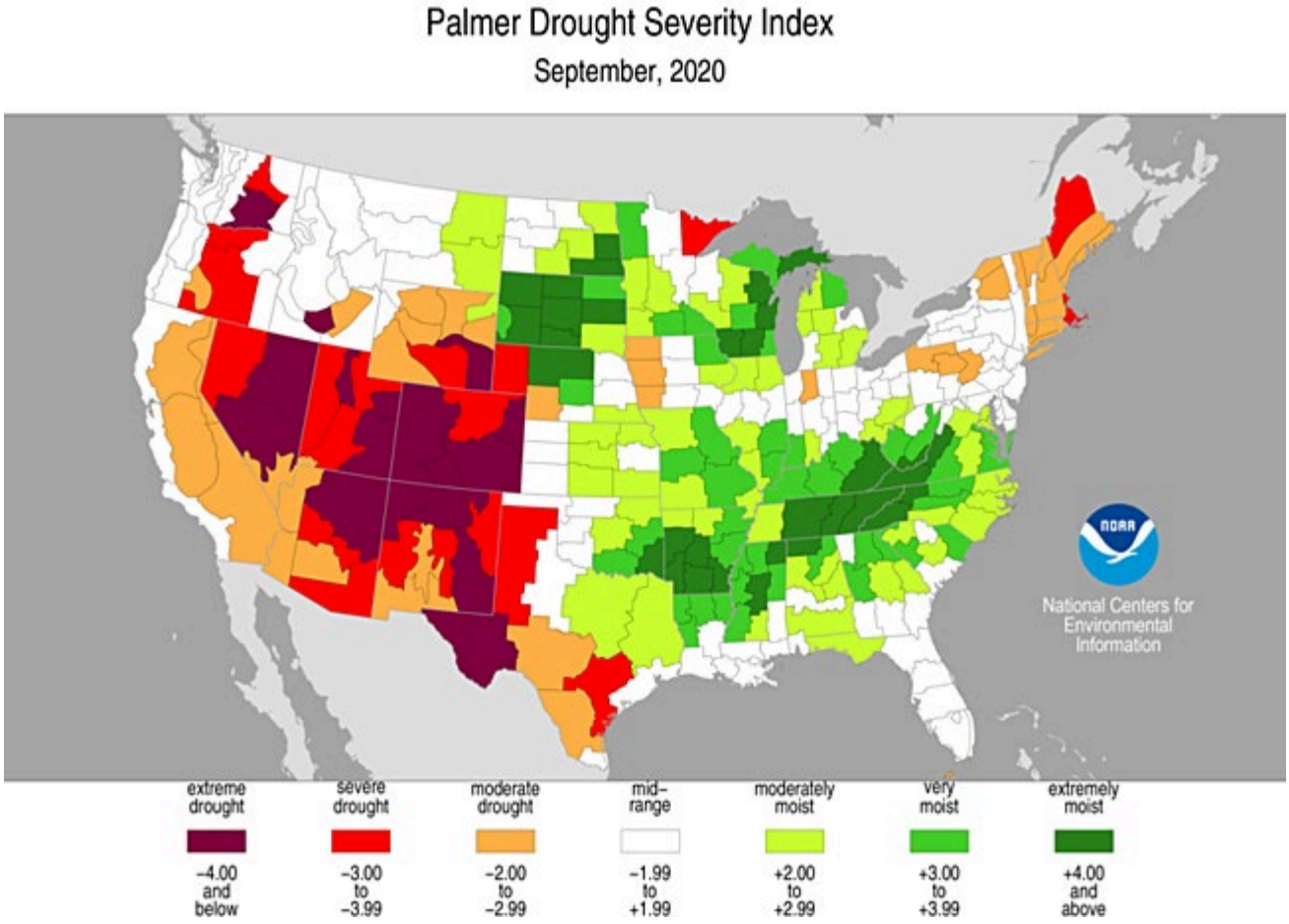


Figure 10a: Palmer Drought Severity Index

Extreme Temperatures

Extreme Heat

Figure 10 shows that combinations of high heat and humidity contribute to the likelihood of a heat disorder (Source is http://www.nws.noaa.gov/os/heat/index.shtml#heatindex, retrieved Sept 26 2013)

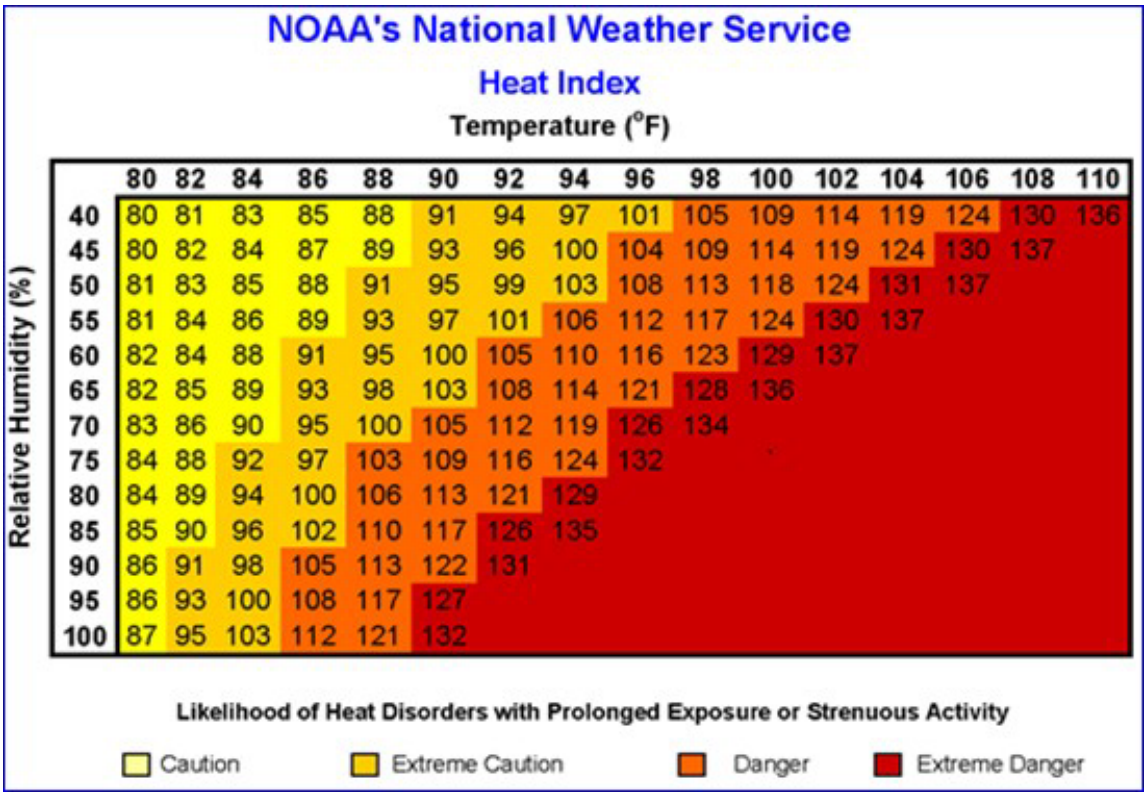
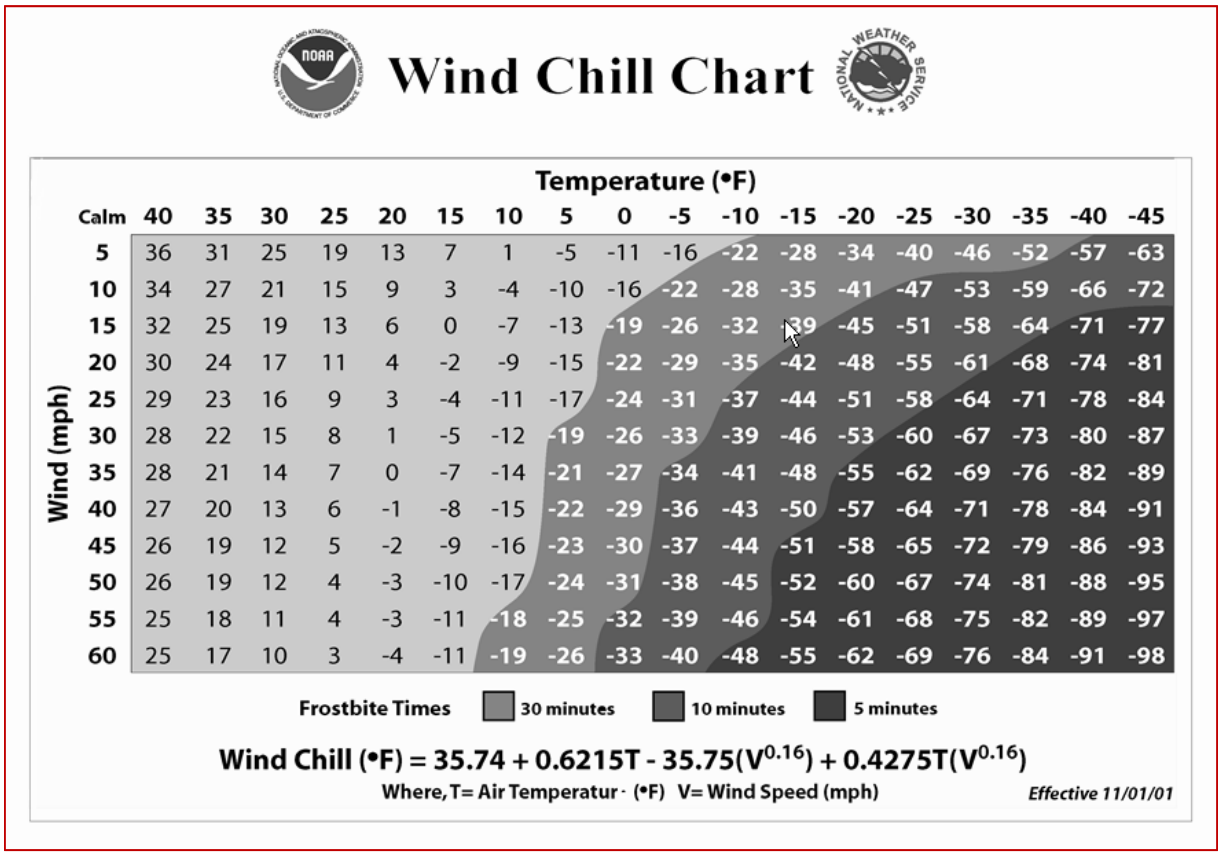


Figure 11: Heat Index

Extreme Cold

Figure 11 shows that cold temperatures in combination with wind can lead to frostbite for various periods of exposure. (Source: http://www.nws.noaa.gov/om/windchill/index.shtml, retrieved Sept 26 2013).



Wind Chill Chart

Temperature (°F)

Wind (mph)	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5		36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10		34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15		32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20		30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25		29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30		28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35		28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40		27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45		26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50		26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55		25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60		25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times: 30 minutes | 10 minutes | 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperatur · (°F) V= Wind Speed (mph)

Effective 11/01/01

Figure 12: Wind Chill Chart

Snow

Figure 12, the Regional Snowfall Index (RSI) shows that snow fall of under 3 inches is notable, but not damaging (Source: http://www.ncdc.noaa.gov/snow-and-ice/rsi/?nesis, retrieved Sept 26 2013)

Category	RSI Value	Description
1	1–3	Notable
2	3–6	Significant
3	6–10	Major
4	10–18	Crippling
5	18.0+	Extreme

Figure 13: Regional Snowfall Index

Figure 13 shows that the impact of snow varies depending on the amount of wind that occurs as the snow falls. It shows that with snow measuring less than 11 inches and wind below 25 miles per hour, impacts are minimal. (Source: Texas Department of Emergency Management, September 2013)

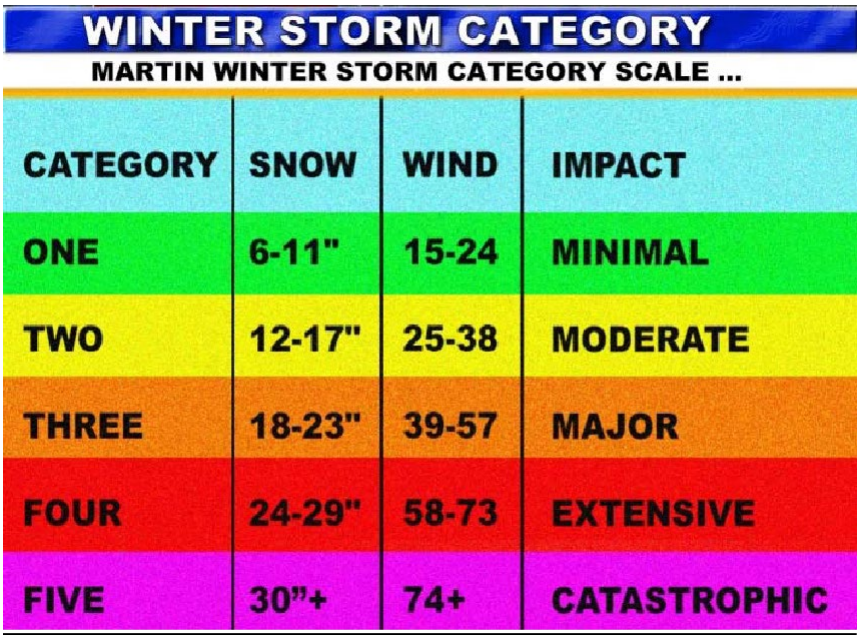


Figure 14: Winter Storm Category Table

Wind

Table 2 provides the data that were available through NCDC on location of wind events in the County an participating jurisdictions.

Table 2: Locations of Wind Events recorded by NCDC in Presidio County

Name	Hazard	Date	Property Damage	Remarks
Presidio	Wind	8/11/1961	$41,991.14	Wind
Presidio	Wind	1/25/1965	$0.00	Dust storm
Presidio	Wind	2/3/1971	$632.67	Wind and Dust storm
Presidio	Wind	2/22/1977	$82,873.60	Wind Storm/ Dust Storm
Presidio	Wind	3/10/1977	$38,367.41	Wind/ Dust Storm
Presidio	Wind	1/20/1979	$1,235.27	High Wind
Presidio	Wind	6/3/1979	$172,938.70	Windstorm
Presidio	Wind	3/31/1980	$6,094.83	wind
Presidio	Wind	4/7/1980	$13,851.87	wind
Presidio	Wind	3/17/1981	$476,285.03	Wind and Dust storm
Presidio	Wind	4/2/1982	$52,042.90	wind/dust storm
Presidio	Wind	4/1/1983	$0.00	High Wind
Presidio	Wind	3/26/1991	$3,687.33	High Wind
Presidio	Wind	1/17/1996	UNK	High Wind
Presidio	Wind	6/10/1998	$7,702.67	DRY MICROBURST
Presidio	Wind	4/13/1999	UNK	High Wind
Presidio	Wind	2/10/2009	$2,194.61	High Wind
Presidio	Wind	1/22/2012	UNK	High Wind
Presidio	Wind	3/28/2017	UNK	High Wind
Presidio	Wind	4/13/2018	UNK	High Wind
Presidio	Wind	4/10/2019	UNK	High Wind
Presidio	Wind	5/20/2019	UNK	High Wind
Presidio	Wind	11/26/2019	UNK	High Wind
Presidio	Wind	1/2/2020	UNK	High Wind
Presidio	Wind	2/23/2020	UNK	High Wind
Presidio	Wind	5/8/2020	UNK	High Wind
Presidio	Wind	1/30/2021	UNK	High Wind
Presidio	Wind	3/13/2021	UNK	High Wind
Presidio	Wind	3/22/2021	UNK	High Wind

Ice

Figure 14 shows that the effect of ice accumulation is exacerbated by wind speed, but that ice accumulation of under one eighth of an inch, which is typical in Presidio County, can, at the worst, result in power outages (Source: http://www.spia-index.com/, retrieved Sept 26 2013). Because of low threat of damage and because of no history of damage due to ice, ice has been eliminated from the plan.

The Sperry-Piltz Ice Accumulation Index, or "SPIA Index" – Copyright, February, 2009

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

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

Figure 15: Sperry-Piltz Ice Accumulation Index

Hail

Table 3 shows the locations of hail events in the County and participating jurisdictions available through the NCDC.

Table 3: Locations of Hail recorded by NCDC in Presidio County

Date	Description of Event	Starting Location	Ending Location
02-JUN-55	HAIL		
01-MAY-59	HAIL		
12-JUN-62	HAIL		
25-APR-65	HAIL		
12-MAR-74	HAIL		
10-MAY-75	HAIL		
10-MAY-75	HAIL		
23-JUN-75	HAIL		
12-JUN-77	HAIL		
14-APR-92	HAIL		
25-MAY-92	HAIL		
07-JUN-92	HAIL		
06-MAY-96	HAIL	MARFA	MARFA
20-MAY-97	HAIL	PRESIDIO	PRESIDIO
15-JUN-97	HAIL	PRESIDIO	PRESIDIO
22-MAY-99	HAIL	RUIDOSA	RUIDOSA
24-MAY-99	HAIL	MARFA	MARFA
17-OCT-00	HAIL	MARFA	MARFA
25-APR-02	HAIL	REDFORD	REDFORD
20-JUN-02	HAIL	PRESIDIO	PRESIDIO
02-JUL-02	HAIL	PRESIDIO	PRESIDIO
22-MAY-03	HAIL	MARFA	MARFA
08-JUN-03	HAIL	MARFA	MARFA
14-MAR-04	HAIL	MARFA	MARFA
03-APR-04	HAIL	PRESIDIO	PRESIDIO
03-APR-04	HAIL	MARFA	MARFA
03-APR-04	HAIL	REDFORD	REDFORD
05-APR-04	HAIL	MARFA	MARFA
03-JUN-04	HAIL	MARFA	MARFA
05-JUN-04	HAIL	MARFA	MARFA
04-OCT-04	HAIL	RYAN	RYAN
14-MAY-05	HAIL	SHAFTER	SHAFTER
14-MAY-05	HAIL	PRESIDIO	PRESIDIO
02-JUN-05	HAIL	MARFA	MARFA
03-JUN-05	HAIL	MARFA	MARFA

03-JUN-05	HAIL	MARFA	MARFA
05-JUN-05	HAIL	MARFA	MARFA
19-JUN-05	HAIL	SHAFTER	SHAFTER
20-JUN-05	HAIL	MARFA	MARFA
20-JUN-05	HAIL	CANDELARIA	CANDELARIA
22-APR-06	HAIL	REDFORD	REDFORD
22-APR-06	HAIL	REDFORD	REDFORD
22-APR-06	HAIL	REDFORD	REDFORD
14-OCT-06	HAIL	MARFA	
14-OCT-06	HAIL	MARFA	
25-MAR-07	HAIL	PRESIDIO	
15-MAY-07	HAIL	RYAN	
15-MAY-07	HAIL	MARFA	
19-MAY-07	HAIL	MARFA	
24-MAY-07	HAIL	MARFA	
24-MAY-07	HAIL	PRESIDIO	
08-JUN-07	HAIL	PRESIDIO	
25-AUG-07	HAIL	MARFA	
25-MAY-09	HAIL	PRESIDIO	
15-AUG-10	HAIL	PRESIDIO BIG BEND AR	
08-MAY-12	HAIL	SHAFTER	
14-MAY-12	HAIL	PRESIDIO	

Lightning

Figure 15 illustrates the various intensities of lightning storms. (Source http://www.nws.noaa.gov/forecasts/wfo/definitions/defineLAL.html, retrieved September 25, 2013)

Lightning Activity Level (LAL)	
Is a scale which describes lightning activity. Values are labeled 1-6:	
LAL 1	No thunderstorms
LAL 2	Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent, 1 to 5 cloud to ground strikes in a five minute period.
LAL 3	Widely scattered thunderstorms. Light to moderate rain will reach the ground. Lightning is infrequent, 6 to 10 cloud to ground strikes in a 5 minute period.
LAL 4	Scattered thunderstorms. Moderate rain is commonly produced Lightning is frequent, 11 to 15 cloud to ground strikes in a 5 minute period.
LAL 5	Numerous thunderstorms. Rainfall is moderate to heavy. Lightning is frequent and intense, greater then 15 cloud to ground strikes in a 5 minute period.
LAL 6	Dry lightning (same as LAL 3 but without rain). This type of lightning has the potential for extreme fire activity and is normally highlighted in fire weather forecasts with a Red Flag Warning.

Figure 16: Lightning Activity Level