



2026

Hill County

Hazard Mitigation Plan Update

Mitigating Risk for a Safe, Secure, Sustainable Future

For more information, visit our website at:

<https://www.co.hill.tx.us/>

Written comments should be forwarded to:

H2O Partners, Inc.

P. O. Box 160130

Austin, Texas 78716

info@h2opartnersusa.com

www.h2opartnersusa.com

SECTION 1 – INTRODUCTION

Background.....	1
Scope	2
Purpose	2
Authority.....	3
Summary of Sections	3

SECTION 2 – PLANNING PROCESS

Plan Preparation and Development.....	1
Review and Incorporation of Existing Plans	12
Timeline for Implementing Mitigation Actions	15
Public and Stakeholder Involvement	16

SECTION 3 – COUNTY PROFILE

Overview.....	1
Population and Demographics	4
Population Growth	5
Economic Impact	6
Natural, Cultural, and Historic Resources.....	8
Existing Land Use and Development Trends	10
Changes in Vulnerability	13
Future Growth and Development	14

SECTION 4 – RISK OVERVIEW

Hazard Description	1
Disaster Declaration History	4
Natural Hazards and Climate Change	6
Overview of Hazard Analysis	8
Hazard Ranking	9
Risk Assessment Resources and Data Limitations	10

SECTION 5 – DAM FAILURE

Hazard Description	1
Location	3
Extent	5

Historical Occurrences	15
Probability of Future Events	15
Climate Change Considerations	15
Vulnerability and Impact	15

SECTION 6 – DROUGHT

Hazard Description	1
Location	1
Extent	2
Historical Occurrences	4
Probability of Future Events	7
Climate Change Considerations	7
Vulnerability and Impact	8

SECTION 7 – EXTREME HEAT

Hazard Description	1
Location	1
Extent	1
Historical Occurrences	4
Probability of Future Events	5
Climate Change Considerations	5
Vulnerability and Impact	6

SECTION 8 – FLOOD

Hazard Description	1
Location	1
Extent	16
Historical Occurrences	32
Probability of Future Events	35
Climate Change Consideration	35
Vulnerability and Impact	35
NFIP Participation	42
NFIP Compliance and Maintenance	43
Repetitive Loss	44

SECTION 9 – HAIL

Hazard Description	1
Location	1
Extent	2
Historical Occurrences	3
Probability of Future Events	6
Climate Change Considerations	6
Vulnerability and Impact.....	7

SECTION 10 – LIGHTNING

Hazard Description	1
Location	1
Extent	1
Historical Occurrences	2
Probability of Future Events	4
Climate Change Considerations.....	4
Vulnerability and Impact	4

SECTION 11 – THUNDERSTORM WIND

Hazard Description	1
Location	1
Extent	1
Historical Occurrences	3
Probability of Future Events	9
Climate Change Considerations.....	9
Vulnerability and Impact.....	9

SECTION 12 – TORNADO

Hazard Description	1
Location	1
Extent	2
Historical Occurrences	4
Probability of Future Events	9
Climate Change Considerations.....	10

Vulnerability and Impact..... 10

SECTION 13 – WILDFIRE

Hazard Description 1
Location 2
Extent 17
Historical Occurrences 33
Probability of Future Events 37
Climate Change Considerations..... 37
Vulnerability and Impact 38

SECTION 14 – WINTER STORM

Hazard Description 1
Location 3
Extent 3
Historical Occurrences 5
Probability of Future Events 7
Climate Change Considerations..... 7
Vulnerability and Impact..... 8

SECTION 15 – HAZARDOUS MATERIALS

Hazard Description 1
Location 2
Extent 5
Historical Occurrences 5
Probability of Future Events 6
Climate Change Considerations..... 6
Vulnerability and Impact..... 6

SECTION 16 – MITIGATION STRATEGY

Mitigation Goals 1
Goal 1 1
Goal 2 1
Goal 3 2
Goal 4 2

Goal 5	2
Goal 6	2
Goal 7	3

SECTION 17 – PREVIOUS ACTIONS

Summary	1
Hill County	2
City of Abbott	19
City of Aquilla	33
City of Blum	48
City of Bynum	63
City of Covington.....	80
City of Hillsboro.....	96
City of Hubbard.....	112
City of Itasca	128
City of Malone	144
City of Mertens.....	159
City of Mount Calm	174
City of Penelope.....	190
City of Whitney.....	206

SECTION 18 – MITIGATION ACTIONS

Summary	1
Hill County	4
City of Abbott	8
City of Aquilla	14
City of Blum	19
City of Bynum	26
City of Carl’s Corner.....	31
City of Covington.....	36
City of Hillsboro.....	41
City of Hubbard.....	46
City of Itasca	51
City of Malone	56
City of Mertens.....	61

City of Mount Calm	66
City of Penelope.....	72
City of Whitney.....	77

SECTION 19 – PLAN MAINTENANCE

Plan Maintenance Procedures	1
Incorporation	1
Monitoring and Evaluation	5
Updating	7
Continued Public Involvement	8

APPENDIX A – PLANNING TEAM

APPENDIX B – PUBLIC SURVEY RESULTS

APPENDIX C – CRITICAL FACILITIES

APPENDIX D – DAM LOCATIONS

APPENDIX E – MEETING DOCUMENTATION

APPENDIX F– CAPABILITY ASSESSMENT

APPENDIX G– STATE AND FEDERAL FUNDING OPPORTUNITIES

ADOPTION RESOLUTIONS



Section 1

Introduction



SECTION 1: INTRODUCTION

Background.....	1
Scope	2
Purpose	2
Authority.....	3
Summary of Sections	3

BACKGROUND

Hill County is located in Central Texas. The largest city and county seat, City of Hillsboro, is 71 miles southwest of Dallas, Texas. Johnson County is adjacent to the north, Navarro County borders the eastern portion of the county, Ellis County is to the northeast, Limestone County is to the southeast, Bosque County is to the west, and McLennan County is to the south.

Texas is prone to extremely heavy rains and flooding, with half of the world record rainfall rates (48 hours or less).¹ While flooding is a well-known risk, Hill County is susceptible to a wide range of natural hazards, including but not limited to tornadoes, extreme heat, wildfire, and drought. These life-threatening hazards can destroy property, disrupt the economy, and lower the overall quality of life for individuals.

While it is impossible to prevent an event from occurring, the impacts to people and property can be minimized through effective mitigation. The Federal Emergency Management Agency (FEMA) defines mitigation as *sustained actions taken to reduce or eliminate long-term risk to people and property from hazards and their effects*.² Communities participate in hazard mitigation by developing hazard mitigation plans. The Texas Division of Emergency Management (TDEM) is required to review the plan, and FEMA has the authority to review and approve hazard mitigation plans through the Disaster Mitigation Act of 2000.

The Disaster Mitigation Act requires that hazard mitigation plans be reviewed and revised every five years to maintain eligibility for Hazard Mitigation Assistance (HMA) grant funding. In 2019, Hill County developed their previous Hazard Mitigation Action Plan (HMAP) to be specific to Hill County and thirteen participating cities.

FEMA approved the previous Hill County Mitigation Action Plan in 2020, which then was set to expire in 2025. Therefore, the County began the process of developing a Hazard Mitigation Plan Update in order to maintain eligibility for grant funding. The HMAP Update planning process provided an opportunity for Hill County to evaluate successful mitigation actions and explore opportunities to avoid future disaster loss.

Hill County selected H2O Partners, Inc. to write and develop the 2026 Plan Update, hereinafter titled: “Hill County Hazard Mitigation Action Plan Update 2026: Maintaining a Safe, Secure, and Sustainable Community” (Plan Update). This is a multi-jurisdictional plan; the participating jurisdictions include:

¹ Source: <http://www.floodsafety.com/texas/regional-info/san-antonio-flooding/>

² Source: <http://www.fema.gov/hazard-mitigation-planning-resources>

SECTION 1: INTRODUCTION

- Hill County
- City of Abbott
- City of Aquilla
- City of Blum
- City of Bynum
- City of Carl's Corner*
- City of Covington
- City of Hillsboro
- City of Hubbard
- City of Itasca
- City of Malone
- City of Mertens
- City of Mount Calm
- City of Penelope
- City of Whitney

**Denotes new Plan participant.*

Hazard mitigation activities are an investment in a community's safety and sustainability. It is widely accepted that the most effective hazard mitigation measures are implemented at the local government level, where decisions on the regulation and control of development are ultimately made. A comprehensive review of a hazard mitigation plan addresses vulnerabilities to hazards that exist today and in the foreseeable future. Therefore, it is essential that a plan identify projected patterns of how future development will increase or decrease a community's overall hazard vulnerability.

SCOPE

The focus of the Plan Update is to identify activities to mitigate hazards classified as "high" or "moderate" risk, as determined through a detailed hazard risk assessment conducted for Hill County and the participating jurisdictions. The hazard classification enables the participating jurisdictions to prioritize mitigation actions based on hazards that can present the greatest risk to lives and property in the geographic scope.

PURPOSE

The Plan Update was prepared by Hill County, participating jurisdictions, and H2O Partners, Inc. The purpose of the Plan Update is to protect people and structures and to minimize the costs of disaster response and recovery. The goal of the Plan Update is to minimize or eliminate long-term risks to human life, property, operations, and the environment from known hazards by identifying risks and implementing cost-effective hazard mitigation actions. The planning process is an opportunity for participating jurisdictions within Hill County, stakeholders, and the general public to evaluate and develop successful hazard mitigation actions to reduce future risk of loss of life and damage to property resulting from a disaster in Hill County.

The Mission Statement of the Plan Update is *"Maintaining a secure and sustainable future through the revision and development of targeted hazard mitigation actions to protect life and property."*

Participating jurisdictions within Hill County and planning participants identified ten natural hazards and one human-caused hazard to be addressed by the Plan Update. The specific goals of the Plan Update are to:

- Provide a comprehensive update to the 2020 HMAP;
- Minimize disruption to participating jurisdictions within Hill County following a disaster;
- Streamline disaster recovery by articulating actions to be taken before a disaster strikes to reduce or eliminate future damage;
- Demonstrate a firm local commitment to hazard mitigation principles;

SECTION 1: INTRODUCTION

- Serve as a basis for future funding that may become available through grants and technical assistance programs offered by the State or Federal government. The Plan will enable participating jurisdictions within Hill County to take advantage of rapidly developing mitigation grant opportunities as they arise; and
- Ensure that participating jurisdictions within Hill County maintain eligibility for the full range of future Federal disaster relief.

AUTHORITY



The Plan is tailored specifically for participating jurisdictions within Hill County and plan participants including Planning Team members, stakeholders, and the general public who participated in the Plan Update development process. The Plan complies with all requirements promulgated by the Texas Division of Emergency Management (TDEM) and all applicable provisions of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, Section 104 of the Disaster Mitigation Act of 2000 (DMA 2000) (P.L. 106-390), and the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004 (P.L. 108-264), which amended the National Flood Insurance Act (NFIA) of 1968 (42 U.S.C. 4001, et al). Additionally, the Plan complies with the Interim Final Rules for the Hazard Mitigation Planning and Hazard Mitigation Grant Program (44 CFR, Part 201), which specify the criteria for approval of mitigation plans required in Section 322 of the DMA 2000 and standards found in FEMA’s “Local Mitigation Planning Policy Guide” (April 2025), and the “Local Mitigation Planning Handbook” (June 2025).

SUMMARY OF SECTIONS

Sections 1 and 2 of the Plan Update outline the Plan’s purpose and development, including how Planning Team members, stakeholders, and members of the general public were involved in the planning process. Section 3 profiles the planning area’s population and economy.

Sections 4 through 15 present a hazard overview and information on individual natural and human-caused hazards in the planning area. For each hazard, the Plan Update presents a description of the hazard, a list of historical hazard events, and the results of the vulnerability and risk assessment process.

Section 16 presents hazard mitigation goals and objectives. Section 17 gives an analysis of the previous actions, and Section 18 presents hazard mitigation actions for Hill County and the participating jurisdictions. Section 19 identifies Plan maintenance mechanisms.

The list of Planning Team members and stakeholders is located in Appendix A. Public survey results are presented in Appendix B. Appendix C contains a detailed list of critical facilities for the area. Appendix D contains information regarding dam locations within Hill County. Appendix E contains information regarding workshops and meeting documentation. Capability Assessment results for the Plan participants are in Appendix F. Appendix G includes State and Federal Funding Opportunities. Resolutions denoting adoption of the Plan Update are located at the end of this document.³

³ Information contained in some of these appendices is exempt from public release under the Freedom of Information Act (FOIA).

Section 2

Planning Process



SECTION 2: PLANNING PROCESS

Plan Preparation and Development.....	1
Overview of the Plan	1
Planning Team	2
Planning Process.....	9
Kickoff Workshop.....	10
Hazard Identification.....	10
Risk Assessment	10
Mitigation Review and Development	11
Review and Incorporation of Existing Plans	12
Review	12
Incorporation of Existing Plans into the HMAP Process	12
Incorporation of the HMAP into Other Planning Mechanisms.....	13
Plan Review and Plan Update	15
Timeline for Implementing Mitigation Actions	15
Public and Stakeholder Involvement	16
Underserved Communities / Vulnerable Populations	16
Stakeholder Involvement	17
Public Meetings	21
Public Participation Survey	21

PLAN PREPARATION AND DEVELOPMENT

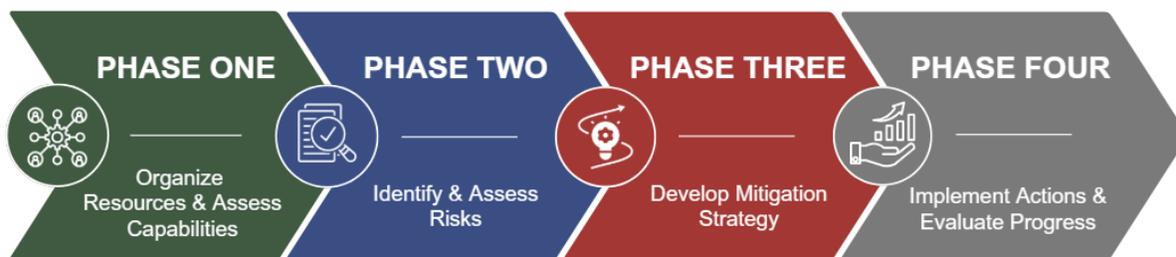
Hazard mitigation planning involves coordination with various constituents and stakeholders to develop a more disaster-resistant community. Section 2 provides an overview of the planning process, including the identification of key steps and a detailed description of how stakeholders and the public were involved.

OVERVIEW OF THE PLAN

Hill County hired H2O Partners, Inc. (Consultant Team), to provide technical support and oversee the development of the Hill County Hazard Mitigation Action Plan Update 2026. The Consultant Team used the FEMA “Local Mitigation Planning Policy Guide” (April 2025) and the “Local Mitigation Planning Handbook” (June 2025) to develop the Plan. The overall planning process is shown in Figure 2-1 below.

SECTION 2: PLANNING PROCESS

Figure 2-1. Mitigation Planning Process



Hill County, the participating jurisdictions, and the Consultant Team met in June 2025 to begin organizing resources, identify Planning Team members, and conduct a Capability Assessment.

PLANNING TEAM

Key members of H2O Partners, Inc. developed the Plan Update in conjunction with the Planning Team. The Planning Team was established using a direct representation model. Some of the responsibilities of the Planning Team included completing Capability Assessment surveys, providing input regarding the identification of hazards, identifying mitigation goals, and developing mitigation strategies. An Executive Planning Team consisting of key personnel involved in hazard mitigation activities from Hill County and the participating jurisdictions shown in Table 2-1, was formed to coordinate planning efforts and request input and participation in the planning process.

Table 2-2 reflects the Advisory Planning Team, consisting of additional representatives from area organizations and departments from Hill County and the jurisdictions that participated throughout the planning process. All Executive and Advisory Planning Team members are involved in hazard mitigation activities; those with the authority to regulate development are identified with an asterisk next to their title.

Table 2-1. Executive Planning Team

ORGANIZATION / DEPARTMENT	TITLE
Hill County – Emergency Management	Emergency Management Coordinator
City of Abbott – Administration	Bookkeeper
City of Aquilla – Administration	Mayor*
City of Blum – Administration	City Secretary
City of Bynum – Administration	Mayor Pro Tem
City of Carl’s Corner – Administration	Mayor*
City of Covington – Administration	City Secretary
City of Hillsboro – Community Enhancement / Code Enforcement	Code Enforcement / Deputy Fire Marshal
City of Hubbard – Administration	City Secretary

SECTION 2: PLANNING PROCESS

ORGANIZATION / DEPARTMENT	TITLE
City of Hubbard – Administration / Police	City Manager / Police Chief
City of Itasca – Administration	City Secretary
City of Malone – Administration	City Secretary
City of Mertens – Administration	City Secretary
City of Mount Calm – Administration	City Secretary
City of Penelope – Administration	City Secretary
City of Whitney – Administration	Operations Director

Table 2-2. Advisory Planning Team

ORGANIZATION / DEPARTMENT	TITLE
Hill County – Administration	County Clerk
Hill County – Auditor	County Auditor
Hill County – Government	County Judge*
Hill County – Sheriff	County Sheriff
Hill County – Surveying	County Surveyor
City of Abbott – Administration	Mayor*
City of Abbott – Fire	Fire Chief
City of Abbott – Fire	Firefighter
City of Abbott – Utilities	Waterworks Superintendent
City of Aquilla – Administration	City Secretary
City of Blum – Administration	Mayor*
City of Blum – Administration	Mayor Pro Tem
City of Bynum – Administration	City Secretary
City of Bynum – Emergency Management	Emergency Management Coordinator
City of Bynum – Utilities	Waterworks Superintendent
City of Carl’s Corner – Administration	City Council Member
City of Covington – Administration	Mayor*
City of Covington – Public Works	Department Head

SECTION 2: PLANNING PROCESS

ORGANIZATION / DEPARTMENT	TITLE
City of Hillsboro – Administration	City Manager
City of Hillsboro – Administration	Communications & Executive Assistant
City of Hillsboro – Administration	Mayor*
City of Hillsboro – Administration	Special Projects Coordinator
City of Hillsboro – Public Safety	Chief
City of Hillsboro – Public Safety	Commander
City of Hillsboro – Public Works	Director
City of Hubbard – Administration	Mayor*
City of Hubbard – Fire	Fire Chief
City of Itasca – Administration	City Administrator
City of Itasca – Administration	Mayor*
City of Itasca – Code Compliance and Planning & Zoning	Code Enforcement
City of Itasca – Fire / Police	Fire Chief / Police Chief
City of Itasca – Water / Utilities	Maintenance Supervisor / Emergency Contact
City of Malone – Administration	Mayor*
City of Mertens – Administration	Mayor*
City of Mount Calm – Administration	Mayor*
City of Mount Calm – Fire	Fire Chief
City of Penelope – Administration	Mayor*
City of Whitney – Administration	City Secretary
City of Whitney – Administration	Mayor*
City of Whitney – Code Enforcement	Code Enforcement Officer
City of Whitney – Emergency Medical Services (EMS)	Director
City of Whitney – Fire	Fire Chief
City of Whitney – Planning and Zoning	Court Clerk
City of Whitney – Police	Police Chief
City of Whitney – Public Works	Director

SECTION 2: PLANNING PROCESS

Additionally, a Stakeholder Group was invited via email to participate in the planning process by attending meetings, commenting on draft versions of the Plan, and/or providing data to inform the planning process. The Consultant Team, Planning Teams, and Stakeholder Group coordinated to identify mitigation goals and develop mitigation strategies and actions for the Plan. Appendix A provides a complete listing of all participating Planning Team members and stakeholders from Hill County and the participating jurisdictions by organization, title, and stakeholder type. Stakeholder involvement is discussed further below.

Based on the results of the completed Capability Assessments, Hill County and the participating jurisdictions described methods for achieving future hazard mitigation measures by expanding existing capabilities. For example, each jurisdiction has an opportunity to identify opportunities for cross-training or increasing the technical expertise of staff by attending free training available through FEMA and the Texas Division of Emergency Management (TDEM) by monitoring classes and availability through the TDEM Training Division Learning Management Site (LMS) (<https://tdem.texas.gov/preparedness/training>). In addition, each jurisdiction can identify Planning Team members with the authority to monitor the Plan Update and identify grant funding opportunities for expanding staff. Other options for improving capabilities for each jurisdiction are included in Table 2-3.

Table 2-3. Opportunities for Improving and Expanding Existing Capabilities by Jurisdiction

JURISDICTION	OPPORTUNITIES
Hill County	<ul style="list-style-type: none"> ● Develop a Capital Improvement Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Comprehensive Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Community Wildfire Protection Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Review current floodplain ordinances for opportunities to increase resiliency such as modifying permitting or building codes. ● Develop building and land use ordinances that will require all new developments to conform to the highest mitigation standards.
City of Abbott	<ul style="list-style-type: none"> ● Develop a Capital Improvement Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Comprehensive Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Community Wildfire Protection Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop floodplain ordinances to increase resiliency such as modifying permitting or building codes. ● Develop building and land use ordinances that will require all new developments to conform to the highest mitigation standards.

SECTION 2: PLANNING PROCESS

JURISDICTION	OPPORTUNITIES
City of Aquilla	<ul style="list-style-type: none"> ● Develop a Capital Improvement Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Comprehensive Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Community Wildfire Protection Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop floodplain ordinances to increase resiliency such as modifying permitting or building codes. ● Review current building ordinances that will require all new developments to conform to the highest mitigation standards. ● Develop land use ordinances that will require all new developments to conform to the highest mitigation standards.
City of Blum	<ul style="list-style-type: none"> ● Develop a Capital Improvement Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Comprehensive Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Community Wildfire Protection Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Review current floodplain ordinances for opportunities to increase resiliency such as modifying permitting or building codes. ● Develop building and land use ordinances that will require all new developments to conform to the highest mitigation standards.
City of Bynum	<ul style="list-style-type: none"> ● Develop a Capital Improvement Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Comprehensive Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Community Wildfire Protection Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop floodplain ordinances to increase resiliency such as modifying permitting or building codes. ● Develop building and land use ordinances that will require all new developments to conform to the highest mitigation standards.
City of Carl's Corner	<ul style="list-style-type: none"> ● Integrate risk information from HMAP into future updates to the Capital Improvement Plan. ● Integrate risk information from HMAP into future updates to the Comprehensive Plan. ● Integrate risk information from HMAP into future updates to the Community Wildfire Protection Plan. ● Review floodplain ordinances for opportunities to increase resiliency such as modifying permitting or building codes.

SECTION 2: PLANNING PROCESS

JURISDICTION	OPPORTUNITIES
	<ul style="list-style-type: none"> ● Review current building and land use ordinances that will require all new developments to conform to the highest mitigation standards.
City of Covington	<ul style="list-style-type: none"> ● Develop a Capital Improvement Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Comprehensive Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Integrate risk information from HMAP into future updates to the Community Wildfire Protection Plan. ● Develop floodplain ordinances to increase resiliency such as modifying permitting or building codes. ● Develop building ordinances that will require all new developments to conform to the highest mitigation standards. ● Review current land use ordinances that will require all new developments to conform to the highest mitigation standards.
City of Hillsboro	<ul style="list-style-type: none"> ● Integrate risk information from HMAP into future updates to the Capital Improvement Plan. ● Integrate risk information from HMAP into future updates to the Comprehensive Plan. ● Develop a Community Wildfire Protection Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Review current floodplain ordinances for opportunities to increase resiliency such as modifying permitting or building codes. ● Review current building and land use ordinances that will require all new developments to conform to the highest mitigation standards.
City of Hubbard	<ul style="list-style-type: none"> ● Integrate risk information from HMAP into future updates to the Capital Improvement Plan. ● Integrate risk information from HMAP into future updates to the Comprehensive Plan. ● Develop a Community Wildfire Protection Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Review current floodplain ordinances for opportunities to increase resiliency such as modifying permitting or building codes. ● Review current building and land use ordinances that will require all new developments to conform to the highest mitigation standards.
City of Itasca	<ul style="list-style-type: none"> ● Integrate risk information from HMAP into future updates to the Capital Improvement Plan. ● Develop a Comprehensive Plan based on information in the risk assessment and identified mitigation projects within the HMAP.

SECTION 2: PLANNING PROCESS

JURISDICTION	OPPORTUNITIES
	<ul style="list-style-type: none"> ● Develop a Community Wildfire Protection Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Review current floodplain ordinances for opportunities to increase resiliency such as modifying permitting or building codes. ● Develop building and land use ordinances that will require all new developments to conform to the highest mitigation standards.
City of Malone	<ul style="list-style-type: none"> ● Develop a Capital Improvement Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Comprehensive Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Community Wildfire Protection Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Review current floodplain ordinances for opportunities to increase resiliency such as modifying permitting or building codes. ● Review current building and land use ordinances that will require all new developments to conform to the highest mitigation standards.
City of Mertens	<ul style="list-style-type: none"> ● Develop a Capital Improvement Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Comprehensive Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Community Wildfire Protection Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Review current floodplain ordinances for opportunities to increase resiliency such as modifying permitting or building codes. ● Develop building and land use ordinances that will require all new developments to conform to the highest mitigation standards.
City of Mount Calm	<ul style="list-style-type: none"> ● Develop a Capital Improvement Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Comprehensive Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Develop a Community Wildfire Protection Plan based on information in the risk assessment and identified mitigation projects within the HMAP. ● Review current floodplain ordinances for opportunities to increase resiliency such as modifying permitting or building codes. ● Develop building and land use ordinances that will require all new developments to conform to the highest mitigation standards.

SECTION 2: PLANNING PROCESS

JURISDICTION	OPPORTUNITIES
City of Penelope	<ul style="list-style-type: none"> • Develop a Capital Improvement Plan based on information in the risk assessment and identified mitigation projects within the HMAP. • Develop a Comprehensive Plan based on information in the risk assessment and identified mitigation projects within the HMAP. • Develop a Community Wildfire Protection Plan based on information in the risk assessment and identified mitigation projects within the HMAP. • Develop floodplain ordinances to increase resiliency such as modifying permitting or building codes. • Develop building and land use ordinances that will require all new developments to conform to the highest mitigation standards.
City of Whitney	<ul style="list-style-type: none"> • Integrate risk information from HMAP into future updates to the Capital Improvement Plan. • Integrate risk information from HMAP into future updates to the Comprehensive Plan. • Develop a Community Wildfire Protection Plan based on information in the risk assessment and identified mitigation projects within the HMAP. • Review current floodplain ordinances for opportunities to increase resiliency such as modifying permitting or building codes. • Review current building and land use ordinances that will require all new developments to conform to the highest mitigation standards.

Sample hazard mitigation actions developed with similar hazard risks were shared at the meetings. These important discussions resulted in the development of multiple mitigation actions that are included in the Plan Update to further mitigate risk from natural hazards in the future.

The Planning Team developed hazard mitigation actions for mitigating risk from all of the hazards including potential flood, tornado, and wildfire events. These actions include but are not limited to implementing an education and awareness program to educate citizens of hazards that can affect the area and acquiring and implementing an outdoor hazard warning system.

PLANNING PROCESS

The process used to prepare the Plan Update followed the four major steps included at Figure 2-1. After the Planning Team was organized, a capability assessment was developed and distributed at the Kickoff Workshop. Hazards were identified and assessed, and results associated with each of the hazards were provided at the Risk Assessment Workshop. Based on the planning area’s identified vulnerabilities, specific mitigation strategies were discussed and developed at the Mitigation Strategy Workshop. Finally, Plan maintenance and implementation procedures were developed and are included in Section 19. Participation of Planning Team members, stakeholders, and the public at each of the workshops is documented in Appendix E. The Cities of Aquilla, Blum, Bynum, Covington, Itasca, Mertens, and Mount Calm were unable to attend workshops throughout the planning process. The Consultant Team followed up directly

SECTION 2: PLANNING PROCESS

with these jurisdictions and the County to review information discussed and gather documents that were collected during the workshop.

At the Plan development workshops held throughout the planning process described herein, the following factors were taken into consideration:

- The nature and magnitude of risks currently affecting the communities;
- Hazard mitigation goals to address current and expected conditions;
- Whether current resources will be sufficient for implementing the Plan Update;
- Implementation problems, such as technical, political, legal, and coordination issues that may hinder development;
- Anticipated outcomes; and
- How the participating jurisdictions within Hill County, agencies, and partners will participate in implementing the Plan.

KICKOFF WORKSHOP

The Kickoff Workshop was held on June 3, 2025, at the Office of Emergency Management in the City of Hillsboro. Participants were also given the option to attend virtually, via Zoom. The initial workshop informed participating officials and key department personnel about how the planning process pertained to their distinct roles and responsibilities and engaged stakeholder groups that focus on vulnerable populations and underserved communities including, but not limited to, public libraries, economic development agencies, local colleges, and surrounding communities. In addition to the kickoff presentation, participants received the following information:

- Project overview regarding the planning process;
- Public survey access information;
- Hazard Ranking form; and
- Capability Assessment survey for completion.

A risk ranking exercise was conducted at the Kickoff Workshop to get input from the Planning Team and stakeholders pertaining to various risks from a list of natural hazards affecting the planning area. Each participant at the Kickoff Workshop was provided a risk ranking sheet that asked participants to rank hazards in terms of the probability or frequency of occurrence, extent of spatial impact, and the magnitude of impact. The results of the ranking sheets identified unique perspectives on varied risks throughout the planning area. The assessments were also used to set priorities for hazard mitigation actions based on potential loss of lives and dollar losses.

HAZARD IDENTIFICATION

At the Kickoff Workshop, and through e-mail and phone correspondence, the Planning Team conducted preliminary hazard identification. The Planning Team, in coordination with the Consultant Team, reviewed and considered a full range of natural hazards. Once identified, the teams narrowed the list to significant hazards by reviewing hazards affecting the area, the 2023 State of Texas Hazard Mitigation Plan, and initial study results from reputable sources such as federal and state agencies. Based on this initial analysis, the teams identified a total of ten natural hazards and one human-caused hazard which pose a significant threat to the planning area.

RISK ASSESSMENT

An initial risk assessment for the participating jurisdictions within Hill County was completed in June 2025, and results were presented to Planning Team members at the Risk Assessment Workshop held on July 10, 2025, at the Office of Emergency Management in the City of Hillsboro.

SECTION 2: PLANNING PROCESS

Participants were also given the option to attend virtually, via Zoom. At the workshop, the characteristics and consequences of each hazard were evaluated to determine the extent to which the planning area would be affected in terms of potential danger to property and citizens.

Property and crop damages were estimated by gathering data from the National Centers for Environmental Information (NCEI) and the National Oceanic and Atmospheric Administration (NOAA). The assessment also examined the impact of various hazards on the built environment, including general building stock, critical facilities, lifelines, and infrastructure. The resulting risk assessment profiled hazard events, provided information on previous occurrences, estimated probability of future events, and detailed the spatial extent and magnitude of impact on people and property. Following the Risk Assessment Workshop, past event data from NCEI was provided to the Planning Team for their review and assistance in identifying significant events. A hazard profile and vulnerability analysis for each of the hazards can be found in Sections 4 through 15.

MITIGATION REVIEW AND DEVELOPMENT

Developing the mitigation strategy for the Plan Update involved identifying mitigation goals and new mitigation actions. A Mitigation Strategy Workshop was held on September 11, 2025, at the Office of Emergency Management in the City of Hillsboro. Participants were also given the option to attend virtually, via Zoom. In addition to the Planning Team, stakeholder groups were invited to attend the workshop. Regarding hazard mitigation actions, workshop participants emphasized the desire for drought projects. Additionally, the participating jurisdictions were proactive in identifying mitigation actions to lessen the risk of all the identified hazards included in the Plan Update.

An inclusive and structured process was used to develop and prioritize new hazard mitigation actions for the Plan Update. The prioritization method was based on FEMA's STAPLEE criteria and included social, technical, administrative, political, legal, economic, and environmental considerations. As a result, each Planning Team member assigned an overall priority to each hazard mitigation action. The overall priority of each action is reflected in the hazard mitigation actions found in Section 18.

Planning Team members then developed action plans identifying proposed actions, costs and benefits, the responsible organization(s), effects on new and existing buildings, implementation schedules, priorities, and potential funding sources.

Specifically, the process involved:

- Listing optional hazard mitigation actions based on information collected from previous plan reviews, studies, and interviews with federal, state, and local officials. Workshop participants reviewed the optional mitigation actions and selected actions that were most applicable to their area of responsibility, cost-effective in reducing risk, easily implemented, and likely to receive institutional and community support.
- Workshop participants inventoried federal and state funding sources that could assist in implementing the proposed hazard mitigation actions. Information was collected, including the program name, authority, purpose of the program, types of assistance and eligible projects, conditions on funding, types of hazards covered, matching requirements, application deadlines, and a point of contact.
- Planning Team members considered the benefits that would result from implementing the hazard mitigation actions compared to the cost of those projects. Although detailed cost-

SECTION 2: PLANNING PROCESS

benefit analyses were beyond the scope of the Plan Update, Planning Team members utilized economic evaluation as a determining factor between hazard mitigation actions.

- Planning Team members then selected and prioritized mitigation actions.

Hazard mitigation actions identified in the process were made available to the Planning Team for review. The draft Plan was maintained on file by Hill County and the participating jurisdictions and was made available to the general public for review.

REVIEW AND INCORPORATION OF EXISTING PLANS

REVIEW

Background information utilized during the planning process included various studies, plans, reports, and technical information from sources such as FEMA, the United States Army Corps of Engineers (USACE), the U.S. Fire Administration, the National Oceanic and Atmospheric Administration (NOAA), the Texas Water Development Board (TWDB), the Texas Commission on Environmental Quality (TCEQ), the Texas State Data Center, the Texas A&M Forest Service, the Texas Division of Emergency Management (TDEM), and local hazard assessments and plans. Section 4 and the hazard-specific sections of the Plan Update (Sections 5-15) summarize the relevant background information.

Specific background documents, including those from FEMA, provided information on hazard risk, hazard mitigation actions currently being implemented, and potential mitigation actions. Previous hazard events, occurrences, and descriptions were identified through NOAA's National Centers for Environmental Information (NCEI). Results of past hazard events were found through searching the NCEI Storm Event Database. The USACE studies were reviewed for their assessment of risk and potential projects in the region. Information from the State Demographer was reviewed for population and other projections and included in Section 3 of the Plan Update. Data from the Texas A&M Forest Service was used to appropriately rank the wildfire hazard, and to help identify potential grant opportunities. Materials from FEMA and TDEM were reviewed for guidance on Plan Update development requirements.

INCORPORATION OF EXISTING PLANS INTO THE HMAP PROCESS

A Capability Assessment was completed by key departments from the participating jurisdictions within Hill County which provided information pertaining to existing plans, policies, ordinances, and regulations to be integrated into the goals and objectives of the Plan Update. The relevant information was included in a master Capability Assessment, Appendix F.

Existing projects and studies were utilized as a starting point for discussing hazard mitigation actions among Planning and Consultant Team members. For example, the City of Hubbard catalogued, evaluated, and updated floodplain regulations within the City to comply with FEMA regulations. Subsequently, the City included mitigation actions to create a master drainage plan and increase drainage capacity throughout the City to build upon these ongoing efforts to reduce flood risk.

The current effective Digital Flood Insurance Rate Map (DFIRM), effective date June 2, 2011, was used in the flood hazard risk assessment (Section 8). The FIRM map for Hill County and the participating jurisdictions (map ID 48217C, panels 25-725) shows the areas throughout the planning area at greater risk of flooding. The FIS report contains detailed flood elevation data in flood profiles and data tables and is utilized in determining extent.

SECTION 2: PLANNING PROCESS

Additionally, policies and ordinances were reviewed by the participating jurisdictions within Hill County. Other plans were reviewed, such as the Capital Improvement Plans, Emergency Operations Plans, and Drought Contingency Plans to identify any additional mitigation actions. Furthermore, applicable information was included in the wildfire risk assessment from the jurisdictions' Community Wildfire Protection Plans.

Finally, the 2023 State of Texas Hazard Mitigation Plan, developed by TDEM, was discussed in the initial planning meeting in order to develop a specific group of hazards to address in the planning effort. The 2023 State Plan was also used as a guidance document, along with FEMA materials, in the development of the Hill County Hazard Mitigation Action Plan Update 2026.

INCORPORATION OF THE HMAP INTO OTHER PLANNING MECHANISMS

Planning Team members will integrate implementation of the Plan Update with other planning mechanisms, such as the Emergency Operations Plan. Existing plans for participating jurisdictions will be reviewed and incorporated into the Plan Update, as appropriate. This section discusses how the Plan Update will be implemented by the participating jurisdictions within Hill County. It also addresses how the Plan Update will be evaluated and improved over time, and how the public will continue to be involved in the hazard mitigation planning process.

Hill County and the participating jurisdictions will be responsible for implementing hazard mitigation actions contained in Section 18. Each hazard mitigation action has been assigned to a specific County or City department that is responsible for tracking and implementing the action.

A funding source has been listed for each identified hazard mitigation action and may be utilized to implement the action. An implementation time period has also been assigned to each hazard mitigation action as an incentive and to determine whether actions are implemented on a timely basis.

Participating jurisdictions within Hill County will integrate hazard mitigation actions contained in the Plan Update with existing planning mechanisms such as ordinances, Emergency Operations or Management Plans, and other local and area planning efforts. Hill County and the participating jurisdictions will work closely with area organizations to coordinate the implementation of hazard mitigation actions that benefit the planning area in terms of financial and economic impact.

Upon formal adoption of the Plan Update, Planning Team members from the participating jurisdictions will review existing plans along with building codes to guide development and ensure that hazard mitigation actions are implemented. Each of the jurisdictions will be responsible for coordinating periodic reviews of the Plan Update with members of the Advisory Planning Team to ensure integration of hazard mitigation strategies into these planning mechanisms and codes. The Planning Team will also conduct periodic reviews of various existing planning mechanisms and analyze the need for any revisions or updates in light of the approved Plan Update. Participating jurisdictions within Hill County will ensure that future long-term planning objectives will contribute to the goals of the Plan Update to reduce the long-term risk to life and property from moderate and high-risk hazards. Within one year of formal adoption of the Plan Update, existing planning mechanisms will be reviewed and analyzed as they pertain to the Plan Update.

Planning Team members will review and revise, as necessary, the long-range goals and objectives in the strategic plan and budgets to ensure that they are consistent with the Plan Update.

SECTION 2: PLANNING PROCESS

Furthermore, Hill County and the participating jurisdictions will work with neighboring jurisdictions to advance the goals of the Plan Update as it applies to ongoing, long-range planning goals and actions for mitigating risk to natural hazards throughout the planning area.

Table 2-4 identifies types of planning mechanisms and examples of methods for incorporating the Plan into other planning efforts.

Table 2-4. Examples of Methods of Incorporation

PLANNING MECHANISM	INCORPORATION OF PLAN
Annual Budget Reviews	Various departments and key personnel that participated in the planning process for Hill County and the participating jurisdictions will review the Plan Update and mitigation actions therein when conducting their annual budget review. Allowances will be made in accordance with grant applications sought, and mitigation actions that will be undertaken, according to the implementation schedule of the specific action.
Capital Improvement Plans	Several participating jurisdictions within Hill County have a Capital Improvement Plan (CIP) in place or under development. Prior to any revisions to the CIPs, City departments will review the risk assessment and mitigation strategy sections of the HMAP, as limiting public spending in hazardous zones is one of the most effective long-term mitigation actions available to local governments.
Community Wildfire Protection Plans	Community Wildfire Protection Plans (CWPPs) include preventative and corrective actions to address a community's risk of damage from wildfire. Information found in Section 13 of this Plan Update discussing the people and property at risk to wildfire will be reviewed and revised when the Cities update or develop their CWPPs.
Comprehensive Plans	Several participating jurisdictions within Hill County have a Comprehensive Land Use Plan in place or under development. Since Comprehensive Plans involve developing a unified vision for a community, the mitigation vision and goals of the Plan Update will be reviewed in the development or revision of a Comprehensive Plan.
Floodplain Management Plans	Floodplain Management Plans include preventative and corrective actions to address the flood hazard. Therefore, the actions for flooding and information found in Section 8 of this Plan Update discussing the people and property at risk to flood will be reviewed and revised when the County or Cities update their management plan and / or develops a new plan.
Grant Applications	The HMAP will be evaluated by Hill County and the participating jurisdictions when grant funding is sought for mitigation projects. If a project is not in the Plan Update, a Plan Revision may be necessary to include the action in the Plan Update.

SECTION 2: PLANNING PROCESS

PLANNING MECHANISM	INCORPORATION OF PLAN
Regulatory Plans	Currently, several participating jurisdictions within Hill County have regulatory plans in place or under development, such as Emergency Operations Plans, Land Use Plans, and/or Evacuation Plans. The Plan Update will be consulted when County or City departments review or revise their current regulatory planning mechanisms, or in the development of regulatory plans that are not currently in place.

Appendix F Capability Assessment provides an overview of Planning Team members’ existing planning and regulatory capabilities. These existing capabilities provide the mechanisms to implement the mitigation strategy objectives. For example, the adoption of building codes and implementation of land use regulations have been demonstrated to help communities avoid losses from natural hazard events. Currently, the Cities of Aquilla, Carl’s Corner, Covington, Hillsboro, Hubbard, Malone, Penelope, and Whitney have building codes, zoning ordinances, and/or land use ordinances in place. Please refer to Appendix F for a complete inventory of each participating jurisdiction’s capabilities.

It should be noted for the purposes of the Plan Update that the HMAP has been used as a reference when reviewing and updating all plans and ordinances for the entire planning area, including all participating jurisdictions. The Emergency Management Action Plans developed for Hill County and the Cities of Abbott, Bynum, Carl’s Corner, Covington, Hillsboro, Itasca, Penelope, and Whitney are updated every 5 years and incorporate goals, objectives and actions identified in the Mitigation Plan.

PLAN REVIEW AND PLAN UPDATE

As with the development of Plan Update, participating jurisdictions within Hill County will oversee the review and update process for relevance and if necessary, make adjustments. At the beginning of each fiscal year, Planning Team members will meet to evaluate the Plan Update and review other planning mechanisms to ensure consistency with long-range planning efforts. In addition, planning participants will also meet once a year, by conference call or presentation, to re-evaluate prioritization of the hazard mitigation actions. The Plan Update may be amended to include additional hazard mitigation actions as they are developed.

TIMELINE FOR IMPLEMENTING MITIGATION ACTIONS

Both the Executive Planning Team (Table 2-1) and the Advisory Planning Team (Table 2-2) will engage in discussions regarding a timeframe for how and when to implement each hazard mitigation action. Considerations include when the action will be started, how existing planning mechanisms’ timelines affect implementation, and when the action should be fully implemented. Timeframes may be general, and there will be short-, medium-, and long-term goals for implementation based on prioritization of each action, as identified on the individual hazard mitigation action tables included in the Plan Update for participating jurisdictions within Hill County.

Both the Executive and Advisory Planning Team will evaluate and prioritize the most suitable hazard mitigation actions for the community to implement. The timeline for implementation of actions will partially be directed by participating jurisdiction’s comprehensive planning process,

SECTION 2: PLANNING PROCESS

budgetary constraints, and community needs. Hill County and the participating jurisdictions are committed to addressing and implementing hazard mitigation actions that may be aligned with and integrated into the Plan Update.

Overall, the Planning Team is in agreement that goals and actions of the Plan Update shall be aligned with the timeframe for implementation of hazard mitigation actions with respect to annual review and updates of existing plans and policies.

PUBLIC AND STAKEHOLDER INVOLVEMENT

An important component of hazard mitigation planning is public participation and stakeholder involvement. Input from individual citizens and the community as a whole provides the Planning Team with a greater understanding of local concerns and increases the likelihood of successfully implementing hazard mitigation actions. If citizens and stakeholders, such as local businesses, non-profits, hospitals, and schools are involved, they are more likely to gain a greater appreciation of the risks that hazards may present in their community and take steps to reduce or mitigate their impact.

The public was involved in the development of the Hill County Hazard Mitigation Action Plan Update 2026 at different stages prior to official Plan Update approval and adoption. Public input was sought using three methods: (1) open public meetings; (2) survey instruments; and (3) making the draft Plan Update available for public review on participating jurisdictions' websites and at local municipal offices.

The draft Plan Update was made available to the general public for review and comment on participating jurisdictions' websites and at local municipal offices. The public was notified at the public meetings that the draft Plan Update would be available for review. No feedback was received on the draft Plan Update, although it was given on the public survey, and all relevant information was incorporated into the Plan Update. Public input was utilized to assist in identifying hazards that were of most concern to the citizens of the County and what actions they felt should be included and prioritized.

The Plan Update will be advertised and posted on Hill County's and participating jurisdictions' websites upon approval from FEMA, and a copy will be kept at the Hill County Courthouse.

UNDERSERVED COMMUNITIES / VULNERABLE POPULATIONS

A goal of the Planning Team was building equity into the planning process. Inviting organizations that aid underserved communities and socially vulnerable populations to participate in the Plan Update helps ensure equitable access to the planning process and the meaningful participation of all residents. In addition, these groups can make sure that the interests of vulnerable populations are accurately represented and act as a valuable resource to share information with those vulnerable populations.

The Planning Team worked to identify local agencies, organizations, and community leaders that focus on reaching vulnerable populations and underserved communities. These organizations were included in the planning process as stakeholders and were invited to participate in the planning process via email. These agencies were encouraged to post public planning meetings as well as solicit feedback via the public survey.

All stakeholders and Planning Team members were invited to participate in the development of the Plan Update during this process, including all public meetings and surveys. All stakeholders

SECTION 2: PLANNING PROCESS

are listed in Table 2-5 below. Some stakeholders have been detailed below along with the agency's mission, including:

- Habitat for Humanity of Hill County – A nonprofit, ecumenical Christian housing ministry that seeks to eliminate poverty, housing, and homelessness from the world, and to make decent shelter a matter of conscience and action.¹
- Hill County Kids – A program designed to feed the school-age children of Hill County on the weekends, when school lunch programs are not available to them. Their mission statement is “*Feeding hungry Hill County Kids, one child at a time.*” The organization’s goal is to ensure that kids have food that they can call their own and eat without it having to be prepared. Food sacks include several different kinds of snack foods and simple meals that a child can open and serve themselves.²
- Mission Hillsboro (MHMC) – MHMC’s mission is to show the love of Christ by providing personalized, quality health services to the medically underserved of Hill County for the purpose of sharing the Gospel of Christ to the glory of God. The Clinic serves patients of all ages who reside in Hill County and have no medical insurance.³

In addition, public notices were posted on public bulletin boards throughout the planning area, as well as posted on the participating jurisdictions’ websites and social media platforms. For a sample of these postings, please see Appendix E. In addition to public meetings, the Planning and Consultant Teams developed a public survey designed to solicit public input during the planning process from citizens and stakeholders and to obtain input and feedback on the Mitigation Plan Update. For each form of engagement, all efforts were made to reach Hill County’s underserved communities and vulnerable populations throughout the planning process. Additional survey information is provided at the end of this section.

STAKEHOLDER INVOLVEMENT

Stakeholder involvement is essential to hazard mitigation planning since a wide range of stakeholders can provide input on specific topics and from various points of view. Throughout the planning process, members of community groups, local businesses, and neighboring jurisdictions were invited to participate in development of the Plan Update. The Stakeholder Group (Table 2-5) included a broad range of representatives from both the public and private sectors and served as a key component in the County and participating jurisdictions’ outreach efforts for development of the Plan Update. Documentation of stakeholder meetings is found in Appendix E. A list of organizations invited to attend via email is found in Table 2-5. Those that participated in the public meetings are identified with a plus symbol (+) next to their stakeholder type.

Table 2-5. Stakeholder Working Group

AGENCY	TITLE	STAKEHOLDER TYPE
2604 VFD	Fire Chief	Community Organization
Abbott ISD	Superintendent	Academia

¹ Source: <https://www.habitat.org/tx/hillsboro/habitat-humanity-hill-county-texas>

² Source: <https://www.hillcountykids.org/aboutus>

³ Source: <https://missionhmc.org/front-page/>

SECTION 2: PLANNING PROCESS

AGENCY	TITLE	STAKEHOLDER TYPE
Advanced Command Force	Founder	Regional and Local Agency
American Red Cross Central and South Texas Region	Regional Communication Director (Heart of Texas)	Non-Profit / Community Organization
Aquilla VFD	Fire Chief	Community Organization
Aquilla ISD	Chief of Police	Academia
Blum Fire and Rescue	Fire Chief	Community Organization
Blum ISD	Superintendent	Academia
Bosque County	Emergency Manager	Neighboring Jurisdiction
Brazos River Authority	Region G Resource Representative	Utility Provider
Bynum ISD	Administrative Assistant	Academia
Bynum VFD	Fire Chief	Community Organization+
Covington ISD	Superintendent	Academia
Covington VFD	Fire Chief	Community Organization
Department of Homeland Security	Media Representative	Federal Agency
Ellis County	Emergency Management Coordinator	Neighboring Jurisdiction
Environmental Protection Agency (EPA)	Director of Superfund and Emergency Management Division	Federal Agency
Environmental Protection Agency (EPA)	Regional Administrator	Federal Agency
Habitat for Humanity	General Representative	Non-Profit / Community Organization
Heart of Texas Council of Governments	Emergency Preparedness Planner	Regional and Local Agency
HILCO Electric Cooperative	General Manager	Utility Provider
Hill College	Campus Safety Officer	Academia
Hill College	Executive Assistant	Academia
Hill County - Blackland SWCD (Soil Water Conservation District)	Field Representative	Utility Provider
Hill County ESD 1	President	Local Department+

SECTION 2: PLANNING PROCESS

AGENCY	TITLE	STAKEHOLDER TYPE
Hill County Indigent Health Care	General Representative	Healthcare Agency
Hill County Kids	General Representative	Non-Profit / Community Organization
Hill County Paw Pals	General Representative	Community Organization
Hill County Veteran Service Office	Veteran Service Officer	Regional and Local Agency
Hill Regional Hospital	Chief Financial Officer / Administrator	Healthcare Agency
Hillsboro Area Chambers of Commerce	General Representative	Community Organization
Hillsboro Economic Development Corporation	Executive Director	Regional and Local Agency
Hillsboro Fire and Rescue	Fire Chief	Community Organization
Hillsboro ISD	School Resource Officer	Academia
Hillsboro Library	Librarian	Community Organization
Hubbard VFD	Fire Chief	Community Organization
Itasca Fire Department	Fire Chief	Community Organization
Itasca ISD	Superintendent	Academia
Johnson County	Emergency Management Coordinator	Neighboring Jurisdiction
Lake Whitney Public Library	Library Director	Community Organization
Lake Whitney Search and Rescue	Fire Chief	Community Organization
Lakeview VFD	Fire Chief	Community Organization
Limestone County	Floodplain Administrator	Neighboring Jurisdiction
Malone VFD	Fire Chief	Community Organization
McLennan County	Emergency Management Coordinator	Neighboring Jurisdiction
McLennan - Hill County Tehuacana Creek WCID 1	General Manager	Utility Provider
Mertens VFD	Fire Chief	Community Organization
Mission Hillsboro	General Representative	Non-Profit / Community Organization
Mount Calm Public Library	Librarian	Community Organization

SECTION 2: PLANNING PROCESS

AGENCY	TITLE	STAKEHOLDER TYPE
Mount Calm VFD	Fire Chief	Community Organization+
National Weather Service (NWS)	Dallas/Fort Worth Representative	Federal Agency
Navarro County	Emergency Management Coordinator	Neighboring Jurisdiction
Penelope ISD	Superintendent	Academia
Penelope VFD	Fire Chief	Community Organization
Peoria VGD	Fire Chief	Community Organization
Peterson Health	Chief Information Officer	Healthcare Agency
Texas A&M AgriLife Extension	County Representative	State Agency
Texas A&M Forest Service	Area Operations Chief	State Agency
Texas Commission on Environmental Quality, Region 9	Executive Assistant	State Agency
Texas Commission on Environmental Quality, Region 9	Regional Director	State Agency
Texas Department of Health and Human Services	Deputy Executive Commissioner, Community Services	State Agency
Texas Department of Health and Human Services	General Representative	State Agency
Texas Department of Housing and Community Affair	Director of Single Family and Homeless Program	State Agency
Texas Department of Housing and Community Affair	Manager of Single-Family Program	State Agency
Texas Department of Transportation	District Engineer	State Agency
Texas Department of Transportation	Hillsboro Engineer	State Agency
Texas Division of Emergency Management, Region 8	District Chief, DC 11	State Agency
Texas Division of Emergency Management, Region 8	Section Chief	State Agency
Texas State Representative	House District 13	State Legislature
Texas State Senate	Senate District 22	State Legislature
Texas State Soil & Water	Program Supervisor	State Agency

SECTION 2: PLANNING PROCESS

AGENCY	TITLE	STAKEHOLDER TYPE
Texas Water Development Board	Regional Water Planning Assistant	State Agency
Texas Windstorm Associations	Regional Water Project Development Assistant	State Agency
The Lakeland newspaper	General Representative	Community Organization
US Army Corps of Engineers	Fort Worth & Galveston District	Federal Agency
US Fish & Wildlife	Southwest Regional Representative	Federal Agency
White Bluff on Lake Whitney VFD	Fire Chief	Community Organization
Whitney Fire and Rescue	Fire Chief	Community Organization
Whitney ISD	Director of Operations	Academia
Whitney ISD	Security	Academia
Woodbury VFD	Fire Chief	Community Organization

Stakeholders and participants from neighboring communities that attended the Planning Team and public meetings played a key role in the planning process. For example, wildfires were a concern to stakeholders, so several participating jurisdictions within Hill County included an action to create and implement a program to initiate controlled burns throughout their respective cities.

PUBLIC MEETINGS

A series of public meetings were held throughout the planning area to collect public and stakeholder input. Topics of discussion included the purpose of hazard mitigation, discussion of the planning process, and types of natural hazards. Each participating jurisdiction within Hill County released information regarding the public meetings in their area to increase public participation in the Plan Update development process, through posting on their website, on social media sources, and/or posting the information on bulletin boards in public facilities. A sampling of these notices can be found in Appendix E, along with the documentation on the public meetings.

Public meetings were held on the following dates:

- June 3, 2025, at the Office of Emergency Management in the City of Hillsboro
- July 10, 2025, at the Office of Emergency Management in the City of Hillsboro
- September 11, 2025, at the Office of Emergency Management in the City of Hillsboro

PUBLIC PARTICIPATION SURVEY

In addition to public meetings, the Planning and Consultant Teams developed a public survey designed to solicit public input during the planning process from citizens and stakeholders to obtain data regarding the identification of any potential hazard mitigation actions or problem areas. The survey was promoted by local officials and a link to the survey was posted on participating jurisdictions' websites. A total of 156 surveys were completed online. The survey results are presented in Appendix B. Hill County and the participating jurisdictions reviewed the

SECTION 2: PLANNING PROCESS

input from the surveys and decided which information to incorporate into the Plan Update as hazard mitigation actions. For example, results indicate that extreme heat and thunderstorm wind are the hazards of highest concern for the public. Constructing, maintaining, and protecting infrastructure as well as protecting and improving the reliability of utilities were the two main actions indicated that the local government should take to mitigate risk to these hazards. As a result, the Planning Team has included mitigation actions to harden critical facilities to hazard-resistant levels, as well as to acquire and install generators with hard-wired quick connections at all critical facilities. Additional actions have been included to create, adopt, and enforce a water conservation ordinance to further enhance community resilience to extreme heat impacts.



Section 3

County Profile

SECTION 3: COUNTY PROFILE

Overview	1
Population and Demographics	4
Population Growth	5
Economic Impact	6
Natural, Cultural, and Historic Resources	8
Existing Land Use and Development Trends	10
Changes in Vulnerability	13
Future Growth and Development	14

OVERVIEW

Hill County is located in north-central Texas. Its county seat and largest city, Hillsboro, sits at Interstate Highways 35 East and West intersection, approximately 55 miles south of Fort Worth and 35 miles north of Waco.

Evidence found in the area indicates human habitation in the area now known as Hill County, which dates back to around A.D. 1300. These early artifacts were discovered at Buzzard Cave along the Brazos River near Blum. In the early 1700s, the Waco and Tawakoni bands of the Wichita people established small hunting camps made of grass huts near Richland and Pin Oak creeks, in the northeastern and southeastern parts of the County. European exploration of the region soon followed, beginning with early Spanish expeditions, followed by the migration of the Comanche and Taovaya peoples during the 1820s.

In 1849, the Texas Rangers established Fort Smith, a temporary camp near White Rock, to maintain peace and stability. Fort Graham was established in 1849; it served as one of nine permanent outposts that ran from the West Fork of the Trinity River to Eagle Pass.

In 1852, a petition was filed to create a new County, which was carved from Navarro County, with a bill being signed on February 7, 1853, thus creating Hill County. In 1853, the County seat was established with the creation of the City of Hillsborough. The spelling was later changed to Hillsboro due to postal service rules. By 1860, there were 3,653 inhabitants in the City of Hillsboro.

Following the Civil War, the postwar period saw disruption and lawlessness in Hill County. Outlaws like John Wesley Hardin arrived in the late 1860s and early 1870s, contributing to the disruption in the community. The population rose to 7,453 by 1870, doubling the number of initial inhabitants. The Chisholm Trail ran through the County's northwest corner between 1871 and 1872; then the railroad arrived in 1881. The Missouri, Kansas, and Texas Railroad was the first railroad to reach the area. The Fort Worth-Temple section of the railroad was completed in the same year, with all connections to Dallas being completed by late 1887. By 1913, Hill County had 200 miles of lines of the Cotton Belt, the Gulf, the Colorado and Santa Fe, the Trinity and Brazos Valley, and the Texas Electric railways.

The increase in railroad lines led to an increase in population in the County. Between 1881 and 1910, various towns developed along the railroads or expanded; these included Itasca, Bynum,

SECTION 3: COUNTY PROFILE

Birome, and Hillsboro. After 1910, the population declined due to plummeting farm prices and manufacturing. The population continued to fluctuate until the 1970s.

Hill County agriculture production includes cotton, corn, cattle, turkeys, sorghum, dairy, wheat, and oats. In 1916, the County was the fourth leading county in Texas for cotton production; however, decreasing prices and drought led to a decrease in production of all crops. Oil was discovered in Hill County, but in very insignificant quantities, on May 28, 1929, near Mount Calm, at a depth of 700 feet. The discovery of a major oilfield eluded Hill County at a time when other areas of the state received a much-needed economic boost from that resource.

The County has numerous small cities and towns that contribute to the economy with retail stores, agricultural production, and manufacturing. The City of Hillsboro, located at the junction of Interstate Highways 35 East and West, is a popular destination for antique shops and retailers.¹

Figure 3-1 shows the general location of Hill County and the cities within the County.

Figure 3-1. Location of Hill County

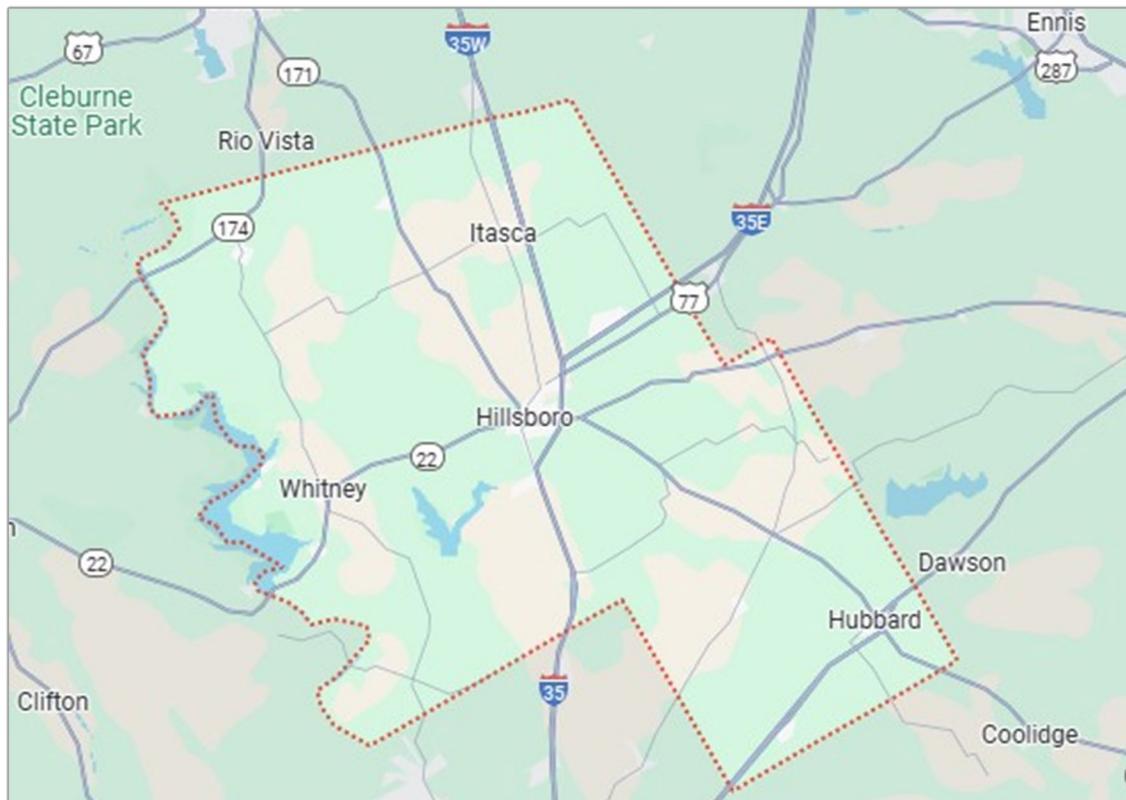


Table 3-1 below lists the jurisdictions in Hill County that participated in the Hill County Hazard Mitigation Action Plan Update 2026.

¹ Texas State Historical Association: <https://www.tshaonline.org/handbook/entries/hill-county>

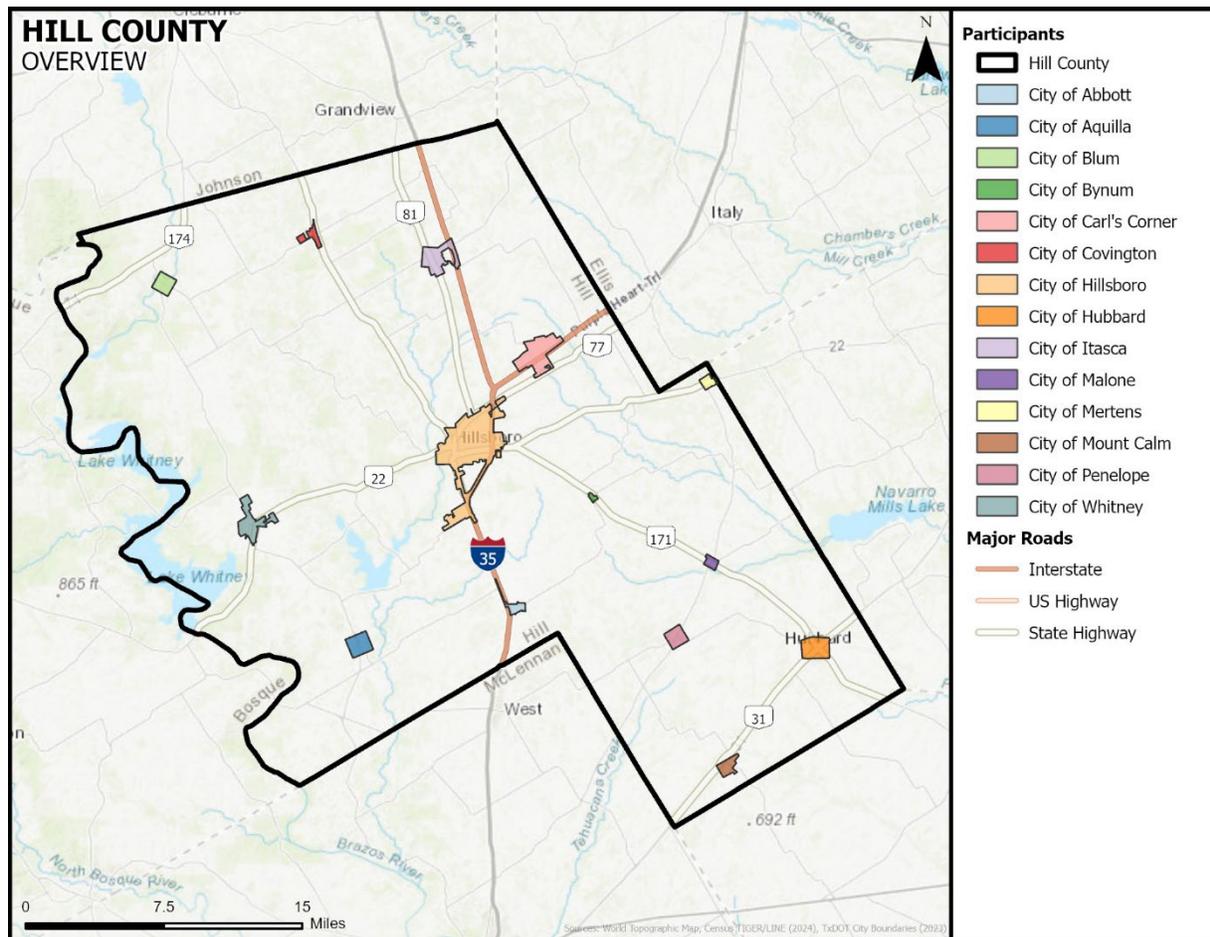
SECTION 3: COUNTY PROFILE

Table 3-1. Participating Jurisdictions

PARTICIPATING JURISDICTIONS		
Hill County	City of Carl's Corner	City of Malone
City of Abbott	City of Covington	City of Mertens
City of Aquilla	City of Hillsboro	City of Mount Calm
City of Blum	City of Hubbard	City of Penelope
City of Bynum	City of Itasca	City of Whitney

Figure 3-2 shows the participating jurisdictions within Hill County that are covered in the risk assessment analysis of the Plan Update.

Figure 3-2. Hill County Planning Area



SECTION 3: COUNTY PROFILE

POPULATION AND DEMOGRAPHICS

According to the 2020 Census, Hill County has an official population of 35,874 residents, a 2 percent increase since the 2010 census. Table 3-2 shows the population distribution in Hill County and the participating jurisdictions in 2010, 2020 (Census population count), and 2023 (2023 American Community Survey (ACS) five-year estimates). Note that in some cases, the 2023 ACS estimates may differ from the 2020 census counts: the ACS estimates are used throughout this section for consistency.²

Table 3-2. Population Distribution by Jurisdiction³

JURISDICTION	TOTAL 2010 POPULATION	TOTAL 2020 POPULATION (Census)	PERCENT CHANGE 2010-2020	TOTAL 2023 POPULATION (ACS Estimates)	PERCENT CHANGE 2010-2023
Hill County ⁴	35,089	35,874	2%	36,664	4%
City of Abbott	356	352	-1%	323	-9%
City of Aquilla	109	101	-7%	106	-3%
City of Blum	444	383	-14%	374	-16%
City of Bynum	199	171	-14%	225	13%
City of Carl's Corner	173	201	16%	287	66%
City of Covington	269	261	-3%	294	9%
City of Hillsboro	8,456	8,221	-3%	8,375	-1%
City of Hubbard	1,423	1,394	-2%	1,492	5%
City of Itasca	1,644	1,562	-5%	2,015	23%
City of Malone	269	237	-12%	287	7%
City of Mertens	125	144	15%	130	4%
City of Mount Calm	320	282	-12%	411	28%
City of Penelope	198	180	-9%	223	13%
City of Whitney	2,087	1,992	-5%	2,308	11%

Table 3-3 summarizes select characteristics of vulnerable or sensitive populations in Hill County and the participating jurisdictions using data from the U.S. Census Bureau 2023 American Community Survey (ACS) five-year estimates. Between official U.S. Census population counts,

² Sources: <https://demographics.texas.gov/Data/Decennial/2010/>, <https://www.census.gov/en.html> and <https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2023/>

³ Note: Some jurisdictions have boundaries that extend beyond Hill County; data for those jurisdictions represents their total population both inside and outside the Hill County line.

⁴ Note: County totals include the entire population within the county lines, including unincorporated areas and non-participating jurisdictions within the County.

SECTION 3: COUNTY PROFILE

the estimate uses a formula based on new residential building permits and household size. It is simply an estimate, and many variables are involved in achieving an accurate estimation of the number of people living in a given area at a given time.

Table 3-3. Populations at Greater Risk by Jurisdiction⁵

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Hill County ⁶	7,442	2,114	6,410	5,206	1,836
City of Abbott	75	26	33	1	1
City of Aquilla	7	8	7	10	5
City of Blum	41	25	48	120	14
City of Bynum	28	10	32	12	0
City of Carl's Corner	35	22	119	39	23
City of Covington	59	19	31	14	0
City of Hillsboro	1,246	699	1,370	1,633	923
City of Hubbard	288	81	325	218	72
City of Itasca	261	106	292	171	73
City of Malone	21	23	53	163	64
City of Mertens	14	8	49	13	17
City of Mount Calm	93	34	124	89	3
City of Penelope	56	25	47	12	24
City of Whitney	496	121	497	503	234

POPULATION GROWTH

The official 2020 Hill County population is 35,874. Overall, Hill County experienced a population increase of 32 percent between 1990 and 2020, or 8,728 residents. Between 2010 and 2020, the Cities of Carl's Corner and Mertens experienced a population increase, while Hill County experienced slight population growth. Table 3-4 provides historical growth rates in Hill County.

⁵ Some jurisdictions have boundaries that extend beyond Hill County; data for those jurisdictions represents their total population both inside and outside the Hill County line.

⁶ County totals include the entire population within the county lines, including unincorporated areas and non-participating jurisdictions within the County.

SECTION 3: COUNTY PROFILE

Table 3-4. Population Growth by Jurisdiction, 1990-2020^{7,8}

JURISDICTIONS	1990	2000	2010	2020	POPULATION CHANGE			
					1990-2020	PERCENT	2010-2020	PERCENT
Hill County ⁹	27,146	32,321	35,089	35,874	8,728	32	785	2
City of Abbott	314	300	356	352	38	12	-4	-1
City of Aquilla	136	136	109	101	-35	-26	-8	-7
City of Blum	358	399	444	383	25	7	-61	-14
City of Bynum	192	225	199	171	-21	-11	-28	-14
City of Carl's Corner	94	134	173	201	107	114	28	16
City of Covington	238	282	269	261	23	10	-8	-3
City of Hillsboro	7,072	8,232	8,456	8,221	1,149	16	-235	-3
City of Hubbard	1,589	1,586	1,423	1,394	-195	-12	-29	-2
City of Itasca	1,523	1,503	1,644	1,562	39	3	-82	-5
City of Malone	306	278	269	237	-69	-23	-32	-12
City of Mertens	104	146	125	144	40	38	19	15
City of Mount Calm	303	310	320	282	-21	-7	-38	-12
City of Penelope	210	211	198	180	-30	-14	-18	-9
City of Whitney	1,626	1,833	2,087	1,992	366	23	-95	-5

ECONOMIC IMPACT

Building and maintaining infrastructure depends on the economy, and therefore protecting infrastructure from risk due to natural hazards in the planning area is important to the participating jurisdictions within Hill County. Whether it's expanding culverts under a road that washes out during flash flooding, shuttering a fire station, or flood-proofing a wastewater facility, infrastructure must be mitigated from natural hazards in order to continue providing essential utility and emergency response services in a fast-growing planning area.

Based on the American Community Survey 2023 estimates, 56.8 percent of the population 16 years and over (15,835) is employed in the labor force. The per capita income is \$31,410 and the median household income countywide is \$63,147. Families with incomes below the poverty level

⁷ U.S. Census Bureau

⁸ Note: Some jurisdictions have boundaries that extend beyond Hill County; data for those jurisdictions represents their total population both inside and outside the Hill County line.

⁹ Note: County totals include the entire population within the county lines, including unincorporated areas and non-participating jurisdictions within the County.

SECTION 3: COUNTY PROFILE

in 2023 made up 14.2 percent of all families. Of families that have children under 18 years old, 18.9 percent are below the poverty level.

Tables 3-5 and 3-6 show the various occupations and industries within Hill County, according to the 2023 estimates by the American Community Survey.

Table 3-5. Occupations of Employed Population in Hill County¹⁰

OCCUPATION	ESTIMATE	PERCENT
Civilian employed population 16 years and over	15,835	
Management, business, science, and arts occupations	4,548	28.7%
Production, transportation, and material moving occupations	3,172	20.0%
Sales and office occupations	3,107	19.6%
Service occupations	2,733	17.3%
Natural resources, construction, and maintenance occupations	2,275	14.4%

Table 3-6. Industries of Employed Population in Hill County¹¹

INDUSTRY	ESTIMATE	PERCENT
Civilian employed population 16 years and over	15,835	
Educational services, and health care, and social assistance	3,353	21.2%
Construction	1,914	12.1%
Manufacturing	1,885	11.9%
Retail trade	1,594	10.1%
Transportation and warehousing, and utilities	1,294	8.2%
Arts, entertainment, and recreation, and accommodation and food services	1,237	7.8%
Professional, scientific, and management, and administrative and waste management services	1,073	6.8%
Agriculture, forestry, fishing and hunting, and mining	877	5.5%
Other services, except public administration	795	5.0%

¹⁰ U.S. Census Bureau: 2023 American Community Survey 5-Year Estimates Data Profiles.

¹¹ U.S. Census Bureau: 2023 American Community Survey 5-Year Estimates Data Profiles.

SECTION 3: COUNTY PROFILE

INDUSTRY	ESTIMATE	PERCENT
Finance and insurance, and real estate and rental and leasing	699	4.4%
Public administration	635	4.0%
Wholesale trade	365	2.3%
Information	114	0.7%

NATURAL, CULTURAL, AND HISTORIC RESOURCES

Hill County encompasses 986 square miles in north-central Texas, of which 27 square miles is water, and is positioned within three distinct ecological regions: the Blackland Prairie, Grand Prairie, and Eastern Cross Timbers. Its topography consists primarily of level plains and gently rolling hills, with elevations ranging from 400 to 900 feet above sea level. A network of waterways defines the County. The Nolan River, Mustang Creek, and Whiterock Creek flow westward into the Brazos River, which forms the County's western boundary. In contrast, streams such as Richland, Ash, and Bynum creeks drain into the Trinity River basin in the northern and eastern parts.

Hill County experiences a temperate climate with distinct seasonal patterns. Most rainfall, about 56 percent of the annual total, occurs between April and September. The eastern region receives between 36 and 40 inches of rain annually, while the western area receives slightly less, at 32 to 36 inches. Temperatures range from an average high of 95°F in July to an average low of 36°F in January. These conditions create a growing season of approximately 230 days each year.

Natural vegetation varies across regions. Bunch grasses like buffalo grass, big bluestem, switchgrass, and Indian grass are common in the prairies. In the Eastern Cross Timbers region, beginning in the Woodbine formation along Aquilla Creek, reddish-brown sandy clay soils support trees such as post oak, blackjack oak, live oak, and pecan. While this region provides limited timber resources, it adds to the County's ecological diversity.

One of the most popular destinations for outdoor recreation in Hill County is Lake Whitney. This expansive reservoir is renowned for its clear waters and is a hub for various water-based activities. Fishing is especially popular, with anglers frequently catching bass, catfish, and crappie. Lake Whitney is also ideal for boating, water skiing, and swimming, with designated areas and multiple boat ramps available. The surrounding Lake Whitney State Park offers campgrounds for tent and RV camping, hiking trails, and picnic areas catering to families and nature enthusiasts. Hikers and nature walkers can also enjoy the area. Aquilla Lake is another notable water body in the region, located southwest of Hillsboro. Although smaller than Lake Whitney, Aquilla Lake provides a tranquil setting for fishing, boating, and birdwatching.

Seasonal hunting is available on both public lands and private leases, with several local outfitters offering guided hunts for enthusiasts of all experience levels. The area is popular for hunting enthusiasts with its mix of forested areas, open prairies, and water sources; the County supports populations of white-tailed deer, feral hogs, and doves.

To further understand natural resources that may be vulnerable to a hazard event and those that need consideration when implementing mitigation activities, it is important to identify at-risk

SECTION 3: COUNTY PROFILE

species (i.e., endangered species) in the planning area. A federally endangered species is any species of fish, plant life, or wildlife that is in danger of extinction throughout all or most of its range. A threatened species is a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Both endangered and threatened species are protected by federal law, and any future hazard mitigation projects are subject to these laws. Candidate species are plants and animals that have been proposed as endangered or threatened but are not currently listed.

According to the U.S. Fish and Wildlife Service, as of October 2025, there are eight federally endangered, threatened, or candidate species in Hill County, listed in Table 3-7. Additionally, one species is listed as being resolved (Plains Spotted Skunk), two species are listed as in recovery (Bald Eagle and Black-Capped Vireo), and one species is listed as under review (Western Chicken Turtle).

Table 3-7. Endangered Species in Hill County¹²

TYPE of SPECIES	COMMON NAME	SCIENTIFIC NAME	SPECIES STATUS
Birds	Golden-Cheeked Warbler	Setophaga chrysoparia	Endangered
Birds	Whooping Crane	Grus americana	Endangered
Mammals	Tricolored Bat	Perimyotis subflavus	Proposed Endangered
Clams	Texas Fawnsfoot	Truncilla macrodon	Threatened
Birds	Piping Plover	Charadrius melodus	Threatened
Birds	Rufa Red Knot	Calidris canutus rufa	Threatened
Insects	Monarch Butterfly	Danaus plexippus	Proposed Threatened
Reptiles	Alligator Snapping Turtle	Macrochelys temminckii	Proposed Threatened

Hill County's designated historic buildings and sites preserve a rich history. The County has 23 buildings and sites on the National Register of Historic Places. Historic buildings are vulnerable to natural hazards as their construction pre-dates modern building codes. There are also historic preservation considerations and requirements for historic structures when they are included in mitigation or recovery projects.

Table 3-8. Historic Properties on the National Register¹³

PROPERTY NAME	LOCATION	ADDRESS
J.T. Baker Farmstead	City of Blum	1.2 miles north of Blum between TX 174 and Nolan Road
Nolan River Bridge	City of Blum	Hill County Road 1127

¹² U.S. Fish and Wildlife Service: <https://ecos.fws.gov/ecp/report/species-listings-by-current-range-county?fips=48217>

¹³ National Register of Historic Places: <https://npgallery.nps.gov/nrhp>

SECTION 3: COUNTY PROFILE

PROPERTY NAME	LOCATION	ADDRESS
Sheep Cave	City of Blum	Address Restricted
Farmers National Bank	City of Hillsboro	68 West Elm Street
Gebhardt Bakery	City of Hillsboro	119 East Franklin Street
Grimes Garage	City of Hillsboro	110 North Waco Street
Grimes House	City of Hillsboro	Country Club Road and Corporation Street
Hill County Courthouse	City of Hillsboro	1 North Waco Street
Hill County Jail	City of Hillsboro	120 North Waco Street
Hillsboro Cotton Mills	City of Hillsboro	220 North Houston Street
Hillsboro Residential Historic District	City of Hillsboro	Country Club Road, Thompson, Corsicana, Pleasant, Franklin and Elm Streets
McKenzie Site	City of Hillsboro	Address Restricted
Missouri-Kansas-Texas Company Railroad Station	City of Hillsboro	Covington Street
Old Rock Saloon	City of Hillsboro	58 West Elm Street
Sturgis National Bank	City of Hillsboro	South Waco and West Elm Streets
Tarlton Building	City of Hillsboro	110 East Franklin Street
U.S. Post Office	City of Hillsboro	118 South Waco Street
Western Union Building	City of Hillsboro	107 South Covington Street
Bear Creek Shelter Site	City of Huron	Address Restricted
Joe E. Turner House	City of Itasca	Farm Road 934, 3 miles east of Itasca
Buzzard Cave	Lake Whitney	Address Restricted
Pictograph Cave	Lake Whitney	Address Restricted
Kyle Shelter	Lake Whitney Estates	Address Restricted

EXISTING LAND USE AND DEVELOPMENT TRENDS

A zoning ordinance sets forth regulations and standards related to the extent of land and structure uses that are allowed in certain areas. A zoning map shows the location of zoning districts and standards within a community, gives an overall picture of the types of developments, and is used as a tool to inform continued growth efforts and initiatives. The Cities of Carl’s Corner, Covington, Hillsboro, Hubbard, Malone, and Whitney have zoning ordinances in place.

SECTION 3: COUNTY PROFILE

A review of housing can also give a picture of the built environment and the changes in vulnerability to various hazards in a jurisdiction. Table 3-9 lists the total housing units for each jurisdiction, where data was available, between 2019 and 2023, utilizing 2020 Decennial Census data and American Community Survey (ACS) five-year estimates. Between official U.S. Census counts, the estimates use a formula based on the applicable decennial census housing units count, new residential construction, new mobile homes, and housing unit loss. The census data “residential construction” category calculates building permits issued utilizing permitted construction counts as well as permit completion rates. Estimates of decreasing housing units are computed by applying an annual loss rate to the housing stock. The rate is then added to an estimate of the number of units lost due to natural disasters. Housing loss rates are derived from prior American Housing Surveys (AHS) at the regional level. A unit is counted as lost if a survey was completed in the AHS, but it was listed as a non-response (Type C, 30- Demolished) in the subsequent survey, indicating a permanent loss to the housing stock.¹⁴ It is simply an estimate, and many variables are involved in achieving an accurate estimation of the number of housing units in a given area at a given time.

Table 3-9. Total Housing Units by Jurisdiction, 2019-2023¹⁵

JURISDICTION	TOTAL HOUSING UNITS					CHANGE 2019-2023	PERCENT OF CHANGE
	2019	2020	2021	2022	2023		
Hill County ¹⁶	16,337	16,178	16,184	16,236	16,314	-23	0
City of Abbott	151	141	137	130	150	-1	-1
City of Aquilla	61	40	53	38	45	-16	-26
City of Blum	158	170	193	157	155	-3	-2
City of Bynum	134	70	122	88	76	-58	-43
City of Carl’s Corner	85	78	110	118	115	30	35
City of Covington	103	127	118	104	107	4	4
City of Hillsboro	3,368	3,355	3,208	3,189	3,275	-93	-3
City of Hubbard	718	662	710	756	685	-33	-5
City of Itasca	585	619	657	721	694	109	19
City of Malone	129	177	178	162	143	14	11
City of Mertens	75	64	54	55	57	-18	-24
City of Mount Calm	135	129	189	186	202	67	50

¹⁴ U.S. Census Bureau: <https://www.census.gov/programs-surveys/popest/technical-documentation/methodology.html>

¹⁵ U.S. Census Bureau: <https://www.census.gov>

¹⁶ Note: County totals include the entire planning area within county lines, including unincorporated areas and non-participating jurisdictions within the county.

SECTION 3: COUNTY PROFILE

JURISDICTION	TOTAL HOUSING UNITS					CHANGE 2019-2023	PERCENT OF CHANGE
	2019	2020	2021	2022	2023		
City of Penelope	68	76	88	103	105	37	54
City of Whitney	919	851	850	921	921	2	0

Certain types of housing found in the Hill County planning area are more vulnerable than typical site-built, newly constructed residential structures. This includes mobile or manufactured homes, of which 2,708 (17 percent of total housing stock) are in the planning area. Additionally, single-family residences (SFR) built before 1980 are typically built to lower or less stringent construction standards than newer construction, making these homes more susceptible to damage during hazard events. These older homes comprise 43 percent (7,075 structures) of housing stock in the planning area. Table 3-10 includes housing inventory data for the participating jurisdictions per the 2023 American Community Survey five-year estimates.

Table 3-10. Housing Inventory and Vulnerable Structures by Jurisdiction¹⁷

JURISDICTION	HOUSING UNITS		
	TOTAL HOUSING UNITS	SFR BUILT PRIOR TO 1980	MANUFACTURED HOMES
Hill County ¹⁸	16,314	7,075	2,708
City of Abbott	150	101	8
City of Aquilla	45	13	16
City of Blum	155	65	42
City of Bynum	76	66	7
City of Carl's Corner	115	4	52
City of Covington	107	64	11
City of Hillsboro	3,275	2,054	96
City of Hubbard	685	490	53
City of Itasca	694	402	66
City of Malone	143	115	12
City of Mertens	57	31	7
City of Mount Calm	202	72	111

¹⁷ Note: The Housing Inventory and Vulnerable Structures are based off the 2023 American Community Survey 5-Year Estimates Data Profiles.

¹⁸ Note: County totals include all housing units within the county lines, including unincorporated areas and non-participating jurisdictions within the County.

SECTION 3: COUNTY PROFILE

JURISDICTION	HOUSING UNITS		
	TOTAL HOUSING UNITS	SFR BUILT PRIOR TO 1980	MANUFACTURED HOMES
City of Penelope	105	66	8
City of Whitney	921	532	93

CHANGES IN VULNERABILITY

The Hill County planning area experienced an overall population increase of 2 percent between 2010 and 2020. The American Community Survey estimates the 2023 total housing units for the planning area to be 16,314, indicating no substantial change since 2019. The overall population increase, combined with the relative stability in housing units, indicates an increase in vulnerability to all hazards in terms of populations and the built environment. Changes in vulnerability vary by jurisdiction based on each jurisdiction's trends in population and development (Table 3-11).

Table 3-11. Changes in Vulnerability by Jurisdiction

JURISDICTION	POPULATION TREND	HOUSING TREND	OVERALL VULNERABILITY CHANGES
City of Abbott	Decrease	Decrease	No Change
City of Aquilla	Decrease	Decrease	No Change
City of Blum	Decrease	Decrease	No Change
City of Bynum	Decrease	Decrease	No Change
City of Carl's Corner	Increase	Increase	Increase
City of Covington	Decrease	Increase	Increase
City of Hillsboro	Decrease	Decrease	No Change
City of Hubbard	Decrease	Decrease	No Change
City of Itasca	Decrease	Increase	Increase
City of Malone	Decrease	Increase	Increase
City of Mertens	Increase	Decrease	Increase
City of Mount Calm	Decrease	Increase	Increase
City of Penelope	Decrease	Increase	Increase
City of Whitney	Decrease	No Change	No Change
Hill County	Increase	No Change	Increase

Changes in vulnerability are applicable to all natural hazards except when discussing dam failure, as vulnerability for this hazard is discussed in relation to changes in the estimated inundation

SECTION 3: COUNTY PROFILE

areas for profiled dams. For the 115 dams profiled in Section 5, there is an increase in vulnerability in the estimated inundation areas. While flood and wildfire hazards feature geographical boundaries, increases in population and building inventory can increase overall vulnerability for these hazards even when the trends occur outside of the known hazard boundary. Development decreases permeable surface areas and increases runoff, increasing flood risk. As population density increases, the Wildland Urban Interface (WUI) typically increases. WUI growth often results in more wildfire ignitions, which puts more houses and lives at risk.

FUTURE GROWTH AND DEVELOPMENT

To better understand how future growth and development in Hill County might affect hazard vulnerability, it is useful to consider population growth, occupied and vacant land, the potential for future development in hazard areas, and current planning and growth management efforts. Population projections from 2020 to 2060 are listed in Table 3-12, provided by the Office of the State Demographer, Texas State Data Center, and the Institute for Demographic and Socioeconomic Research. Projections are based on the 0.5 migration scenario, which assumes that future net migration will occur at 50 percent of the rate observed from 2000 to 2010. The total population growth rate accounts for natural increase (births minus deaths) as well as net migration. This information is only available at the county level; however, projections reflect an increase in population density, which would mean overall growth for the County.

Table 3-12. Hill County Population Density Projections¹⁹

LAND AREA (SQ MI)	2020		2030		2040		2050		2060	
	POPULATION									
	Total Number	Density								
959.00	35,874	37.41	36,500	38.07	36,838	38.42	36,806	38.39	36,911	38.49

Comprehensive Plans are guiding documents in a community that set forth a vision, goals, policies, and guidelines to direct future physical, social, and economic development within a jurisdiction. They are part of a continuous process to provide a sustainable environment for citizens and consider the general desire of the community to conserve, preserve, and protect the natural environment of their jurisdiction. These plans present a future vision for each participating jurisdiction, outlining recommendations on growth, community character, infrastructure, land use, economic development, zoning, mobility, and public facilities, while guiding staff, decision-makers, and citizens to weigh choice with an eye toward the future. The Cities of Carl's Corner, Hillsboro, Hubbard, Penelope and Whitney have Comprehensive Plans in place or under development. Refer to the Capability Assessment in Appendix F for a complete list of the plans, ordinances, and other resources for all participating jurisdictions.

¹⁹ Sources: Office of the State Demographer, Texas State Data Center, and the Institute for Demographic and Socioeconomic Research



Section 4

Risk Overview

SECTION 4: RISK OVERVIEW

Hazard Description	1
Disaster Declaration History	4
Natural Hazards and Climate Change	6
Overview of Hazard Analysis	8
Hazard Ranking	9
Risk Assessment Resources and Data Limitations	10
Assumptions.....	11

HAZARD DESCRIPTION

Section 4 is the first phase of the Risk Assessment, providing background information for the hazard identification process and descriptions of the hazards identified. The Risk Assessment continues with Sections 5 through 15, which include hazard descriptions and vulnerability assessments.

Upon a review of the full range of natural hazards suggested under FEMA planning guidance, participating jurisdictions within Hill County identified ten natural hazards and one human-caused hazard that are addressed in the Hazard Mitigation Plan Update, and were identified as significant, as shown in Table 4-1. The hazards were identified through input from Planning Team members and a review of the current 2023 State of Texas Hazard Mitigation Plan (State Plan). Readily available online information from reputable sources such as federal and state agencies was also evaluated and utilized to supplement information as needed.

In general, there are four main categories of natural hazards: atmospheric, geologic, hydrologic, and technological. Atmospheric hazards are events or incidents associated with weather-generated phenomena. The following have been identified as significant for the planning area: extreme heat, hail, lightning, thunderstorm wind, tornado, and winter storm (Table 4-1).

Geologic hazards are events or incidents associated with the earth’s crust. No geologic hazards have been identified as significant for the planning area.

Hydrologic hazards are events or incidents associated with water-related damage and account for over 75 percent of federal disaster declarations in the United States. Hydrologic hazards identified as significant for the planning area include drought and flood.

Technological hazards refer to the origins of incidents that can arise from human activities, such as the construction and maintenance of dams. They are distinct from natural hazards primarily because they originate from human activity. Human activity may increase or decrease the risks presented by natural hazards; however, they are not inherently human-induced. Therefore, dam failure is classified as a quasi-technological hazard and referred to as “technological” in Table 4-1 for description purposes.

For the Risk Assessment, the wildfire hazard is considered “other” since this hazard is not considered atmospheric, hydrologic, geologic, or technological.

Human-caused hazards are events or incidents caused by human intent, human error, or failed systems. They can be caused or exacerbated by accidental or intentional human actions that result in the loss of life or property. The human-caused hazard identified as significant for the County is hazardous materials.

SECTION 4: RISK OVERVIEW

Table 4-1. Hazard Descriptions

HAZARD	DESCRIPTION
ATMOSPHERIC	
Extreme Heat	Extreme heat is the condition whereby temperatures hover ten degrees or more above the average high temperature in a region for an extended period of time.
Hail	Hailstorms are a potentially damaging outgrowth of severe thunderstorms. Early in the developmental stages of a hailstorm, ice crystals form within a low-pressure front due to the rapid rising of warm air into the upper atmosphere and subsequent cooling of the air mass.
Lightning	Lightning is a sudden electrostatic discharge that occurs during an electrical storm. This discharge occurs between electrically charged regions of a cloud, between two clouds, or between a cloud and the ground.
Thunderstorm Wind	Thunderstorm winds, often referred to as straight-line winds, are produced by severe thunderstorms and can reach speeds exceeding 100 mph. These winds are often caused by downbursts or microbursts, which are powerful columns of air that descend from a storm and spread outward upon hitting the ground. They can cause damage patterns similar to tornadoes but occur without rotation, spreading out in a straight path. Contrastingly, high wind events can occur in the absence of other definable hazard conditions, developing from strong pressure systems or terrain effects and causing similar impacts, especially in exposed or rural areas.
Tornado	A tornado is a violently rotating column of air that has contact with the ground and is often visible as a funnel cloud. Its vortex rotates cyclonically with wind speeds ranging from as low as 40 mph to as high as 300 mph. The destruction caused by tornadoes ranges from light to catastrophic, depending on the location, intensity, size, and duration of the storm.
Winter Storm	Severe winter storms may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation. Blizzards, the most dangerous of all winter storms, combine low temperatures, heavy snowfall, and winds of at least 35 mph, reducing visibility to only a few yards. Ice storms occur when moisture falls and freezes immediately upon impact on trees, power lines, communication towers, structures, roads, and other hard surfaces. Winter storms and ice storms can down trees, cause widespread power outages, damage property, and cause fatalities and injuries to human life.
HYDROLOGIC	
Drought	A prolonged period of less than normal precipitation such that the lack of water causes a serious hydrologic imbalance. Common effects of drought include crop failure, water supply shortages, and fish and wildlife mortality.

SECTION 4: RISK OVERVIEW

HAZARD	DESCRIPTION
Flood	The accumulation of water within a body of water, which results in the overflow of excess water onto adjacent lands, usually floodplains. The floodplain is the land adjoining the channel of a river, stream, ocean, lake, or other watercourse or water body that is susceptible to flooding. Most floods fall into the following three categories: riverine flooding, coastal flooding, and shallow flooding.
OTHER	
Wildfire	A wildfire is an uncontrolled fire burning in an area of vegetative fuels such as grasslands, brush, or woodlands. Heavier fuels with high continuity, steep slopes, high temperatures, low humidity, low rainfall, and high winds all work to increase the risk for people and property located within wildfire hazard areas or along the urban/wildland interface. Wildfires are part of the natural management of forest ecosystems, but most are caused by human factors.
TECHNOLOGICAL	
Dam Failure	Dam failure is the collapse, breach, or other failure of a dam structure resulting in downstream flooding. In the event of a dam failure, the energy of the water stored behind even a small dam is capable of causing loss of life and severe property damage if development exists downstream of the dam.
HUMAN-CAUSED	
Hazardous Materials	Hazardous materials come in the form of explosives, flammable and combustible substances, poisons, and radioactive materials. A hazardous material (HAZMAT) incident involves a substance outside normal safe containment in sufficient concentration to pose a threat to life, property, or the environment.

Hazards that were not considered significant and were not included in the Plan Update are located in Table 4-2, along with the evaluation process used for determining the significance of each of these hazards. Hazards not identified for inclusion at this time may be addressed during future evaluations and updates.

Table 4-2. Other Hazards Deferred

HAZARD CONSIDERED	REASON FOR DETERMINATION
Coastal Erosion	The planning area is not located on the coast. Therefore, coastal erosion does not pose a risk.
Earthquakes	The planning area has no historical earthquake occurrences, and it is in an area where occurrences are considered rare. Earthquakes have not impacted critical structures, systems, populations, or other community assets or vital services in the past and are not expected to do so in the future.

SECTION 4: RISK OVERVIEW

HAZARD CONSIDERED	REASON FOR DETERMINATION
Expansive Soils	The planning area has no historical expansive soils occurrences, and it is in an area where occurrences are considered rare. Expansive soils have not impacted critical structures, systems, populations, or other community assets or vital services in the past and are not expected to do so in the future.
Hurricane / Tropical Storm	The planning area is located inland and is not within close proximity to the Gulf Coast and is not subject to direct hurricane wind impacts. The remnants of tropical systems passing across the planning area may cause significant thunderstorm wind, lightning, and excessive rainfall. Impacts associated with these historical events are covered under thunderstorm wind, lightning, or flood hazard profiles.
Land Subsidence	The planning area has no historical land subsidence occurrences, and it is in an area where occurrences are considered rare. Land subsidence has not impacted critical structures, systems, populations, or other community assets or vital services in the past and are not expected to do so in the future.

DISASTER DECLARATION HISTORY

One method of understanding hazards that pose a risk to the Hill County is to identify past hazard events that triggered federal or state disaster declarations. Federal and state declarations may be granted when the severity and magnitude of an event surpass the ability of the local government to respond and recover. Disaster assistance is supplemental and sequential. Table 4-3 lists state and federal disaster declarations received by Hill County. Many of the disaster events were regional or statewide.

Between 1953 and October 2025, Hill County received 25 federal disaster declarations. The largest share (7) was related to severe storms, followed by declarations for fires (5), hurricanes¹ (4), floods (4), biological (2), severe ice storms (2), and drought (1).

Table 4-3. Disaster Declaration History of Hill County, 1953 – October 2025²

YEAR	DECLARATION TITLE	HAZARD	DECLARATION TYPE	DISASTER No.
1968	Heavy Rains and Flooding	Flood	DR	DR-244
1973	High Winds, Tornadoes, and Flooding	Severe Storm	DR	DR-365
1989	Severe Storms, Tornadoes, and Flooding	Severe Storm	DR	DR-828

¹ Note: The Hill County planning area does not experience direct impacts from hurricanes. Tropical storm and hurricane disaster declarations typically include multiple inland counties due to the excessive precipitation, thunderstorm wind, and lightning associated with the remnants of tropical systems as they track inland before dissipating.

² FEMA: <https://www.fema.gov/openfema-data-page/disaster-declarations-summaries-v2>

SECTION 4: RISK OVERVIEW

YEAR	DECLARATION TITLE	HAZARD	DECLARATION TYPE	DISASTER No.
1990	Severe Storms, Tornadoes, and Flooding	Severe Storm	DR	DR-863
1991	Severe Thunderstorms	Flood	DR	DR-930
1993	Extreme Fire Hazard	Drought	EM	EM-3113
1998	Tropical Storm Charley	Severe Storm	DR	DR-1239
1999	Extreme Fire Hazards	Fire	EM	EM-3142
2000	Live Oak Loop Fire	Fire	FSA	FSA-2325
2005	Hurricane Katrina Evacuation	Hurricane	EM	EM-3216
2005	Hurricane Rita	Hurricane	EM	EM-3261
2005	Hurricane Rita	Hurricane	DR	DR-1606
2006	Extreme Wildfire Threat	Fire	DR	DR-1624
2007	Severe Storms, Tornadoes, and Flooding	Severe Storm	DR	DR-1709
2008	Wildfires	Fire	EM	EM-3284
2008	Hurricane Ike	Hurricane	EM	EM-3294
2011	Wildfires	Fire	DR	DR-4029
2015	Severe Storms, Tornadoes, Straight-Line Winds, and Flooding	Severe Storm	DR	DR-4223
2015	Severe Storms, Tornadoes, Straight-Line Winds, and Flooding	Severe Storm	DR	DR-4245
2019	Severe Storms and Flooding	Flood	DR	DR-4416
2020	Covid-19	Biological	EM	EM-3458
2020	Covid-19 Pandemic	Biological	DR	DR-4485
2021	Severe Winter Storm	Severe Ice Storm	EM	EM-3554
2021	Severe Winter Storms	Severe Ice Storm	DR	DR-4586
2024	Severe Storms, Straight-Line Winds, Tornadoes, and Flooding	Flood	DR	DR-4781

In addition to the 25 federally declared disasters there have been 34 U.S. Department of Agriculture (USDA) Secretarial disaster designations between 2012 and 2024. The Secretary of Agriculture is authorized to designate counties as disaster areas to make emergency loans

SECTION 4: RISK OVERVIEW

available to producers suffering losses in those counties and in counties that are contiguous to a designated county.³ Of the 34 USDA designations for Hill County, many listed multiple factors as having caused the disaster area designation. The leading cause was drought, which was included in 24 designations. Other factors listed include excessive heat (11 designations), high wind (9), fire / wildfire (8), insects (8), excessive rain (7), flash floods (3), hail (1), and winter storm (1).

NATURAL HAZARDS AND CLIMATE CHANGE

Climate change is defined as a long-term shift in temperature and weather patterns. These shifts can increase or decrease the risk of natural hazards. Global climate change is expected to exacerbate the risks of certain types of natural hazards impacted by rising sea levels, warmer ocean temperatures, higher humidity, the possibility of stronger storms, and an increase in wind and flood damage due to storm surges. Texas is considered one of the more vulnerable states in the U.S. to both abrupt climate changes and the impact of gradual climate changes on the natural and built environments.

Climate change is expected to lead to an increase in average temperatures as well as an increase in the frequency, duration, and intensity of extreme heat events. With no reductions in emissions worldwide, the state of Texas is projected to experience an additional 30 to 60 days per year above 100°F than what is experienced now.⁴

The State Climatologist's *Assessment of Historic and Future Trends of Extreme Weather in Texas, 1900-2036* identifies ongoing and likely future trends through 2036 based on analysis of historical observations of temperatures, precipitation, and extreme weather. Table 4-4 highlights future trends in extreme weather from the report.

Table 4-4. Future Trends in Extreme Weather in Texas^{5,6}

HAZARDS	EXPECTED TRENDS
Extreme Temperatures	<ul style="list-style-type: none"> • The average annual surface temperature in 2036 is expected to be 3.0°F warmer than the 1950-1999 average and 1.8°F warmer than the 1991-2020 average. • The number of 100°F days is projected to double by 2036, with urban areas experiencing a higher frequency due to the urban heat island effect. • Fewer cold extremes and warmer minimum temperatures are projected, suggesting a continued decrease in freezing

³ United States Department of Agriculture: https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/FactSheets/emergency_disaster_designation_declaration_process-factsheet.pdf

⁴ Kloesel, K., B. Bartush, J. Banner, D. Brown, J. Lemery, X. Lin, C. Loeffler, G. McManus, E. Mullens, J. Nielsen-Gammon, M. Shafer, C. Sorensen, S. Sperry, D. Wildcat, and J. Ziolkowska, 2018: Southern Great Plains. In *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 987–1035. doi: 10.7930/NCA4.2018.CH23. <https://nca2018.globalchange.gov/chapter/23/>

⁵ Nielsen-Gammon, John, Holman, Sara, Buley, Austin and Jorgensen, Savannah. *Assessment of Historic and Future Trends of Extreme Weather in Texas, 1900-2036, 2021 Update*. Texas A&M University Office of the Texas State Climatologist. October 7, 2021. <https://climatexas.tamu.edu/files/ClimateReport-1900to2036-2021Update>

⁶ University of Texas at Austin, February 2023, *Austin Future Climate, Climate Change Predictions for the Hill County 2022*, Technical Report.

SECTION 4: RISK OVERVIEW

HAZARDS	EXPECTED TRENDS
	<p>conditions and frost days, as well as a warming trend for the coolest days of summer.</p> <ul style="list-style-type: none"> • The number of heatwaves per year and number of days per year classified as heatwaves are expected to increase. • Data suggests a recent increase in both the severity and frequency of extreme heat, while extreme cold has decreased in both aspects.
Precipitation	<ul style="list-style-type: none"> • Precipitation has increased by 10 percent or more in eastern Texas, but no significant trends are evident in western Texas. • Natural variability will substantially influence precipitation trends through 2036. • Extreme precipitation has already intensified by about 7 percent from 1960 to 2020 and is projected to continue increasing statewide—by 6-10 percent in intensity relative to 1950–1999 (2-3 percent relative to 2001–2020), and by 30-50 percent in frequency compared to 1950–1999 (10-15 percent compared to 2001–2020).
Drought	<ul style="list-style-type: none"> • Projected increases in temperature, rainfall variability, and other factors—such as improved plant water use efficiency—collectively indicate a decrease in water availability; however, the extent of this impact varies significantly across regions and applications. • Sector-based variance in impact trends is expected, with agricultural areas potentially experiencing less impact than surface water supply.
Flood	<ul style="list-style-type: none"> • Observational data suggests no long-term trend in river flooding, and this remains consistent for current projections, barring areas with normally high rainfall or for the most extreme flood events. • Urban flooding is projected to increase due to both population growth and rising precipitation intensity, particularly in areas with fast-response drainage systems. • The climate-driven trend in urban flood frequency should be similar to the climate-driven trend in extreme precipitation frequency: 30-50 percent in 2036 relative to 1950-1999 and 10-15 percent relative to 2001-2020. • Areas already experiencing flooding are likely to see an increase in the frequency and magnitude of events.
Winter Weather	<ul style="list-style-type: none"> • As the climate warms, the likelihood of winter weather decreases. • Widespread snowfall events in Texas, such as the one in February 2021, remain extremely rare and have not shown an increase in frequency. However, with rising air temperatures, a decrease in both the frequency and intensity of such events is expected—reducing the overall snow hazard. • Extreme cold has become less frequent and less severe overall but is subject to more variation than other temperate extremes, thus, massively cold temperatures will continue to be possible.

SECTION 4: RISK OVERVIEW

HAZARDS	EXPECTED TRENDS
Thunderstorms (Wind, Hail, Lightning)	<ul style="list-style-type: none"> The evolution of reporting methods and magnitude scales, along with inconsistencies in observational data, has resulted in the absence of reliable, comprehensive records—limiting the ability to project trends and necessitating the use of indirect indicators. Indirect evidence supports an increase in the number of days capable of producing severe thunderstorms and very large hail; however, a substantial basis to quantify these trends remains lacking.
Wildfire	<ul style="list-style-type: none"> Reductions in precipitation, rising temperatures, increased surface dryness, stronger winds, lower humidity, and higher fuel loads are projected to vary in intensity across different regions of Texas, leading to non-uniform increases in wildfire risk. The geographical boundaries of the area of the state commonly affected may expand.

OVERVIEW OF HAZARD ANALYSIS

The methodologies utilized to develop the Risk Assessment are a historical analysis and a statistical approach. Both methodologies provide an estimate of potential impact by using a common, systematic framework for evaluation.

Records retrieved from the National Centers for Environmental Information (NCEI) and the National Oceanic and Atmospheric Administration (NOAA) were reported for participating jurisdictions within the Hill County. The remaining records identifying the occurrence of hazard events in the planning area and the maximum recorded magnitude of each event were also evaluated.

Geographic information system (GIS) technology was used to identify and assess risks for the Hill County and evaluate community assets and their vulnerability to hazards.

The four general parameters that are described for each hazard in the Risk Assessment include frequency of return, approximate annualized losses, a description of the general vulnerability, and a statement of the hazard’s impact.

The frequency of return was calculated by dividing the number of events in the recorded time period for each hazard by the overall time period that the resource database was recording events. Frequency of return statements are defined in Table 4-5, and impact statements are defined in Table 4-6 below.

Table 4-5. Frequency of Return Statements

PROBABILITY	DESCRIPTION
Highly Likely	Event is probable in the next year.
Likely	Event is probable in the next three years.
Occasional	Event is probable in the next five years.

SECTION 4: RISK OVERVIEW

PROBABILITY	DESCRIPTION
Unlikely	Event is probable in the next ten years.

Table 4-6. Impact Statements

POTENTIAL SEVERITY	DESCRIPTION
Substantial	Multiple deaths. Complete shutdown of facilities for 30 days or more. More than 50 percent of property destroyed or with major damage.
Major	Injuries and illnesses resulting in permanent disability. Complete shutdown of critical facilities between one and four weeks. More than 25 percent of property destroyed or with major damage.
Minor	Injuries and illnesses do not result in permanent disability. Complete shutdown of critical facilities for up to one week. More than 10 percent of property destroyed or with major damage.
Limited	Injuries and illnesses are treatable with first aid. Shutdown of critical facilities and services for 24 hours or less. Less than 10 percent of property destroyed or with major damage.

Each of the hazard profiles includes a description of a general Vulnerability Assessment. Vulnerability is the total of assets that are subject to damage from a hazard based on historic recorded damages. Assets in the region were inventoried and defined in hazard zones where appropriate. The total amount of damage, including property and crop damages, for each hazard is divided by the total number of assets (building value totals) in that community to determine the percentage of damage that each hazard can cause to the community. Risk and consequences will be addressed and covered within each hazard profile under the Vulnerability and Impact section as well as under the Assessment of Impact sections, where applicable.

To better understand how future growth and development in the Hill County region might affect hazard vulnerability, it is useful to consider population growth, occupied and vacant land, the potential for future development in hazard areas, and current planning and growth management efforts. Hazard vulnerability for all participating jurisdictions within the Hill County was reviewed based on recent development changes that occurred throughout the planning area. The population of the Hill County has grown by 2 percent between 2010 and 2020, according to the U.S. Census Bureau. Therefore, the vulnerability to the population, infrastructure, and buildings has increased for hazards that do not have a geographical boundary.

Once loss estimates and vulnerability were known, an impact statement was applied to relate the potential impact of the hazard on the assets within the area of impact.

HAZARD RANKING

During the 2025 planning process, the Planning Team conducted a risk ranking exercise to get input from the Planning Team and stakeholders. Table 4-7 portrays the results of the risk assessment analysis, including the frequency of occurrence and potential severity and the

SECTION 4: RISK OVERVIEW

Planning Team’s self-assessment for hazard ranking based on local knowledge of past hazard events and impacts for each identified hazard. The definitions for frequency of occurrence and potential severity can be found in Table 4-5 and Table 4-6

Table 4-7. Hazard Risk Ranking

HAZARD	FREQUENCY OF OCCURRING	POTENTIAL SEVERITY	RANKING
NATURAL HAZARDS			
Drought	Highly Likely	Limited	High
Extreme Heat	Highly Likely	Substantial	High
Thunderstorm Wind	Highly Likely	Major	High
Wildfire	Highly Likely	Limited	High
Flood	Highly Likely	Limited	Moderate
Hail	Highly Likely	Limited	Moderate
Lightning	Highly Likely	Limited	Moderate
Tornado	Highly Likely	Substantial	Moderate
Winter Storm	Highly Likely	Substantial	Moderate
Dam Failure	Unlikely	Limited	Low
HUMAN-CAUSED HAZARDS			
Hazardous Materials	Occasional	Limited	Moderate

RISK ASSESSMENT RESOURCES AND DATA LIMITATIONS

The risk and vulnerability assessment relies heavily on the content of the National Oceanic and Atmospheric Administration (NOAA) National Center for Environmental Information (NCEI) Storm Events Database. This database covers weather-related hazards that affect the planning area and that are profiled in this Plan including winter weather (extreme cold and winter storm), drought, hail, lightning, thunderstorm wind, flood, extreme heat, and tornado. Other hazards were analyzed using databases containing more comprehensive historical data specific to Texas such as the Texas A&M Forest Service (TFS) for wildfires. Historical dam incidents, including failures, were researched through the Association of State Dam Safety Officials database.

The NCEI Storm Events Database is a rich centralized repository of nationwide weather-related hazard events. Among other things, it is the source used by NOAA to populate its monthly storm data publication. The database contains recorded weather events of significance based on a range of potential criteria including intensity, duration, damages, injuries, or other noteworthy events. The history of data available in the NCEI database allows the study of impacts of individual hazards over an extended period of time. This data contributes to the framework for understanding relative risks over time.

SECTION 4: RISK OVERVIEW

While the NCEI is considered one of the most comprehensive national historical event databases it is not without limitations. Records of historical occurrences in the state shows significant variations in the number of events recorded from one county to the next. Further research shows that the variations are more attributable to under-reporting of events than variations in weather occurrences. Only the events that have been reported or recorded in the database are factored into the risk assessment when no other reliable resources are available. It is accurate to assume that additional natural hazard occurrences have gone unreported or have been underreported. The risk assessment in this plan is considered the baseline for estimating potential future losses and frequency of events, which are assumed to be the minimum the planning area can anticipate. Additionally, significant events may be reported by both the county and local jurisdictions. This is due to reports from various locations impacted by a given event.

Finally, damages are not reported for the majority of events recorded in the NCEI, as property damage estimates are not always available. Natural hazard event damages are often covered by private insurance, and statistical insurance data is not readily available in the public domain. The National Weather Service (NWS) regional forecast coordinators utilize the resources available to them to describe damages or impacts of events. However, local input is key to assigning damages to historical events.

ASSUMPTIONS

Event data is often reported at the county level only. This is primarily due to the nature of most natural hazards impacting areas larger than a single municipality. Winter storms or extreme heat, for example, impact large regions and are not confined to a single location. NWS regional coordinators typically gather event data from countywide or regional reporting and record it accordingly. Some exceptional events are captured by NWS regional coordinators when the impact of the event is severe or catastrophic. However, most events recorded at the municipality level are conveyed by local officials. Event data at the municipality level is often limited as a result. Due to the more robust reporting at the county level and limited reporting at the local level, summary vulnerability statements are formulated using both local and countywide event data. These vulnerability assessments assume that events impacting the county similarly impact the jurisdictions within that county. Therefore, the countywide assessment is considered similar for all participating jurisdictions unless stated otherwise. Future risk and vulnerability assessments at the local, county, and state levels will benefit significantly from increased, detailed event reporting.

Section 5

Dam Failure



SECTION 5: DAM FAILURE

Section 5 is For Official Use Only (FOUO) and may be exempt from public release under the Freedom of Information Act (FOIA).



Section 6

Drought



SECTION 6: DROUGHT

Hazard Description	1
Location	1
Extent	2
Historical Occurrences	4
Significant Events	6
Probability of Future Events	7
Climate Change Considerations.....	7
Vulnerability and Impact.....	8
Assessment of Impacts.....	11

HAZARD DESCRIPTION

Drought is a period of time without substantial rainfall that persists from one year to the next. Drought is a normal part of virtually all climatic regions, including areas with high and low average rainfall. Drought is the consequence of anticipated natural precipitation reduction over an extended period of time, usually a season or more in length. Droughts can be classified as meteorological, hydrologic, agricultural, and socioeconomic. Table 6-1 presents definitions for these different types of droughts.

Droughts are one of the most complex of all natural hazards as it is difficult to determine their precise beginning or end. In addition, droughts can lead to other hazards such as extreme heat and wildfires. Their impact on wildlife and area farming is enormous, often killing crops, grazing land, edible plants, and even in severe cases, trees. A secondary hazard to drought is wildfire because dying vegetation serves as a prime ignition source. Therefore, a heat wave combined with a drought is a very dangerous situation.

Table 6-1. Drought Classification Definitions¹

METEOROLOGICAL DROUGHT	The degree of dryness or departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales.
HYDROLOGIC DROUGHT	The effects of precipitation shortfalls on stream flows and reservoir, lake, and groundwater levels.
AGRICULTURAL DROUGHT	Soil moisture deficiencies relative to water demands of plant life, usually crops.
SOCIOECONOMIC DROUGHT	The effect of demands for water exceeding the supply as a result of a weather-related supply shortfall.

LOCATION

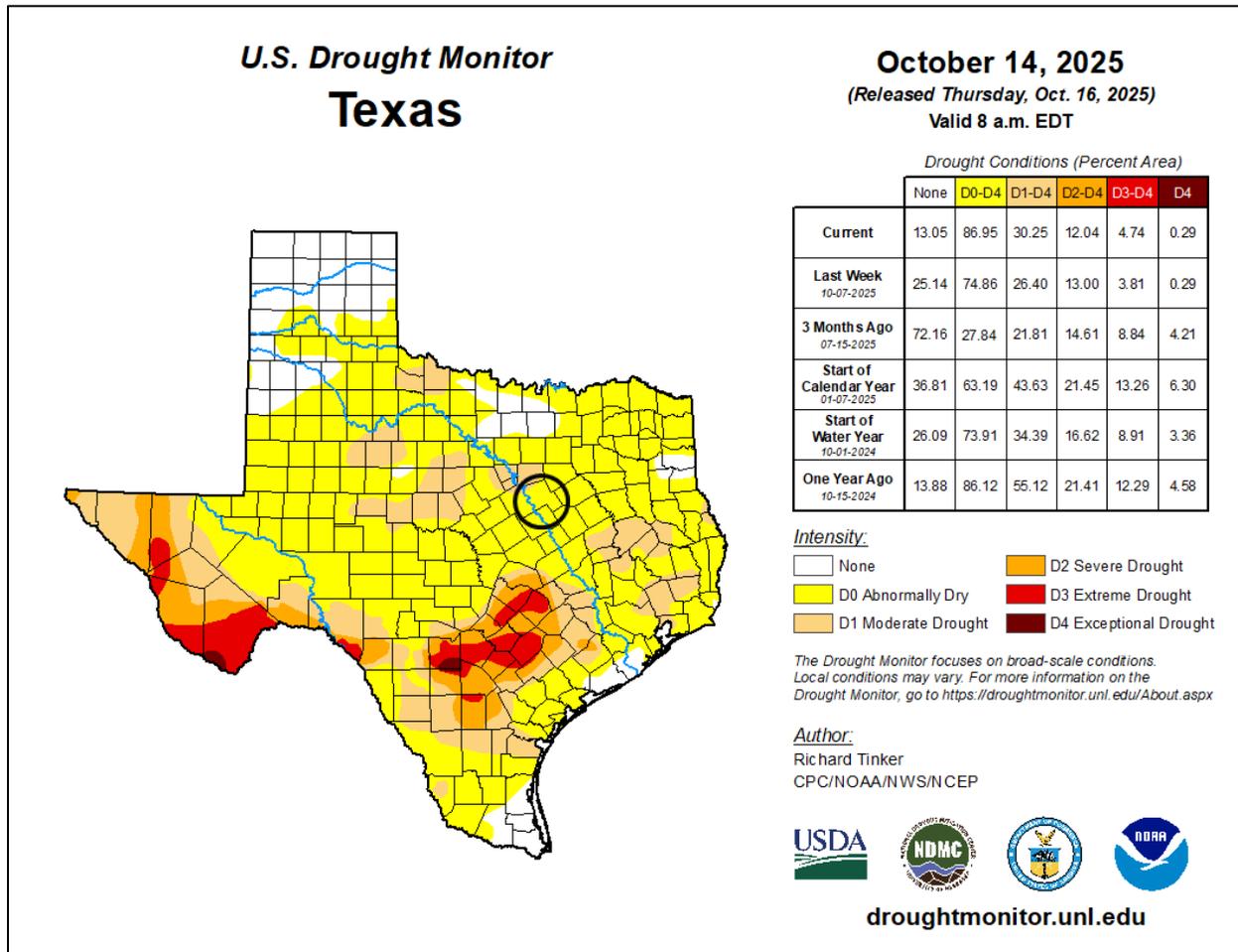
Droughts occur regularly throughout Texas and the Hill County planning area and are considered a normal condition. However, they can vary greatly in their intensity and duration. The U.S. Drought Monitor, produced through a partnership between the National Drought Mitigation Center

¹ Source: Multi-Hazard Identification and Risk Assessment: A Cornerstone of the National Mitigation Strategy, FEMA

SECTION 6: DROUGHT

at the University of Nebraska-Lincoln, U.S. Department of Agriculture and the National Oceanic and Atmospheric Administration, shows the planning area is currently experiencing abnormally drought conditions (Figure 6-1) but has experienced a range of conditions from normal (none) to exceptional drought conditions over the last decade (Figure 6-2). There is no distinct geographic boundary to drought; therefore, it can occur anywhere throughout the Hill County planning area.

Figure 6-1. U.S. Drought Monitor, October 2025



EXTENT

The Palmer Drought Index is used to measure the extent of drought by measuring the duration and intensity of long-term drought-inducing circulation patterns. Long-term drought is cumulative, with the intensity of drought during the current month dependent upon the current weather patterns plus the cumulative patterns of previous months. The hydrological impacts of drought (e.g., reservoir levels, groundwater levels, etc.) take longer to develop. Table 6-2 depicts magnitude of drought, while Table 6-3 describes the classification descriptions.

SECTION 6: DROUGHT

Table 6-2. Palmer Drought Index

DROUGHT INDEX	DROUGHT CONDITION CLASSIFICATIONS						
	Extreme	Severe	Moderate	Normal	Moderately Moist	Very Moist	Extremely Moist
Z Index	-2.75 and below	-2.00 to -2.74	-1.25 to -1.99	-1.24 to +.99	+1.00 to +2.49	+2.50 to +3.49	n/a
Meteorological	-4.00 and below	-3.00 to -3.99	-2.00 to -2.99	-1.99 to +1.99	+2.00 to +2.99	+3.00 to +3.99	+4.00 and above
Hydrological	-4.00 and below	-3.00 to -3.99	-2.00 to -2.99	-1.99 to +1.99	+2.00 to +2.99	+3.00 to +3.99	+4.00 and above

Table 6-3. Palmer Drought Category Descriptions²

CATEGORY	DESCRIPTION	POSSIBLE IMPACTS	PALMER DROUGHT INDEX
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting, growth of crops or pastures; fire risk above average. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered.	-1.0 to -1.9
D1	Moderate Drought	Some damage to crops, pastures; fire risk high; streams, reservoirs, or wells low, some water shortages developing or imminent, voluntary water use restrictions requested.	-2.0 to -2.9
D2	Severe Drought	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed.	-3.0 to -3.9
D3	Extreme Drought	Major crop/pasture losses; extreme fire danger; widespread water shortages or restrictions.	-4.0 to -4.9
D4	Exceptional Drought	Exceptional and widespread crop/pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells, creating water emergencies.	-5.0 or less

Drought is monitored nationwide by the National Drought Mitigation Center (NDMC). Indicators are used to describe broad scale drought conditions across the U.S. and correspond to the intensity of drought. Based on the historical occurrences for drought and the location of the Hill County planning area, the area can anticipate the full range of drought from abnormally dry to exceptional drought, or D0 to D4, based on the Palmer Drought Category. The entire planning area has experienced exceptional drought conditions. This is the highest level of drought severity and the most extreme drought conditions the planning area can anticipate in the future.

² Source: National Drought Mitigation Center

SECTION 6: DROUGHT

HISTORICAL OCCURRENCES

The Hill County planning area may experience an extreme drought in any given year. According to the U.S. Drought Monitor, between January 2000 and June 2025, the Hill County planning area spent 790 weeks (60%), over 28 unique drought periods, in some level of drought as defined as Abnormally Dry (D0) or worse conditions. The longest drought during this period lasted about 2 years and 9 months. Hill County has received 24 USDA disaster designations for drought from 2012 through 2024.

Figure 6-2. Hill County Drought Intensity, January 2000 – June 2025³

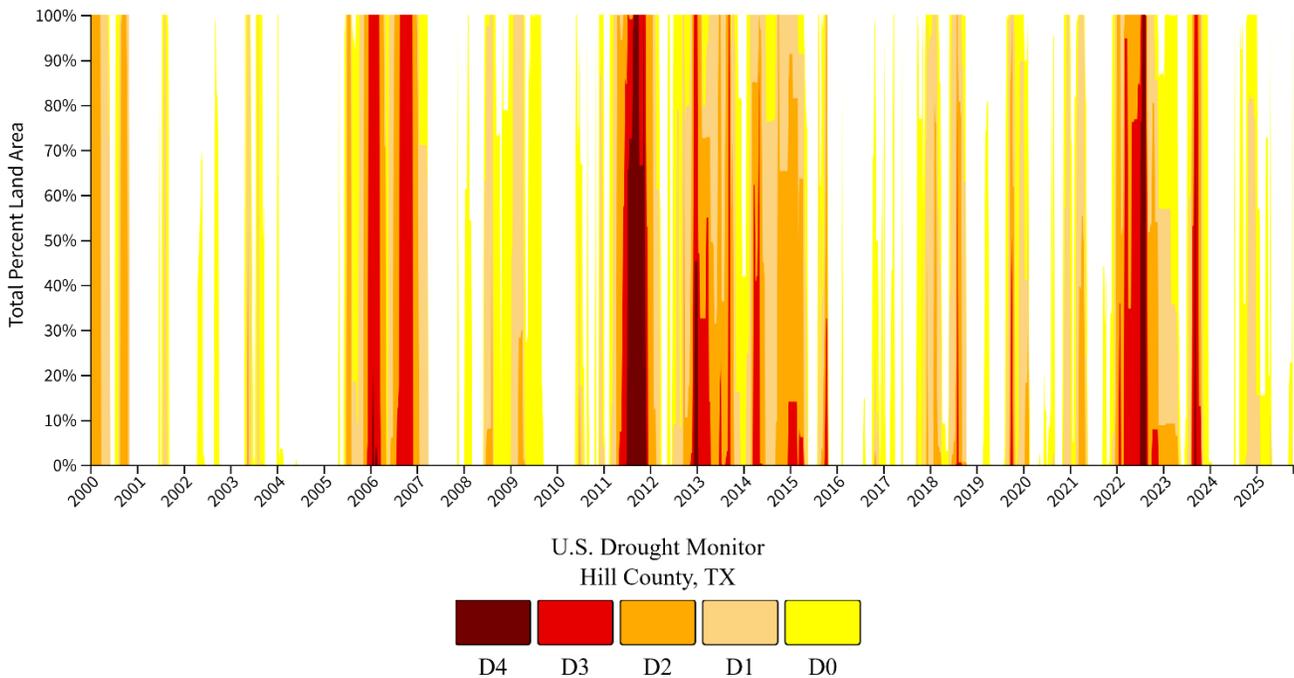


Table 6-4 lists historical events that have occurred in Hill County as reported in the National Centers for Environmental Information Storm Events Database (NCEI). A total of 84 drought impacts were reported in the NCEI in Hill County from January 2000 through June 2025. Historical drought impacts reported in the NCEI database for the Hill County planning area over the 25.5-year reporting period have resulted in an estimated \$2,466,800 (2025 dollars) in property and crop damages.

Historical drought information shows drought activity across a multi-county forecast area for each event, the appropriate percentage of the total property and crop damage reported for the entire forecast area has been allocated to each county impacted by the event. Historical drought data is provided on a county-wide basis per the NCEI Storm Events database. Only those events with reported damages are provided in Table 6-4. A summary of historical drought events is provided

³ U.S. Drought Monitor

SECTION 6: DROUGHT

in Table 6-5. Historical drought data for all participating jurisdictions are provided on a county-wide basis per the NCEI database.

Table 6-4. Historical Drought Events, January 2000 – June 2025⁴

JURISDICTION	DATE	INJURIES	DEATHS	PROPERTY DAMAGE	CROP DAMAGE
Hill County	10/1/2006	0	0	\$792,400	\$792,400
Hill County	11/1/2006	0	0	\$0	\$1,269,700
Hill County	3/10/2009	0	0	\$0	\$7,600
Hill County	4/1/2009	0	0	\$0	\$15,000
Hill County	4/17/2011	0	0	\$0	\$21,400
Hill County	5/1/2011	0	0	\$0	\$21,300
Hill County	6/1/2011	0	0	\$0	\$42,600
Hill County	7/1/2011	0	0	\$0	\$42,500
Hill County	8/1/2011	0	0	\$0	\$70,600
Hill County	9/1/2011	0	0	\$0	\$42,300
Hill County	10/1/2011	0	0	\$0	\$28,300
Hill County	11/1/2011	0	0	\$0	\$17,000
Hill County	12/1/2011	0	0	\$0	\$10,000
Hill County	1/1/2012	0	0	\$0	\$5,700
Hill County	9/25/2012	0	0	\$0	\$2,800
Hill County	11/13/2012	0	0	\$0	\$2,800
Hill County	12/1/2012	0	0	\$0	\$7,000
Hill County	1/1/2013	0	0	\$0	\$8,400
Hill County	2/1/2013	0	0	\$0	\$2,800
Hill County	3/1/2013	0	0	\$4,200	\$0
Hill County	4/1/2013	0	0	\$0	\$4,200
Hill County	5/1/2013	0	0	\$0	\$2,800
Hill County	6/1/2013	0	0	\$0	\$4,200

⁴ Only those events with reported injuries, fatalities, or damages were included in the table. Monetary damages are inflated to their 2025 value.

SECTION 6: DROUGHT

JURISDICTION	DATE	INJURIES	DEATHS	PROPERTY DAMAGE	CROP DAMAGE
Hill County	7/1/2013	0	0	\$0	\$1,400
Hill County	8/1/2013	0	0	\$0	\$4,200
Hill County	9/1/2013	0	0	\$0	\$5,500
Hill County	10/1/2013	0	0	\$0	\$2,800
Hill County	3/11/2014	0	0	\$0	\$5,500
Hill County	5/1/2014	0	0	\$0	\$2,700
Hill County	6/1/2014	0	0	\$0	\$1,400
Hill County	10/1/2014	0	0	\$0	\$1,400
Hill County	11/1/2014	0	0	\$0	\$1,400
Hill County	12/1/2014	0	0	\$0	\$6,900
Hill County	1/1/2015	0	0	\$0	\$1,400
Hill County	2/1/2015	0	0	\$0	\$2,800
Hill County	3/1/2015	0	0	\$0	\$1,400
Hill County	4/1/2015	0	0	\$0	\$1,400
Hill County	10/1/2015	0	0	\$1,400	\$0
Hill County	12/1/2017	0	0	\$0	\$1,300
Hill County	8/1/2018	0	0	\$0	\$2,600
Hill County	9/24/2019	0	0	\$0	\$1,300
TOTALS		0	0	\$798,000	\$2,466,800

Table 6-5. Historical Drought Events Summary, January 2000 – June 2025

JURISDICTION	DROUGHT IMPACTS	INJURIES	DEATHS	PROPERTY DAMAGE	CROP DAMAGE
Hill County	84	0	0	\$798,000	\$2,466,800

Based on the historical drought events for the Hill County planning area 26 drought impacts and 7 unique drought periods have occurred since the 2020 Plan.

SIGNIFICANT EVENTS

April 2011 – December 2011

A general lack of rain in the spring of 2011 led to a prolonged drought period starting in April. Though there was some rainfall at the end of the month, it wasn't nearly enough to provide relief. During April and most of May 2011, the county was experiencing severe (D2) drought conditions.

SECTION 6: DROUGHT

By the end of May however, the county was upgraded to extreme (D3) drought conditions. Although the county received about 2 inches of rain, it did little to improve the drought conditions. On June 24th, the U.S. Department of Agriculture (USDA) declared Hill County a primary natural disaster area. As summer progressed with little to no rainfall, the county got upgraded to exceptional (D4) drought conditions. At this time, most of the lakes in the area continued to suffer and water levels fell below conservation levels. As fall approached and the county began to receive much needed rainfall, the planning area was finally downgraded to extreme (D3) drought conditions by the end of November. By December, Hill County received 3-6 inches of rain, finally alleviating most of the drought. By the end of the month, the county was downgraded to severe (D2) drought conditions. This period of drought became the driest year on record for the State of Texas.

September 2012 – April 2015

Following a very dry Fall of 2012, Hill County began experiencing severe (D2) drought conditions by the end of September. By January of 2013, the planning area was very quickly elevated to exceptional (D4) drought conditions following rainfall over 2 inches below the normal for the month. Although the county received nearly 5 inches of rain in January, alleviating the drought for a little bit, spring approached with very minimal rain causing extreme (D3) drought conditions to develop again. Drought conditions continued throughout the summer months, as very minimal rain fell. These conditions lingered into October of 2013, but with the area receiving some rainfall, it did slightly improve drought conditions. The county was met with more drought conditions early in the spring. Although March is typically one of the wettest months, rainfall was nearly 3 inches below normal, placing the county in extreme (D3) drought conditions. With more rainfall occurring throughout the spring months, the planning area was downgraded to severe (D2) drought conditions. These drought conditions continued the rest of 2014, and by spring of 2015, the county was downgraded moderate (D1) drought conditions, following multiple rounds of rain. This drought period became the longest period of drought since 2000.

PROBABILITY OF FUTURE EVENTS

According to the U.S. Drought Monitor, 28 unique drought periods (ranging from five weeks to about 2 years and 9 months in duration) over a 25.5-year reporting period, provides a probability of approximately one event every year. This frequency supports a “Highly Likely” probability of future events for the Hill County planning area, including all participating jurisdictions.

CLIMATE CHANGE CONSIDERATIONS

With the range of factors influencing drought conditions, it is impossible to make quantitative statewide projections of drought trends; however, many factors point toward increased drought severity. Drought will continue to be driven largely by precipitation variability over multiple decades, with long-term precipitation trends expected to be relatively small. Other factors affecting drought impacts, such as increased temperatures and improved plant water use efficiency, can affect water availability. These impacts could cause drought impact trends to be

SECTION 6: DROUGHT

highly sector-specific, with the impacts possibly smaller for agriculture than for surface water supply.⁵

It is projected that future changes to Hill County will include increased temperatures, which according to the U.S. Climate Explorer, the planning area may experience a 6°F increase in average extreme heat temperatures. Historically, extreme temperatures averaged 101°F in Hill County, but between 2035 and 2064 the average will be 107°F, increasing the severity and frequency of drought events. Some projections show an even higher increase; however, the severity will be dependent on overall future emissions and is subject to change.

VULNERABILITY AND IMPACT

Loss estimates were based on 25.5 years of statistical data from the NCEI and the U.S. Drought Monitor. A drought event frequency-impact was then developed to determine an impact profile on agriculture products and estimate potential losses due to drought in the area. All existing and future buildings, facilities, and populations are exposed to this hazard and could potentially be impacted. However, drought impacts are mostly experienced in water shortages or crop and livestock losses on agricultural lands and typically have minimal impact on buildings.

The Hill County Planning Team identified the following critical facilities as assets that are considered the most important to the planning area and are susceptible to a range of impacts caused by drought events. For a comprehensive list by participating jurisdiction, please see Appendix C.

Table 6-6. Critical Facilities Vulnerable to Drought Events

CRITICAL FACILITIES	POTENTIAL IMPACTS
Emergency Response Services (EOC, Fire, Police, EMS, Hospitals)	<ul style="list-style-type: none">• Increased law enforcement activities may be required to enforce water restrictions.• Firefighters may have limited water resources to aid in firefighting and suppression activities, increasing risk to lives and property.• Potential for increased number of emergency calls as drought events can lead to cascading hazard events such as wildfires and flash flooding.
Airport, Academic Institutions, Community Residential Facilities, Day Care Facilities, Evacuation Centers & Shelters, Governmental Facilities	<ul style="list-style-type: none">• Strain on staff as drought may cause health problems related to low water flows and poor water quality.• Operations dependent on water supply may be adversely impacted.

⁵ Cleaveland, M. K., T. H. Votteler, D. K. Stahle, R. C. Casteel, and J. L. Banner, 2011: Extended Chronology of Drought in South Central, Southeastern and West Texas. Texas Water Journal, 2, 54-96, as cited in Assessment of Historic and Future Trends of Extreme Weather in Texas, 1900-2036, Texas A&M University Office of the Texas State Climatologist, 2021 update.

SECTION 6: DROUGHT

CRITICAL FACILITIES	POTENTIAL IMPACTS
Commercial Suppliers (food, gas, etc.)	<ul style="list-style-type: none"> Operations dependent on water supply may be adversely impacted.
Utility Services and Infrastructure (electric, water, wastewater, communications)	<ul style="list-style-type: none"> Potential for increased number of emergency calls as drought events can lead to cascading hazard events such as wildfires and flash flooding. Operations dependent on water supply may be adversely impacted.

Even with the planning area relying on multiple water utility providers as well as local and private service, high demand can still deplete these resources during extreme drought conditions. As resources are depleted, potable water is in short supply and overall water quality can suffer, elevating health concerns for all residents but especially vulnerable populations – typically children, the elderly, and the ill. In addition, potable water is used for drinking, sanitation, patient care, sterilization, equipment, heating and cooling systems, and many other essential functions in medical facilities.

The average person will survive only a few days without potable water, and this timeframe can be drastically shortened for those people with more fragile health – typically children, the elderly, and people with disabilities. In addition, people who speak a language other than English may face increased vulnerability due to language barriers that limit their access to important information such as weather-related warnings and instructions regarding safety measures.

The population over 65 in the Hill County planning area is estimated at 20 percent of the total population and children under the age of 5 are estimated at 6 percent. The population with a disability is estimated at 18 percent of the total population. An estimated 14 percent of the planning area population live below the poverty level and 5 percent of the populations speak English ‘less than very well’ (Table 6-7).

Table 6-7. Populations at Greater Risk by Participating Jurisdiction

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Hill County	7,442	2,114	6,410	5,206	1,836
City of Abbott	75	26	33	1	1
City of Aquilla	7	8	7	10	5
City of Blum	41	25	48	120	14
City of Bynum	28	10	32	12	0
City of Carl’s Corner	35	22	119	39	23
City of Covington	59	19	31	14	0

SECTION 6: DROUGHT

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
City of Hillsboro	1,246	699	1,370	1,633	923
City of Hubbard	288	81	325	218	72
City of Itasca	261	106	292	171	73
City of Malone	21	23	53	163	64
City of Mertens	14	8	49	13	17
City of Mount Calm	93	34	124	89	3
City of Penelope	56	25	47	12	24
City of Whitney	496	121	497	503	234

The planning area is also vulnerable to food shortages when drought conditions exist, and potable water is in short supply. Potable water is used for drinking, sanitation, patient care, sterilization, equipment, heating and cooling systems, and many other essential functions in medical facilities. All residents in the Hill County planning area could be adversely affected by drought conditions, which could limit water supplies and present health threats.

The economic impact of droughts can be significant as they produce a complex web of impacts that spans many sectors of the economy and reach well beyond the area experiencing physical drought. This complexity exists because water is integral to our ability to produce goods and provide services. If droughts extend over several years, the direct and indirect economic impact can be significant.

Hill County has a prominent agricultural sector and features 2,011 farms over 566,852 acres of land including grains, sod, poultry and eggs, cattle and calves. Hill County's annual market value of agricultural products sold is over \$129,941,000. An estimated 28 percent of sales are from livestock and poultry products and an estimated 73 percent of sales are from crops. Most of the County's agriculture sales are poultry and eggs. A lactating dairy cow will consume 30 to 50 gallons of water a day. The average adult beef cow requires approximately 12 gallons of water a day. Drought can negatively affect nutrition sources, milk production, and future yields. Dry pastures lead to lower quality hay and increased fire danger. Decreases in feed availability can lead to overgrazing. Heat stress can decrease milk production in dairy cattle. Prolonged drought periods could have devastating impacts on the agricultural industry across the planning area.

Impacts of past droughts experienced in the Hill County planning area have not resulted in injuries or fatalities, supporting a "Limited" severity of impact meaning injuries and/or illnesses are treatable with first aid, shutdown of facilities and services for 24 hours or less, and less than 10 percent of property is impacted. The annualized losses due to drought over the 25.5-year reporting period in the Hill County planning area are estimated at \$128,000. Table 6-8 shows annualized exposure.

SECTION 6: DROUGHT

Table 6-8. Estimated Annualized Losses for Hill County

JURISDICTION	TOTAL PROPERTY & CROP LOSS (2025 dollars)	ANNUAL LOSS ESTIMATES (2025 dollars)
Hill County	\$3,264,800	\$128,000

ASSESSMENT OF IMPACTS

The Drought Impact Reporter was developed in 2005 by the University of Nebraska-Lincoln to provide a national database of drought impacts. Droughts can have an impact on agriculture, business and industry; energy; fire; plants and wildlife; relief, response, and restrictions; society and public health; tourism and recreation; and water supply and quality. The reports are submitted from individuals to Federal, State, and local agencies, as well as the general public. Table 6-9 lists the drought impacts to Hill County from January 2005 to June 2025 based on reports received by the Drought Impact Reporter.

Table 6-9. Drought Impacts, January 2005 – 2025

DROUGHT IMPACTS	
Agriculture	105
Business & Industry	3
Energy	0
Fire	22
Plants & Wildlife	72
Relief, Response & Restrictions	21
Society & Public Health	5
Tourism & Recreation	1
Water Supply & Quality	49

Drought has the potential to impact people in the Hill County planning area. While it is rare that drought, in and of itself, leads to a direct risk to the health and safety of people in the U.S., severe water shortages could result in inadequate supply for human needs. Based on historical population trends, the Hill County population is projected to increase. Future growth can cause concern for the current water infrastructure and demand for the planning area. Severe drought conditions can be frequently associated with a variety of impacts, including:

- The number of health-related low-flow issues (e.g., diminished sewage flows, increased pollution concentrations, reduced firefighting capacity, and cross-connection contamination) will increase as the drought intensifies.
- Public safety from forest/range/wildfires will increase as water availability and/or pressure decreases.

SECTION 6: DROUGHT

- Respiratory ailments may increase as the air quality decreases.
- There may be an increase in disease due to wildlife concentrations (e.g., rabies, Rocky Mountain spotted fever, Lyme disease).
- Residents may disagree with the County and City over water use/water rights, creating conflict.
- Political conflicts may increase between municipalities, counties, states, and regions.
- Water management conflicts may arise between competing interests.
- Increased law enforcement activities may be required to enforce water restrictions.
- Severe water shortages could result in inadequate supply for human needs as well as lower quality of water for consumption.
- Firefighters may have limited water resources to aid in firefighting and suppression activities, increasing risk to lives and property.
- During drought there is an increased risk for wildfires and dust storms.
- The community may need increased operational costs to enforce water restriction or rationing.
- Prolonged drought can lead to increases in illness and disease related to drought.
- Utility providers can see decreases in revenue as water supplies diminish.
- Utilities providers may cut back energy generation and service to their customers to prioritize critical service needs.
- Hydroelectric power generation facilities and infrastructure would have significantly diminished generation capability. Dams simply cannot produce as much electricity from low water levels as they can from high water levels.
- Fish and wildlife food and habitat will be reduced or degraded over time during a drought and disease will increase, especially for aquatic life.
- Wildlife will move to more sustainable locations creating higher concentrations of wildlife in smaller areas, increasing vulnerability, and further depleting limited natural resources.
- There are eight federally endangered, threatened or candidate species in Hill County. Severe and prolonged drought can result in the reduction of a species or cause the extinction of a species altogether.
- Plant life will suffer from long-term drought. Wind and erosion will also pose a threat to plant life as soil quality will decline. The urban tree canopy, including county and city parks, are vulnerable to the impacts of prolonged drought.
- Dry and dead vegetation will increase the risk of wildfire.
- Drought poses a significant risk to annual and perennial crop production and overall crop quality leading to higher food costs.
- Drought-related declines in production may lead to an increase in unemployment.
- Drought may limit livestock grazing resulting in decreased livestock weight, potential increased livestock mortality, and increased cost for feed.
- Negatively impacted water suppliers may face increased costs resulting from the transport water or developing supplemental water resources.
- Long term drought may negatively impact future economic development.

The overall extent of damage caused by periods of drought is dependent on its extent and duration. The level of preparedness and pre-event planning done by the community, local businesses, and citizens will contribute to the overall economic and financial conditions in the aftermath of a drought event.

Section 7

Extreme Heat



SECTION 7: EXTREME HEAT

Hazard Description	1
Location	1
Extent	1
Historical Occurrences	4
Significant Events	5
Probability of Future Events	5
Climate Change Considerations	5
Vulnerability and Impact	6
Assessment of Impacts	8

HAZARD DESCRIPTION

Extreme heat is a prolonged period of excessively high temperatures and exceptionally humid conditions. Extreme heat during the summer months is a common occurrence throughout the State of Texas, and the Hill County planning area is no exception. The County typically experiences extended heat waves or an extended period of extreme heat and is often accompanied by high humidity.



Although heat can damage buildings and facilities, it presents a more significant threat to the safety and welfare of citizens. The major human risks associated with extreme heat include heat cramps; sunburn; dehydration; fatigue; heat exhaustion; and even heat stroke. The most vulnerable population to heat casualties are children and the elderly or infirmed who frequently live on low fixed incomes and cannot afford to run air-conditioning on a regular basis. This population is sometimes isolated, with no immediate family or friends to look out for their well-being.

Critical infrastructure can also be damaged or impacted by extreme heat. High temperatures may cause a rise in electricity consumption as homes, schools, and businesses try to regulate the temperature. This may lead to energy shortages and possible blackouts.

LOCATION

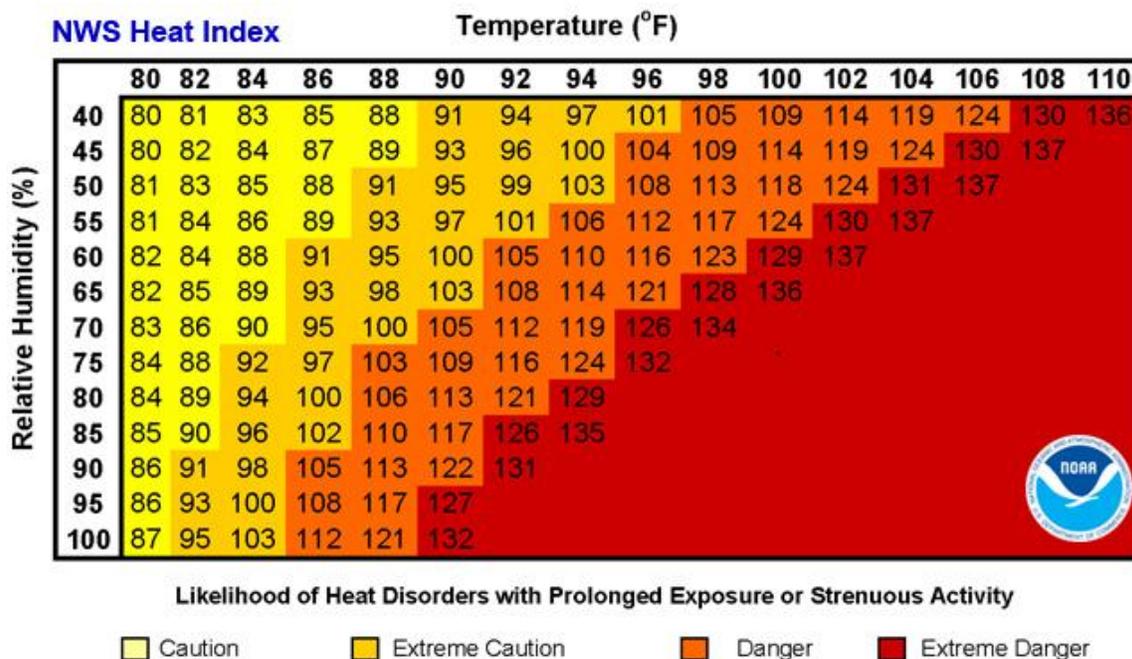
Extreme heat events can occur anywhere throughout the Hill County planning area, including all participating jurisdictions, as there is no specific geographic scope to the extreme heat hazard.

EXTENT

The magnitude or intensity of an extreme heat event is measured according to temperature in relation to the percentage of humidity. According to the National Oceanic Atmospheric Administration (NOAA), this relationship is referred to as the “Heat Index” and is depicted in Figure 7-1. This index measures how hot it feels outside when humidity is combined with high temperatures.

SECTION 7: EXTREME HEAT

Figure 7-1. Extent Scale for Extreme Heat¹



The index in Figure 7-1 displays varying categories of caution depending on the relative humidity combined with the temperature. For example, when the temperature is at 90 degrees Fahrenheit (°F) or lower, caution should be exercised if the humidity level is at or above 40 percent.

The shaded zones on the chart indicate varying symptoms or disorders that could occur depending on the magnitude or intensity of the event. “Caution” is the first category of intensity, and it indicates when fatigue due to heat exposure is possible. “Extreme Caution” indicates that sunstroke, muscle cramps, or heat exhaustion are possible, and a “Danger” level means that these symptoms are likely. “Extreme Danger” indicates that heat stroke is likely. The National Weather Service (NWS) initiates alerts based on the Heat Index as shown in Table 7-1.

Table 7-1. Heat Index and Warnings

CATEGORY	HEAT INDEX	POSSIBLE HEAT DISORDERS	WARNING TYPE
Extreme Danger	125°F and higher	Heat stroke or sun stroke likely.	An Excessive Heat Warning is issued if the Heat Index rises above 105°F at least 3 hours during the day or above 80°F at night.
Danger	103 – 124°F	Sunstroke, muscle cramps, and/or heat exhaustion are likely. Heatstroke possible with prolonged exposure and/or physical activity.	An Excessive Heat Warning is issued if the Heat Index rises above 105°F at least 3 hours during the day or above 80°F at night.

¹ Source: NOAA

SECTION 7: EXTREME HEAT

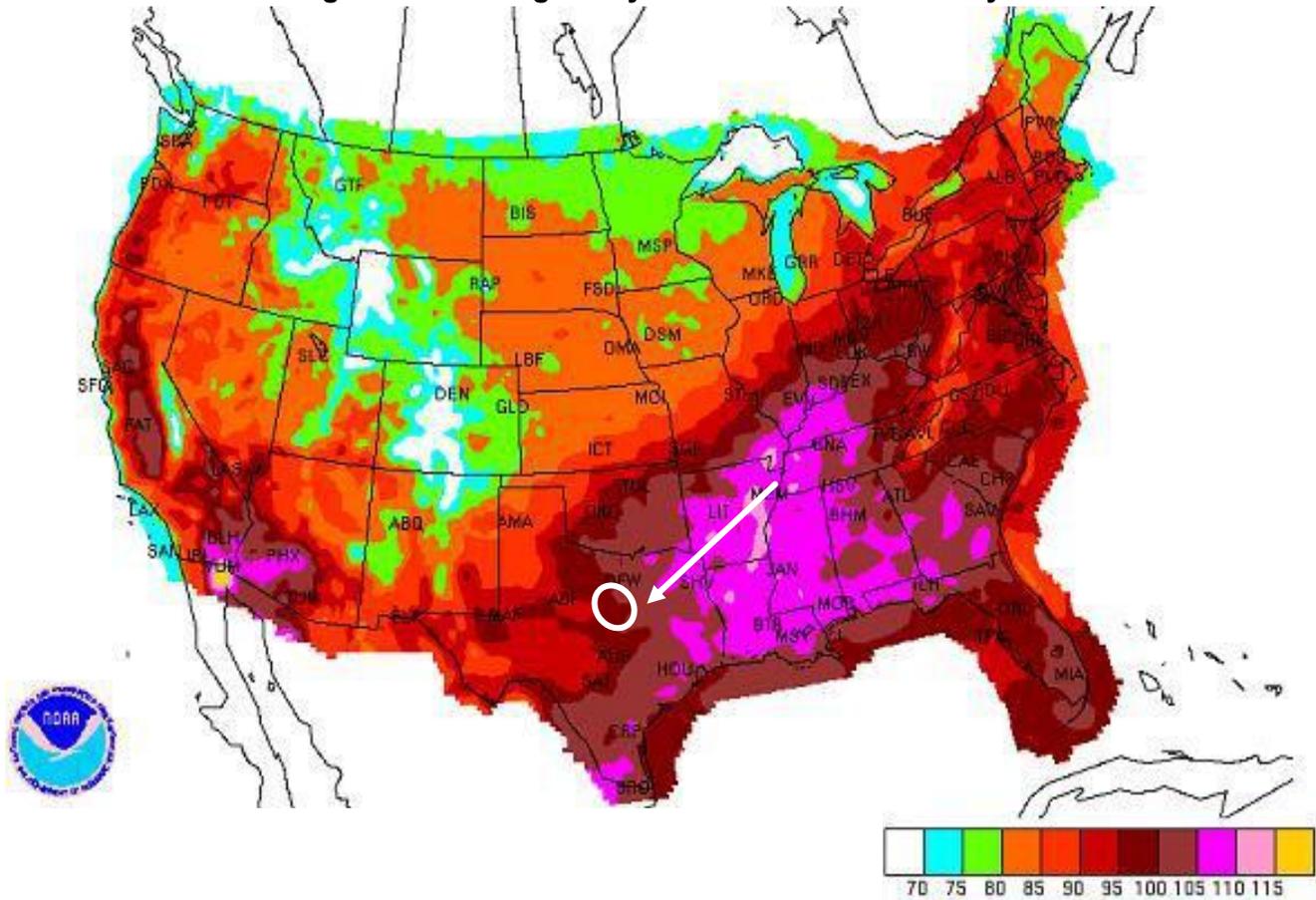
CATEGORY	HEAT INDEX	POSSIBLE HEAT DISORDERS	WARNING TYPE
Extreme Caution	90 – 103°F	Sunstroke, muscle cramps, and/or heat exhaustion possible with prolonged exposure and/or physical activity.	A Heat Advisory will be issued to warn that the Heat Index may exceed 105°F.
Caution	80 – 90°F	Fatigue is possible with prolonged exposure and/or physical activity.	A Heat Advisory will be issued to warn that the Heat Index may exceed 105°F.

Due to its geography and its hot, humid, and subtropical climate, the Hill County planning area can expect an extreme heat event each summer. Citizens, especially children and the elderly, should exercise caution by staying out of the heat for prolonged periods when a heat advisory or excessive heat warning is issued. In addition, those working or remaining outdoors for extended periods of time are at greater risk.

Figure 7-2 displays the daily maximum heat index as derived from NOAA based on data compiled from 1838 to 2015. The white circle shows the Hill County planning area. The planning area is represented in a dark red and maroon color across the County. The dark red color indicates an average daily heat index of 95°F to 100°F. The maroon color indicates an average daily heat index of 100°F to 105°F. Therefore, Hill County could experience dangerous heat from 95°F to 105°F and should mitigate to the extent of “Extreme Caution” and “Danger” which can include sunstroke, muscle cramps, heat exhaustion, and heatstroke. This is the average maximum temperature the planning area can anticipate based on historical events.

SECTION 7: EXTREME HEAT

Figure 7-2. Average Daily Maximum Heat Index Days²



HISTORICAL OCCURRENCES

The National Centers for Environmental Information (NCEI) Storm Events database is a national data source organized under the National Oceanic and Atmospheric Administration (NOAA). The NCEI is the largest archive available for historic storm events data. Previous occurrences for extreme heat are derived from the NCEI database, which identifies extreme heat events at the county level for each event. According to heat related incidents located within Hill County, there have been 51 extreme heat events on record for the planning area (Table 7-2). Historical data for all participating jurisdictions are provided on a county-wide basis per the NCEI database from 1996 through 2025. No injuries or damages were reported to the NCEI, however there was one reported death.

Only extreme heat events that have been reported have been factored into this Risk Assessment. It is highly likely additional extreme heat occurrences have gone unreported before and during

² NRDC and the white circle indicates the Hill County planning area.

SECTION 7: EXTREME HEAT

the recording period. Due to historical underreporting of extreme heat events, average high temperatures have also been analyzed in order to determine the probability of future events.

Table 7-2. Historical Extreme Heat Events Summary, 1996 – 2025

JURISDICTION	NUMBER OF EVENTS	DEATH	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Hill County	51	1	0	\$0	\$0

Based on the list of historical extreme heat events for the Hill County planning area, 44 events were reported to the NCEI since the 2020 Plan.

SIGNIFICANT EVENTS

June 19, 1998

A prolonged and intense heatwave affected parts of North Texas from late May through early September. On June 19, 1998, a two-year-old girl died after being accidentally left in a closed vehicle on June 17. The cause of death was determined to be hyperthermia, with no secondary complications reported.

July 8 to July 10, 2019

Hot and humid conditions led to heat index values ranging from 105°F to 110°F across much of North and Central Texas on July 9 and 10, 2019. In the afternoons of July 8 and 9, heat index readings between 105°F and 108°F were recorded throughout the county.

August 1 to August 23, 2024

Some of the hottest weather of the season occurred in mid-to-late August as a strong mid- and upper-level ridge settled over North and Central Texas. Heat Advisory criteria were met across the entire forecast area, with much of the region reaching Excessive Heat Warning levels multiple times during this period. On August 20, 2024, temperatures across much of the County reached or exceeded 105°F, and heat index values met or surpassed 110°F.

PROBABILITY OF FUTURE EVENTS

According to historical records, the Hill County planning area has experienced 51 events in a 29.5-year reporting period. Historical records in combination with an analysis of maximum average temperatures provide a probability of at least one event every year. This frequency supports an “Highly Likely” probability of future events including participating jurisdictions.

CLIMATE CHANGE CONSIDERATIONS

Climate change is expected to lead to an increase in average temperatures as well as an increase in frequency, duration, and intensity of extreme heat events. With no reductions in emissions worldwide, the state of Texas is projected to experience an additional 30 to 60 days per year above 100°F than what is experienced now.³

³ Nielsen-Gammon, John, Holman, Sara, Buley, Austin and Jorgensen, Savannah. Assessment of Historic and Future Trends of Extreme Weather in Texas, 1900-2036, 2021 Update. Texas A&M University Office of the Texas State Climatologist. October 7, 2021. <https://climatexas.tamu.edu/files/ClimateReport-1900to2036-2021Update>

SECTION 7: EXTREME HEAT

In addition, it is projected that future changes to Hill County will include increased temperatures, which according to the U.S. Climate Explorer, the planning area may experience a 6°F increase in the average extreme heat temperatures. Historically, extreme temperatures averaged 101°F in Hill County, but between 2035 and 2064 the average will be 107°F, increasing the severity and frequency of extreme heat events. Some projections show an even higher increase; however, the severity will be dependent on overall future emissions and is subject to change.

VULNERABILITY AND IMPACT

While the entirety of the Hill County planning area is exposed to extreme temperatures, existing buildings, infrastructure, and critical facilities are not likely to sustain significant damage from extreme heat events. Therefore, any estimated property losses associated with the extreme heat hazard are anticipated to be minimal across the area.

Every summer, the hazard of heat-related illness becomes a significant public health issue throughout much of the United States. Mortality rates increase during heat waves, and excessive heat is an important contributing factor to deaths from other causes, particularly among the elderly. Extreme temperatures present a significant threat to life and safety for the population of the County as a whole. Heat casualties, for example, are typically caused by a lack of adequate air conditioning or heat exhaustion. The most vulnerable population to heat casualties are the elderly or infirmed who frequently live on fixed incomes and cannot afford to run air conditioning on a regular basis. This population is sometimes isolated, with no immediate family or friends to look out for their well-being. Children may also be more vulnerable if left unattended in vehicles. Populations living below the poverty level are often unable to run air conditioning on a regular basis and are limited in their ability to seek medical treatment.

Vulnerable and underserved populations are disproportionately impacted by extreme heat events as they may be more susceptible to health risks. The population below the poverty level are less likely to be able to afford air conditioning during the hot summer months as well as less likely to have access to medical care. In addition, people who speak a language other than English may face increased vulnerability due to language barriers that limit their access to important information such as weather-related warnings and instructions regarding safety measures.

The population over 65 in the Hill County planning area is estimated at 20 percent of the total population and children under the age of 5 are estimated at 6 percent. The population with a disability is estimated at 18 percent of the total population. An estimated 14 percent of the planning area population live below the poverty level and 5 percent of the populations speak English ‘less than very well’ (Table 7-4).

Table 7-4. Populations at Greater Risk by Participating Jurisdiction

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Hill County	7,442	2,114	6,410	5,206	1,836
City of Abbot	75	26	33	1	1
City of Aquilla	7	8	7	10	5

SECTION 7: EXTREME HEAT

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
City of Blum	41	25	48	120	14
Town of Bynum	28	10	32	12	0
City of Carl's Corner	35	22	119	39	23
City of Covington	59	19	31	14	0
City of Hillsboro	1,246	699	1,370	1,633	923
City of Hubbard	288	81	325	218	72
City of Itasca	261	106	292	171	73
Town of Malone	21	23	53	163	64
Town of Mertens	14	8	49	13	17
City of Mount Calm	93	34	124	89	3
Town of Penelope	56	25	47	12	24
City of Whitney	496	121	497	503	234

Extremely high temperatures can have significant secondary impacts, leading to droughts, water shortages, increased fire danger, and prompt excessive demands for energy. The possibility of rolling blackouts increases with unseasonably high temperatures in what is a normally mild month with low power demands. Typically, more than 12 hours of warning time would be given before the onset of an extreme heat event.

In terms of vulnerability to structures, the impact from extreme heat is considered negligible. Based on historical records, annualized property and crop losses for the Hill County planning area, including all participating jurisdictions, are negligible. However, with one reported fatality, the potential impact of excessive summer heat is considered “Substantial,” with multiple deaths and injuries possible depending on the extent and duration of the event.

The Hill County Planning Team identified the following critical facilities as assets that are considered the most important to the planning area and are susceptible to a range of impacts caused by extreme heat events. The following critical facilities would be vulnerable to extreme heat events in the Hill County planning area. For a comprehensive list by participating jurisdiction, please see Appendix C.

SECTION 7: EXTREME HEAT

Table 7-5. Critical Facilities Vulnerable to Extreme Heat Events

CRITICAL FACILITIES	POTENTIAL IMPACTS
Emergency Response Services (EOC, Fire, Police, EMS, Hospitals)	<ul style="list-style-type: none"> • Emergency operations, services and response times may be significantly impacted due to power outages, and/or loss of communications. • Exposure to heat can cause heat illnesses in first responders, especially for those in heavy equipment. • Roads may become impassable due to excessive heat causing asphalt roads to soften and concrete roads to shift or buckle impacting response times by emergency services. • Extended power outages due to increased usage may lead to possible looting, destruction of property, and theft, further burdening law enforcement resources.
Airport, Academic Institutions, Community Residential Facilities, Day Care Facilities, Evacuation Centers & Shelters, Governmental Facilities	<ul style="list-style-type: none"> • Facilities, infrastructure, or critical equipment including communications may be damaged, destroyed or otherwise inoperable. • Power outages due to increased usage could disrupt critical care. • Backup power sources could be damaged. • Evacuations may be necessary due to extended power outages, breaks in water main lines or other associated damage to facilities. • Facilities, infrastructure, or critical equipment including communications may be damaged, destroyed or otherwise inoperable. • Economic disruption due to power outages negatively impact airport services as well as area businesses reliant on airport operations.
Commercial Suppliers (food, gas, etc.)	<ul style="list-style-type: none"> • Facilities, infrastructure, or critical equipment including communications may be damaged, destroyed or otherwise inoperable. • Essential supplies like medicines, water, food, and equipment deliveries may be delayed.
Utility Services and Infrastructure (electric, water, wastewater, communications)	<ul style="list-style-type: none"> • Emergency operations, services and response times may be significantly impacted due to power outages, and/or loss of communications. • Roads may become impassable due to excessive heat causing asphalt roads to soften and concrete roads to shift or buckle impacting response times by emergency services. • Breaks in water main lines or other associated damage to facilities.

ASSESSMENT OF IMPACTS

The greatest risk from extreme heat is to public health and safety. Extreme heat conditions can be frequently associated with a variety of impacts, including:

- Vulnerable populations, particularly the elderly (20 percent of total population), children under 5 (6 percent of total population), and those with a disability (18 percent of total population) can face serious or life-threatening health problems from exposure to extreme

SECTION 7: EXTREME HEAT

heat including hyperthermia, heat cramps, heat exhaustion, and heat stroke (or sunstroke).

- Response personnel, including utility workers, public works personnel, and any other professions where individuals are required to work outside, are more subject to extreme heat related illnesses since their exposure would typically be greater.
- High energy demand periods can outpace the supply of energy, potentially creating the need for rolling brownouts which would elevate the risk of illness to vulnerable residents.
- Highways and roads may be damaged by excessive heat causing asphalt roads to soften and concrete roads to shift or buckle.
- Vehicle engines and cooling systems typically run harder during extreme heat events resulting in increases in mechanical failures.
- Extreme heat events during times of drought can exacerbate the environmental impacts associated with drought, decreasing water and air quality and further degrading wildlife habitat.
- Extreme heat increases ground-level ozone (smog), increasing the risk of respiratory illnesses.
- Negatively impacted water suppliers may face increased costs resulting from the transport of water resources or development of supplemental water resources.
- Tourism and recreational activities at places may be negatively impacted during extreme heat events, reducing seasonal revenue.
- Outdoor activities may see an increase in school injury or illness during extreme heat events.

The economic and financial impacts of extreme heat on the community will depend on the duration of the event, demand for energy, drought associated with extreme heat, and many other factors. The level of preparedness and the amount of planning done by the community, local businesses, and citizens will impact the overall economic and financial conditions before, during, and after an extreme heat event.



Section 8

Flood

SECTION 8: FLOOD

Hazard Description	1
Location	1
Extent.....	16
Historical Occurrences.....	32
Significant Events	34
Probability of Future Events.....	35
Climate Change Considerations	35
Vulnerability and Impact.....	35
Assessment of Impacts	40
National Flood Insurance Program (NFIP) Participation.....	42
NFIP Compliance and Maintenance	43
Repetitive Loss	44

HAZARD DESCRIPTION

Floods generally result from excessive precipitation. The severity of a flood event is determined by a combination of several major factors, including: stream and river basin topography and physiography; precipitation and weather patterns; recent soil moisture conditions; and the degree of vegetative clearing and impervious surfaces. Typically, floods are long-term events that may last for several days.

The primary types of general flooding are inland and coastal flooding. Due to Hill County’s inland location, only inland flooding is profiled in this section. Inland or riverine flooding is a result of excessive precipitation levels and water runoff volumes within the watershed of a stream or river. Inland or riverine flooding is overbank flooding of rivers and streams, typically resulting from large-scale weather systems that generate prolonged rainfall over a wide geographic area. Therefore, it is a naturally occurring and inevitable event. Some river floods occur seasonally when winter or spring rainfalls fill river basins with too much water, too quickly. Torrential rains from decaying hurricanes or tropical systems can also produce river flooding.

The Hill County planning area is subject to extreme rainfall events, often in short durations, leading to dangerous flash flooding events. Floods are a natural and recurrent event and take place every year, in all seasons.

LOCATION

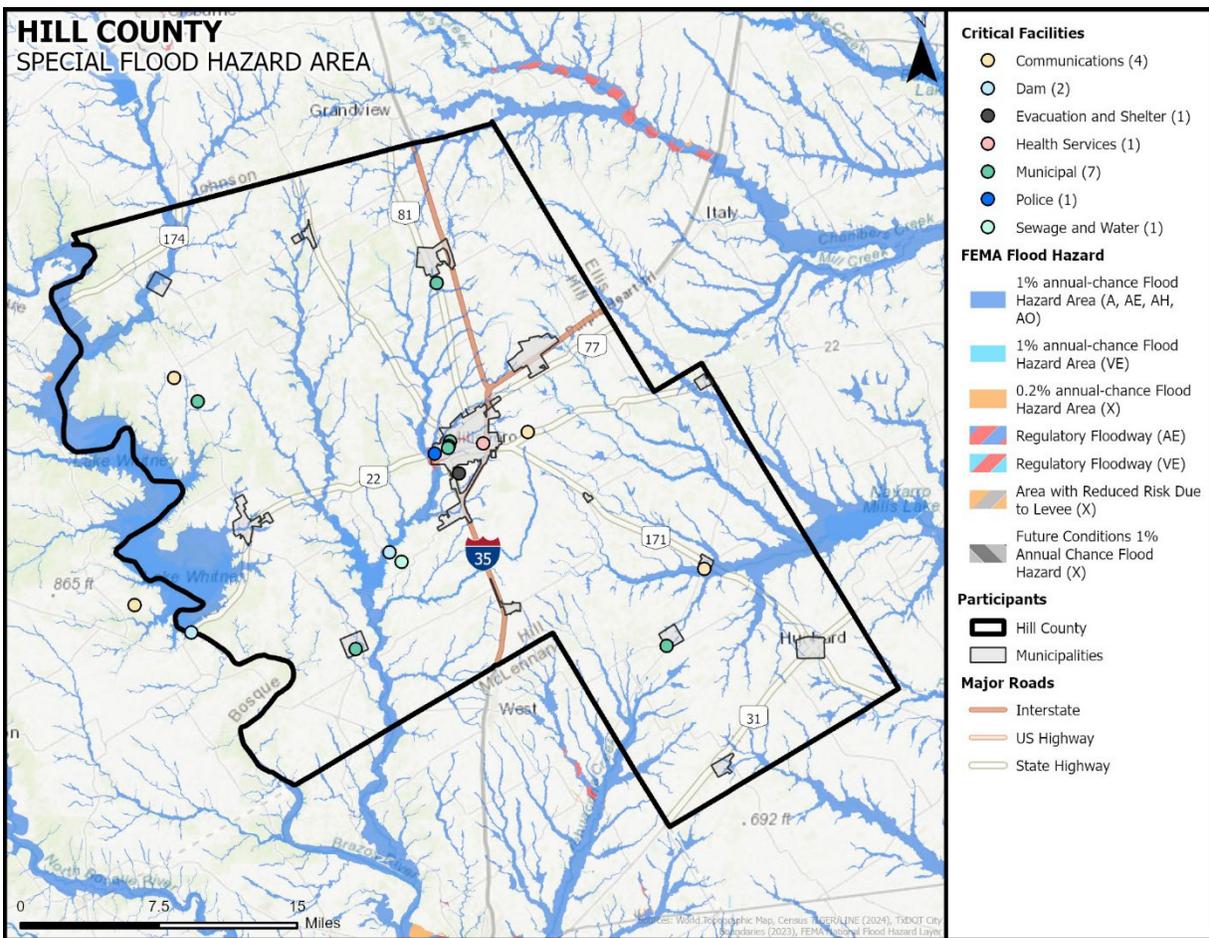
The Flood Insurance Rate Maps (FIRMs) prepared by FEMA provide an overview of flood risk but can also be used to identify the areas of the County that are vulnerable to flooding. FIRMs are used to regulate new development and to control the substantial improvement and repair of substantially damaged buildings. Flood Insurance Studies (FIS) are often developed in conjunction with FIRMs. The FIS typically contains a narrative of the flood history of a community and discusses the engineering methods used to develop the FIRMs. The FIS also contains flood profiles for studying flooding sources and can be used to determine Base Flood Elevations (BFEs) for some areas.

SECTION 8: FLOOD

The FIS for Hill County is dated December 20, 2019. This compiles all previous flood information including data collected on numerous waterways. This study indicates that flooding is usually associated with intense rainfall from localized thunderstorms. These floods may occur during any season of the year but are most likely in the summer months as a result of torrential rains. Flooding also periodically occurs within the City of Whitney, due to the location of Whitney Lake.

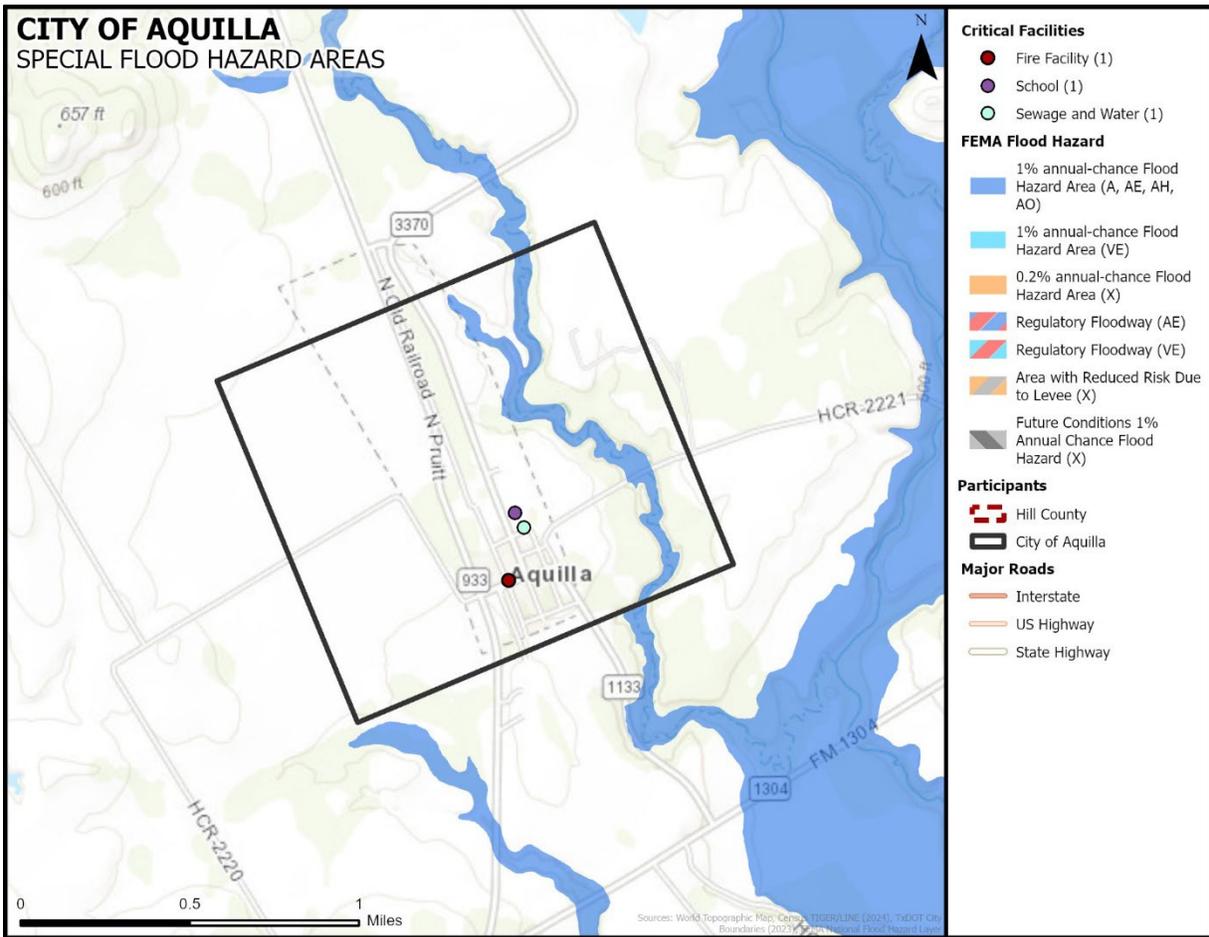
The current effective Digital Flood Insurance Rate Map or DFIRM (map ID 48217C, panels 25-725, dated June 2, 2011) data provided by FEMA for Hill County shows flood hazard Zone A across the majority of the planning area and a detailed study with base flood elevation delineations (Zone AE) identified in some pocket areas. FEMA flood zones are defined in Table 8-1. Locations of flood zones in Hill County based on the Digital Flood Insurance Rate Map (DFIRM) from FEMA are illustrated in Figures 8-1 through 8-15.

Figure 8-1. Estimated Flood Zones in Hill County



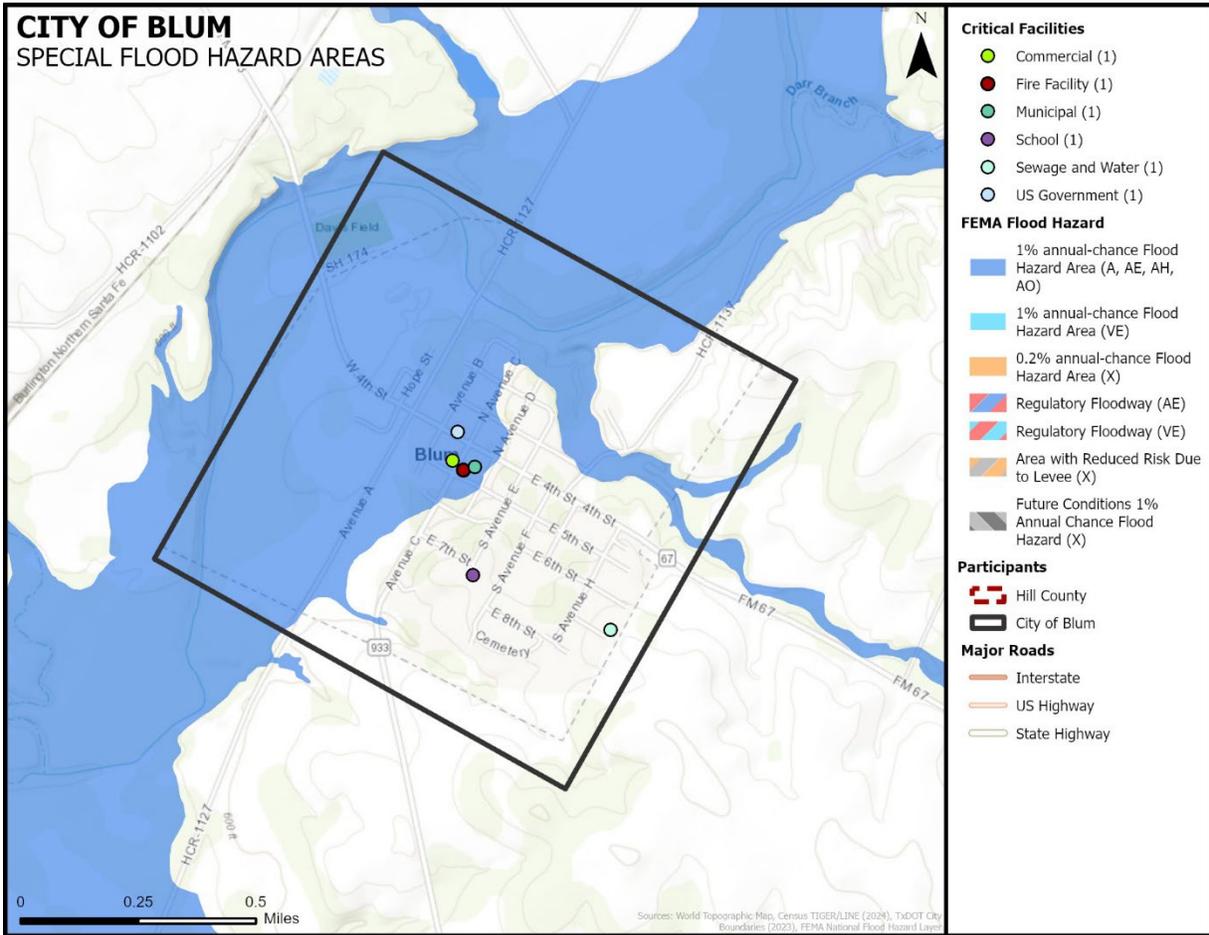
SECTION 8: FLOOD

Figure 8-3. Estimated Flood Zones in the City of Aquilla



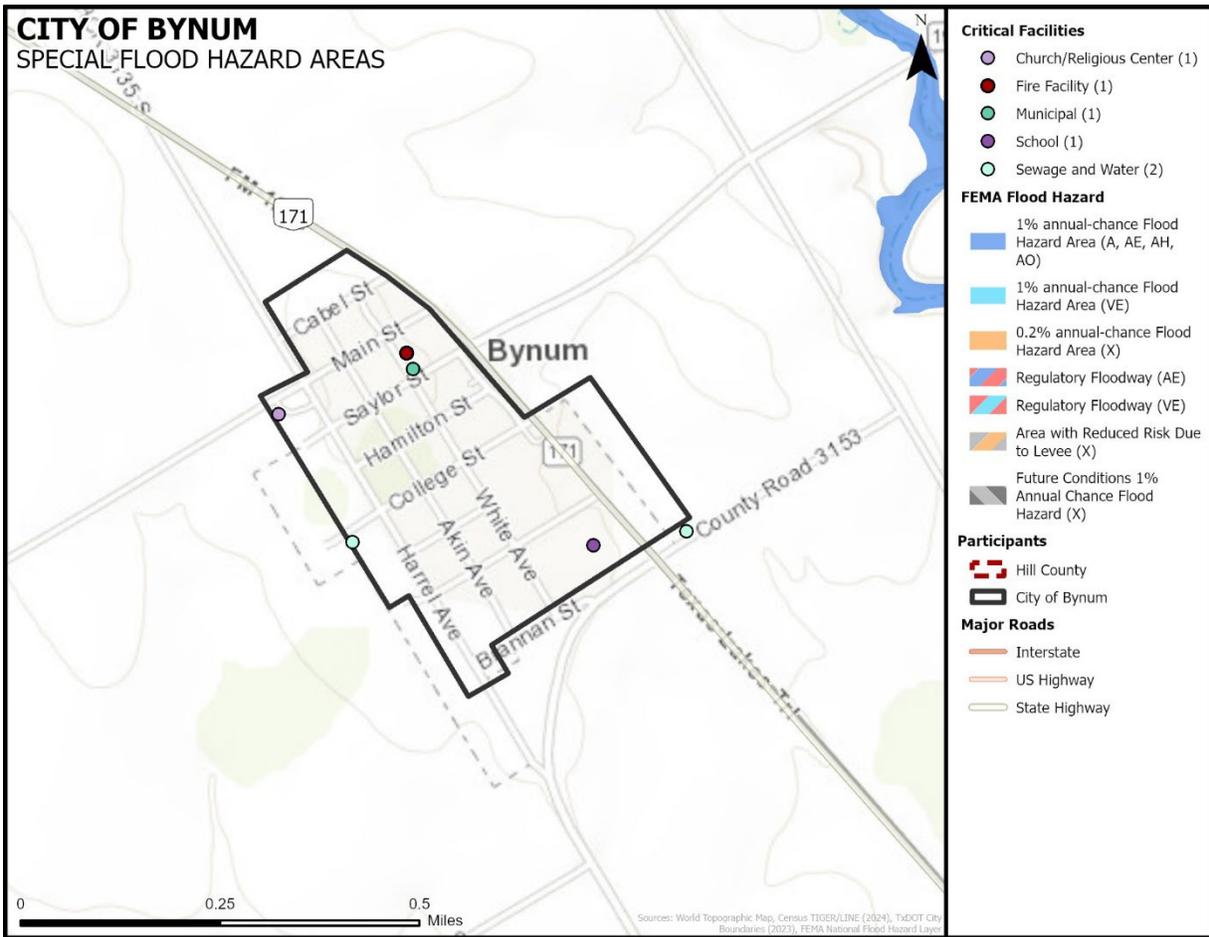
SECTION 8: FLOOD

Figure 8-4. Estimated Flood Zones in the City of Blum



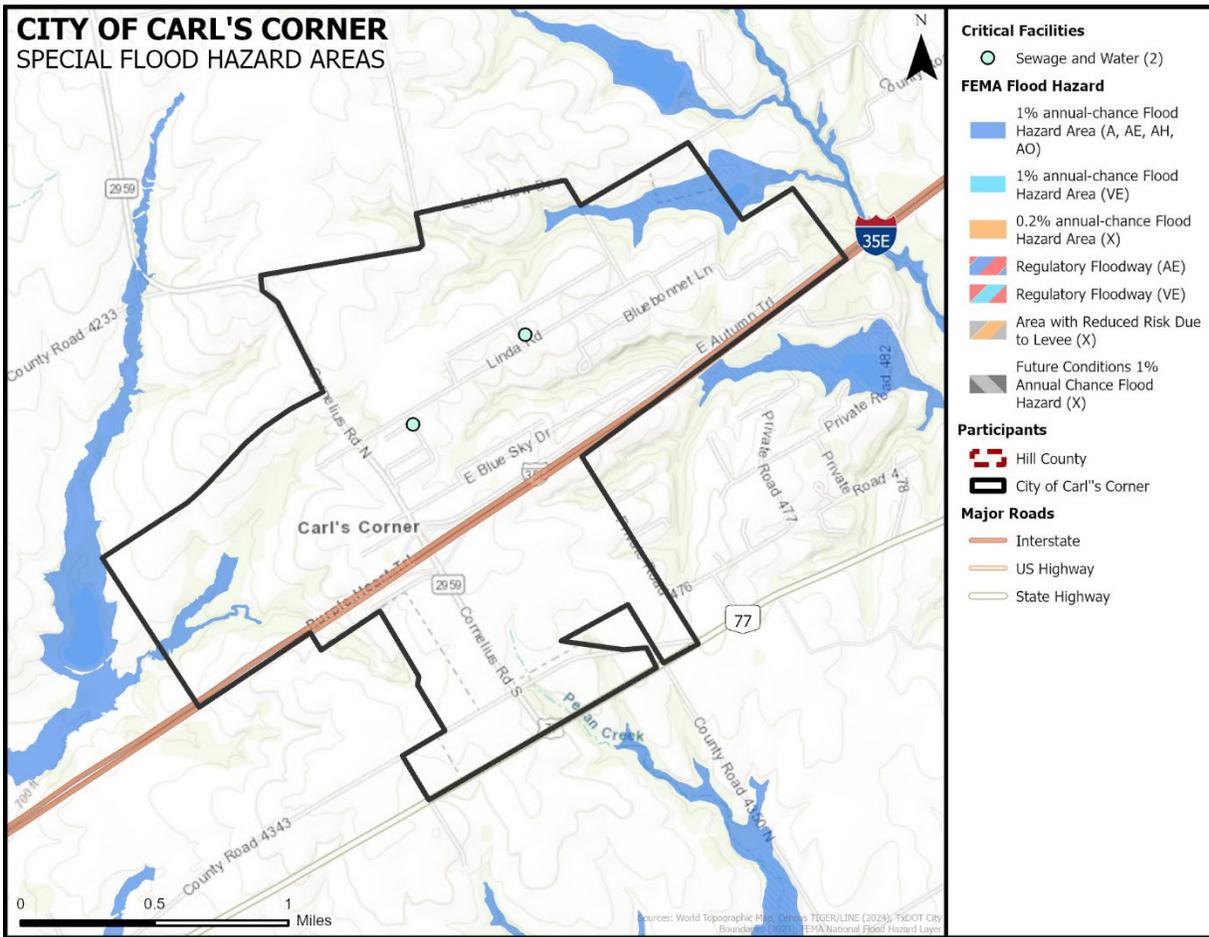
SECTION 8: FLOOD

Figure 8-5. Estimated Flood Zones in the City of Bynum



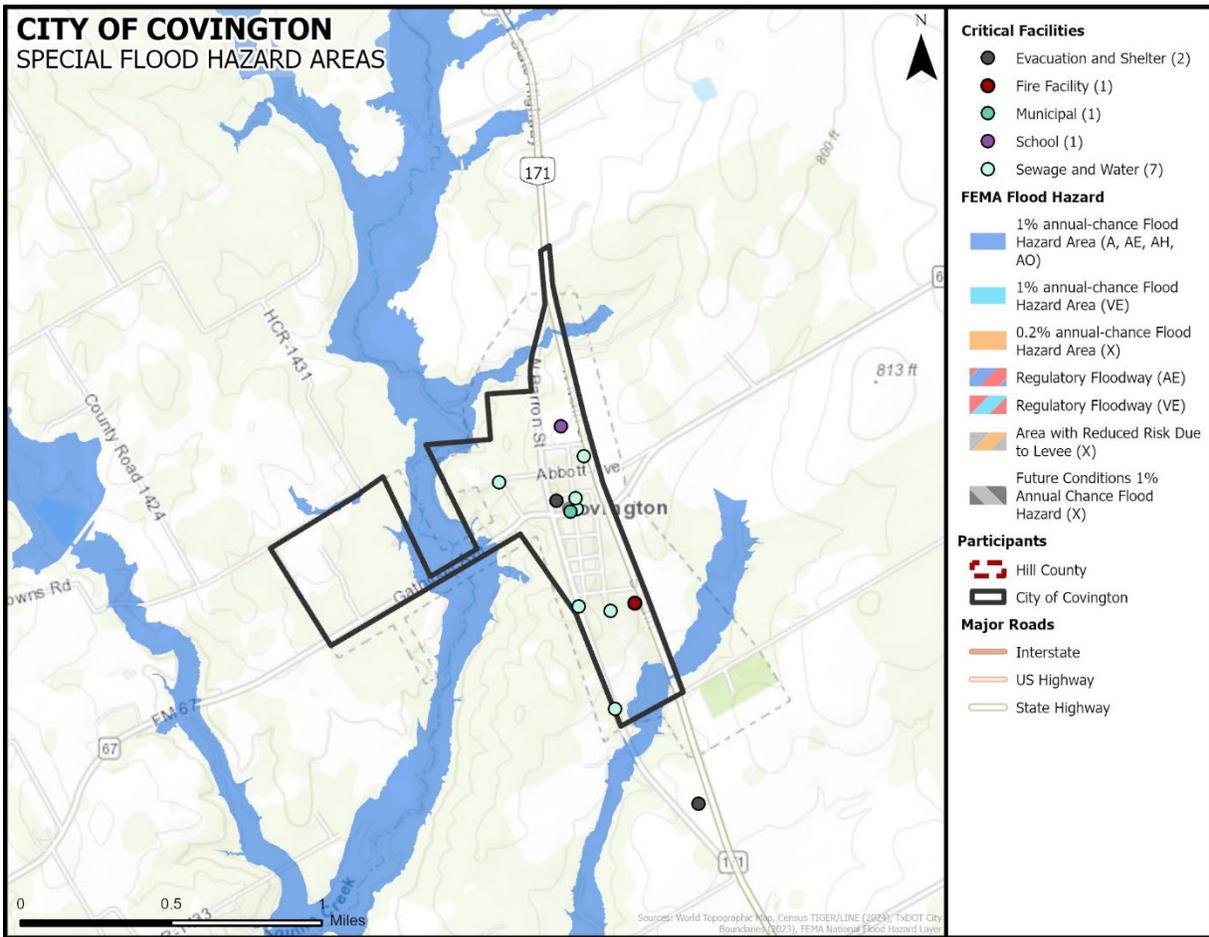
SECTION 8: FLOOD

Figure 8-6. Estimated Flood Zones in the City of Carl's Corner



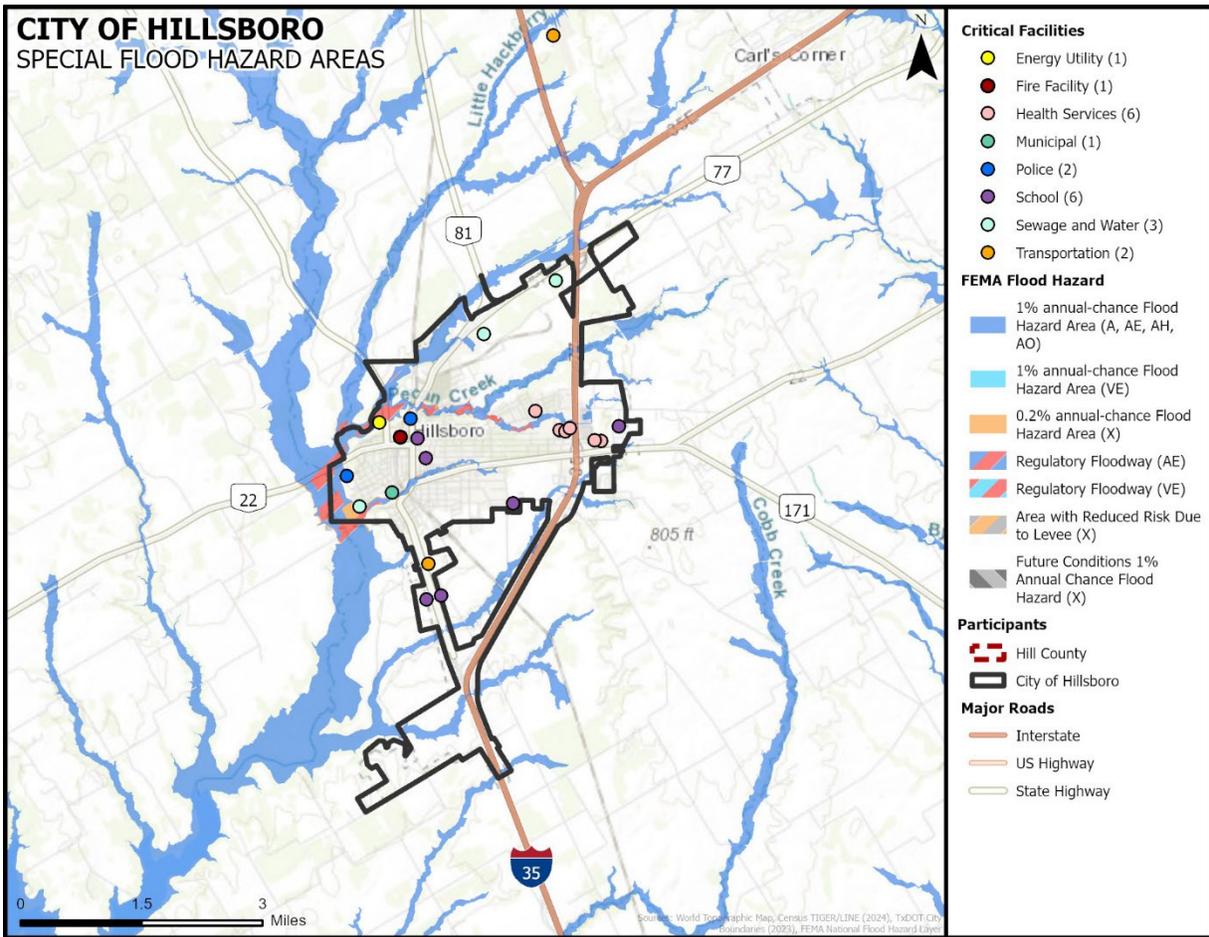
SECTION 8: FLOOD

Figure 8-7. Estimated Flood Zones in the City of Covington



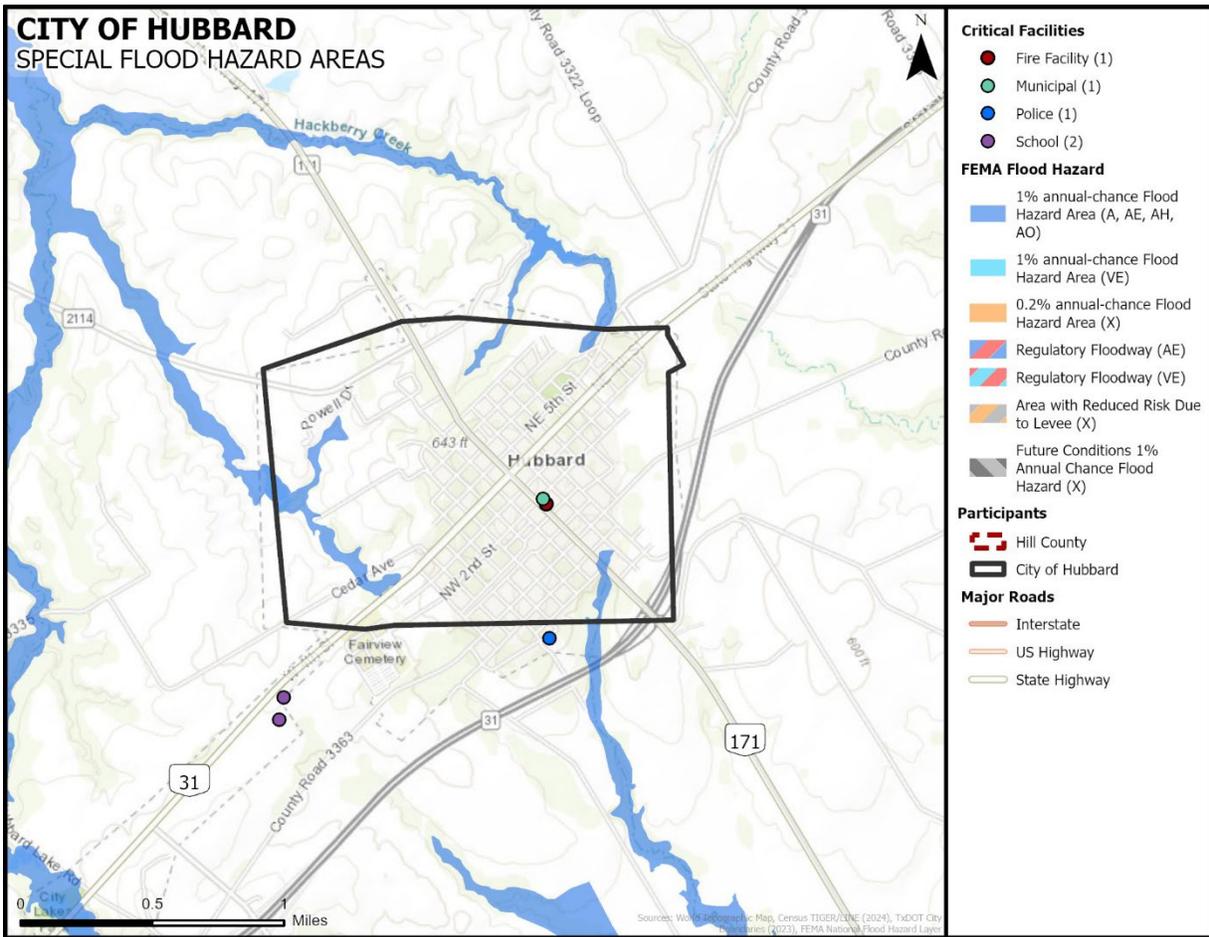
SECTION 8: FLOOD

Figure 8-8. Estimated Flood Zones in the City of Hillsboro



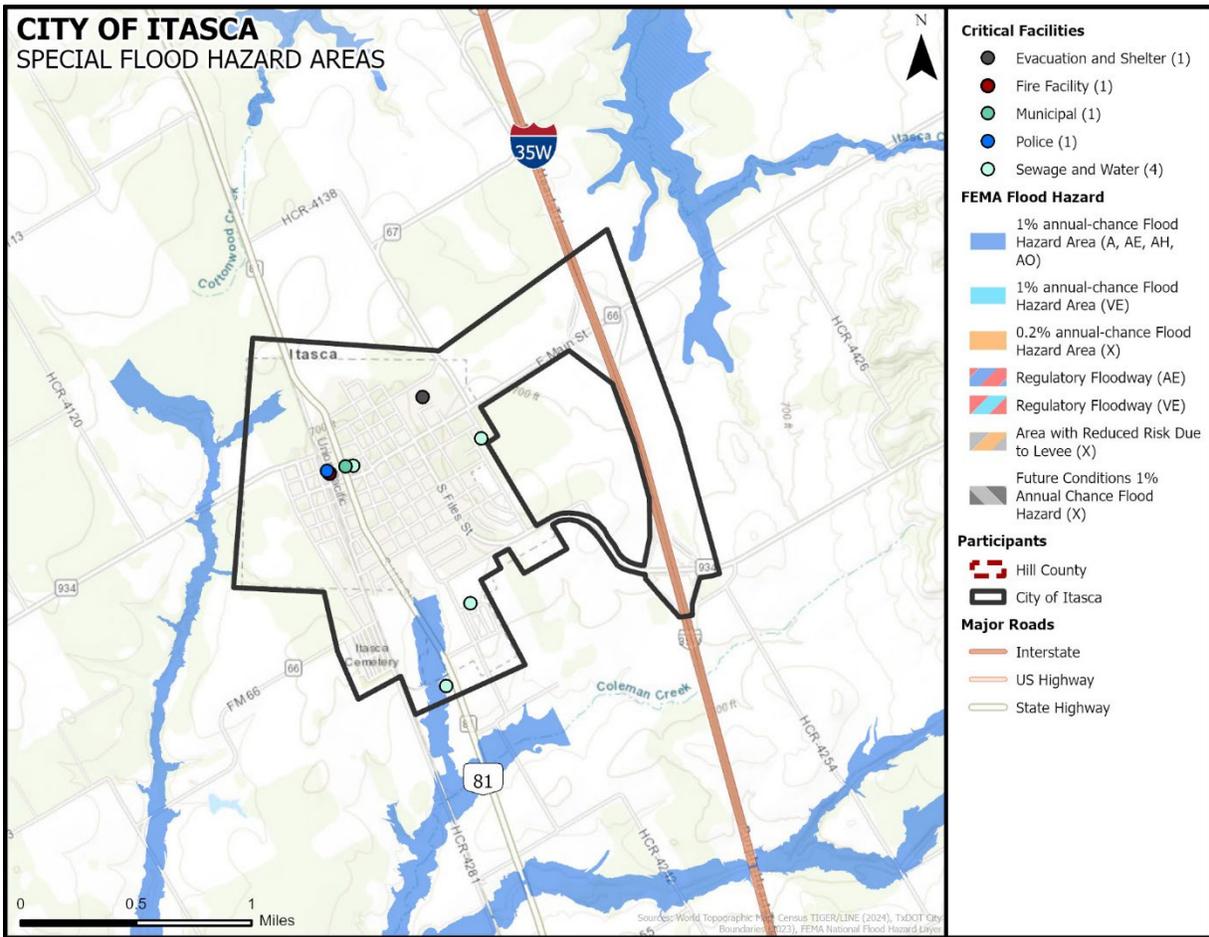
SECTION 8: FLOOD

Figure 8-9. Estimated Flood Zones in the City of Hubbard



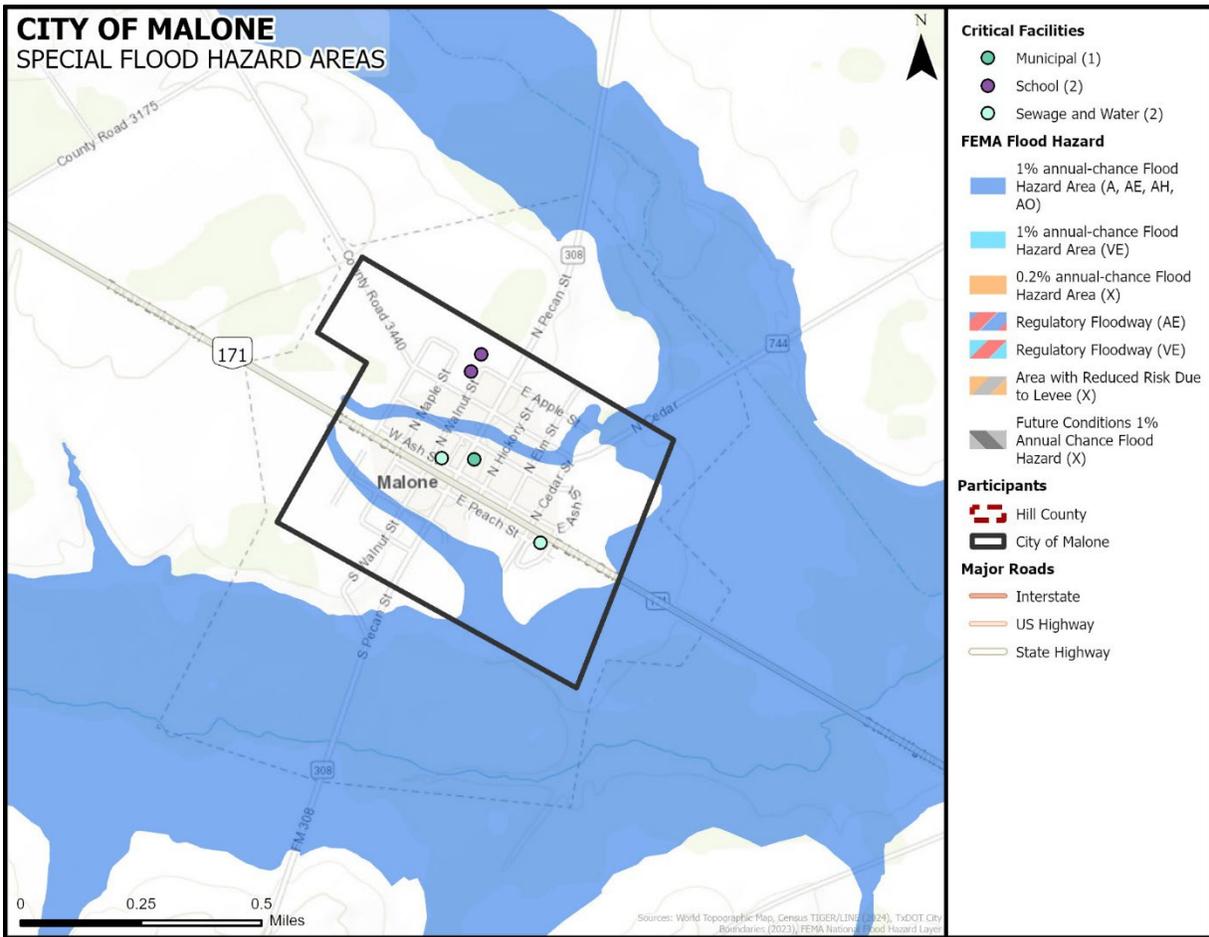
SECTION 8: FLOOD

Figure 8-10. Estimated Flood Zones in the City of Itasca



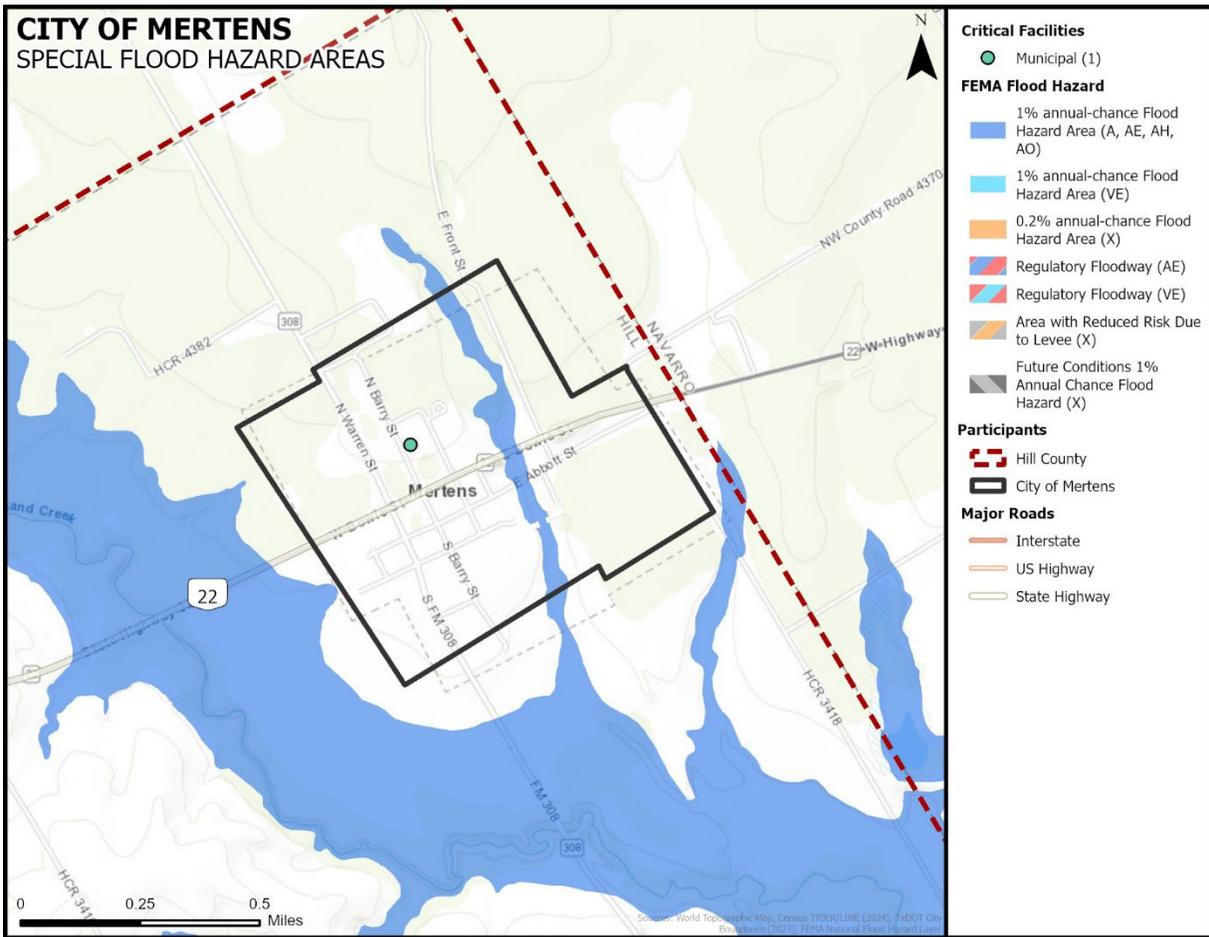
SECTION 8: FLOOD

Figure 8-11. Estimated Flood Zones in the City of Malone



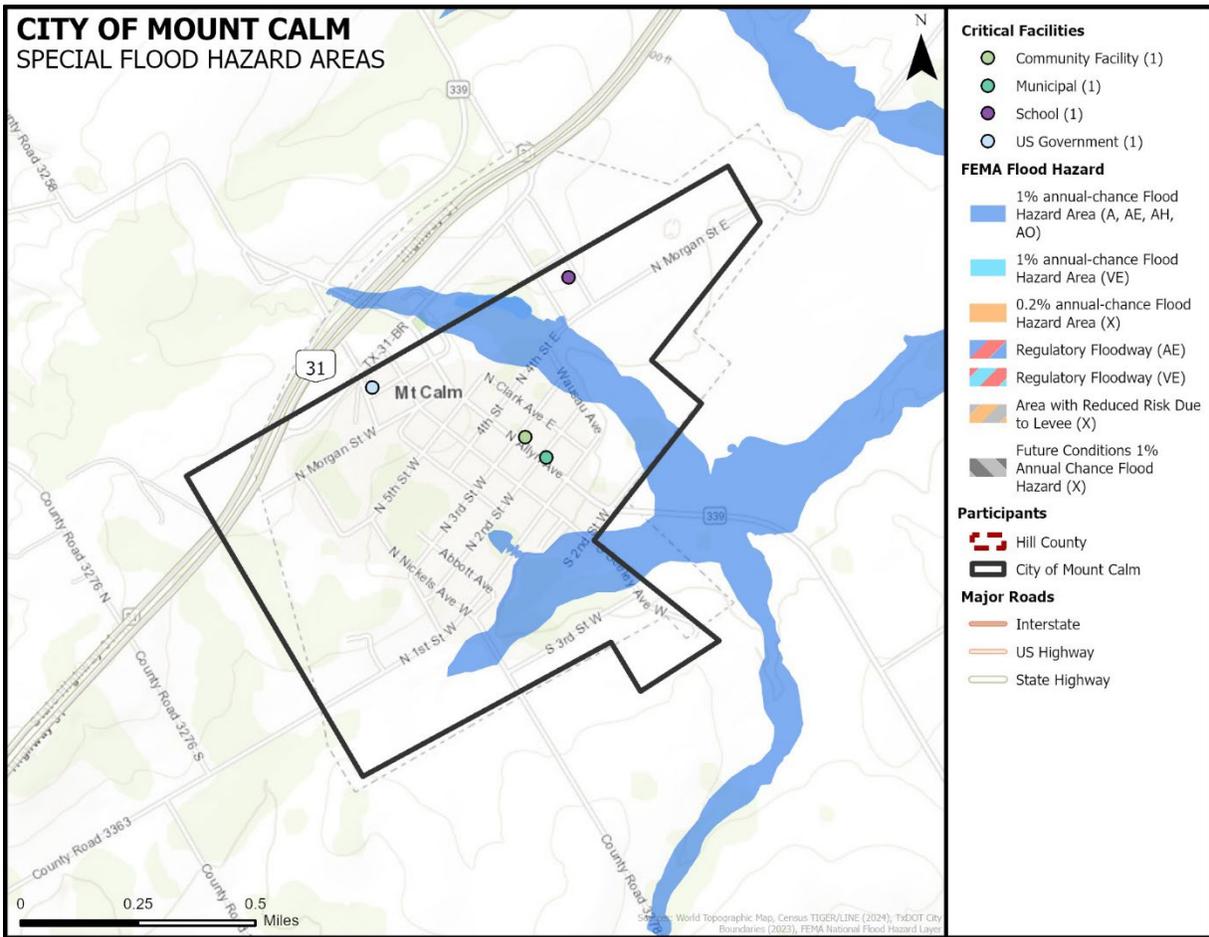
SECTION 8: FLOOD

Figure 8-12. Estimated Flood Zones in the City of Mertens



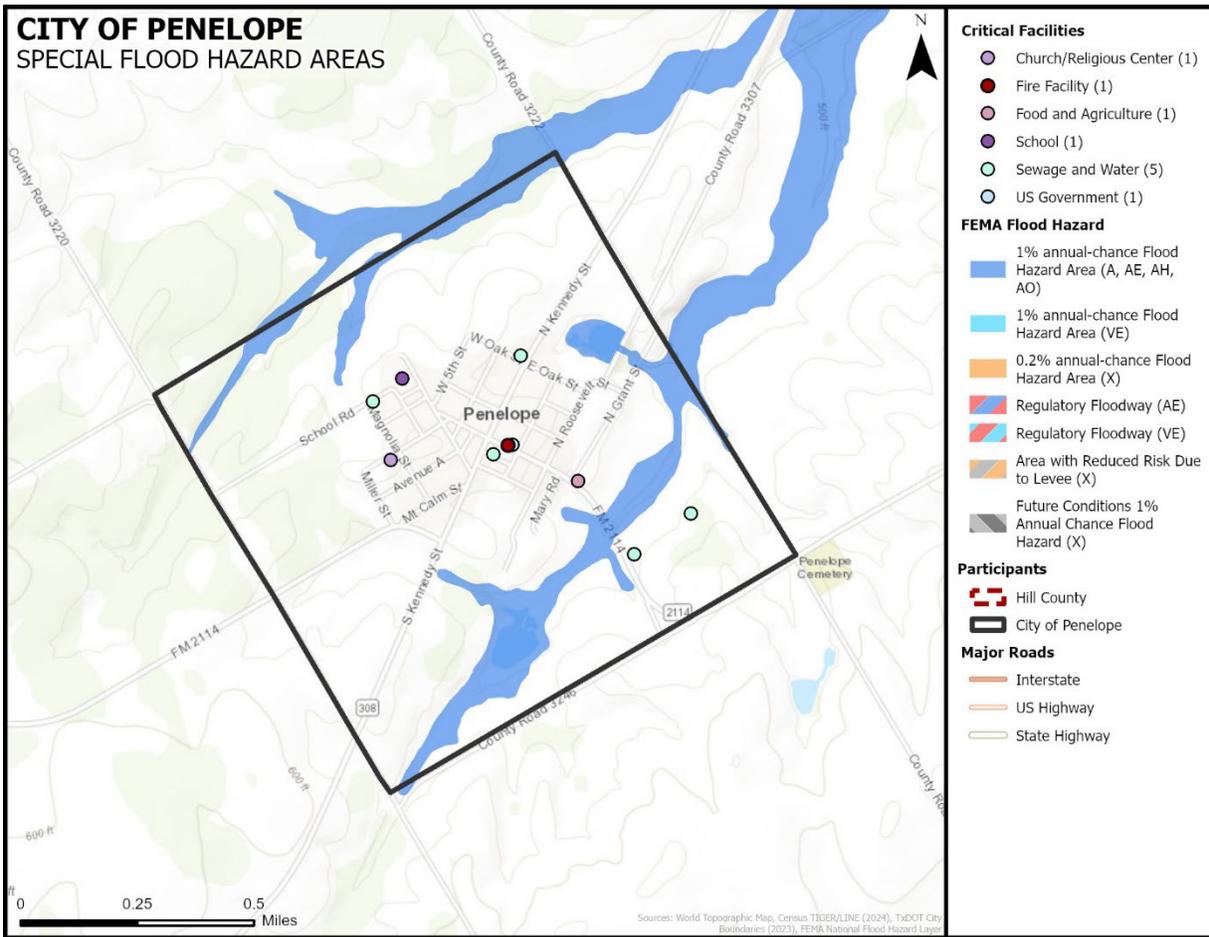
SECTION 8: FLOOD

Figure 8-13. Estimated Flood Zones in the City of Mount Calm



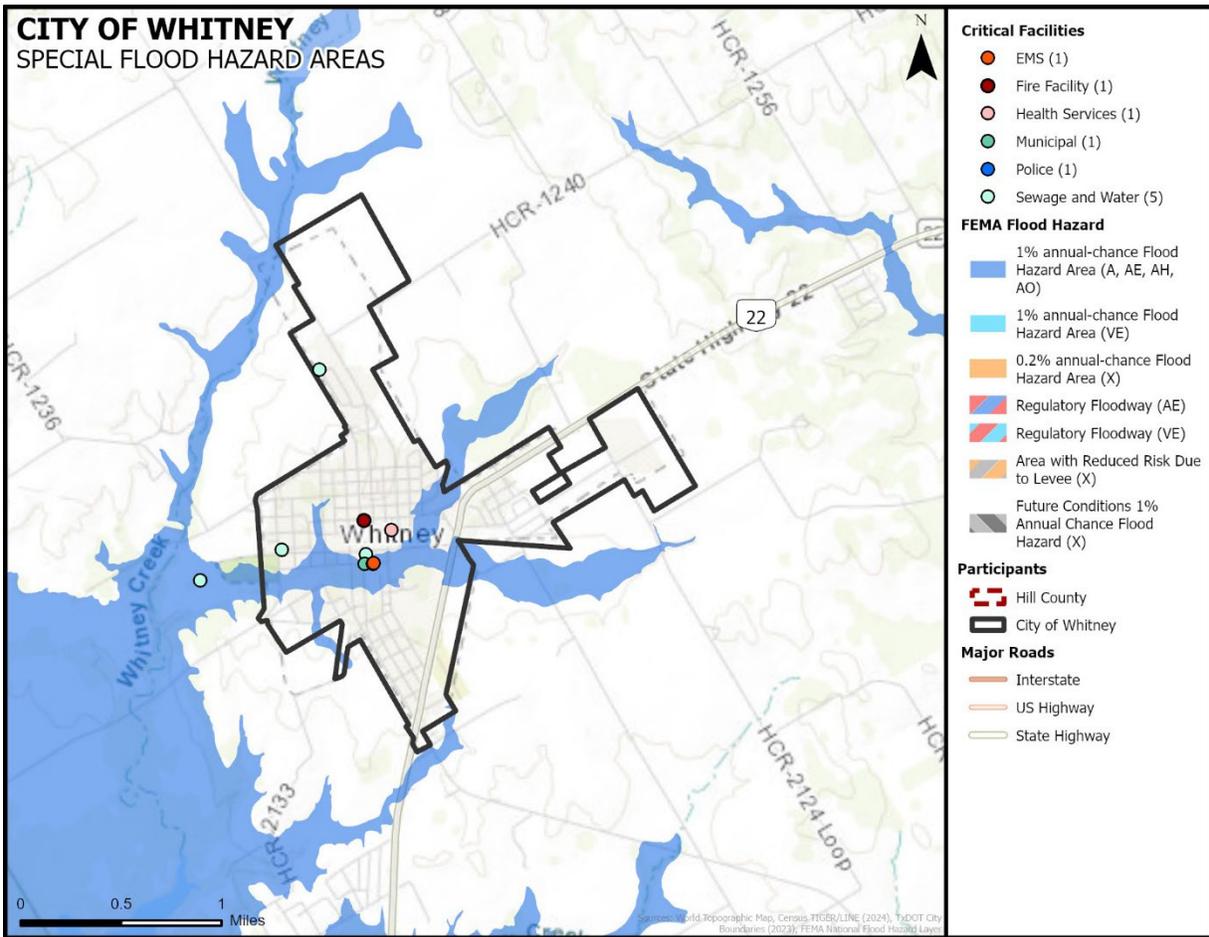
SECTION 8: FLOOD

Figure 8-14. Estimated Flood Zones in the City of Penelope



SECTION 8: FLOOD

Figure 8-15. Estimated Flood Zones in the City of Whitney



EXTENT

The severity of a flood event is determined by a combination of several major factors, including stream and river basin topography and physiography; precipitation and weather patterns; recent soil moisture conditions; and the degree of vegetative clearing and impervious surfaces. Typically, floods are long-term events that may last for several days.

Determining the intensity and magnitude of a flood event is dependent upon the flood zone and location of the flood hazard area in addition to the depths of flood waters. FEMA categorizes areas on the terrain according to how the area will convey flood water. Flood zones are the categories that are mapped on FIRMs. Table 8-1 provides a description of FEMA flood zones and the flood impact in terms of severity or potential harm. Figures 8-1 through 8-15 should be read in conjunction with the extent for flooding in Table 8-1 and Figures 8-16 through 8-30 to determine the intensity of a potential flood event.

SECTION 8: FLOOD

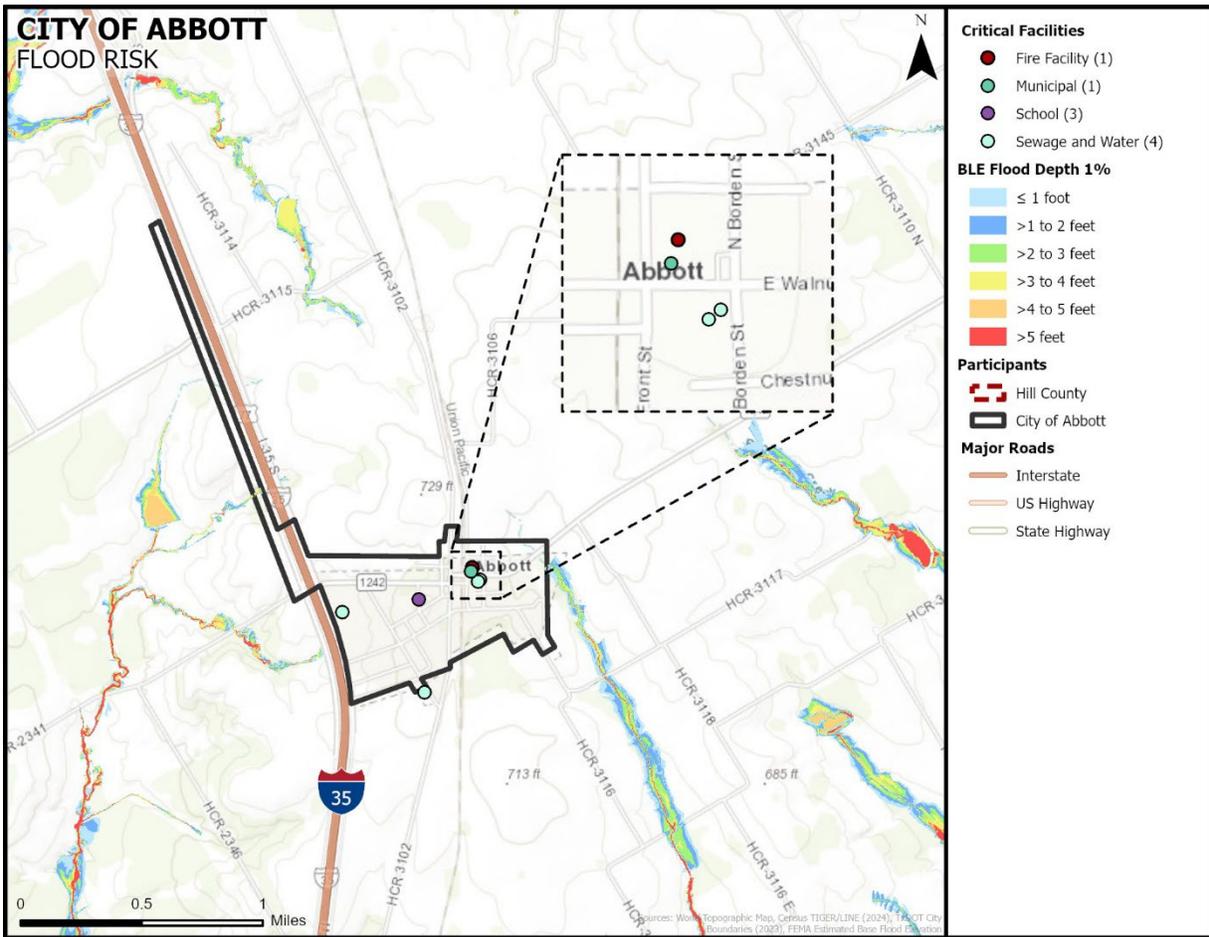
Table 8-1. Flood Zones

INTENSITY	ZONE	DESCRIPTION
HIGH	ZONE A	Areas with a 1-percent-annual-chance of flooding and a 26 percent chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas, no depths or base flood elevations are shown within these zones.
	ZONE A1-30	These are known as numbered A Zones (e.g., A7 or A14). This is the base floodplain where the FIRM shows a Base Flood Elevation (BFE) (old format).
	ZONE AE	The base floodplain where BFEs are provided. AE Zones are now used on the new format FIRMs instead of A1-A30 Zones.
	ZONE AO	River or stream flood hazard areas and areas with a 1-percent-annual-chance or greater of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26 percent chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.
	ZONE AH	Areas with a 1-percent-annual-chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26 percent chance of flooding over the life of a 30-year mortgage. BFEs derived from detailed analyses are shown at selected intervals within these zones.
	ZONE A99	Areas with a 1-percent-annual-chance of flooding that will be protected by a federal flood control system where construction has reached specified legal requirements. No depths or BFEs are shown within these zones.
	ZONE AR	Areas with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam). Mandatory flood insurance purchase requirements will apply, but rates will not exceed the rates for unnumbered A zones if the structure is built or restored in compliance with Zone AR floodplain management regulations.
MODERATE to LOW	ZONE X 500	An area inundated by 500-year flooding; an area inundated by 100-year flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile; or an area protected by levees from 100-year flooding.

Zone A is interchangeably referred to as the 100-year flood, the 1-percent-annual-chance flood, the Special Flood Hazard Area (SFHA), or more commonly, the base flood. This is the area that will convey the base flood and constitutes a threat to the planning area. The impact from a flood event can be more damaging in areas that will convey a base flood.

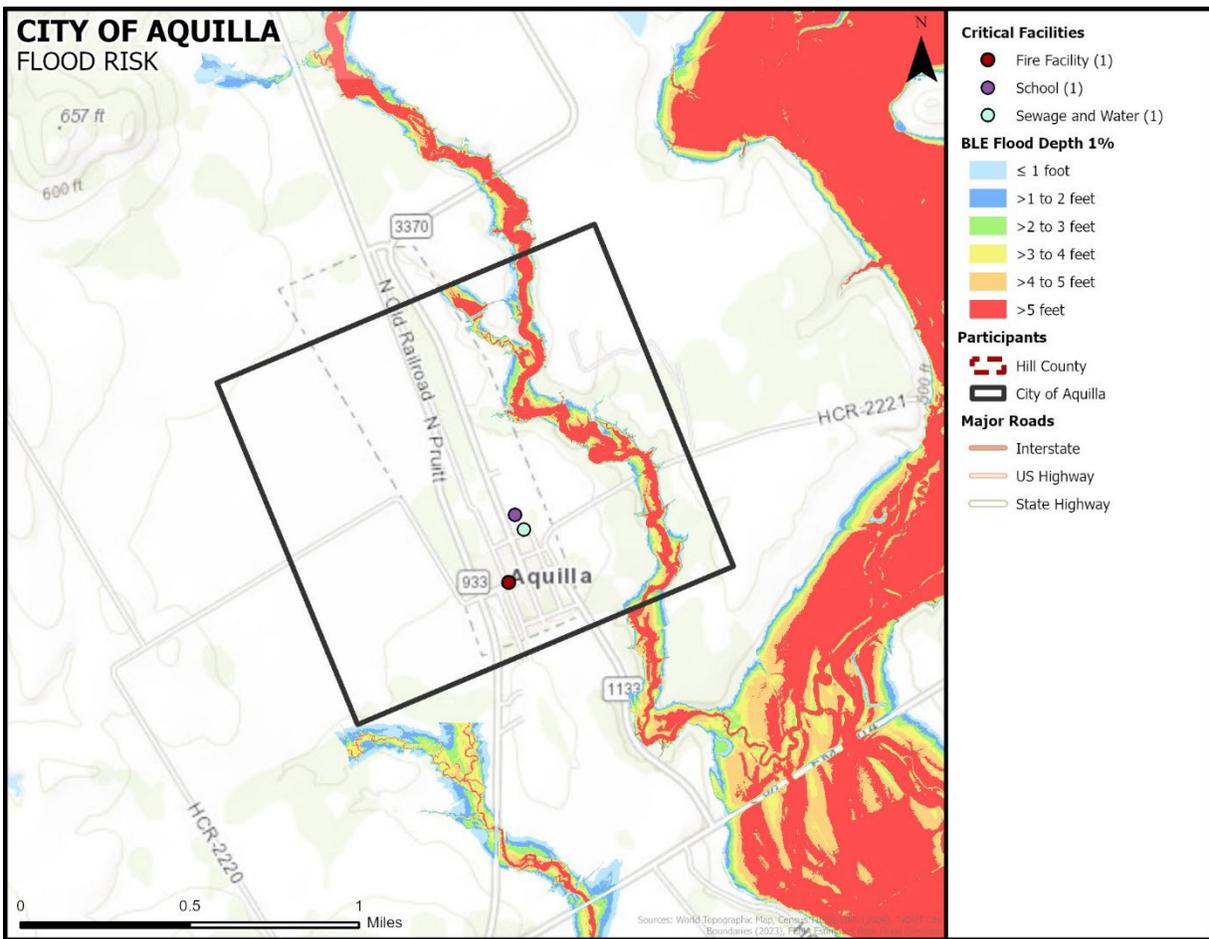
SECTION 8: FLOOD

Figure 8-17. Estimated Base Flood Elevation Flood Depths for the City of Abbott



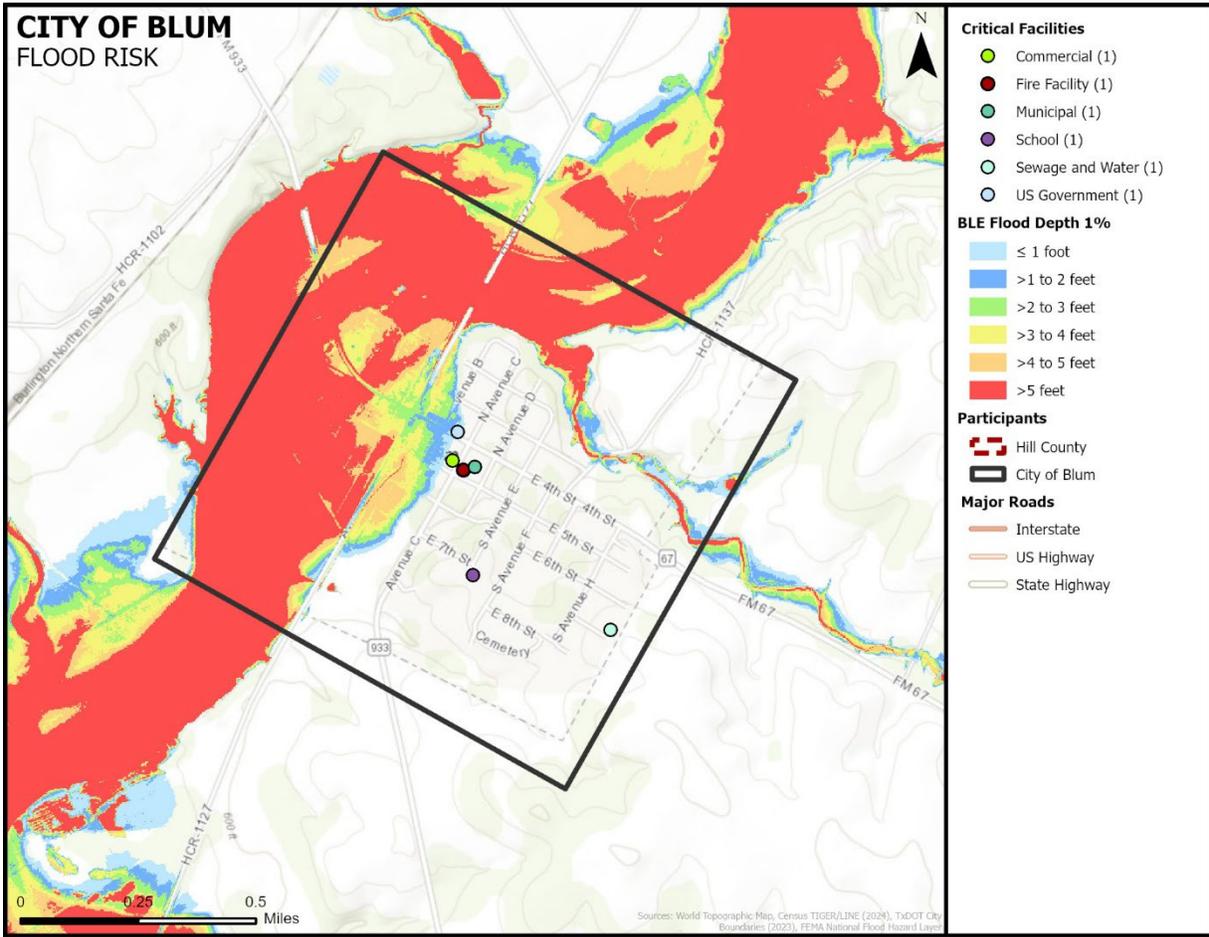
SECTION 8: FLOOD

Figure 8-18 Estimated Base Flood Elevation Flood Depths for the City of Aquilla



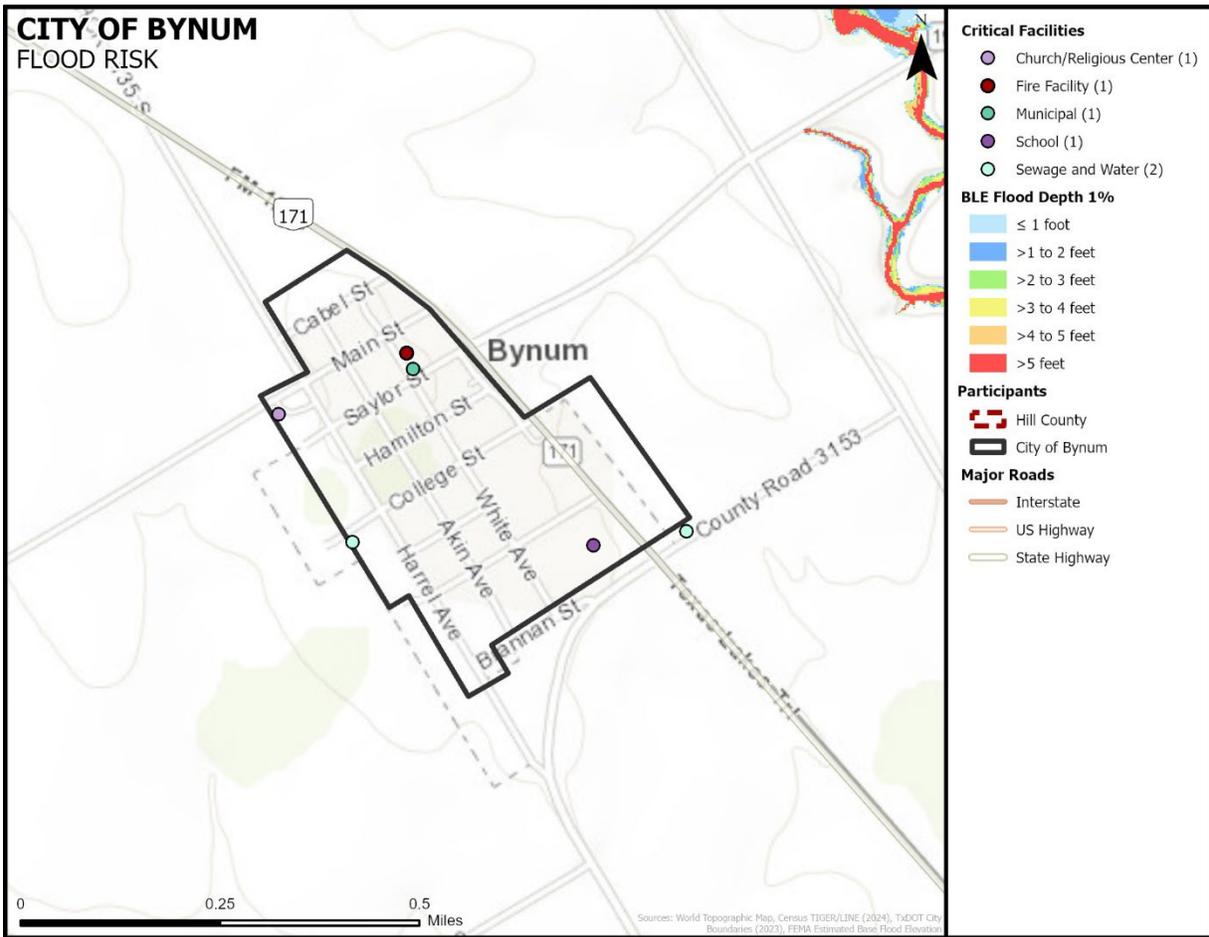
SECTION 8: FLOOD

Figure 8-19. Estimated Base Flood Elevation Flood Depths for the City of Blum



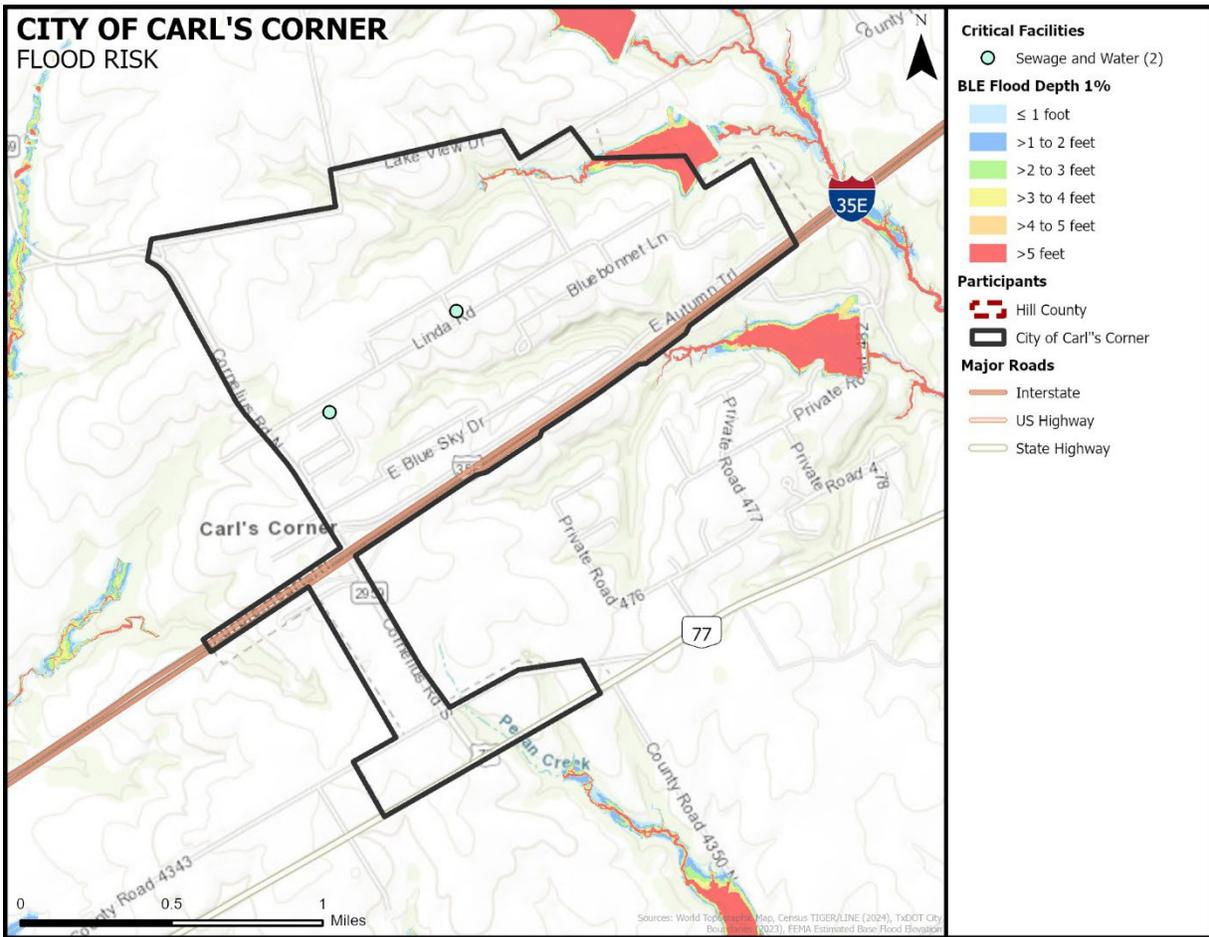
SECTION 8: FLOOD

Figure 8-20. Estimated Base Flood Elevation Flood Depths for the City of Bynum



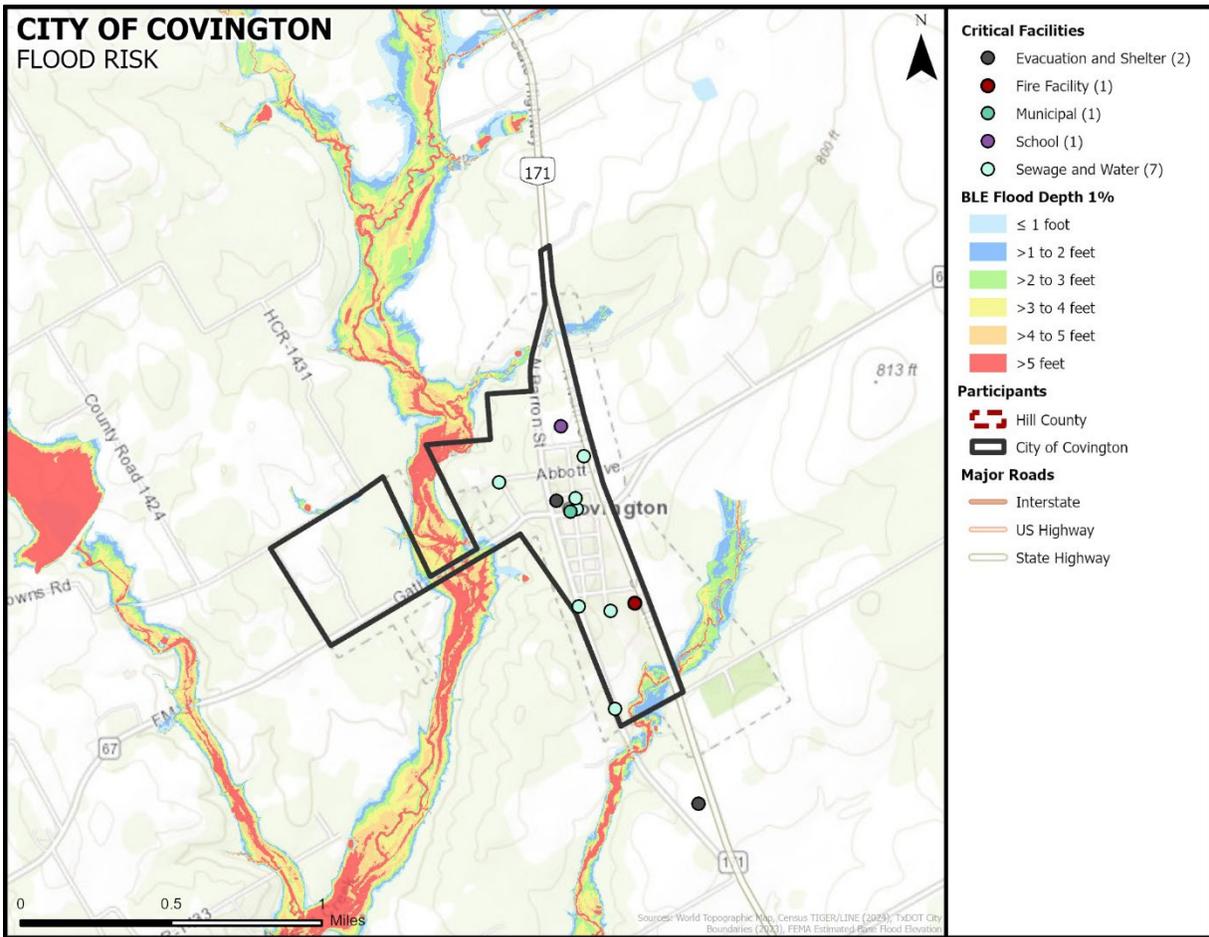
SECTION 8: FLOOD

Figure 8-21 Estimated Base Flood Elevation Flood Depths for the City of Carl's Corner



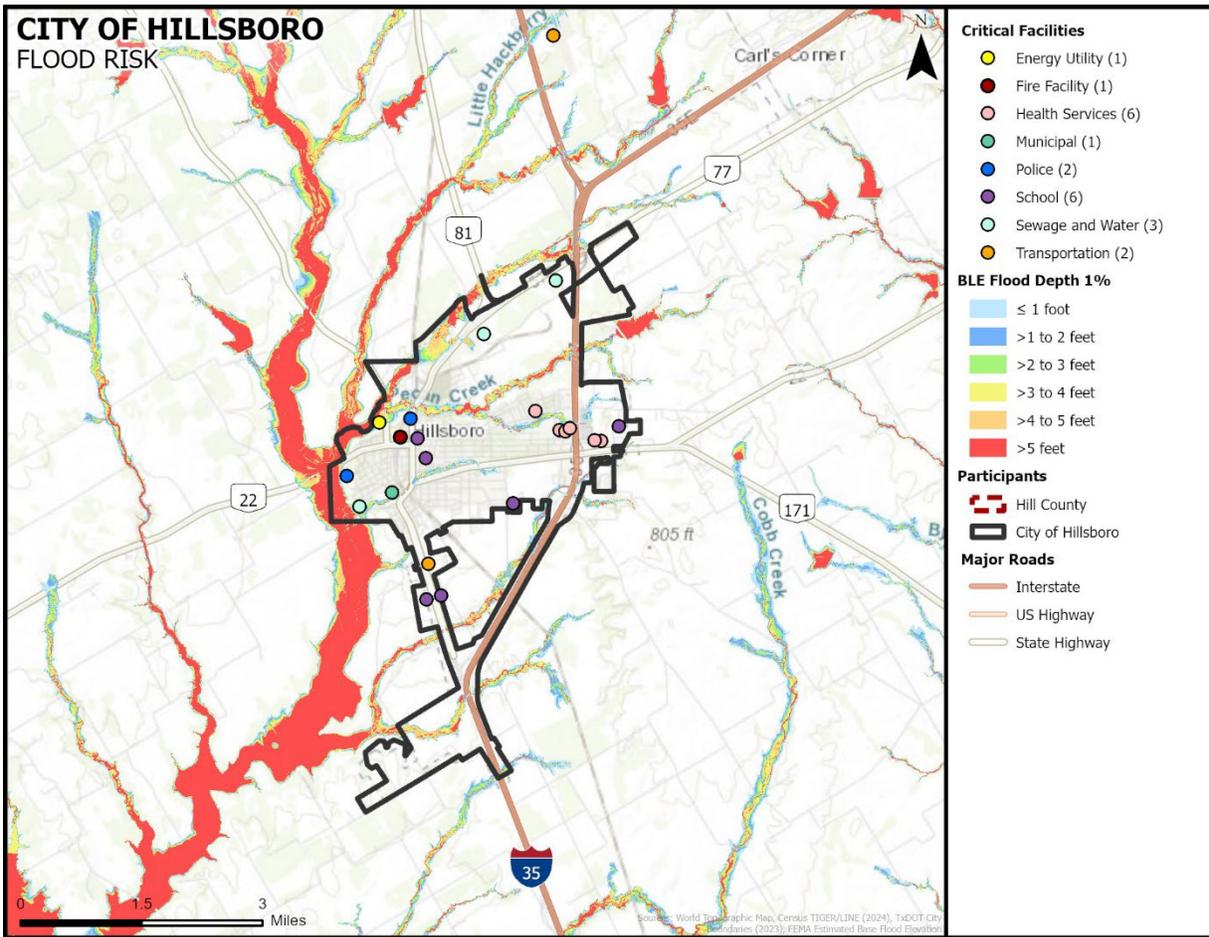
SECTION 8: FLOOD

Figure 8-22. Estimated Base Flood Elevation Flood Depths for the City of Covington



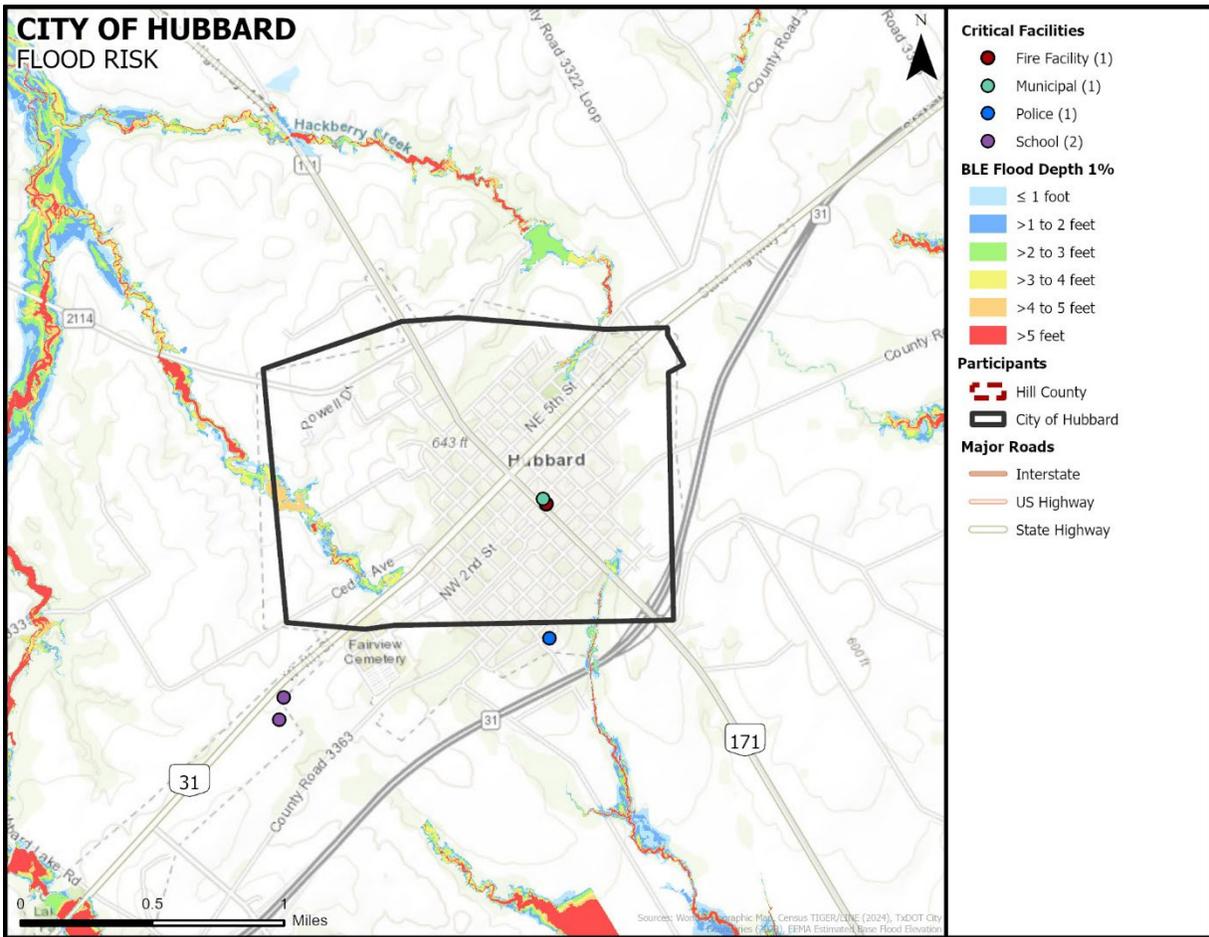
SECTION 8: FLOOD

Figure 8-23. Estimated Base Flood Elevation Flood Depths for the City of Hillsboro



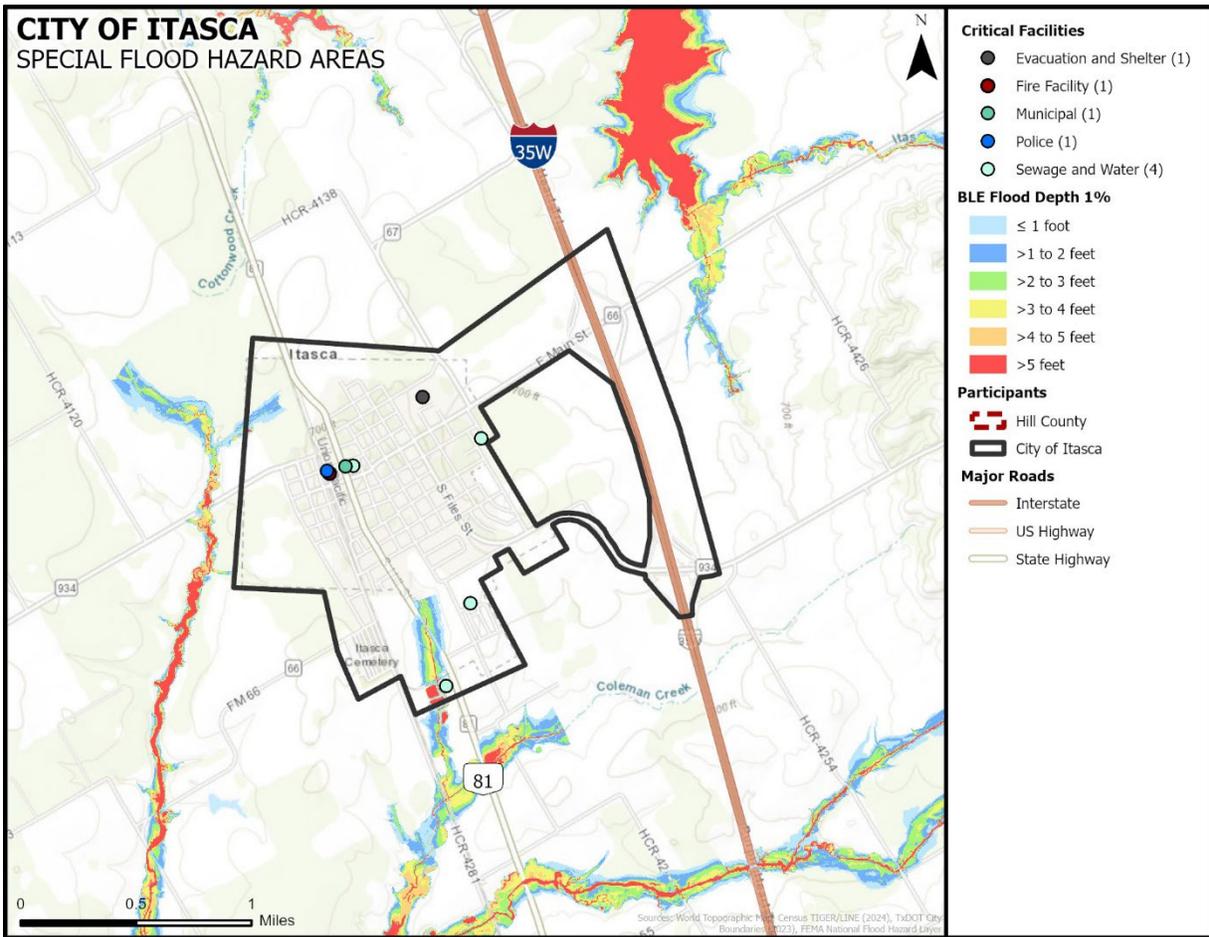
SECTION 8: FLOOD

Figure 8-24. Estimated Base Flood Elevation Flood Depths for the City of Hubbard



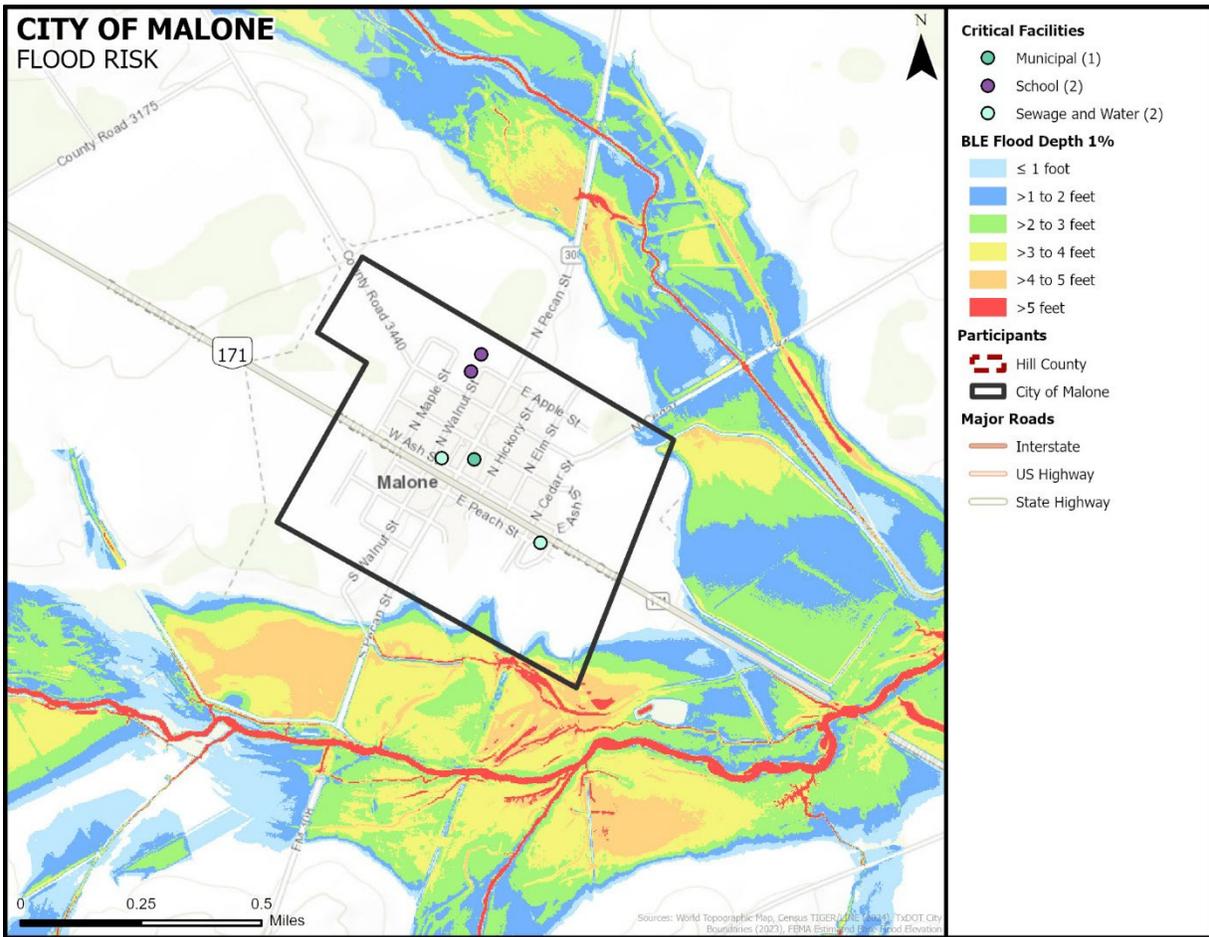
SECTION 8: FLOOD

Figure 8-25. Estimated Base Flood Elevation Flood Depths for the City of Itasca



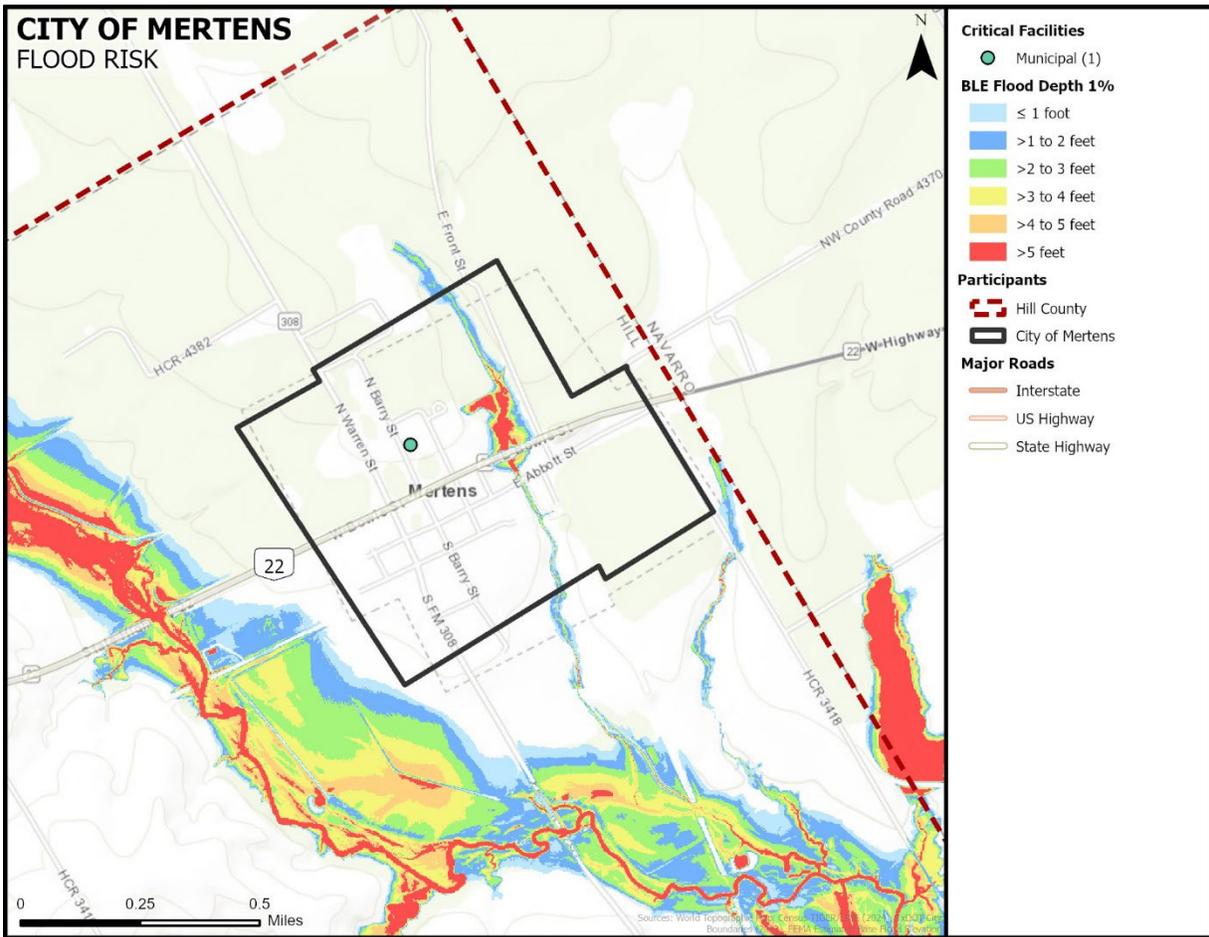
SECTION 8: FLOOD

Figure 8-26. Estimated Base Flood Elevation Flood Depths for the City of Malone



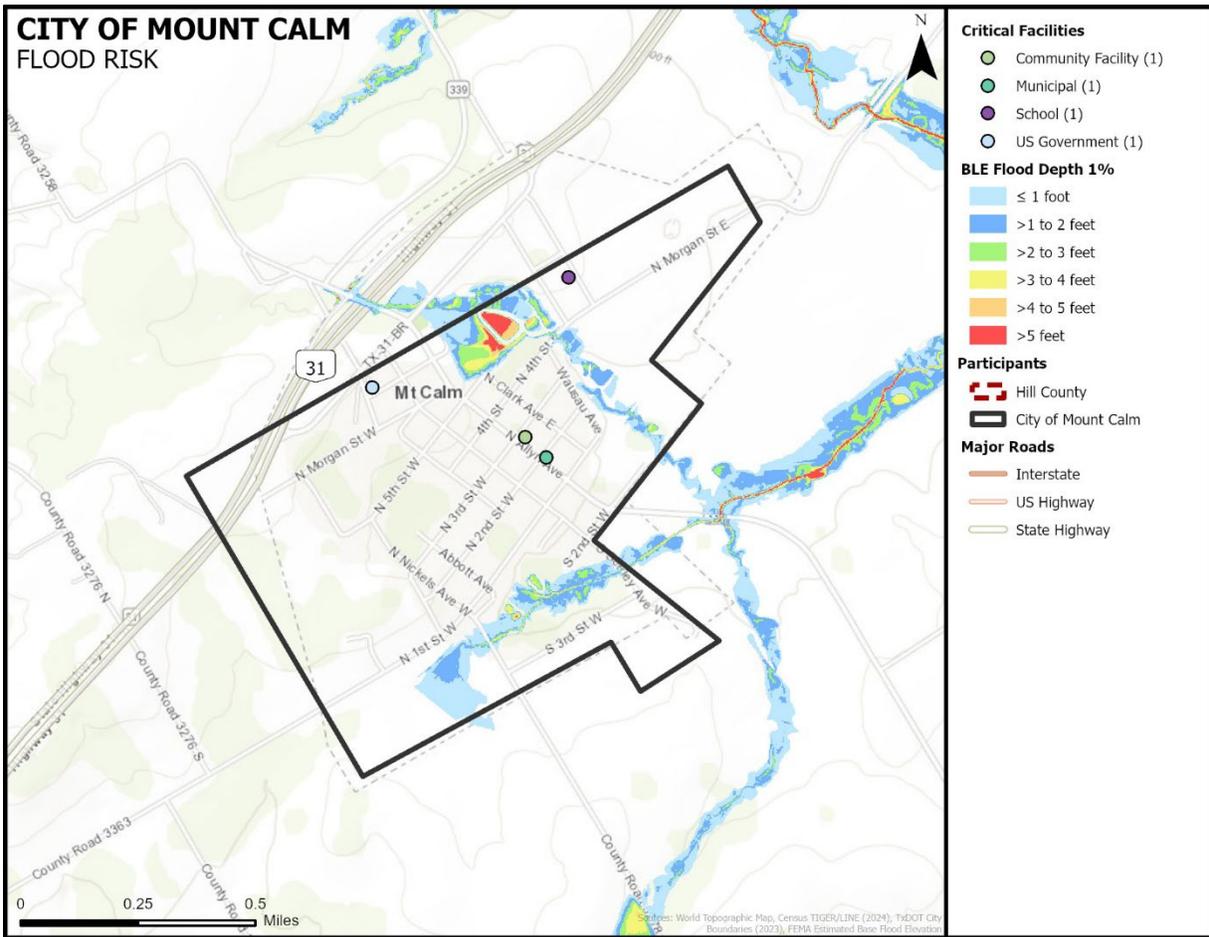
SECTION 8: FLOOD

Figure 8-27. Estimated Base Flood Elevation Flood Depths for the City of Mertens



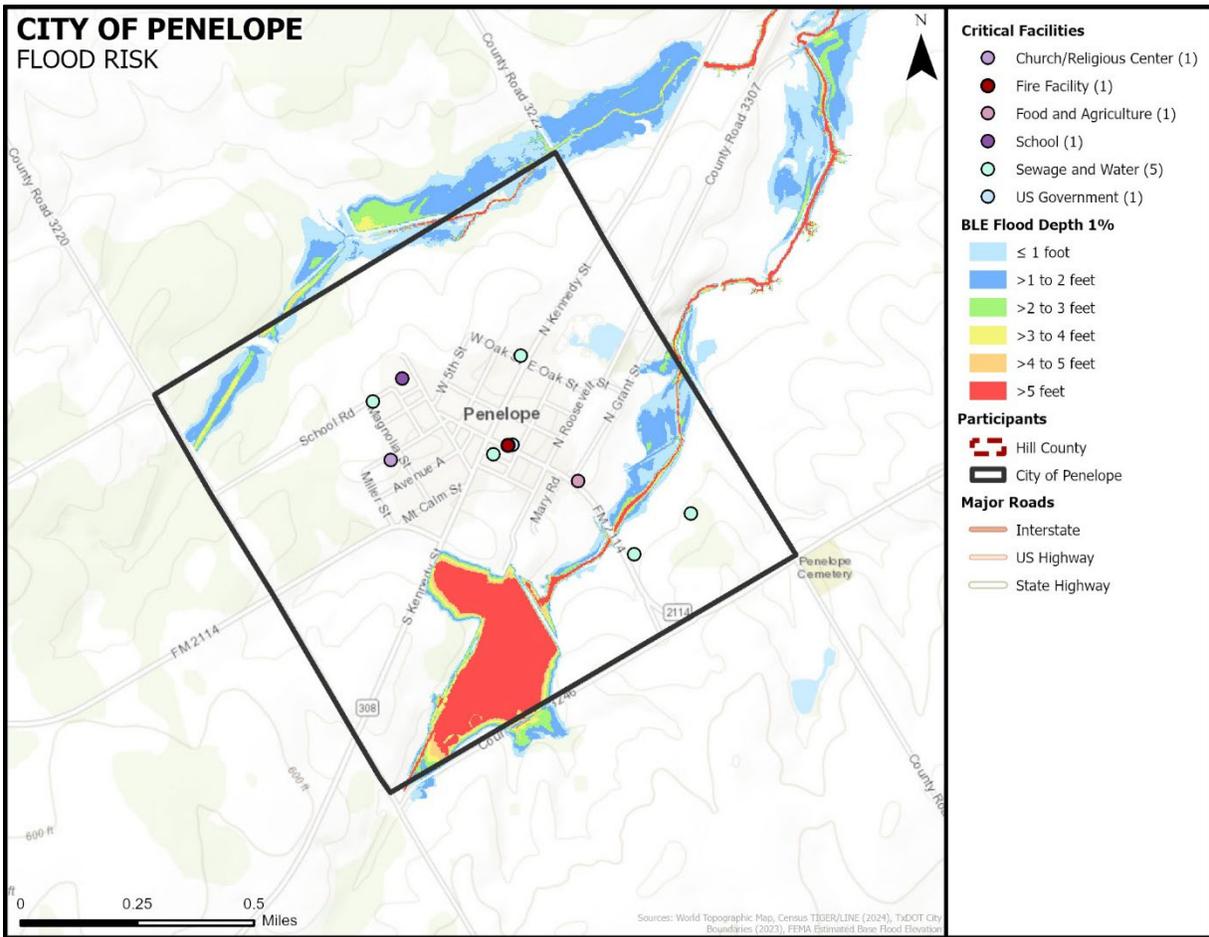
SECTION 8: FLOOD

Figure 8-28. Estimated Base Flood Elevation Flood Depths for the City of Mount Calm



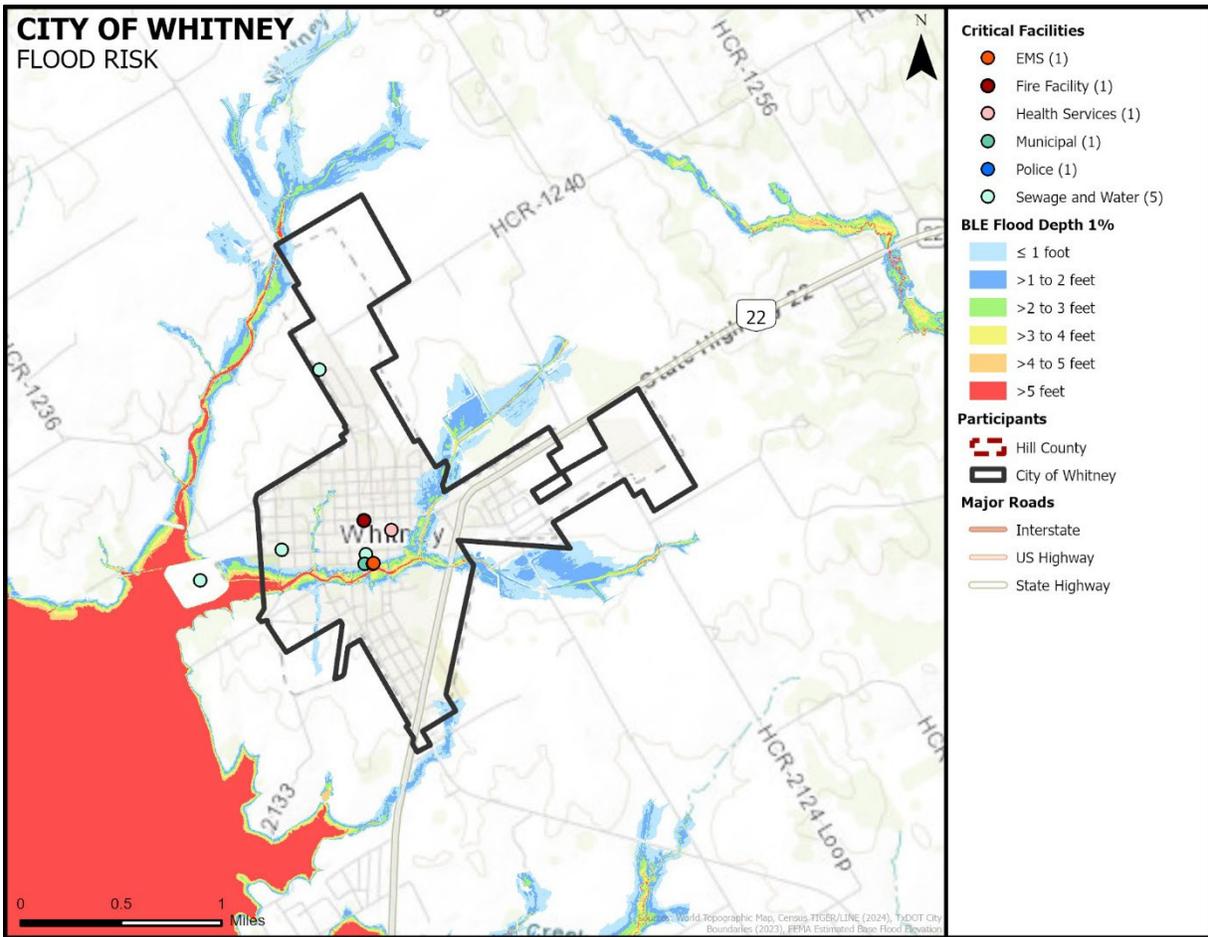
SECTION 8: FLOOD

Figure 8-29. Estimated Base Flood Elevation Flood Depths for the City of Penelope



SECTION 8: FLOOD

Figure 8-30 Estimated Base Flood Elevation Flood Depths for the City of Whitney



The range of flood intensity that the planning area can experience is high, or Zone A. Based on historical occurrences, the planning area could expect to experience an average of 1 to 2 inches of rain within a 2-hour period, resulting in flash flooding. The data described in Table 8-1 together with Figures 8-1 through 8-30, and historical occurrences for the area, provides an estimated potential magnitude and severity for the Hill County planning area.

HISTORICAL OCCURRENCES

Historical evidence indicates that areas within the planning area are susceptible to flooding, especially in the form of flash flooding. It is important to note that only flood events that have been reported have been factored into this risk assessment, therefore it is likely that additional flood occurrences have gone unreported before and during the recording period. Table 8-3 identifies historical flood events that resulted in damages, injuries, or fatalities within the Hill County planning area. Table 8-4 provides the historical flood event summary by jurisdiction. Historical data is provided by the Storm Prediction Center (NOAA), National Centers for Environmental Information (NCEI) database for Hill County. There have been 57 recorded flood events in Hill County.

SECTION 8: FLOOD

Table 8-3. Historical Flood Events, January 1996 – June 2025²

JURISDICTION	DATE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
City of Itasca	4/24/2004	0	0	\$3,500	\$0
City of Whitney	3/29/2007	0	0	\$15,600	\$0
City of Itasca	3/30/2007	0	0	\$62,300	\$0
City of Abbott	6/17/2007	0	0	\$61,400	\$0
City of Blum	9/5/2007	0	0	\$30,700	\$0
City of Hillsboro	9/5/2007	0	0	\$30,700	\$0
Hill County	4/23/2008	0	0	\$44,700	\$0
Hill County	10/13/2009	0	0	\$29,600	\$0
Hill County	6/10/2010	0	0	\$586,900	\$0
City of Blum	9/8/2010	0	0	\$1,464,100	\$0
City of Whitney	5/12/2014	0	0	\$6,800	\$0
Hill County	6/22/2014	0	0	\$13,500	\$0
City of Blum	5/29/2015	0	0	\$1,400	\$0
City of Hubbard	10/23/2015	0	0	\$134,500	\$0
City of Mertens	10/23/2015	0	0	\$134,500	\$0
City of Mount Calm	6/2/2016	0	0	\$1,400	\$0
City of Hillsboro	4/28/2024	0	0	\$204,000	\$0
Hill County	6/2/2024	0	0	\$5,100	\$0
City of Malone	6/2/2024	0	0	\$10,200	\$0
City of Itasca	6/5/2024	0	0	\$10,200	\$0
City of Covington	12/26/2024	0	0	\$1,100	\$0
TOTALS		0	0	\$2,852,200	\$0

² Table only includes historical flood events that resulted in damages, injuries, or fatalities between January 1996 and June 2025 in the NCEI database. Values are in 2025 dollars.

SECTION 8: FLOOD

Table 8-4. Summary of Historical Flood Events, January 1996 – June 2025³

JURISDICTION	NUMBER OF EVENTS	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Hill County	10	0	0	\$679,800	\$0
City of Abbott	4	0	0	\$61,400	\$0
City of Aquilla	3	0	0	\$0	\$0
City of Blum	8	0	0	\$1,496,200	\$0
City of Bynum	0	-	-	-	-
City of Carl's Corner	0	-	-	-	-
City of Covington	5	0	0	\$1,100	\$0
City of Hillsboro	12	0	0	\$234,700	\$0
City of Hubbard	2	0	0	\$134,500	\$0
City of Itasca	4	0	0	\$76,000	\$0
City of Malone	2	0	0	\$10,200	\$0
City of Mertens	2	0	0	\$134,500	\$0
City of Mount Calm	1	0	0	\$1,400	\$0
City of Penelope	0	-	-	-	-
City of Whitney	4	0	0	\$22,400	\$0
TOTALS	57	0	0	\$2,852,200	

Based on the list of historical flood events for the Hill County planning area, 6 events have occurred since the 2020 Plan.

SIGNIFICANT EVENTS

Flash Flood on September 8, 2010

The remnants of Tropical Storm Hermine swept through the western portions of North Texas, bringing widespread destruction and heavy rainfall. Between September 7th and 8th, the storm dropped several inches of rain across the region, with some areas receiving up to 12 inches, particularly along the Interstate 35 corridor. The intense rainfall triggered significant flash flooding late in the evening, overwhelming creeks, roads, and neighborhoods.

Across Hill County, several county and Farm-to-Market roads became impassable or were closed due to high water. In the City of Whitney, floodwaters inundated two apartment complexes, prompting swift water rescues to save trapped residents. In total, at least 17 high water rescues

³ Note: Participating jurisdictions with no reported events show a “-“ in table columns where damages, deaths or injuries would be otherwise reported.

SECTION 8: FLOOD

were conducted throughout the county, as emergency responders worked tirelessly through the night. More than 40 homes sustained damage, and county infrastructure suffered extensive impacts as floodwaters washed out and damaged numerous roadways. According to the NCEI, this event caused \$1,464,100 (2025 dollars) of damages in the City of Blum.

Flash Flood on April 28, 2024

From April 26th through April 28th, a combination of a shortwave trough, dryline, and Pacific front created a volatile weather pattern across Central Texas, resulting in multiple rounds of severe thunderstorms. All modes of severe weather were reported throughout the region, including large hail, damaging winds, tornadoes, and flash flooding.

The storms produced widespread heavy rainfall that led to flash flooding in several areas. Broadcast media captured footage in the City of Hillsboro showing residential roads covered with water, with depths reaching one to two feet in some locations. This was high enough to reach home foundations. The exact locations of the affected homes remain uncertain, but the damage reflected the severity and widespread impact of the weekend's storms.

PROBABILITY OF FUTURE EVENTS

Based on 57 recorded historical occurrences within a 29.5-year reporting period within the Hill County planning area, flooding is considered "Highly Likely," meaning an event is probable within the next year.

CLIMATE CHANGE CONSIDERATIONS

River flooding in Texas is projected to have no substantial change through 2036. This is in large part due to the construction of dams and reservoirs for flood management in the 20th century. There is a mixture of historical trends categorized by season, with no one clear trend to project. In addition, meteorological drivers of river flooding (increased rainfall intensity, decreased soil moisture) are projected to have competing influences. On balance, if an increasing trend is present in river flooding, it will be at the most extreme flood events or in the wettest parts of the state where there is so much rainfall that a decrease in soil moisture would have little mitigating impact.⁴

According to the Climate Risk and Resilience Portal (ClimRR), the historical annual total precipitation for Hill County is 36.52 inches and the current ClimRR climate change projections estimate the annual minimum precipitation at mid-century to be 37.23 inches, which represents an increase from current averages. End of century projections are higher with a new annual minimum precipitation at 41.51 inches. An increase in precipitation and precipitation events could increase flood risk, however, projections are subject to change over time.

VULNERABILITY AND IMPACT

A property's vulnerability to a flood depends on its location and proximity to the floodplain. Structures that lie along banks of a waterway are the most vulnerable and are often repetitive loss structures. Hill County promotes development outside of the floodplain. In terms of structure and

⁴ Assessment of Historic and Future Trends of Extreme Weather in Texas, 1900-2036, Texas A&M University Office of the Texas State Climatologist, 2021 update.

SECTION 8: FLOOD

infrastructure damages and service disruptions, the potential severity of impacts for flood events is considered “Limited” with the complete shutdown of critical facilities for 24-hours or less and less than 10 percent of property destroyed or with major damage.

Table 8-5 includes the comprehensive critical facilities identified in Appendix C that were considered the most important to the planning area that are subject to a range of impacts due to flood and are located in the regulatory floodplain. For a comprehensive list of identified critical facilities by participating jurisdiction, please see Appendix C.

Table 8-5. Critical Facilities in the Floodplain by Participating Jurisdiction

CRITICAL FACILITY TYPES	CRITICAL FACILITIES AT RISK	POTENTIAL IMPACTS
Emergency Response Departments (EOC, Fire, Police, EMS), Hospitals	City of Blum: 1 Fire Facility City of Whitney: 1 EMS Facility, 1 Police Facility	<ul style="list-style-type: none"> • Emergency operations and services may be significantly impacted due to damaged facilities and/or loss of communications. • Emergency vehicles can be damaged by rising flood waters. • Flood-related rescues may be necessary at swift and low water crossings or in flooded neighborhoods where roads have become impassable, placing first responders in harm’s way. • Evacuations may be required for entire neighborhoods because of rising floodwaters, further taxing limited response capabilities and increasing sheltering needs for displaced residents. • Power outages could disrupt communications, delaying emergency response times. • Critical staff may be injured or otherwise unable to report for duty, limiting response capabilities. • Washed out roads and bridges can impede emergency response vehicle access to areas. • Increased number of structure fires due to gas line ruptures and downed power lines, further straining the capacity and resources of emergency personnel. • First responders are exposed to downed power lines, contaminated and unusual debris, hazardous materials, and generally unsafe conditions. • Extended power outages and evacuations may lead to possible looting, destruction of property, and theft, further burdening law enforcement resources.
Airport, Academic Institutions, Community Residential Facilities, Day Care Facilities, Evacuation Centers & Shelters,	City of Blum: 1 Municipal Facility, 1 U.S. Government Facility City of Whitney: 1 Municipal Facility	<ul style="list-style-type: none"> • Structures can be damaged by rising flood waters. • Power outages could disrupt critical care. • Backup power sources could be damaged, inundated or otherwise inoperable. • Critical staff may be impacted and unable to report for duty, limiting response capabilities. • Evacuations may be necessary due to extended power outages, gas line ruptures, or inundation of facilities.

SECTION 8: FLOOD

CRITICAL FACILITY TYPES	CRITICAL FACILITIES AT RISK	POTENTIAL IMPACTS
Governmental Facilities		<ul style="list-style-type: none"> • Additional emergency responders and critical aid workers may not be able to reach the area for days. • Power outages and infrastructure damage may prevent larger airports from acting as temporary command centers for logistics, communications, and emergency operations. • Temporary break in operations may significantly inhibit post event evacuations. • Damaged or destroyed highway infrastructure may substantially increase the need for airport operations.
Commercial Suppliers (food, gas, etc.)	City of Blum: 1 Commercial Facility	<ul style="list-style-type: none"> • Facilities or infrastructure may be damaged, destroyed or otherwise inaccessible. • Essential supplies like medicines, water, food, and equipment deliveries may be significantly delayed.
Utility Services and Infrastructure (electric, water, wastewater, communications)	Hill County: 1 Communication Facility, 2 Dams City of Hillsboro: 1 Energy Utility City of Whitney: 2 Sewage and Water Facilities	<ul style="list-style-type: none"> • Emergency operations and services may be significantly impacted due to damaged facilities and/or loss of communications. • Emergency service vehicles can be damaged by rising flood waters. • Flood-related rescues may be necessary at swift and low water crossings or in flooded neighborhoods where roads have become impassable, placing emergency service workers in harm's way. • Increased number of structure fires due to gas line ruptures and downed power lines, further straining the capacity and resources of emergency personnel. • Service responders are exposed to downed power lines, contaminated and unusual debris, hazardous materials, and generally unsafe conditions. • Extended power outages and evacuations may lead to possible looting, destruction of property, and theft, further burdening law enforcement resources.

Historic loss estimates due to flood are presented in Table 8-6 below. Considering 57 flood events over a 29.5-year period, frequency is approximately two events every year.

Table 8-6. Average Annualized Losses by Jurisdiction, 1996 – 2024

JURISDICTION	TOTAL PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
Hill County	\$679,800	\$23,000
City of Abbott	\$61,400	\$2,100
City of Aquilla	\$0	\$0
City of Blum	\$1,496,200	\$50,700

SECTION 8: FLOOD

JURISDICTION	TOTAL PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
City of Bynum	\$0	\$0
City of Carl's Corner	\$0	\$0
City of Covington	\$1,100	\$0
City of Hillsboro	\$234,700	\$8,000
City of Hubbard	\$134,500	\$4,600
City of Itasca	\$76,000	\$2,600
City of Malone	\$10,200	\$300
City of Mertens	\$134,500	\$4,600
City of Mount Calm	\$1,400	\$0
City of Penelope	\$0	\$0
City of Whitney	\$22,400	\$800
TOTALS	\$2,852,200	\$96,700

While all citizens are at risk of the impacts of a flood, forced relocation and disaster recovery disproportionately impacts low-income residents who lack the financial means to travel, afford a long-term stay away from home, and to rebuild or repair their homes. In addition, due to factors like limited mobility, communication difficulties, medical needs, reliance on support services, transportation challenges, housing accessibility issues, and possible shortages in emergency shelter accommodations, the elderly, children, and people with disabilities are also disproportionately affected by flooding events. People who speak a language other than English may face increased vulnerability due to language barriers that limit their access to important information such as weather-related warnings and instructions regarding safety measures.

The population over 65 in the Hill County planning area is estimated at 20 percent of the total population and children under the age of 5 are estimated at 6 percent. The population with a disability is estimated at 18 percent of the total population. An estimated 14 percent of the planning area population live below the poverty level and 5 percent of the populations speak English 'less than very well'.

Table 8-7. Populations at Greater Risk by Jurisdiction⁵

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Hill County	7,442	2,114	6,410	5,206	1,836

⁵ U.S. Census Bureau Five-Year estimates

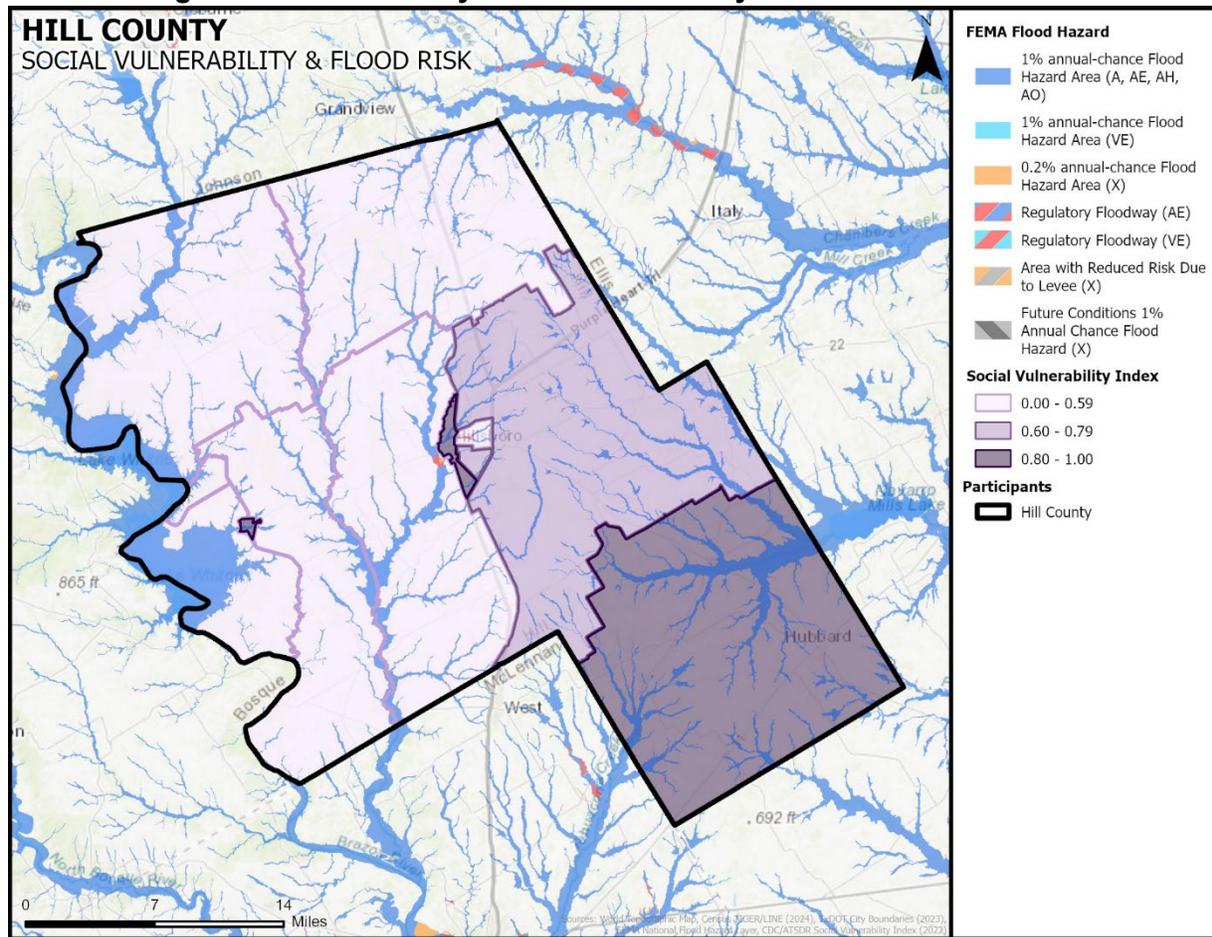
SECTION 8: FLOOD

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
City of Abbot	75	26	33	1	1
City of Aquilla	7	8	7	10	5
City of Blum	41	25	48	120	14
Town of Bynum	28	10	32	12	0
City of Carl's Corner	35	22	119	39	23
City of Covington	59	19	31	14	0
City of Hillsboro	1,246	699	1,370	1,633	923
City of Hubbard	288	81	325	218	72
City of Itasca	261	106	292	171	73
Town of Malone	21	23	53	163	64
Town of Mertens	14	8	49	13	17
City of Mount Calm	93	34	124	89	3
Town of Penelope	56	25	47	12	24
City of Whitney	496	121	497	503	234

The Center for Disease Control (CDC) created a Social Vulnerability Index (SVI) which includes a database and mapping application that identifies and quantifies communities experiencing social vulnerability. The current CDC SVI uses 16 U.S. census variables from the 5-year American Community Survey (ACS) to identify communities that may need support before, during, or after disasters. All 16 variables fall under four broad categories including socioeconomic status (population in poverty, unemployment, etc.), household characteristics (age, disability status, etc.), racial and ethnic minority status, and housing type and transportation (mobile homes, no vehicles, etc.). Populations experiencing social vulnerability may be adversely impacted by natural hazards, disasters, and other community-level stressors. Figure 8-31 identifies areas of social vulnerability using the CDC's SVI and where these areas overlap with the Hill County flood hazard areas.

SECTION 8: FLOOD

Figure 8-31. Hill County Social Vulnerability and Flood Hazard Areas



ASSESSMENT OF IMPACTS

Flooding is the deadliest natural disaster that occurs in the U.S. each year, and it poses a constant and significant threat to the health and safety of the people in the Hill County planning area. Impacts to the planning area can include:

- Flood-related rescues may be necessary at swift water and low water crossings or in flooded neighborhoods where roads have become impassable, placing first responders in harm's way.
- Evacuations may be required for entire neighborhoods because of rising floodwaters, further taxing limited response capabilities and increasing sheltering needs for displaced residents.
- Health risks and threats to residents are elevated after the flood waters have receded due to contaminated flood waters (untreated sewage and hazardous chemicals) and mold growth typical in flooded buildings and homes.
- Significant flood events often result in widespread power outages, increasing the risk to more vulnerable portions of the population who rely on power for health and/or life safety.

SECTION 8: FLOOD

- Extended power outages can result in an increase in structure fires and/or carbon monoxide poisoning, as individuals attempt to cook or heat their home with alternate, unsafe cooking or heating devices, such as grills.
- Floods can destroy or make residential structures uninhabitable, requiring shelter or relocation of residents in the aftermath of the event.
- First responders are exposed to downed power lines, contaminated and potentially unstable debris, hazardous materials, and generally unsafe conditions, elevating the risk of injury to first responders and potentially diminishing emergency response capabilities.
- Emergency operations and services may be significantly impacted due to damaged facilities.
- Significant flooding can result in the inability of emergency response vehicles to access areas of the community.
- Critical staff may suffer personal losses or otherwise be impacted by a flood event and be unable to report for duty, limiting response capabilities.
- City or County departments may be flooded, delaying response and recovery efforts for the entire community.
- Private sector entities that the planning area and its residents rely on, such as utility providers, financial institutions, and medical care providers, may not be fully operational and may require assistance from neighboring communities until full services can be restored.
- Damage to infrastructure may slow economic recovery since repairs may be extensive and lengthy.
- Some businesses not directly damaged by the flood may be negatively impacted while utilities are being restored or water recedes, further slowing economic recovery.
- When the community is affected by significant property damage it is anticipated that funding would be required for infrastructure repair and restoration, temporary services and facilities, overtime pay for responders, as well as normal day-to-day operating expenses.
- Displaced residents may not be able to immediately return to work, further slowing economic recovery.
- Residential structures substantially damaged by a flood may not be rebuilt for years and uninsured or underinsured residential structures may never be rebuilt, reducing the tax base for the community.
- Large floods may result in a dramatic population fluctuation, as people are unable to return to their homes or jobs and must seek shelter and/or work outside of the affected area.
- Businesses that are uninsured or underinsured may have difficulty reopening, which results in a net loss of jobs for the community and a potential increase in the unemployment rate.
- Recreation activities may be unavailable, and tourism can be unappealing for years following a large flood event, devastating directly related local businesses and negatively impacting economic recovery.
- Flooding may cause significant disruptions of clean water and sewer services, elevating health risks and delaying recovery efforts.
- The psychosocial effects on flood victims and their families can traumatize them for long periods of time, creating long term increases in medical treatment and services.

SECTION 8: FLOOD

- Extensive or repetitive flooding can lead to decreases in property value for the affected community.
- Flood poses a potential catastrophic risk to annual and perennial crop production and overall crop quality, leading to higher food costs.
- Flood related declines in production may lead to an increase in unemployment.
- Large floods may result in loss of livestock, increased livestock mortality due to stress and waterborne disease, and increased cost for feed.

The overall extent of damage caused by floods is dependent on the extent, depth, and duration of flooding, in addition to the velocities of flows in the flooded areas. The level of preparedness and pre-event planning done by the community, local businesses, and citizens will contribute to the overall economic and financial conditions in the aftermath of a flood event.

NATIONAL FLOOD INSURANCE PROGRAM (NFIP) PARTICIPATION

Flood insurance offered through the National Flood Insurance Program (NFIP) is the best way for home and business owners to protect themselves financially against the flood hazard. Hill County, City of Blum, City of Hillsboro, City of Hubbard, City of Itasca, City of Malone, City of Mertens, City of Mount Calm, and City of Whitney participate in the NFIP and are in good standing. The City of Abbott, City of Aquila, City of Bynum, City of Carl's Corner, City of Covington, and City of Penelope do not have the capacity to administer and participate in the NFIP at this time.

As an additional indicator of floodplain management responsibility, communities may choose to participate in FEMA's Community Rating System (CRS). This is an incentive-based program that allows communities to undertake flood mitigation activities that go beyond NFIP requirements. Currently, none of the participating communities in Hill County participate in the CRS. Hill County and all participating jurisdictions may evaluate their capacity for CRS participation in the next planning cycle.

Hill County currently has in place minimum NFIP standards for new construction and substantial improvements of structures. The City of Hillsboro and City of Whitney have adopted some additional higher regulatory standards for further flood protection, such as elevating structures two feet above the base flood elevation. All jurisdictions are considering adopting additional higher regulatory NFIP standards to limit floodplain development.

The flood hazard areas throughout Hill County are subject to periodic inundation, which may adversely affect public safety, resulting in loss of life and property, health and safety hazards, disruption of commerce and governmental services, and extraordinary public expenditures for flood protection and relief. Flood losses are created by the cumulative effect of obstructions in floodplains which cause an increase in flood heights and velocities. In addition, occupancy in flood hazard areas creates an increase in vulnerabilities to flood hazards as they typically are inadequately elevated, flood-proofed, or otherwise protected from flood damage. Mitigation actions are included to address flood maintenance issues as well, including routinely clearing debris from roadside ditches and bridges, and expanding drainage culverts and storm water structures to convey flood water more adequately.

It is the purpose of Hill County and all participating jurisdictions to continue to promote public health, safety, and general welfare by minimizing public and private losses due to flood conditions

SECTION 8: FLOOD

in specific areas. Each of the NFIP participating jurisdictions in the Plan Update are guided by their local Flood Damage Prevention Ordinance. These communities will continue to comply with NFIP requirements through their local permitting, inspection, and record-keeping requirements for new and substantially developed construction. Further, the NFIP program promotes sound development in floodplain areas and includes provisions designed to:

- Protect human life and health;
- Minimize expenditure of public money for costly flood control projects;
- Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- Minimize prolonged business interruptions;
- Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in floodplains;
- Help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize future flood blight areas; and
- Ensure that potential buyers are notified that property is in a flood area.

In order to accomplish these tasks, Hill County and all participating jurisdictions seek to observe the following guidelines in order to achieve flood mitigation:

- Restrict or prohibit uses that are dangerous to health, safety, or property in times of flood, such as filling or dumping, that may cause excessive increases in flood heights or velocities;
- Require that uses vulnerable to floods, including facilities, which serve such uses, be protected against flood damage at the time of initial construction, as a method of reducing flood losses;
- Control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of floodwaters;
- Control filling, grading, dredging, and other development, which may increase flood damage; and
- Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands.

NFIP COMPLIANCE AND MAINTENANCE

All NFIP participating jurisdictions have developed mitigation actions that relate to either NFIP maintenance or compliance. Compliance and maintenance actions can be found in Section 18.

Flooding was identified as a significant risk hazard during hazard ranking activities at the Risk Assessment Workshop by the majority of the planning team. As such, many of the mitigation actions were developed with flood mitigation in mind. A majority of these flood actions address compliance with the NFIP and implementing flood awareness programs. All participating jurisdictions recognize the need and are working towards adopting higher NFIP regulatory standards to further minimize flood risk in their community. In addition, each jurisdiction focuses on public flood awareness activities. This includes promoting the availability of flood insurance by placing NFIP brochures and flyers in public libraries or public meeting places in participating jurisdictions.

SECTION 8: FLOOD

Each NFIP participating jurisdiction in this planning process has a designated floodplain administrator. All floodplain administrators in the planning area will continue to maintain compliance with the NFIP, including continued floodplain administration, zoning ordinances, and development regulation. The floodplain ordinance adopted by each participating jurisdiction outlines the minimum requirements for development in Special Flood Hazard Areas.

All jurisdictions have a permitting process in place and each local floodplain administrator is responsible for coordinating inspections of damaged homes located in the floodplain. Following a flood event, local officials inspect damaged homes to make a substantial damage determination. Substantially damaged homes must be brought into compliance. Similarly, proposed improvements to homes located in the floodplain are reviewed by local building officials to determine if a substantial improvement is proposed. The floodplain administrator oversees permitted repairs and improvements to ensure compliance during the rebuilding or improvement process.

REPETITIVE LOSS

The Flood Mitigation Assistance (FMA) Grant Program under FEMA provides federal funding to assist states and communities in implementing mitigation measures to reduce or eliminate the long-term risk of flood damage to buildings that are insured under the National Flood Insurance Program. The Texas Water Development Board (TWDB) administers the FMA grant program for the State of Texas. One of the goals of the FMA program is to reduce the burden of repetitive loss and severe repetitive loss properties on the NFIP through mitigation activities that significantly reduce or eliminate the threat of future flood damages.

Repetitive Loss properties are defined as structures that are:

- Any insurable building for which 2 or more claims of more than \$1,000 each, paid by the National Flood Insurance Program (NFIP) within any 9-year period, since 1978;
- May or may not be currently insured under the NFIP.

Severe Repetitive Loss properties are defined as structures that are:

- Covered under the NFIP and have at least 4 flood related damage claim payments (building and contents) over \$5,000.00 each, and the cumulative amount of such claims payments exceed \$20,000; or
- At least 2 separate claim payments (building payments only) have been made, with the cumulative amount of the building portion of such claims exceeding the market value of the building.

In either scenario, at least 2 of the referenced claims must have occurred within any 9-year period and must be greater than 10 days apart.⁶ Table 8-8 shows repetitive loss and severe repetitive loss properties for Hill County and the City of Whitney. The remaining jurisdictions currently have no repetitive loss or severe repetitive loss properties.

⁶ Source: Texas Water Development Board.

SECTION 8: FLOOD

Table 8-8. Repetitive Loss and Severe Repetitive Loss Properties

JURISDICTION	NUMBER OF STRUCTURES	NUMBER OF LOSSES	STRUCTURE TYPE
Hill County	2	5	Single Family Residential
City of Whitney	2	6	Single Family Residential

Section 9

Hail



SECTION 9: HAIL

Hazard Description	1
Location	1
Extent.....	2
Historical Occurrences.....	3
Significant Events.....	6
Probability of Future Events.....	6
Climate Change Considerations	6
Vulnerability and Impact.....	7
Assessment of Impacts	11

HAZARD DESCRIPTION



Hailstorm events are a potentially damaging outgrowth of severe thunderstorms. During the developmental stages of a hailstorm, ice crystals form within a low-pressure front due to the rapid rising of warm air into the upper atmosphere, and the subsequent cooling of the air mass. Frozen droplets gradually accumulate into ice crystals until they fall as precipitation that is round or irregularly shaped masses of ice typically greater than 0.75 inches in diameter. The size of hailstones is a direct result of the size and severity of the storm. High velocity updraft winds are required to keep hail in suspension in thunderclouds. The strength of the updraft is a by-product of heating on the Earth's surface. Higher temperature gradients above Earth's surface result in increased suspension time and hailstone size.

According to the National Insurance Crime Bureau (NICB), between 2018 and 2020 the State of Texas had the greatest number of hail loss claims in the U.S. with 605,866 loss claims (23 percent of total hail claims in the U.S.) due to hail events. In this two-year period Texas experienced a total of 584 severe hail days. Five of the top ten cities for hail loss claims between 2017 and 2019 were in Texas, three of which were in the Dallas-Fort Worth metropolitan area.¹

In 2021, 6.8 million properties in the U.S. experienced one or more damaging hail events, resulting in a total of \$16.5 billion in insured losses. Texas had the highest number of properties affected by hail with over 1.5 million properties or 17 percent of total properties in the state affected; an increase of 80,000 properties affected between 2020 and 2021. Texas hailstorms accounted for almost a quarter of total U.S. properties affected by hail in 2021.

LOCATION

Hailstorms are an extension of severe thunderstorms that could potentially cause severe damage. Hailstorms are not confined to any specific geographic location and can vary greatly in size,

¹ Manasek, Thomas, "2018-2020 United States Hail Loss Claims and Questionable Claims" (National Insurance Crime Bureau, March 15, 2021). <http://www.rmiiia.org/downloads/PUBLIC%202018%20-%202020%20Hail%20foreCAST-%20TJM.pdf>

SECTION 9: HAIL

location, intensity, and duration. Therefore, the entire Hill County planning area is equally at risk to the hazard of hail. Refer to Figure 9-1 for the location of past hail events in the planning area.

EXTENT

The National Weather Service (NWS) classifies a storm as “severe” if there is hail three-quarters of an inch in diameter (approximately the size of a penny) or greater, based on radar intensity or as seen by observers. The intensity category of a hailstorm depends on hail size and the potential damage it could cause, as depicted in the National Centers for Environmental Information (NCEI) Intensity Scale in Table 9-1.

Table 9-1. Hail Intensity and Magnitude²

SIZE CODE	INTENSITY CATEGORY	SIZE (diameter inches)	DESCRIPTIVE TERM	TYPICAL DAMAGE
H0	Hard Hail	Up to 0.33	Pea	No damage
H1	Potentially Damaging	0.33 – 0.60	Marble	Slight damage to plants and crops
H2	Potentially Damaging	0.60 – 0.80	Dime	Significant damage to plants and crops
H3	Severe	0.80 – 1.20	Nickel	Severe damage to plants and crops
H4	Severe	1.2 – 1.6	Quarter	Widespread glass and auto damage
H5	Destructive	1.6 – 2.0	Half Dollar	Widespread destruction of glass, roofs, and risk of injuries
H6	Destructive	2.0 – 2.4	Ping Pong Ball	Aircraft bodywork dented and brick walls pitted
H7	Very Destructive	2.4 – 3.0	Golf Ball	Severe roof damage and risk of serious injuries
H8	Very Destructive	3.0 – 3.5	Hen Egg	Severe damage to all structures
H9	Super Hailstorms	3.5 – 4.0	Tennis Ball	Extensive structural damage, could cause fatal injuries
H10	Super Hailstorms	4.0 +	Baseball	Extensive structural damage, could cause fatal injuries

The intensity scale in Table 9-1 ranges from H0 to H10, with increments of intensity or damage potential in relation to hail size (distribution and maximum), texture, fall speed, speed of storm translation, and strength of the accompanying wind. Based on the best available data regarding the previous occurrences for the area, the Hill County planning area may experience hailstorms ranging from an H0 (pea size) to an H10 (tennis ball size). The largest size hail to be reported since 1996 was 4.5 inches in diameter, or an H10, which is considered a super hailstorm that can cause extensive structural damage and potentially fatal injuries. An event of this magnitude

² NCEI Intensity Scale, based on the TORRO Hailstorm Intensity Scale.

SECTION 9: HAIL

occurred in the planning area on May 9, 2024. This is likely the greatest extent the planning area can anticipate in the future, based on historical events.

HISTORICAL OCCURRENCES

Historical evidence shown in Figure 9-1 demonstrates that the planning area is vulnerable to hail events overall. Historical events with reported damages, injuries, or fatalities are shown in Table 9-2. A total of 193 reported historical hail events impacted the Hill County planning area between January 1996 and June 2025; these events were reported to NCEI and NOAA databases and may not represent all hail events to have occurred during the past 29.5 years. Only those events for the Hill County planning area with latitude and longitude available were plotted (Figure 9-1).

Figure 9-1. Spatial Historical Hail Events, January 1996 – June 2025

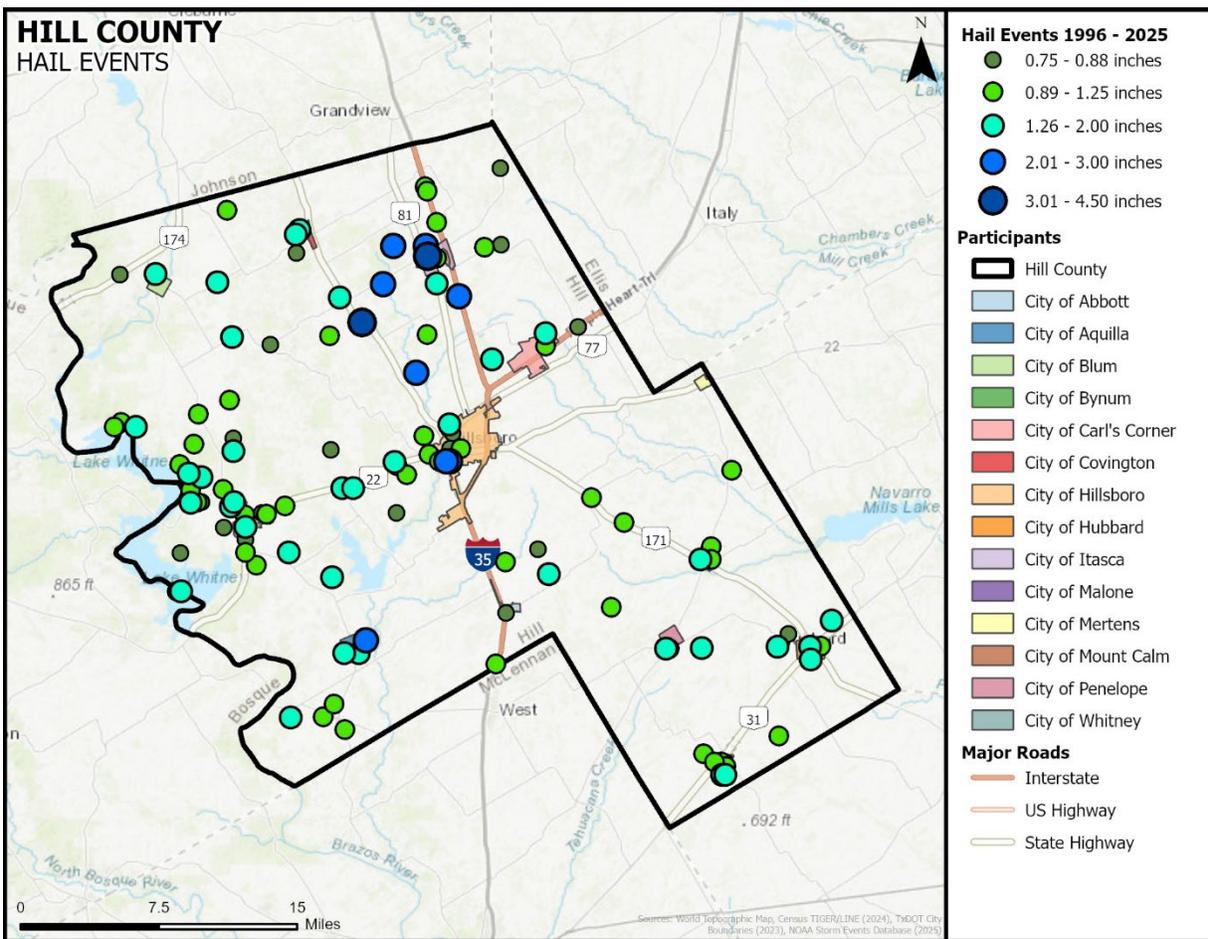


Table 9-2. Damaging Historical Hail Events, January 1996 – June 2025³

JURISDICTION	DATE	MAGNITUDE (inches)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
City of Hillsboro	3/25/2000	2.75	0	0	\$1,868,000	\$0

³ Only recorded events with damages are listed. Monetary damages have been inflated to their 2025 value.

SECTION 9: HAIL

JURISDICTION	DATE	MAGNITUDE (inches)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
City of Blum	10/14/2007	1.75	0	0	\$7,700	\$0
City of Mount Calm	2/15/2008	1.75	0	0	\$7,600	\$0
City of Hubbard	4/25/2008	1.75	0	0	\$7,500	\$0
City of Hillsboro	2/10/2009	1.75	0	0	\$7,600	\$0
City of Hubbard	5/20/2010	1.75	0	0	\$1,500	\$0
City of Itasca	4/19/2011	3.5	0	0	\$49,800	\$0
City of Itasca	4/19/2011	1.75	0	0	\$35,600	\$0
Hill County	4/19/2011	3	0	0	\$28,500	\$0
City of Itasca	4/19/2011	2.5	0	0	\$14,300	\$0
Hill County	4/19/2011	1.75	0	0	\$8,600	\$0
City of Mount Calm	4/25/2011	1.75	0	0	\$4,300	\$0
City of Hillsboro	4/26/2011	0.5	0	0	\$200	\$0
City of Itasca	4/3/2012	2.5	0	0	\$973,000	\$347,500
City of Hillsboro	4/3/2012	1.75	0	0	\$13,900	\$139,000
City of Covington	5/15/2013	1.75	0	0	\$6,900	\$0
City of Itasca	4/21/2014	1.5	0	0	\$54,000	\$0
City of Itasca	4/26/2015	1.5	0	0	\$13,600	\$0
City of Hillsboro	3/26/2017	1	0	0	\$26,300	\$0
City of Whitney	3/26/2017	1.75	0	0	\$6,600	\$0
City of Whitney	3/26/2017	1.75	0	0	\$6,600	\$0
City of Whitney	3/26/2017	1.75	0	0	\$6,600	\$0
City of Hubbard	5/3/2017	1.5	0	0	\$2,000	\$0
City of Aquilla	5/3/2017	1.25	0	0	\$2,000	\$0
City of Aquilla	5/3/2017	1.25	0	0	\$1,400	\$0
City of Mount Calm	5/3/2017	1.25	0	0	\$1,400	\$0
City of Mount Calm	5/3/2017	1	0	0	\$1,400	\$0
City of Aquilla	3/18/2018	2.5	0	0	\$12,900	\$0
Hill County	3/18/2018	2	0	0	\$6,500	\$0

SECTION 9: HAIL

JURISDICTION	DATE	MAGNITUDE (inches)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
City of Aquilla	3/18/2018	2	0	0	\$6,500	\$0
City of Whitney	3/18/2018	2	0	0	\$6,500	\$0
City of Itasca	10/14/2018	1	0	0	\$5,100	\$0
City of Blum	5/3/2021	1.75	0	0	\$11,900	\$0
City of Whitney	6/11/2023	2	0	0	\$104,900	\$0
Hill County	5/9/2024	4.5	0	0	\$101,900	\$0
Hill County	5/9/2024	3	0	0	\$76,400	\$0
City of Itasca	5/9/2024	2.75	0	0	\$20,400	\$0
Hill County	5/9/2024	1.75	0	0	\$7,200	\$0
City of Whitney	5/21/2024	1.75	0	0	\$7,200	\$0
TOTALS		(Max Extent)	0	0	\$3,524,300	\$486,500

Table 9-3. Historical Hail Events Summary, January 1996 – June 2025⁴

JURISDICTION	NUMBER of EVENTS	MAX MAGNITUDE (inches)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Hill County	28	4.5	0	0	\$229,100	\$0
City of Abbott	4	1.75	0	0	\$0	\$0
City of Aquilla	9	2.5	0	0	\$22,800	\$0
City of Blum	17	1.75	0	0	\$19,600	\$0
City of Bynum	3	1	0	0	\$0	\$0
City of Carl's Corner	3	1.25	0	0	\$0	\$0
City of Covington	5	1.75	0	0	\$6,900	\$0
City of Hillsboro	32	2.75	0	0	\$1,916,000	\$139,000
City of Hubbard	15	1.75	0	0	\$11,000	\$0
City of Itasca	21	3.5	0	0	\$1,165,800	\$347,500
City of Malone	6	1.75	0	0	\$0	\$0

⁴ Note: Participating jurisdictions with no reported events show a “-“ in table columns where damages, deaths or injuries would be otherwise reported.

SECTION 9: HAIL

JURISDICTION	NUMBER of EVENTS	MAX MAGNITUDE (inches)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
City of Mertens	0	-	-	-	-	-
City of Mount Calm	10	1.75	0	0	\$14,700	\$0
City of Penelope	2	1.75	0	0	\$0	\$0
City of Whitney	38	2	0	0	\$138,400	\$0
TOTALS	193	(Max Extent)	0	0	\$4,010,800	

Based on the list of historical hail events for the Hill County planning area, 42 events were reported to the NCEI since the 2020 Plan.

SIGNIFICANT EVENTS

March 25, 2000

Overnight, large hail and high wind did extensive damage across northern Hill County from the City of Blum to the City of Hillsboro, where the worst impacts were felt. Hail up to 2.75 inches in diameter broke over 200 windows, dented vehicles, and ruined approximately 17,000 acres of wheat. A local newspaper reported this as the worst hailstorm in Hillsboro since the 1980s. Total damages were estimated at \$1,868,000 (2025 dollars).

April 3, 2012

During a historic severe weather outbreak in North Texas, large hail fell across the Hill County planning area, primarily damaging the cities of Itasca and Hillsboro. In both cities, tennis ball sized hail damaged cars, houses, buildings, and greatly damaged the wheat crop. In total, it was estimated that hail caused \$986,900 (2025 dollars) in property damage and an additional \$486,500 (2025 dollars) in crop damage.

May 9, 2024

Severe thunderstorms brought extremely large hail, up to 4.5 inches in diameter, to multiple areas throughout Hill County. The worst reported impacts were largely in the northern portion of the county in and around the City of Itasca, where an estimated \$20,400 (2025 dollars) in property damage was caused by hail. An additional \$205,900 (2025 dollars) in property damages were reported in Hill County outside of the City of Itasca.

PROBABILITY OF FUTURE EVENTS

Based on available records of historic events, 193 events in a 29.5-year reporting period for Hill County provides an average annual occurrence of approximately six to seven events per year. This frequency supports a “Highly Likely” probability of future events for the Hill County planning area with an event probable within the next year.

CLIMATE CHANGE CONSIDERATIONS

Although the impact of climate change on the frequency and severity of hail events is uncertain, some climate studies attempt to give insight into the future conditions of hailstorms. As ocean temperatures rise due to climate change, more moisture is evaporating into the atmosphere. The

SECTION 9: HAIL

warm and moist air masses that fuel severe weather may become more unstable on average, which could favor the increased development of thunderstorms and hail. However, it is also suggested that in a warming climate, the average melting level will rise in thunderstorms, meaning small hailstones will have more of a chance to melt as they fall to the ground. Therefore, hail may become less frequent, but large hail can be expected when it does occur, leading to the possibility of increased damages.⁵

VULNERABILITY AND IMPACT

Crops are typically the most vulnerable to the impacts of hail. Even relatively small hail can shred plants to ribbons in a matter of minutes. Vehicles, roofs of buildings and homes, and landscaping are more frequently damaged by hail. Utility systems on roofs of buildings and critical facilities would be vulnerable and could be damaged. Hail could cause a significant threat to people, as they could be struck by hail and falling trees and branches. Outdoor activities and events may elevate the risk to residents and visitors when a hailstorm strikes with little warning. Portable buildings typically utilized by schools and commercial sites such as construction areas would be more vulnerable to hail events than the typical site-built structures.

The Hill County planning area features mobile or manufactured homes throughout the planning area. These homes are typically more vulnerable to hail events than typical site-built structures. The U.S. Census data indicates a total of 2,708 (17 percent of total housing stock) manufactured homes located in the Hill County planning area. In addition, 43 percent (7,075 structures) of the housing structures in the Hill County planning area were built before 1980. These structures would typically be built to lower or less stringent construction standards than newer construction and may be more susceptible to damage during hail events.

Table 9-4. Structures at Greater Risk by Participating Jurisdiction

JURISDICTION	STRUCTURES	
	SFR BUILT BEFORE 1980	MANUFACTURED HOMES
Hill County	7,075	2,708
City of Abbott	101	8
City of Aquilla	13	16
City of Blum	65	42
City of Bynum	66	7
City of Carl's Corner	4	52
City of Covington	64	11
City of Hillsboro	2,054	96
City of Hubbard	490	53

⁵ Yale Climate Connections, Hailstorms and Climate Change, March 17, 2022.

SECTION 9: HAIL

JURISDICTION	STRUCTURES	
	SFR BUILT BEFORE 1980	MANUFACTURED HOMES
City of Itasca	402	66
City of Malone	115	12
City of Mertens	31	7
City of Mount Calm	72	111
City of Penelope	66	8
City of Whitney	532	93

While all citizens are at risk of the impacts of hail, forced relocation and disaster recovery disproportionately impacts low-income residents who lack the financial means to repair their homes. An estimated 14 percent of the planning area population live below the poverty level (Table 9-5). While warning times for this type of hazard events should be substantial enough for these individuals to seek shelter, the elderly, children, and people with a disability may have trouble taking shelter due to mobility issues or a lack of awareness, making them more susceptible to injury or harm. In addition, people who speak a language other than English may face increased vulnerability due to language barriers that limit their access to important information such as weather-related warnings and instructions regarding safety measures.

Table 9-5. Populations at Greater Risk by Jurisdiction⁶

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Hill County	7,442	2,114	6,410	5,206	1,836
City of Abbott	75	26	33	1	1
City of Aquilla	7	8	7	10	5
City of Blum	41	25	48	120	14
City of Bynum	28	10	32	12	0
City of Carl's Corner	35	22	119	39	23
City of Covington	59	19	31	14	0
City of Hillsboro	1,246	699	1,370	1,633	923
City of Hubbard	288	81	325	218	72

⁶ US Census Bureau 2023 data for Hill County

SECTION 9: HAIL

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
City of Itasca	261	106	292	171	73
City of Malone	21	23	53	163	64
City of Mertens	14	8	49	13	17
City of Mount Calm	93	34	124	89	3
City of Penelope	56	25	47	12	24
City of Whitney	496	121	497	503	234

The Hill County Planning Team identified the following critical facilities (Table 9-6) as assets that are considered the most important to the planning area and are susceptible to a range of impacts caused by hail events. For a comprehensive list by participating jurisdiction, please see Appendix C.

Table 9-6. Critical Facilities Vulnerable to Hail

CRITICAL FACILITY TYPE	POTENTIAL IMPACTS
Emergency Response Services (EOC, Fire, Police, EMS), Hospitals and Medical Centers	<ul style="list-style-type: none"> Emergency operations and services may be significantly impacted due to damaged facilities and/or loss of communications. Emergency vehicles can be damaged by hailstones. Power outages could disrupt communications, delaying emergency response times. Accumulated hail on the streets may impede emergency response vehicle access to areas. Extended power outages and evacuations may lead to possible looting, destruction of property, and theft, further burdening law enforcement resources.
Airport, Academic Institutions, Animal Shelter, Evacuation Centers & Shelters, Governmental Facilities, Residential/ Assisted Living Facilities	<ul style="list-style-type: none"> Structures can be damaged by hailstones. Power outages could disrupt critical care. Backup power sources could be damaged. Evacuations may be necessary due to extended power outages, gas line ruptures, or structural damage to facilities. Power outages and infrastructure damage may prevent larger airports from acting as temporary command centers for logistics, communications, and emergency operations. Temporary break in operations may significantly inhibit post event evacuations. Damaged or destroyed highway infrastructure may substantially increase the need for airport operations.
Commercial Supplier (Food, fuel, etc.)	<ul style="list-style-type: none"> Facilities or infrastructure may be damaged, destroyed or otherwise inaccessible. Essential supplies like medicines, water, food, and equipment deliveries may be significantly delayed.

SECTION 9: HAIL

CRITICAL FACILITY TYPE	POTENTIAL IMPACTS
Utility Services and Infrastructure (electric, water, wastewater, communications)	<ul style="list-style-type: none"> • Emergency operations and services may be significantly impacted due to damaged facilities and/or loss of communications. • Power outages could disrupt communications, delaying emergency response times. • Accumulated hail on the streets may impede service response vehicle access to areas. • Extended power outages and evacuations may lead to possible looting, destruction of property, and theft, further burdening law enforcement resources.

Hail has been known to cause injury to humans and occasionally has been fatal. Historically, no injuries have been reported due to hail within Hill County. Overall, the total loss estimate of property and crops in the planning area is \$4,010,800 (2025 dollars) with an average annualized loss of \$136,000. Based on historic loss and damages, the impact of hail on the Hill County planning area, including all participating jurisdictions, is considered “Limited” severity of impact, meaning minor quality of life lost, critical facilities and services shut down for 24 hours or less, and less than 10 percent of property destroyed or with major damage.

Table 9-7. Estimated Annualized Losses by Jurisdiction

JURISDICTION	TOTAL PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
Hill County	\$229,100	\$7,800
City of Abbott	\$0	\$0
City of Aquilla	\$22,800	\$800
City of Blum	\$19,600	\$700
City of Bynum	\$0	\$0
City of Carl's Corner	\$0	\$0
City of Covington	\$6,900	\$200
City of Hillsboro	\$2,055,000	\$69,700
City of Hubbard	\$11,000	\$400
City of Itasca	\$1,513,300	\$51,300
City of Malone	\$0	\$0
City of Mertens	\$0	\$0
City of Mount Calm	\$14,700	\$500
City of Penelope	\$0	\$0
City of Whitney	\$138,400	\$4,700
TOTALS	\$4,010,800	\$136,000

SECTION 9: HAIL

ASSESSMENT OF IMPACTS

Hail events have the potential to pose a significant risk to people and can create dangerous situations. Hail conditions can be frequently associated with a variety of impacts, including:

- Hail may create hazardous road conditions during and immediately following an event, potentially delaying critical staff from reporting for duty as well as delaying first responders from providing for or preserving public health and safety.
- Individuals and first responders who are exposed to the storm may be struck by hail, falling branches, or downed trees resulting in injuries or possible fatalities.
- Large hail events will likely cause extensive roof damage to residential structures along with siding damage and broken windows, creating a spike in insurance claims and a rise in premiums, and potentially result in physical harm to occupants.
- Automobile damage may be extensive depending on the size of the hail and length of the storm.
- Hail events can result in power outages over widespread areas increasing the risk to more vulnerable portions of the population who rely on power for health and/or life safety.
- Extended power outage can result in an increase in structure fires and/or carbon monoxide poisoning, as individuals attempt to cook or heat their home with alternate, unsafe cooking or heating devices, such as grills.
- First responders are exposed to downed power lines, damaged structures, hazardous spills, and debris that often accompany hail events, elevating the risk of injury to first responders and potentially diminishing emergency response capabilities.
- Some businesses not directly damaged by the hail event may be negatively impacted while roads are cleared and utilities are being restored, further slowing economic recovery.
- Businesses that are more reliant on utility infrastructure than others may suffer greater damage without a backup power source.
- Depending on the severity and scale of damage caused by large hail events, damage to power transmission and distribution infrastructure can require days or weeks to repair.
- A significant hail event could significantly damage agricultural crops, resulting in extensive economic losses for the community and surrounding area.
- Hail events may injure or kill livestock and wildlife or destroy wildlife habitat.
- A large hail event could impact the accessibility of recreational areas and parks due to extended power outages or debris clogged access roads.
- Historical sites and properties are placed at a higher risk of impact due to materials used and the inability to change properties due to their historic status. There are 23 historical buildings and sites listed on the National Register of Historic Places for Hill County.

The economic and financial impacts of hail will depend entirely on the scale of the event, what is damaged, and how quickly repairs to critical components of the economy can be implemented. The level of preparedness and pre-event planning conducted by the community, local businesses, and citizens will contribute to the overall economic and financial conditions in the aftermath of any hail event.



Section 10

Lightning



SECTION 10: LIGHTNING

Hazard Description	1
Location	1
Extent	1
Historical Occurrences	2
Significant Events	3
Probability of Future Events	4
Climate Change Considerations	4
Vulnerability and Impact	4
Assessment of Impacts	8

HAZARD DESCRIPTION

Lightning is a discharge of electrical energy resulting from the buildup of positive and negative charges within a thunderstorm, creating a “bolt” when the buildup of charges becomes strong enough. This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning can reach temperatures approaching 50,000 degrees Fahrenheit. Lightning rapidly heats the sky as it flashes but the surrounding air cools following the bolt. This rapid heating and cooling of the surrounding air causes the thunder which often accompanies lightning strikes. While most often affiliated with severe thunderstorms, lightning often strikes outside of heavy rain and might occur as far as 10 miles away from any rainfall.

According to the National Weather Service (NWS), the 10-year (2012–2021) average for fatalities is 23 people with an average of 300 injuries in the United States each year by lightning. Lightning can occur as cloud to ground flashes or as intra-cloud lightning flashes. Direct lightning strikes can cause significant damage to buildings, critical facilities, infrastructure, and communication equipment affecting emergency response. Lightning is also responsible for igniting wildfires that can result in widespread damages to property before firefighters have the ability to contain and suppress the resultant fire.

LOCATION

Lightning can strike in any geographic location and is considered a common occurrence in Texas. The Hill County planning area is in a region of the country that is moderately susceptible to lightning strikes. Therefore, lightning could occur at any location within the entire planning area. It is assumed that the entire Hill County planning area is uniformly exposed to the threat of lightning.

EXTENT

According to the 2024 Annual Lightning Report by Vaisala, the State of Texas ranks fifth in the U.S. for lightning strike density with an average of 150.5 flashes per square mile.¹ Vaisala’s U.S. National Lightning Detection Network lightning flash density map shows an average of 366 lightning events per square mile per year for the Hill County planning area. This rate equates to

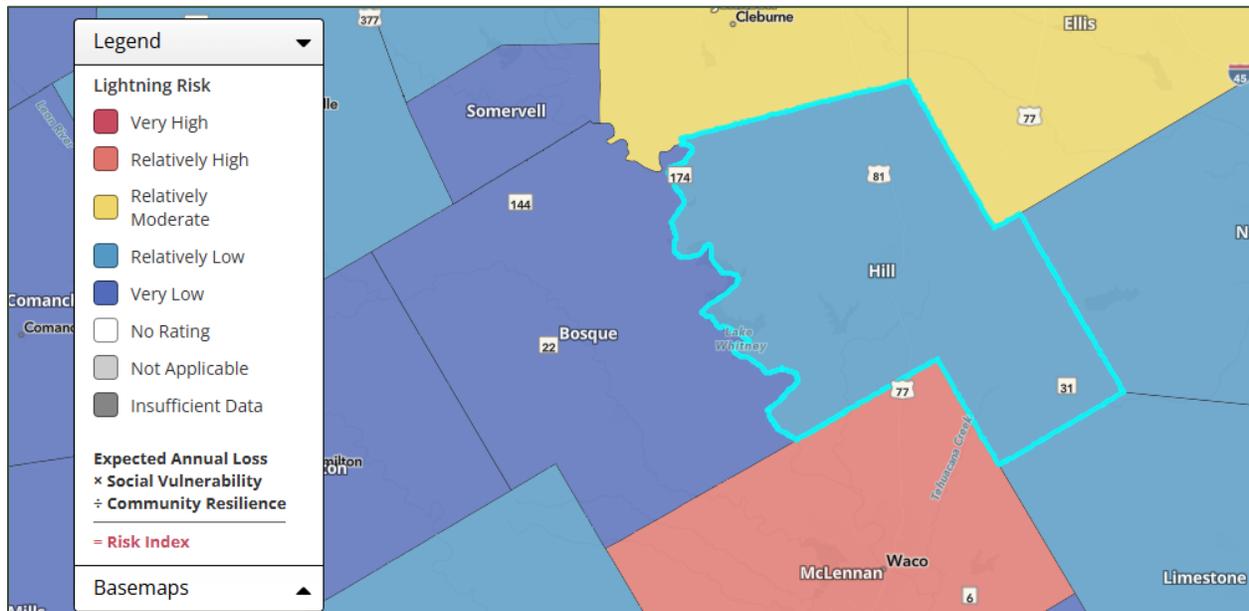
¹ Source: <https://www.xweather.com/annual-lightning-report>

SECTION 10: LIGHTNING

approximately 351,000 flashes per year for the entire planning area, or nine to ten flashes per 15-minute interval during storm events.

FEMA’s National Risk Index includes an analysis of the planning area’s expected annual loss and the community’s risk factor which incorporates social vulnerability as well as community resilience to determine the lightning risk for the area, compared to the rest of the United States. Hill County is located in an area where the extent is classified as relatively low (Figure 10-1).

Figure 10-1. Hill County Lightning Risk, National Risk Index, October 2025²



HISTORICAL OCCURRENCES

The National Centers for Environmental Information (NCEI) database indicates three recorded lightning events for the Hill County planning area. It is highly likely multiple lightning occurrences have gone unreported before and during the recording period. The NCEI is a national data source organized under the National Oceanic and Atmospheric Administration and considered a reliable resource for hazards. However, the flash density for the planning area along with input from local team members indicates regular lightning occurrences that simply have not been reported.

Table 10-1. Historical Lightning Events, January 1996 – June 2025³

JURISDICTION	DATE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
City of Hillsboro	6/11/2003	0	0	\$875,000	\$0
City of Hillsboro	6/7/2012	0	0	\$96,100	\$0
City of Hillsboro	5/25/2015	0	0	\$6,800	\$0
TOTALS		0	0	\$977,900	

² Source: Map | National Risk Index, <https://hazards.fema.gov/nri/map>

³ Values are in 2025 dollars. Database was searched for events between January 1996 and June 2025.

SECTION 10: LIGHTNING

Table 10-2. Historical Lightning Events Summary, January 1996 – June 2025⁴

JURISDICTION	NUMBER OF EVENTS	DEATHS	INJURIES	PROPERTY DAMAGES	CROP DAMAGES
Hill County	0	-	-	-	-
City of Abbott	0	-	-	-	-
City of Aquilla	0	-	-	-	-
City of Blum	0	-	-	-	-
City of Bynum	0	-	-	-	-
City of Carl's Corner	0	-	-	-	-
City of Covington	0	-	-	-	-
City of Hillsboro	3	0	0	\$977,900	\$0
City of Hubbard	0	-	-	-	-
City of Itasca	0	-	-	-	-
City of Malone	0	-	-	-	-
City of Mertens	0	-	-	-	-
City of Mount Calm	0	-	-	-	-
City of Penelope	0	-	-	-	-
City of Whitney	0	-	-	-	-
TOTALS	3	0	0	\$977,900	\$0

Based on the list of historical lightning events for the Hill County planning area, there has been no reported event since the 2020 Plan.

SIGNIFICANT EVENTS

June 7, 2012

Severe thunderstorms developed in the area along an outflow boundary. During these storms, downburst winds produced relatively minor damage. However, lightning damaged the Hill County Law Enforcement Center. When lightning struck the building, it damaged much of the electrical equipment in the building. Damages for this incident were estimated to be around \$96,100 (2025 dollars).

⁴ Note: Participating jurisdictions with no reported events show a “-“ in table columns where damages, deaths or injuries would be otherwise reported.

SECTION 10: LIGHTNING

PROBABILITY OF FUTURE EVENTS

Based on historical records and input from the planning team the probability of occurrence for future lightning events in the Hill County planning area is considered “Highly Likely”, or an event probable in the next year. The planning team stated that lightning occurs regularly in the area. According to the 2024 Annual Lightning Report by Vaisala, the Hill County planning area is located in an area of the country that experiences approximately 366 lightning flashes per square mile per year (approximately 351,000 flashes per year). Given this estimated probability of events, it can be expected that future lightning events will continue to threaten life and cause minor property damage throughout the planning area.

CLIMATE CHANGE CONSIDERATIONS

As CO₂ increases and the land surface warms, stronger updrafts are more likely to produce lightning. In a climate with double the amount of CO₂, we may see fewer lightning storms overall, but 25 percent stronger storms, with a 5 percent increase in lightning. Lightning damage is also likely to increase because of its role in igniting forest fires, where dry vegetation, also caused by rising temperatures, creates more ‘fuel’ for fires, so even a small climate change may have huge consequences. While the impact climate change will have on our weather still remains uncertain, researchers agree that implementing simple measures like lightning detection systems and installing grounding systems in buildings could go a long way in avoiding deaths and injuries.⁵

Lightning events have the potential to pose a significant risk to people and property throughout the Hill County planning area. The economic and financial impacts of lightning on the area will depend entirely on the scale of the event, what is damaged, and how quickly repairs to critical components of the economy can be implemented. While no increase in the number of hazard events is anticipated, the impact of the hazard may see an increase in losses. As populations grow and urban development continues to rise, the overall vulnerability and impact are expected to increase in the next five years.

VULNERABILITY AND IMPACT

Vulnerability is difficult to evaluate since lightning events can occur at different strength levels, in random locations, and can create a broad range of damage depending on the strike location. Due to the randomness of these events, all existing and future structures and facilities in the Hill County planning area could potentially be impacted and remain vulnerable to possible injury and property loss from lightning strikes.

The direct and indirect losses associated with these events include injury and loss of life, damage to structures and infrastructure, agricultural losses, utility failure (power outages), and stress on community resources. The entire population of the Hill County planning area are considered exposed to the lightning hazard. The peak lightning season in the State of Texas is from June to August; however, the most fatalities occur in July. Fatalities occur most often when people are outdoors and/or participating in some form of recreation. The population located outdoors during a lightning event is considered at risk and more vulnerable to a lightning strike compared to those inside a structure. Moving to a lower risk location will decrease a person’s vulnerability.

⁵ Environmental Journal, Nathan Neal, January 11, 2021.

SECTION 10: LIGHTNING

The entire general building stock and all infrastructure of the Hill County planning area are considered exposed to the lightning hazard. Lightning can be responsible for damages to buildings, cause electrical, forest and/or wildfires, and damage infrastructure such as power transmission lines and communication towers.

While all citizens are at risk to the impacts of lightning, forced relocation and disaster recovery drastically impacts low-income residents who lack the financial means to travel, afford a long-term stay away from home, and to rebuild or repair their homes. An estimated 14 percent of the planning area population live below the poverty level. In addition, people who speak a language other than English may face increased vulnerability due to language barriers that limit their access to important information such as weather-related warnings and instructions regarding safety measures. Table 10-3 lists these vulnerable populations and several others for Hill County and the participating jurisdictions.

Table 10-3. Populations at Greater Risk by Jurisdiction⁶

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Hill County	7,442	2,114	6,410	5,206	1,836
City of Abbott	75	26	33	1	1
City of Aquilla	7	8	7	10	5
City of Blum	41	25	48	120	14
City of Bynum	28	10	32	12	0
City of Carl's Corner	35	22	119	39	23
City of Covington	59	19	31	14	0
City of Hillsboro	1,246	699	1,370	1,633	923
City of Hubbard	288	81	325	218	72
City of Itasca	261	106	292	171	73
City of Malone	21	23	53	163	64
City of Mertens	14	8	49	13	17
City of Mount Calm	93	34	124	89	3
City of Penelope	56	25	47	12	24
City of Whitney	496	121	497	503	234

⁶ US Census Bureau, American Community Survey Five-Year Estimates, 2023

SECTION 10: LIGHTNING

The Hill County Planning Team identified the following critical facilities (Table 10-4) as assets that are considered the most important to the planning area and are susceptible to a range of impacts caused by lightning events. For a comprehensive list by participating jurisdiction, please see Appendix C.

Table 10-4. Critical Facilities Vulnerable to Lightning Events

CRITICAL FACILITIES	POTENTIAL IMPACTS
Emergency Response Services (EOC, Fire, Police, EMS), Hospitals and Medical Centers	<ul style="list-style-type: none"> • Emergency operations and services may be significantly impacted due to power outages, damaged facilities, fires and/or loss of communications as a result of lightning strikes. • Emergency vehicles, including critical equipment, can be damaged by lightning strikes or by falling trees damaged by lightning. • Power outages could disrupt communications, delaying emergency response times. • Downed trees due to lightning strikes can impede emergency response vehicle access to areas. • Lightning strikes can be associated with structure fires and wildfires, further straining the capacity and resources of emergency personnel. • Extended power outages may lead to possible looting, destruction of property, and theft, further burdening law enforcement resources.
Airport, Academic Institutions, Animal Shelter, Evacuation Centers & Shelters, Governmental Facilities, Residential/ Assisted Living Facilities	<ul style="list-style-type: none"> • Structures can be damaged by falling trees damaged by lightning. • Power outages could disrupt critical care. • Backup power sources could be damaged. • Evacuations may be necessary due to extended power outages, fires, or other associated damages to facilities.
Commercial Supplier (food, fuel, etc.)	<ul style="list-style-type: none"> • Facilities, infrastructure, or critical equipment including communications may be damaged, destroyed or otherwise inoperable. • Essential supplies like medicines, water, food, and equipment deliveries may be delayed. • Economic disruption due to power outages and fires negatively impact airport services as well as area businesses reliant on airport operations.
Utility Services and Infrastructure (electric, water, wastewater, communications)	<ul style="list-style-type: none"> • Emergency operations and critical services may be significantly impacted due to power outages, damaged facilities, fires and/or loss of communications as a result of lightning strikes. • Emergency vehicles, including critical equipment, can be damaged by lightning strikes or by falling trees damaged by lightning. • Power outages could disrupt communications, delaying emergency response times. • Downed trees due to lightning strikes can impede emergency response vehicle access to areas.

SECTION 10: LIGHTNING

CRITICAL FACILITIES	POTENTIAL IMPACTS
	<ul style="list-style-type: none"> Lightning strikes can be associated with structure fires and wildfires, further straining the capacity and resources of emergency personnel. Extended power outages may lead to possible looting, destruction of property, and theft, further burdening law enforcement resources.

There are no recorded fatalities or injuries within the Hill County planning area due to lightning events. Overall, the property and crop damages in the planning area are estimated at \$977,900 (2025 dollars) with an average annualized loss of \$33,200. Based on recorded impacts and best available data for the Hill County planning area, the potential impact of lightning is considered “Limited” in severity of impact, meaning minimal quality of life lost, critical facilities and services shut down for 24 hours or less, and less than 10 percent of property destroyed.

Table 10-5. Estimated Annualized Losses by Jurisdiction

JURISDICTION	TOTAL PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
Hill County	\$0	\$0
City of Abbott	\$0	\$0
City of Aquilla	\$0	\$0
City of Blum	\$0	\$0
City of Bynum	\$0	\$0
City of Carl’s Corner	\$0	\$0
City of Covington	\$0	\$0
City of Hillsboro	\$977,900	\$33,200
City of Hubbard	\$0	\$0
City of Itasca	\$0	\$0
City of Malone	\$0	\$0
City of Mertens	\$0	\$0
City of Mount Calm	\$0	\$0
City of Penelope	\$0	\$0
City of Whitney	\$0	\$0
TOTALS	\$977,900	\$33,200

SECTION 10: LIGHTNING

ASSESSMENT OF IMPACTS

Lightning events have the potential to pose a significant risk to people and can create dangerous and difficult situations for public health and safety officials. Additional impacts to the planning area can include:

- The Hill County planning area features developed parks and green spaces. Lightning events could impact recreational activities, placing residents and visitors in imminent danger, potentially requiring emergency services or park evacuation.
- Older structures built to less stringent building codes may suffer greater damage from a lightning strike as they are typically built with less fire-resistant materials and often lack any fire mitigation measures such as sprinkler systems. 43 percent of homes in Hill County were built before 1980. Similarly, historic buildings may lack fire mitigation materials or measures due to their historic status. 23 historic buildings and sites in the Hill County planning area, are listed on the National Register of Historic Places.
- Vegetation in urban parks may be destroyed by lightning caused brush fires and result in poor air quality impacting public health.
- Individuals exposed to the storm can be directly struck, posing significant health risks and potential death.
- Structures can be damaged or crushed by falling trees damaged by lightning, which can result in physical harm to the occupants.
- Lightning strikes can result in widespread power outages increasing the risk to more vulnerable portions of the population who rely on power for health and/or life safety.
- Extended power outage often results in an increase in structure fires and carbon monoxide poisoning as individuals attempt to cook or heat their homes with alternate, unsafe cooking or heating devices, such as grills.
- Lightning strikes can be associated with structure fires and wildfires, creating additional risk to residents and first responders.
- Emergency operations and services may be significantly impacted due to power outages and/or loss of communications.
- County and city departments may be damaged, delaying response and recovery efforts for the entire community.
- Economic disruption due to power outages and fires negatively impacts the programs and services provided by the community due to short- and long-term loss in revenue.
- Some businesses not directly damaged by lightning events may be negatively impacted while utilities are being restored, further slowing economic recovery.
- Businesses that are more reliant on utility infrastructure than others may suffer greater damage without a backup power source.

The economic and financial impacts of lightning on the area will depend entirely on the scale of the event, what is damaged, and how quickly repairs to critical components of the economy can be implemented. The level of preparedness and pre-event planning done by the community, local businesses, and citizens will also contribute to the overall economic and financial conditions in the aftermath of any significant lightning event.



Section 11

Thunderstorm Wind

SECTION 11: THUNDERSTORM WIND

Hazard Description	1
Location	1
Extent	1
Historical Occurrences	3
Significant Events	8
Probability of Future Events	9
Climate Change Considerations	9
Vulnerability and Impact	9
Assessment of Impacts	14

HAZARD DESCRIPTION

Thunderstorms create extreme wind events which includes straight-line winds. Wind is the horizontal motion of the air past a given point, beginning with differences in air pressures. Pressure that is higher at one place than another sets up a force pushing from high toward low pressure; the greater the difference in pressures, the stronger the force. The distance between the area of high pressure and the area of low pressure also determines how fast the moving air accelerates.

Thunderstorms are created when heat and moisture near the Earth's surface are transported to the upper levels of the atmosphere. By-products of this process are the clouds, precipitation, and wind that become the thunderstorm.

According to the National Weather Service (NWS), a thunderstorm occurs when thunder accompanies rainfall. Radar observers use the intensity of radar echoes to distinguish between rain showers and thunderstorms.



Straight-line winds are responsible for most thunderstorm wind damages. One type of straight-line wind, the downburst, is a small area of rapidly descending air beneath a thunderstorm. A downburst can cause damage equivalent to a strong tornado and make air travel extremely hazardous.

LOCATION

Thunderstorm wind events can develop in any geographic location and are considered a common occurrence in Texas. It is assumed that the entire Hill County planning area is uniformly exposed to the threat of thunderstorm winds.

EXTENT

The extent or magnitude of a thunderstorm wind event is measured by the Beaufort Wind Scale. Table 11-1 describes the different intensities of wind in terms of speed and effects, from calm to violent and destructive.

SECTION 11: THUNDERSTORM WIND

Table 11-1. Beaufort Wind Scale¹

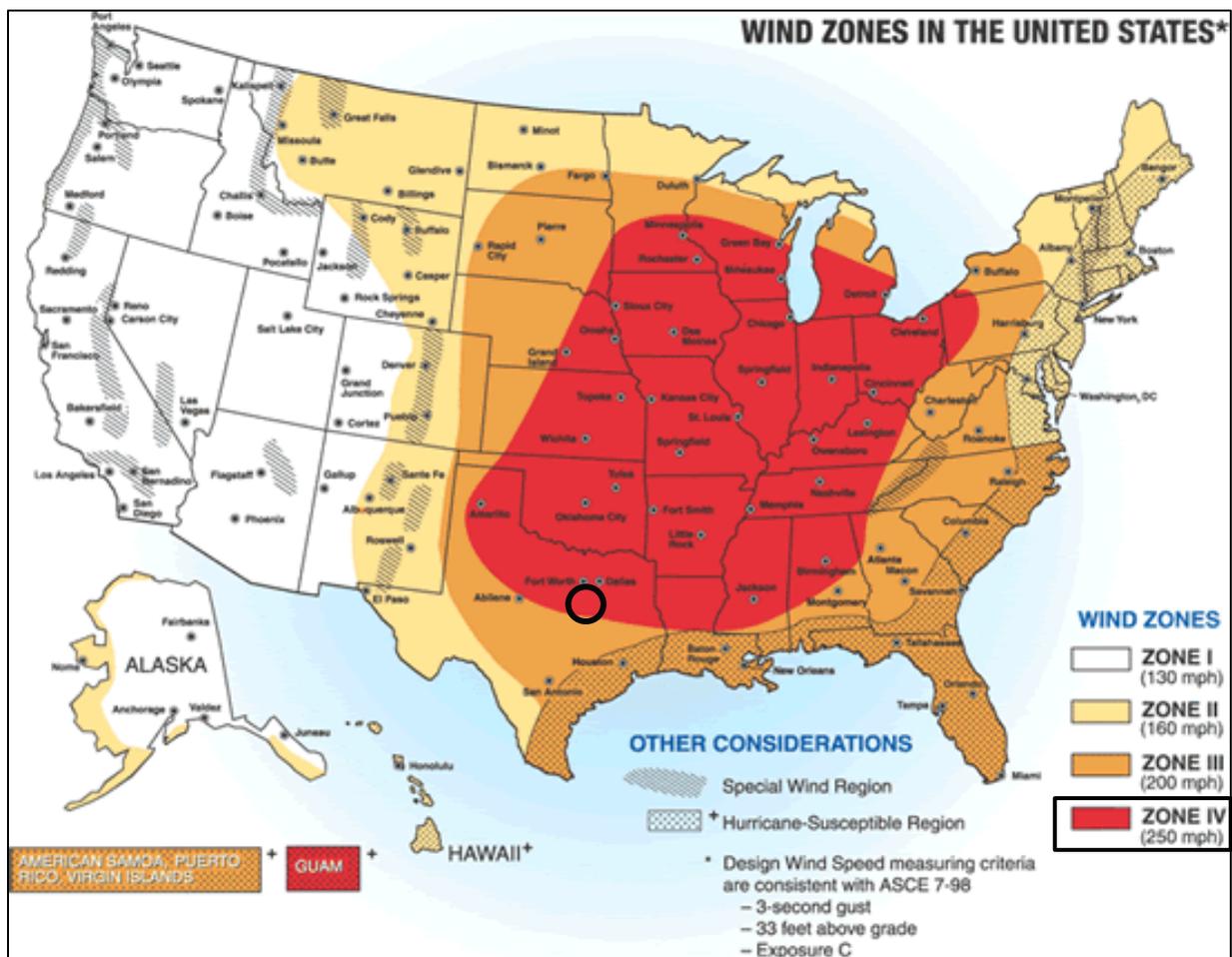
FORCE	WIND		WMO CLASSIFICATION	APPEARANCE OF WIND EFFECTS
	(mph)	(knots)		
0	Less than 1	Less than 1	Calm	Calm, smoke rises vertically
1	1-3	1-3	Light Air	Smoke drift indicates wind direction, still wind vanes
2	4-7	4-6	Light Breeze	Wind felt on face, leaves rustle, vanes begin to move
3	8-12	7-10	Gentle Breeze	Leaves and small twigs constantly moving, light flags extended
4	13-18	11-16	Moderate Breeze	Dust, leaves and loose paper lifted, small tree branches move
5	19-24	17-21	Fresh Breeze	Small trees in leaf begin to sway
6	25-31	22-27	Strong Breeze	Larger tree branches moving, whistling in wires
7	32-38	28-33	Near Gale	Whole trees moving, resistance felt walking against wind
8	39-46	34-40	Gale	Whole trees in motion, resistance felt walking against wind
9	47-54	41-47	Strong Gale	Slight structural damage occurs, slate blows off roofs
10	55-63	48-55	Storm	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"
11	64-72	56-63	Violent Storm	If experienced on land, widespread damage
12	72-83	64-71	Hurricane	Violence and destruction

Figure 11-1 displays the wind zones as derived from NOAA.

¹ Source: World Meteorological Organization

SECTION 11: THUNDERSTORM WIND

Figure 11-1. Wind Zones in the United States²



The Hill County planning area is located within Wind Zone IV, meaning the planning area can experience maximum windspeeds up to 250 mph. The Hill County planning area has experienced a significant wind event, or an event with winds in the range of “Force 12” on the Beaufort Wind Scale with winds above 72 mph. The highest magnitude event occurred on February 10, 2009, with winds recorded at 80 knots, or approximately 92 mph. This is the worst to be anticipated for the entire planning area based on historic events.

HISTORICAL OCCURRENCES

The National Centers for Environmental Information (NCEI) Storm Events database is a national data source organized under the National Oceanic and Atmospheric Administration (NOAA). The NCEI is the largest archive available for historic storm events data; however, it is important to note that only incidents recorded in the NCEI have been factored into this risk assessment unless otherwise noted. It is likely that a high number of occurrences have gone unreported over the past 38.5 years. Tables 11-2, 11-3, and 11-4 depict historical occurrences of thunderstorm wind events for the Hill County planning area according to the NCEI database.

² The Hill County planning area is indicated by the black circle.

SECTION 11: THUNDERSTORM WIND

Since 1987, 141 thunderstorm wind events are known to have occurred in the Hill County planning area. Table 11-3 presents information on known historical events impacting the Hill County planning area. It is important to note that high wind events associated with other hazards, such as tornadoes, are not accounted for in this section. Property damage estimates are not always available. Where an estimate has been provided in a table for losses, the dollar amounts have been modified for inflation to indicate the damage in 2025 dollars.

Table 11-2. Historical Thunderstorm Wind Speeds, January 1987 – June 2025

MAXIMUM WIND SPEED RECORDED (knots)	NUMBER OF REPORTED EVENTS
0-30	0
31-40	0
41-50	19
51-60	46
61-70	22
71-80	5
81-90	0
91-100+	0
Unknown	49

Table 11-3. Damaging Historical Thunderstorm Wind Events, January 1987 – June 2025³

JURISDICTION	DATE	MAGNITUDE (knots)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Hill County	12/19/1987	-	0	4	\$0	\$0
Hill County	4/14/1990	-	0	2	\$0	\$0
Hill County	4/14/1990	-	0	1	\$0	\$0
City of Hubbard	5/13/1994	-	0	0	\$10,900	\$0
Hill County	5/29/1994	-	0	0	\$10,900	\$0
City of Hillsboro	5/29/1994	-	0	0	\$10,900	\$0
City of Itasca	8/7/1994	-	0	0	\$10,800	\$0
City of Itasca	11/4/1994	-	0	0	\$106,900	\$0
City of Hillsboro	11/4/1994	-	0	0	\$10,700	\$0
City of Itasca	1/18/1995	-	0	0	\$42,600	\$0

³ Magnitude is listed when available. Damage values are in 2025 dollars.

SECTION 11: THUNDERSTORM WIND

JURISDICTION	DATE	MAGNITUDE (knots)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
City of Hillsboro	5/7/1995	-	0	0	\$21,100	\$0
Hill County	6/10/1995	-	0	0	\$10,500	\$0
City of Whitney	1/17/1996	-	0	0	\$51,800	\$0
City of Hillsboro	1/17/1996	-	0	0	\$31,100	\$0
City of Hubbard	1/17/1996	-	0	0	\$4,200	\$0
City of Hillsboro	4/19/1996	-	0	0	\$20,500	\$0
City of Hillsboro	4/19/1996	-	0	0	\$10,300	\$0
City of Itasca	4/19/1996	-	0	0	\$4,100	\$0
City of Hubbard	5/30/1996	-	0	0	\$4,100	\$0
City of Whitney	9/20/1996	-	0	0	\$20,300	\$0
City of Hubbard	11/7/1996	-	0	0	\$201,700	\$0
City of Itasca	11/7/1996	-	0	0	\$4,100	\$0
City of Hubbard	6/4/1998	75	0	3	\$98,100	\$0
City of Abbott	3/8/1999	-	0	0	\$9,700	\$0
City of Hillsboro	4/26/1999	-	0	0	\$48,200	\$0
City of Hubbard	6/8/1999	-	0	0	\$600	\$0
City of Aquilla	8/27/1999	-	0	0	\$200	\$0
City of Hillsboro	2/22/2000	-	0	0	\$28,300	\$0
City of Covington	3/25/2000	-	0	0	\$9,400	\$0
City of Blum	4/11/2001	52	0	0	\$1,900	\$0
City of Covington	5/4/2001	-	0	0	\$27,000	\$0
City of Covington	5/4/2001	-	0	0	\$18,000	\$0
City of Blum	5/5/2001	58	0	0	\$1,800	\$0
City of Hillsboro	3/19/2002	-	0	0	\$3,600	\$0
City of Whitney	3/19/2002	-	0	0	\$3,600	\$0
City of Whitney	4/7/2002	52	0	0	\$8,900	\$0
City of Itasca	4/7/2002	52	0	0	\$7,200	\$0
City of Whitney	4/7/2002	52	0	0	\$7,200	\$0

SECTION 11: THUNDERSTORM WIND

JURISDICTION	DATE	MAGNITUDE (knots)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
City of Itasca	5/3/2002	-	0	0	\$26,700	\$0
City of Hillsboro	5/27/2002	52	0	0	\$7,200	\$0
City of Hillsboro	6/16/2002	52	0	0	\$1,800	\$0
City of Hillsboro	3/4/2004	60	0	0	\$85,400	\$0
City of Hillsboro	4/5/2005	50	0	0	\$1,700	\$0
City of Hillsboro	6/17/2006	56	0	0	\$47,300	\$0
City of Itasca	6/17/2006	50	0	0	\$31,600	\$0
City of Blum	5/2/2007	65	0	0	\$92,300	\$0
City of Hillsboro	6/3/2007	52	0	0	\$15,400	\$0
City of Hillsboro	10/15/2007	56	0	0	\$306,200	\$0
City of Blum	2/12/2008	52	0	0	\$1,600	\$0
City of Hubbard	4/10/2008	50	0	0	\$7,500	\$0
City of Hillsboro	4/10/2008	50	0	0	\$1,500	\$0
City of Covington	4/23/2008	61	0	0	\$52,200	\$0
City of Hubbard	4/23/2008	50	0	0	\$29,800	\$0
City of Hubbard	4/23/2008	50	0	0	\$1,500	\$0
City of Hillsboro	7/13/2008	50	0	0	\$7,300	\$0
Hill County	2/10/2009	70	0	0	\$90,500	\$0
City of Hillsboro	2/10/2009	73	0	0	\$75,400	\$0
City of Whitney	2/10/2009	80	0	0	\$4,600	\$0
City of Hubbard	5/3/2009	50	0	0	\$3,000	\$0
City of Whitney	5/26/2009	50	0	0	\$1,500	\$0
City of Hillsboro	7/30/2009	61	0	0	\$10,400	\$0
City of Hillsboro	7/30/2009	61	0	0	\$3,000	\$0
City of Hillsboro	8/25/2009	55	0	0	\$74,100	\$0
City of Itasca	9/21/2009	56	0	0	\$1,500	\$0
City of Penelope	4/23/2010	61	0	0	\$88,100	\$0
City of Mount Calm	4/23/2010	61	0	0	\$3,000	\$0

SECTION 11: THUNDERSTORM WIND

JURISDICTION	DATE	MAGNITUDE (knots)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
City of Hubbard	10/23/2010	66	0	0	\$14,700	\$0
City of Whitney	6/21/2011	52	0	0	\$21,300	\$0
City of Hubbard	6/21/2011	50	0	0	\$7,100	\$0
City of Whitney	6/22/2014	70	0	0	\$6,800	\$0
City of Penelope	10/2/2014	43	0	0	\$1,400	\$0
Hill County	4/27/2015	78	0	0	\$121,700	\$0
Hill County	4/27/2015	65	0	0	\$67,600	\$0
City of Blum	4/27/2015	70	0	0	\$67,600	\$0
City of Itasca	4/27/2015	70	0	0	\$67,600	\$0
City of Itasca	4/27/2015	70	0	0	\$40,600	\$0
City of Itasca	12/13/2015	48	0	0	\$16,300	\$0
Hill County	5/10/2016	65	0	0	\$13,400	\$0
Hill County	4/28/2020	56	0	0	\$3,800	\$0
City of Abbott	1/25/2021	50	0	0	\$700	\$0
City of Whitney	6/11/2023	50	0	0	\$104,900	\$0
City of Whitney	5/30/2024	61	0	0	\$20,400	\$0
Hill County	11/4/2024	56	0	0	\$5,100	\$0
City of Whitney	11/18/2024	56	0	0	\$50,700	\$0
City of Whitney	5/17/2025	52	0	0	\$9,000	\$0
TOTALS		(MAX EXTENT)	0	10	\$2,574,000	\$0

Table 11-4. Summary of Historical Events by Jurisdiction, January 1987 – June 2025⁴

JURISDICTION	NUMBER OF EVENTS	MAGNITUDE (knots)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Hill County	36	78	0	7	\$323,500	\$0
City of Abbott	3	50	0	0	\$10,400	\$0
City of Aquilla	7	61	0	0	\$200	\$0

⁴ Note: Participating jurisdictions with no reported events show a “-“ in table columns where damages, deaths or injuries would be otherwise reported.

SECTION 11: THUNDERSTORM WIND

JURISDICTION	NUMBER OF EVENTS	MAGNITUDE (knots)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
City of Blum	10	70	0	0	\$165,200	\$0
City of Bynum	0	-	-	-	-	-
City of Carl's Corner	0	-	-	-	-	-
City of Covington	5	61	0	0	\$106,600	\$0
City of Hillsboro	32	76	0	0	\$821,400	\$0
City of Hubbard	13	75	0	3	\$383,200	\$0
City of Itasca	15	70	0	0	\$360,000	\$0
City of Malone	0	-	-	-	-	-
City of Mertens	0	-	-	-	-	-
City of Mount Calm	2	61	0	0	\$3,000	\$0
City of Penelope	2	61	0	0	\$89,500	\$0
City of Whitney	16	80	0	0	\$311,000	\$0
TOTALS	141	(MAX EXTENT)	0	10	\$2,574,000	

Based on the list of historical thunderstorm wind events for the Hill County planning area, 12 events were reported to the NCEI since the 2020 Plan.

SIGNIFICANT EVENTS

December 19, 1987

A squall line produced up to 58 mph winds in Hill County which impacted several locations in the planning area. Numerous trees were uprooted in multiple areas, and a mobile home was destroyed approximately five miles north of the City of Hillsboro. Four occupants of the mobile home were injured during this event.

June 4, 1998

Scattered severe thunderstorms developed ahead of a slow-moving cold front over Hill County, producing approximately 86 mph winds in the planning area. These thunderstorm winds blew the roof from a home as well as a metal awning which fell and damaged two vehicles. Additional damaged structures and downed trees were also reported, with three people in the City of Hubbard being damaged by flying glass during the event. Total property damage was estimated at \$98,100 (2025 dollars).

October 15, 2007

A powerful storm system brought 65 mph winds to the City of Hillsboro, causing extensive damage to numerous trees and roofs throughout the city. Several downed trees fell on homes and vehicles, and other structures like garage doors and business signs were heavily damaged. A car dealership in the city sustained significant damages to its vehicle stock, with 12 cars losing all

SECTION 11: THUNDERSTORM WIND

their windows and 10 additional cars being damaged by flying debris. Total property damage was estimated at \$306,200 (2025 dollars).

June 11, 2023

Severe thunderstorms pushed into Hill County from the north ahead of a cold front from Oklahoma, bringing approximately 58 mph winds to the planning area. The most severe reported impact from this event occurred in the City of Whitney, where a tree was blown down onto a house. Property damage was estimated at \$104,900 (2025 dollars).

PROBABILITY OF FUTURE EVENTS

Most thunderstorm winds occur during the spring and fall seasons and during the months of March, April, May, and September. Based on available records of historic events, there have been a total of 141 events in a 38.5-year reporting period, which provides an estimated frequency of three to four events each year. Even though the intensity of thunderstorm wind events is not always damaging for the Hill County planning area, the frequency of occurrence for a thunderstorm wind event is “Highly Likely.” This means that an event is probable within the next year for the Hill County planning area.

CLIMATE CHANGE CONSIDERATIONS

The impacts on the frequency and severity of severe thunderstorm wind events due to climate change are unclear. According to the Texas A&M 2021 Climate Report Update, changes in severe thunderstorm reports over time have been more closely linked to changes in population than changes in the hazard event. Currently there is low confidence of an ongoing trend in the overall frequency and severity of thunderstorm events, due to the lack of climate data records for severe thunderstorms. Based on climate models that are available, the environmental conditions needed for severe thunderstorms are estimated to become more likely, resulting in an overall increase in the number of days capable of producing a severe thunderstorm event.⁵

VULNERABILITY AND IMPACT

Vulnerability is difficult to evaluate since thunderstorm wind events can occur at different strength levels, in random locations, and can create relatively narrow paths of destruction. Due to the randomness of these events, all existing and future structures, and facilities within the Hill County planning area, could potentially be impacted and remain vulnerable to possible injury and property loss from strong winds.

Trees, power lines and poles, signage, manufactured housing, radio towers, concrete block walls, storage barns, windows, garbage receptacles, brick facades, and vehicles, unless reinforced, are vulnerable to thunderstorm wind events. More severe damage involves windborne debris; in some instances, patio furniture and other lawn items have been reported to have been blown around by wind and, very commonly, debris from damaged structures in turn have caused damage to other buildings not directly impacted by the event. In more severe instances, roofs have been reportedly been torn off of buildings. The portable buildings typically used at schools and

⁵ Assessment of Historic and Future Trends of Extreme Weather in Texas, 1900-2036, Texas A&M University Office of the Texas State Climatologist, 2021 Update.

SECTION 11: THUNDERSTORM WIND

construction sites would be more vulnerable to thunderstorm wind events than typical site-built structures and could potentially pose a greater risk for wind-blown debris.

According to the American Community Survey (ACS) five-year estimates for 2023, a total of 2,708 manufactured homes are located in the Hill County planning area (17 percent of total housing stock). In addition, 43 percent (7,075 structures) of the housing units were built before 1980. These structures would typically be built to lower or less stringent construction standards than newer construction and may be more susceptible to damage during significant wind events.

Table 11-5. Structures at Greater Risk by Participating Jurisdiction

JURISDICTION	STRUCTURES	
	SFR BUILT BEFORE 1980	MANUFACTURED HOMES
Hill County	7,075	2,708
City of Abbott	101	8
City of Aquilla	13	16
City of Blum	65	42
City of Bynum	66	7
City of Carl's Corner	4	52
City of Covington	64	11
City of Hillsboro	2,054	96
City of Hubbard	490	53
City of Itasca	402	66
City of Malone	115	12
City of Mertens	31	7
City of Mount Calm	72	111
City of Penelope	66	8
City of Whitney	532	93

While all citizens are vulnerable to the impacts of thunderstorm wind, forced relocation and disaster recovery disproportionately impacts low-income residents who lack the financial means to travel, afford a long-term stay away from home, and to rebuild or repair their homes. An estimated 14 percent of the planning area population live below the poverty level (Table 11-6). While warning times for these types of hazard events should be substantial enough for these individuals to seek shelter, the elderly, children, and people with a disability may have trouble taking shelter due to mobility issues or a lack of awareness, making them more susceptible to injury or harm. In addition, people who speak a language other than English may face increased

SECTION 11: THUNDERSTORM WIND

vulnerability due to language barriers that limit their access to important information such as weather-related warnings and instructions regarding safety measures.

Table 11-6. Populations at Greater Risk by Jurisdiction⁶

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Hill County	7,442	2,114	6,410	5,206	1,836
City of Abbott	75	26	33	1	1
City of Aquilla	7	8	7	10	5
City of Blum	41	25	48	120	14
City of Bynum	28	10	32	12	0
City of Carl's Corner	35	22	119	39	23
City of Covington	59	19	31	14	0
City of Hillsboro	1,246	699	1,370	1,633	923
City of Hubbard	288	81	325	218	72
City of Itasca	261	106	292	171	73
City of Malone	21	23	53	163	64
City of Mertens	14	8	49	13	17
City of Mount Calm	93	34	124	89	3
City of Penelope	56	25	47	12	24
City of Whitney	496	121	497	503	234

The Hill County Planning Team identified the following critical facilities (Table 11-7) as assets that are considered the most important to the planning area and are susceptible to a range of impacts caused by thunderstorm wind events. The critical infrastructure with the greatest vulnerability to thunderstorms are power and communications facilities. Failures of these facilities can result in a loss of service and cascading impacts such as posing enormous risk to individuals dependent on electricity as a medical necessity. For a comprehensive list by participating jurisdiction, please see Appendix C.

⁶ US Census Bureau 2023 data for Hill County.

SECTION 11: THUNDERSTORM WIND

Table 11-7. Critical Facilities Vulnerable to Thunderstorm Wind Event

CRITICAL FACILITY TYPE	POTENTIAL IMPACTS
<p>Emergency Response Services (EOC, Fire, Police, EMS), Hospitals and Medical Centers</p>	<ul style="list-style-type: none"> • Emergency operations and services may be significantly impacted due to damaged facilities and/or loss of communications. • Emergency vehicles can be damaged by falling trees or flying debris. • Power outages could disrupt communications, delaying emergency response times. • Critical staff may be injured or otherwise unable to report for duty, limiting response capabilities. • Debris/downed trees can impede emergency response vehicle access to areas. • Increased number of structure fires due to gas line ruptures and downed power lines, further straining the capacity and resources of emergency personnel. • First responders are exposed to downed power lines, unstable and unusual debris, hazardous materials, and generally unsafe conditions.
<p>Airport, Academic Institutions, Animal Shelter, Evacuation Centers & Shelters, Governmental Facilities, Residential/ Assisted Living Facilities</p>	<ul style="list-style-type: none"> • Structures can be damaged by falling trees or flying debris. • Power outages could disrupt critical care. • Backup power sources could be damaged. • Critical staff may be injured or otherwise unable to report for duty, limiting response capabilities. • Evacuations may be necessary due to extended power outages, gas line ruptures, or structural damage to facilities. • Power outages and infrastructure damage may prevent larger airports from acting as temporary command centers for logistics, communications, and emergency operations. • Temporary break in operations may significantly inhibit post event evacuations. • Damaged or destroyed highway infrastructure may substantially increase the need for airport operations.
<p>Commercial Supplier (food, fuel, etc.)</p>	<ul style="list-style-type: none"> • Facilities, infrastructure, or critical equipment including communications may be damaged, destroyed or otherwise inoperable. • Essential supplies like medicines, water, food, and equipment deliveries may be delayed. • Economic disruption due to power outages and fires negatively impact airport services as well as area businesses reliant on airport operations.
<p>Utility Services and Infrastructure (electric, water, wastewater, communications)</p>	<ul style="list-style-type: none"> • Emergency operations and services may be significantly impacted due to damaged facilities and/or loss of communications. • Emergency vehicles can be damaged by falling trees or flying debris. • Power outages could disrupt communications, delaying emergency response times. • Critical staff may be injured or otherwise unable to report for duty, limiting response capabilities.

SECTION 11: THUNDERSTORM WIND

CRITICAL FACILITY TYPE	POTENTIAL IMPACTS
	<ul style="list-style-type: none"> • Debris/downed trees can impede emergency response vehicle access to areas. • Increased number of structure fires due to gas line ruptures and downed power lines, further straining the capacity and resources of emergency personnel.

A thunderstorm wind event can also result in traffic disruptions, injuries and in rare cases, fatalities. The impacts of thunderstorm winds experienced in the Hill County planning area have resulted in 10 reported injuries. Overall, in the past 38.5 years there has been an estimated total of \$2,574,000 in damages (2025 dollars) in the Hill County planning area due to thunderstorm wind events. The estimated average annual loss from thunderstorm wind events is \$66,900. Based on historic loss and damages to property and crops, the impact of thunderstorm wind events on the Hill County planning area would be considered limited severity of impact, meaning critical facilities and services shut down for 24 hours or less and less than 10 percent of property destroyed or with major damage. However, with 10 reported injuries due to thunderstorm wind, the severity of impact is considered “Major” for the Hill County planning area, meaning multiple injuries resulting in permanent disability are possible depending on the size and extent of the event.

Table 11-8. Estimated Annualized Losses by Participating Jurisdiction

JURISDICTION	TOTAL PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
Hill County	\$323,500	\$8,400
City of Abbott	\$10,400	\$300
City of Aquilla	\$200	\$0
City of Blum	\$165,200	\$4,300
City of Bynum	\$0	\$0
City of Carl's Corner	\$0	\$0
City of Covington	\$106,600	\$2,800
City of Hillsboro	\$821,400	\$21,300
City of Hubbard	\$383,200	\$10,000
City of Itasca	\$360,000	\$9,400
City of Malone	\$0	\$0
City of Mertens	\$0	\$0
City of Mount Calm	\$3,000	\$100
City of Penelope	\$89,500	\$2,300

SECTION 11: THUNDERSTORM WIND

JURISDICTION	TOTAL PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
City of Whitney	\$311,000	\$8,100
TOTALS	\$2,574,000	\$66,900

ASSESSMENT OF IMPACTS

Thunderstorm wind events have the potential to pose a significant risk to people and can create dangerous and difficult situations for public health and safety officials. Thunderstorm wind conditions can be frequently associated with a variety of impacts, including:

- Individuals exposed to the storm can be struck by flying debris, falling limbs, or downed trees causing serious injury or death.
- Structures can be damaged or crushed by falling trees, which can result in physical harm to the occupants.
- Significant debris and downed trees can result in emergency response vehicles being unable to access areas of the community.
- Downed power lines may result in roadways being unsafe for use, which may prevent first responders from answering calls for assistance or rescue.
- Thunderstorm wind events often result in widespread power outages increasing the risk to more vulnerable portions of the population who rely on power for health and/or life safety.
- Extended power outage often results in an increase in structure fires and carbon monoxide poisoning, as individuals attempt to cook or heat their homes with alternate, unsafe cooking or heating devices, such as grills.
- Critical staff may be unable to report for duty, limiting response capabilities.
- Private sector entities that residents rely on, such as utility providers, financial institutions, and medical care providers may not be fully operational and may require assistance from neighboring communities until full services can be restored.
- Economic disruption negatively impacts the programs and services provided by the community due to short- and long-term loss in revenue.
- Some businesses not directly damaged by thunderstorm wind events may be negatively impacted while roads are cleared and utilities are being restored, further slowing economic recovery.
- Older structures, specifically those built before 1980 (43 percent of the planning area), were built to less stringent building codes may suffer greater damage as they are typically more vulnerable to thunderstorm winds.
- Recreational areas such as community parks and green spaces may be damaged or inaccessible due to downed trees or debris, causing temporary impacts to associated businesses in the area.
- Historical sites and properties are placed at a higher risk of impact due to materials used and the inability to change properties due to their historic status. There are 23 historical buildings and sites listed on the National Register of Historic Places for Hill County.

SECTION 11: THUNDERSTORM WIND

The economic and financial impacts of thunderstorm winds on the area will depend entirely on the scale of the event, what is damaged, and how quickly repairs to critical components of the economy can be implemented. The level of preparedness and pre-event planning done by the community, local businesses, and citizens will also contribute to the overall economic and financial conditions in the aftermath of any thunderstorm wind event.

Section 12

Tornado



SECTION 12: TORNADO

Hazard Description	1
Location	1
Extent.....	2
Historical Occurrences.....	4
Significant Events	8
Probability of Future Events.....	9
Climate Change Considerations	10
Vulnerability and Impact.....	10
Assessment of Impacts	15

HAZARD DESCRIPTION



Tornadoes are among the most violent storms on the planet. A tornado is a rapidly rotating column of air extending between, and in contact with, a cloud and the surface of the earth. The most violent tornadoes are capable of tremendous destruction and have wind speeds of 250 miles per hour (mph) or more. In extreme cases, winds may approach 300 mph. Damage paths can be in excess of one mile wide and 50 miles long.

The most powerful tornadoes are produced by “Supercell Thunderstorms.” These thunderstorms are created when horizontal wind shears (winds moving in different directions at different altitudes) begin to rotate the storm. This horizontal rotation can be tilted vertically by violent updrafts, and the rotation radius can shrink, forming a vertical column of very quickly swirling air. This rotating air can eventually reach the ground, forming a tornado.

Table 12-1. Variations among Tornadoes

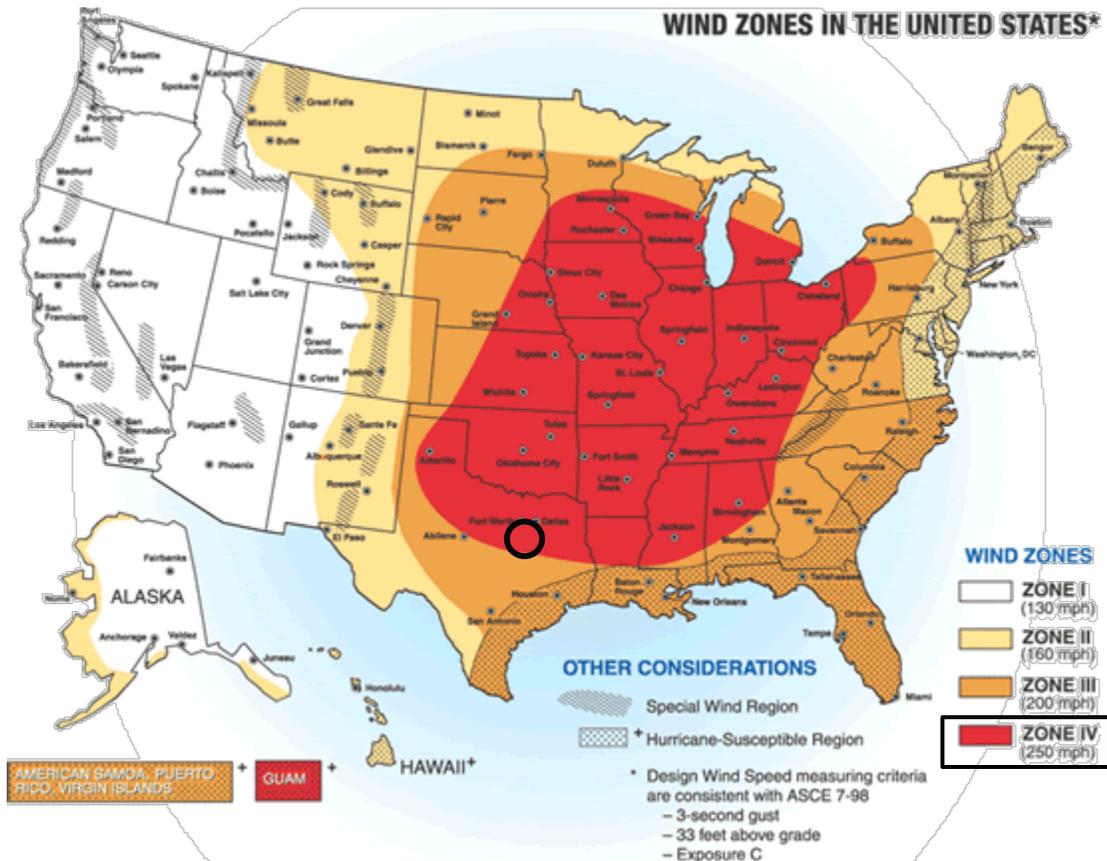
WEAK TORNADOES	STRONG TORNADOES	VIOLENT TORNADOES
<ul style="list-style-type: none"> • 69% of all tornadoes • Less than 5% of tornado deaths • Lifetime 1-10+ minutes • Winds less than 110 mph 	<ul style="list-style-type: none"> • 29% of all tornadoes • Nearly 30% of all tornado deaths • May last 20 minutes or longer • Winds 110–205 mph 	<ul style="list-style-type: none"> • 2% of all tornadoes • 70% of all tornado deaths • Lifetime can exceed one hour • Winds greater than 205 mph

LOCATION

Tornadoes do not have any specific geographic boundary and can occur throughout the county uniformly. It is assumed that the entire Hill County planning area is uniformly exposed to tornado activity. The Hill County planning area is in Wind Zone IV, meaning tornado winds can be as high as 250 mph within the planning area.

SECTION 12: TORNADO

Figure 12-1. FEMA Wind Zones in the United States¹



EXTENT

The destruction caused by tornadoes ranges from light to inconceivable, depending on the intensity, size, and duration of the storm. Typically, tornadoes cause the greatest damage to structures of light construction, such as residential homes (particularly manufactured homes).

Tornado magnitudes prior to 2007 were determined using the traditional version of the Fujita Scale, which estimated tornado wind speeds based on the damage caused by an event. Since February 2007, the Enhanced Fujita Scale has been utilized to classify tornadoes, which included improvements to the original scale. The original Fujita scale had limitations, such as a lack of damage indicators, no account for construction quality and variability, and no definitive correlation between damage and wind speed. These limitations led to some tornadoes being rated in an inconsistent manner and, in some cases, an overestimate of tornado wind speeds. The Enhanced Fujita scale retains the same basic design and six strength categories as the previous scale. The newer scale reflects more refined assessments of tornado damage surveys, standardization, and damage consideration to a wider range of structures. Table 12-2 includes both scales for reference when analyzing historical tornadoes, since tornado events prior to 2007 will follow the original Fujita Scale.

¹ The Hill County planning area is indicated by the circle.

SECTION 12: TORNADO

Table 12-2. The Fujita and Enhanced Fujita Tornado Scale²

Enhanced Fujita Scale				Fujita Scale			
Category	Wind Speed	Damage Level	Damage	Category	Wind Speed	Intensity	Damage
EF0	65-85 MPH	Gale	The environment sustained minor damage: tree branches are broken, some shallow-rooted trees are uprooted, and some chimneys are damaged.	F0	45-78 MPH	Gale	Some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; sign boards damaged.
EF1	86-110 MPH	Weak	The environment sustained moderate damage: mobile homes are tipped over, windows are broken, roof tiles may be blown off, and some tree trunks have snapped.	F1	79-117 MPH	Moderate	Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads.
EF2	111-135 MPH	Strong	The environment sustained considerable damage: mobile homes are destroyed, roofs are damaged, debris flies in the air, and large trees are snapped or uprooted.	F2	118-161 MPH	Significant	Roofs torn off frame houses; mobile homes demolished; boxcars overturned; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	136-165 MPH	Severe	The environment sustained severe damage: roofs and walls are ripped off buildings, small buildings are destroyed, and most trees are uprooted.	F3	162-209 MPH	Severe	Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown.
EF4	166-200 MPH	Devastating	The environment sustained devastating damage: well-built homes are destroyed, buildings are lifted off their foundations, cars are blown away, and large debris flies in the air.	F4	210-261 MPH	Devastating	Well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown, and large missiles generated.
EF5	200+ MPH	Incredible	The environment sustained incredible damage: well-built homes are lifted from their foundations, reinforced concrete buildings are damaged, the bark is stripped from trees, and car-sized debris flies through the air.	F5	262-317 MPH	Incredible	Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 meters (109 yds); trees debarked; incredible phenomena will occur.

² Source: <http://www.tornadoproject.com/fscale/fscale.htm>

SECTION 12: TORNADO

Both the Fujita Scale and Enhanced Fujita Scale should be referenced in reviewing previous occurrences since tornado events that occurred before 2007 will follow the original Fujita Scale. The greatest magnitude reported within the planning area is F4 (an EF5 when converted to the Enhanced Fujita Scale), an incredible tornado capable of lifting well-built homes off their foundations, stripping bark from trees, and sending car-sized debris flying through the air. Based on the planning area's location in Wind Zone IV, the planning area has the potential to experience anywhere from an EF0 to an EF5 depending on the wind speed. Previous tornado events in the Hill County planning area (converted from the Fujita Scale) have ranged between EF0 and EF5 magnitudes (Figure 12-2). This is the worst the planning area can anticipate based on historical events.

HISTORICAL OCCURRENCES

The National Centers for Environmental Information (NCEI) Storm Events database is a national data source organized under the National Oceanic and Atmospheric Administration (NOAA). The NCEI is the largest archive available for historic storm events data; however, it is important to note that only incidents recorded in the NCEI have been factored into this risk assessment unless otherwise noted. It is likely that a number of occurrences have gone unreported over time.

Figure 12-2 identifies the locations of previous occurrences in the Hill County planning area from January 1957 through June 2025. A total of 61 events have been recorded by NOAA's Storm Prediction Center and the NCEI Storm Events databases for the Hill County planning area. The strongest magnitude reported in the county were all F4 tornadoes, occurring in 1959, 1973, and 1976 (Table 12-3).

SECTION 12: TORNADO

Figure 12-2. Spatial Historical Tornado Events, January 1957 – June 2025³

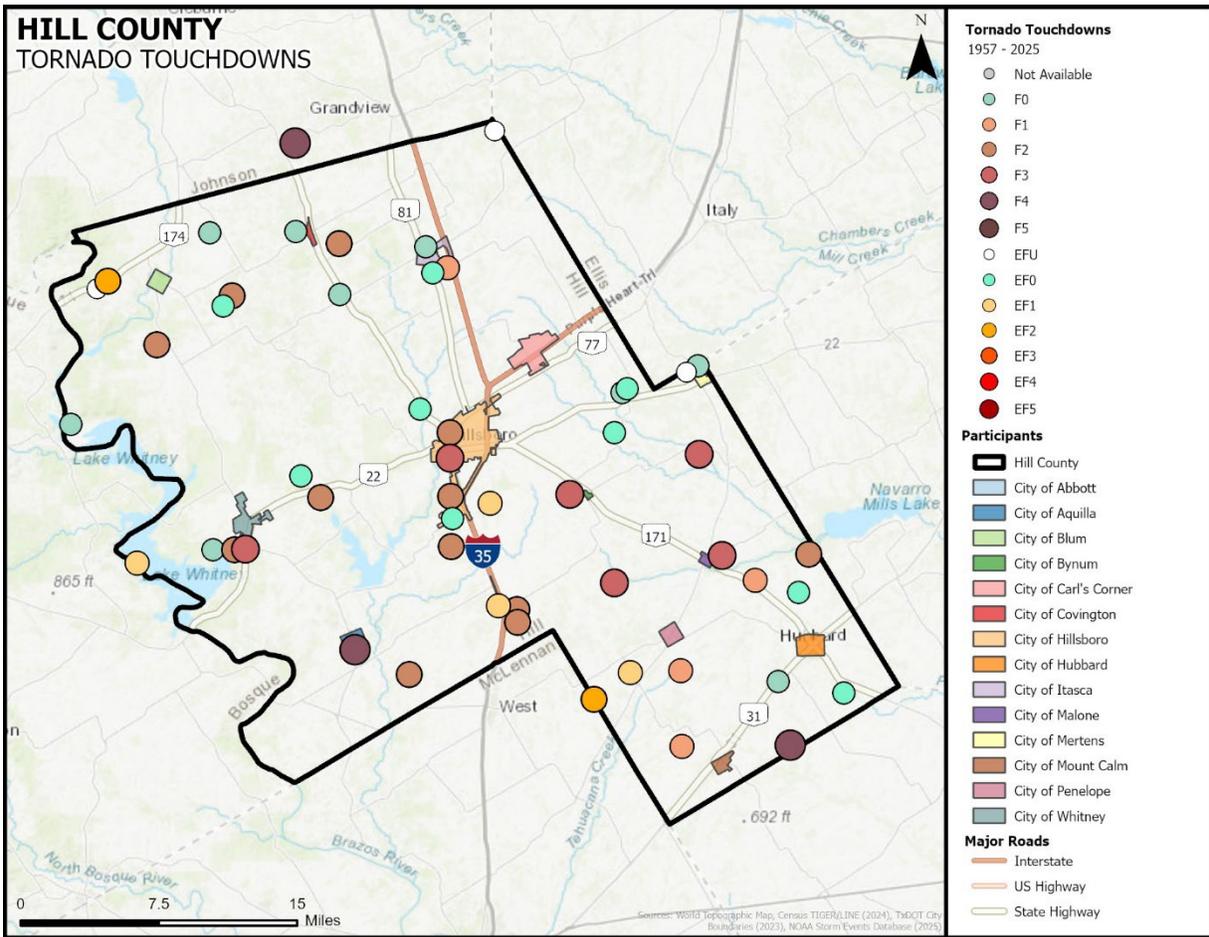


Table 12-3. Historical Tornado Events, January 1957 – June 2025⁴

JURISDICTION	DATE	MAGNITUDE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Hill County	4/19/1957	F0	0	0	\$0	\$0
Hill County	5/22/1957	F3	0	4	\$2,855,400	\$0
City of Aquilla	3/31/1959	F4	6	31	\$276,700	\$0
Hill County	6/23/1959	F0	0	0	\$0	\$0
Hill County	10/13/1960	F2	0	0	\$0	\$0
Hill County	5/25/1961	F0	0	0	\$0	\$0
Hill County	3/16/1965	F3	0	0	\$255,500	\$0

³ Source: NOAA Storm Prediction Center

⁴ Damage values are in 2025 dollars.

SECTION 12: TORNADO

JURISDICTION	DATE	MAGNITUDE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Hill County	5/9/1965	F2	0	0	\$254,700	\$0
Hill County	5/11/1968	F2	0	0	\$2,317,400	\$0
Hill County	5/14/1969	F3	0	0	\$219,700	\$0
Hill County	2/18/1971	F2	0	0	\$20,100	\$0
Hill County	5/23/1971	F2	0	0	\$0	\$0
Hill County	5/23/1971	F2	0	0	\$0	\$0
Hill County	5/23/1971	F3	1	49	\$0	\$0
Hill County	12/14/1971	F1	0	0	\$194,600	\$0
Hill County	3/26/1972	F1	0	0	\$193,200	\$0
City of Hillsboro	3/26/1972	F2	0	2	\$1,931,200	\$0
Hill County	3/10/1973	F4	6	75	\$0	\$0
City of Hillsboro	10/31/1974	F1	0	0	\$156,500	\$0
City of Hillsboro	5/25/1976	F3	0	0	\$141,600	\$0
Hill County	5/26/1976	F4	0	0	\$14,150,400	\$0
City of Hillsboro	5/11/1978		0	0	\$124,000	\$0
Hill County	3/26/1979	F1	0	0	\$11,500	\$0
Hill County	5/10/1979	F1	0	0	\$0	\$0
Hill County	5/10/1979	F2	0	0	\$0	\$0
Hill County	5/9/1981	F2	0	0	\$89,100	\$0
Hill County	5/9/1981	F3	0	0	\$8,903,100	\$0
Hill County	10/13/1981	F2	0	0	\$85,600	\$0
Hill County	10/17/1985	F2	0	0	\$735,600	\$0
Hill County	4/19/1986	F1	0	2	\$736,200	\$0
Hill County	3/14/1990	F2	0	0	\$0	\$0
Hill County	4/27/1990	F2	0	0	\$0	\$0
Hill County	5/9/1993	F0	0	0	\$0	\$0
City of Covington	5/9/1993	F0	0	0	\$0	\$0
City of Hillsboro	5/9/1993	F0	0	0	\$0	\$0

SECTION 12: TORNADO

JURISDICTION	DATE	MAGNITUDE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Hill County	5/14/1994	F0	0	0	\$0	\$0
Hill County	10/21/1996	F0	0	0	\$0	\$0
City of Hubbard	5/27/1997	F0	0	0	\$0	\$0
Hill County	10/17/1998	F0	0	0	\$0	\$0
City of Mertens	3/8/1999	F0	0	0	\$0	\$0
City of Itasca	3/28/2000	F0	0	0	\$0	\$0
City of Abbott	10/12/2001	F1	0	0	\$72,000	\$0
City of Blum	12/29/2006	F2	0	0	\$792,400	\$0
City of Hubbard	5/20/2010	EF0	0	0	\$0	\$0
City of Itasca	4/25/2011	EF0	0	0	\$0	\$0
City of Blum	4/26/2015	EF0	0	0	\$0	\$0
Hill County	5/10/2015	EF0	0	0	\$0	\$67,300
Hill County	5/10/2015	EF0	0	0	\$0	\$0
City of Hillsboro	12/26/2015	EF0	0	0	\$0	\$27,100
City of Hubbard	12/26/2015	EF0	0	0	\$0	\$20,300
City of Whitney	1/15/2017	EF1	0	2	\$382,000	\$0
City of Hillsboro	10/13/2018	EF0	0	0	\$19,000	\$0
Hill County	10/13/2018	EF0	0	0	\$6,400	\$0
Hill County	10/13/2018	EF1	0	0	\$63,300	\$0
Hill County	5/3/2021	EF2	0	0	\$415,800	\$0
Hill County	5/3/2021	EFU	0	0	\$0	\$0
Hill County	5/16/2021	EFU	0	0	\$0	\$0
Hill County	4/26/2024	EF1	0	0	\$61,200	\$0
City of Abbott	4/26/2024	EF1	0	0	\$51,000	\$0
Hill County	4/26/2024	EF2	0	0	\$0	\$0
City of Mertens	4/30/2025	EFU	0	0	\$0	\$0
TOTALS		(MAX EXTENT)	13	165	\$35,515,200	\$114,700

SECTION 12: TORNADO

Table 12-4. Summary of Historical Tornado Events, January 1957 – June 2025⁵

JURISDICTION	NUMBER OF EVENTS	MAX MAGNITUDE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Hill County	40	F4	7	130	\$31,568,800	\$67,300
City of Abbott	2	F1	0	0	\$123,000	\$0
City of Aquilla	1	F4	6	31	\$276,700	\$0
City of Blum	2	F2	0	0	\$792,400	\$0
City of Bynum	0	-	-	-	-	-
City of Carl's Corner	0	-	-	-	-	-
City of Covington	1	F0	0	0	\$0	\$0
City of Hillsboro	7	F3	0	2	\$2,372,300	\$27,100
City of Hubbard	3	EF0	0	0	\$0	\$20,300
City of Itasca	2	EF0	0	0	\$0	\$0
City of Malone	0	-	-	-	-	-
City of Mertens	2	F0	0	0	\$0	\$0
City of Mount Calm	0	-	-	-	-	-
City of Penelope	0	-	-	-	-	-
City of Whitney	1	EF1	0	2	\$382,000	\$0
TOTALS	61	(MAX EXTENT)	13	165	\$35,629,900	

Based on the list of historical tornado events for the Hill County planning area, seven events were reported to the NCEI since the 2020 Plan.

SIGNIFICANT EVENTS

May 23, 1971

In the Lake Whitney area of Hill County, five funnels developed with at least three of them confirmed to have touched the ground. These three confirmed tornadoes were clustered close together, one being near Lake Whitney in the Red Wood Lodge area and the other two travelling through the City of Whitney. Impacts were severe and widespread in the city, with considerable damage being done to a cotton gin, a hospital, water pumping station, and many other structures.

⁵ Note: Participating jurisdictions with no reported events show a “-“ in table columns where damages, deaths or injuries would be otherwise reported.

SECTION 12: TORNADO

In total, it was reported that 24 businesses were destroyed or damaged; 11 homes were destroyed; 52 homes were damaged; and 16 mobile homes were destroyed. In addition to the property damage, 49 people were injured, 12 of which had to be hospitalized. One person was killed when his mobile home was struck by the tornado.

March 10, 1973

Early in the morning, an F4 tornado caused devastating impacts in the City of Hubbard after initially touching down near the City of Mart and causing damage in Limestone and McLennan Counties. One in the Hill County planning area, the tornado struck a trailer house two miles south of the City of Hubbard, destroying it and killing its three occupants. When the tornado tracked into Hubbard, it caused widespread devastation including three additional fatalities, 75 injuries, and cutting off power and water supplies. Approximately a third of the city was destroyed, including half of the business district. In total, 45 homes and 7 businesses were destroyed, and an additional 75 homes and 12 businesses were heavily damaged.

January 15, 2017

An EF1 tornado touched down in Bosque County then tracked 5.8 miles into Hill County before lifting. Along its path through the planning area, the tornado damaged approximately 80 homes with most of the damage being to roofs and shingles. An additional 10 manufactured homes suffered more severe damages, including one which lost most of its roof and walls after a tree was blown onto it. Additionally, two injuries were reported from this tornado. Total property damage was estimated at \$382,000 (2025 dollars).

May 3, 2021

Severe thunderstorms along a cold front produced six tornadoes across a multi-county area in North-Central Texas, including an EF2 which impacted Hill County. This tornado formed at the northern edge of the county, northwest of the City of Blum, near the intersection of Texas Highway 174 and Hill County Road 1106. The tornado first traveled across several miles of open country, causing scattered tree and powerline damage. Near the end of its track, and at the peak of its intensity, the tornado struck a brick-clad frame home and removed most of the roof and parts of the walls of the structure. Several outbuildings and trees near the home also sustained damage. Total property damage was estimated at \$415,800 (2025 dollars).

April 26, 2024

Multiple rounds of thunderstorms in the region over several days resulted in numerous forms of severe weather, including the formation of 11 tornadoes. Three of these were reported to have impacted Hill County, all occurring in the south / southeast portion of the planning area. Two tornadoes were of EF1 magnitude, damaging several homes, rolling a semi-tractor trailer on Interstate 35, and damaging numerous trees. The third tornado, which was an EF2 beginning in McLennan County, damaged a barn and a shop on a property near County Line Road, as well as lifting and scattering heavy farm materials. In total, this tornado outbreak resulted in an estimated \$112,200 (2025 dollars) in property damage.

PROBABILITY OF FUTURE EVENTS

Tornadoes can occur at any time of year and at any time of day, but they are typically more common in the spring months during the late afternoon and evening hours. A smaller, high frequency period can emerge in the fall during the brief transition between the warm and cold seasons. With 61 historical events over a 68.5-year reporting period, the Hill County planning

SECTION 12: TORNADO

area can anticipate a tornado touchdown approximately once each year. This frequency supports a “Highly Likely” probability of future events for the Hill County planning area, meaning an event is probable within the next year.

CLIMATE CHANGE CONSIDERATIONS

The impacts on the frequency and severity of tornado events due to climate change are unclear. According to the Texas A&M 2021 Climate Report Update, the most robust trend in tornado activity in Texas is a likelihood for a greater number of tornadoes in large outbreaks, although the factors contributing to this trend are not expected to continue. Tornadoes spawn from less than 10 percent of thunderstorms, usually supercell thunderstorms that are in a wind shear environment that promotes rotation.⁶ Based on climate models that are available, the environmental conditions needed for severe thunderstorm events are estimated to become more likely, resulting in an overall increase in the number of days capable of producing a severe thunderstorm event and potential tornadoes to develop from these storms.⁷

VULNERABILITY AND IMPACT

Because tornadoes often cross jurisdictional boundaries, all existing and future buildings, facilities, and populations in the entire Hill County planning area is considered to be exposed to this hazard and could potentially be impacted. The damage caused by a tornado is typically a result of high wind velocity, wind-blown debris, lightning, and large hail.

The average tornado moves from southwest to northeast, but tornadoes have been known to move in any direction. Consequently, vulnerability of humans and property is difficult to evaluate since tornadoes form at different strengths, in random locations, and create relatively narrow paths of destruction. Although tornadoes strike at random, making all buildings vulnerable, three types of structures are more likely to suffer damage:

- Manufactured Homes;
- Homes built of peer and beam construction (more susceptible to lift); and
- Buildings with large spans, such as shopping malls, gymnasiums, and factories.

Tornadoes can cause a significant threat to people as they could be struck by flying debris, falling trees or branches, utility lines, and poles. Blocked roads could prevent first responders from responding to calls. Tornadoes commonly cause power outages which could cause health and safety risks to residents and visitors, as well as to patients in hospitals.

The Hill County planning area features mobile or manufactured homes throughout the planning area. These homes are typically more vulnerable to tornado events than typical site-built structures. In addition, manufactured homes are located sporadically throughout the planning area, which would also be more vulnerable. The U.S. Census data indicates a total of 2,708 (17 percent of total housing stock) manufactured homes located in the Hill County planning area. In

⁶ Treisman, Rachel. *The exact link between tornadoes and climate change is hard to draw. Here's why.* NPR. December 13, 2021. <https://www.npr.org/2021/12/13/1063676832/the-exact-link-between-tornadoes-and-climate-change-is-hard-to-draw-heres-why>

⁷ Assessment of Historic and Future Trends of Extreme Weather in Texas, 1900-2036, Texas A&M University Office of the Texas State Climatologist, 2021 update.

SECTION 12: TORNADO

addition, 43 percent (7,075 structures) of the housing structures in the Hill County planning area were built before 1980. These structures would typically be built to lower or less stringent construction standards than newer construction and may be more susceptible to damage during significant tornado events (Table 12-5).

Table 12-5. Structures at Greater Risk by Participating Jurisdiction

JURISDICTION	STRUCTURES	
	SFR BUILT BEFORE 1980	MANUFACTURED HOMES
Hill County	7,075	2,708
City of Abbott	101	8
City of Aquilla	13	16
City of Blum	65	42
City of Bynum	66	7
City of Carl's Corner	4	52
City of Covington	64	11
City of Hillsboro	2,054	96
City of Hubbard	490	53
City of Itasca	402	66
City of Malone	115	12
City of Mertens	31	7
City of Mount Calm	72	111
City of Penelope	66	8
City of Whitney	532	93

While all citizens are at risk to the impacts of a tornado, forced relocation and disaster recovery disproportionately impacts low-income residents who lack the financial means to travel, afford a long-term stay away from home, and to rebuild or repair their homes. The elderly, children, and people with a disability may have trouble taking shelter due to mobility issues or a lack of awareness, making them more susceptible to injury or harm. In addition, people who speak a language other than English may face increased vulnerability due to language barriers that limit their access to important information such as weather-related warnings and instructions regarding safety measures. The population over 65 in the Hill County planning area is estimated at 20 percent of the total population and children under the age of 5 are estimated at 6 percent. The population with a disability is estimated at 18 percent of the total population. An estimated 14 percent of the planning area population live below the poverty level and 5 percent of the populations speak English 'less than very well' (Table 12-6).

SECTION 12: TORNADO

Table 12-6. Populations at Greater Risk by Jurisdiction⁸

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Hill County	7,442	2,114	6,410	5,206	1,836
City of Abbott	75	26	33	1	1
City of Aquilla	7	8	7	10	5
City of Blum	41	25	48	120	14
City of Bynum	28	10	32	12	0
City of Carl's Corner	35	22	119	39	23
City of Covington	59	19	31	14	0
City of Hillsboro	1,246	699	1,370	1,633	923
City of Hubbard	288	81	325	218	72
City of Itasca	261	106	292	171	73
City of Malone	21	23	53	163	64
City of Mertens	14	8	49	13	17
City of Mount Calm	93	34	124	89	3
City of Penelope	56	25	47	12	24
City of Whitney	496	121	497	503	234

The Hill County Planning Team identified the following critical facilities as assets that are considered the most important to the planning area and are susceptible to a range of impacts caused by tornado events (Table 12-7). The critical infrastructure with the greatest vulnerability to tornadoes are power and communications facilities. Failures of these facilities can result in a loss of service and cascading impacts such as posing enormous risk to individuals dependent on electricity as a medical necessity. For a comprehensive list by participating jurisdiction, please see Appendix C.

⁸ US Census Bureau 2023 data for Hill County

SECTION 12: TORNADO

Table 12-7. Critical Facilities Vulnerable to Tornado Event

CRITICAL FACILITIES	POTENTIAL IMPACTS
<p>Emergency Response Services (EOC, Fire, Police, EMS), Hospitals and Medical Centers</p>	<ul style="list-style-type: none"> • Emergency operations and services may be significantly impacted due to damaged facilities and/or loss of communications. • Emergency vehicles can be damaged by falling trees or flying debris. • Power outages could disrupt communications, delaying emergency response times. • Critical staff may be injured or otherwise unable to report for duty, limiting response capabilities. • Debris/downed trees can impede emergency response vehicle access to areas. • Increased number of structure fires due to gas line ruptures and downed power lines, further straining the capacity and resources of emergency personnel. • First responders are exposed to downed power lines, unstable and unusual debris, hazardous materials, and generally unsafe conditions. • Extended power outages and evacuations may lead to possible looting, destruction of property, and theft, further burdening law enforcement resources.
<p>Airport, Academic Institutions, Animal Shelter, Evacuation Centers & Shelters, Governmental Facilities, Residential/ Assisted Living Facilities</p>	<ul style="list-style-type: none"> • Structures can be damaged by falling trees damaged by tornadoes. • Power outages could disrupt critical care. • Backup power sources could be damaged. • Evacuations may be necessary due to extended power outages, fires, or other associated damage to facilities. • Power outages and infrastructure damage may prevent larger airports from acting as temporary command centers for logistics, communications, and emergency operations. • Temporary break in operations may significantly inhibit post event evacuations. • Damaged or destroyed highway infrastructure may substantially increase the need for airport operations.
<p>Commercial Supplier (Food, fuel, etc.)</p>	<ul style="list-style-type: none"> • Facilities or infrastructure may be damaged, destroyed or otherwise inaccessible. • Essential supplies like medicines, water, food, and equipment deliveries may be significantly delayed. • Additional emergency responders and critical aid workers may not be able to reach the area for days.
<p>Utility Services and Infrastructure (electric, water, wastewater, communications)</p>	<ul style="list-style-type: none"> • Emergency operations and services may be significantly impacted due to damaged facilities and/or loss of communications. • Emergency vehicles can be damaged by falling trees or flying debris. • Power outages could disrupt communications, delaying emergency response times. • Critical staff may be injured or otherwise unable to report for duty, limiting response capabilities.

SECTION 12: TORNADO

CRITICAL FACILITIES	POTENTIAL IMPACTS
	<ul style="list-style-type: none"> • Debris/downed trees can impede emergency response vehicle access to areas. • Increased number of structure fires due to gas line ruptures and downed power lines, further straining the capacity and resources of emergency personnel. • First responders are exposed to downed power lines, unstable and unusual debris, hazardous materials, and generally unsafe conditions. • Extended power outages and evacuations may lead to possible looting, destruction of property, and theft, further burdening law enforcement resources.

The total loss estimate due to tornado events in Hill County is \$35,629,900 (2025 dollars), having an approximate average annual loss estimate of \$520,100. Additionally, tornadoes have caused 13 reported fatalities and 165 reported injuries within the planning area. Based on historical damages to property and crops, the impact of a tornado event on the Hill County planning area would be considered limited in severity of impact, meaning complete shutdown of facilities for 24 hours or less and less than 10 percent of property destroyed or with major damage. However, based on numerous previously reported fatalities and injuries, the severity of impact is considered “Substantial,” meaning multiple deaths are possible depending on the size and extent of the event.

Table 12-8. Estimated Average Annual Losses by Jurisdiction

JURISDICTION	TOTAL PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
Hill County	\$31,636,100	\$461,800
City of Abbott	\$123,000	\$1,800
City of Aquilla	\$276,700	\$4,000
City of Blum	\$792,400	\$11,600
City of Bynum	\$0	\$0
City of Carl's Corner	\$0	\$0
City of Covington	\$0	\$0
City of Hillsboro	\$2,399,400	\$35,000
City of Hubbard	\$20,300	\$300
City of Itasca	\$0	\$0
City of Malone	\$0	\$0
City of Mertens	\$0	\$0
City of Mount Calm	\$0	\$0

SECTION 12: TORNADO

JURISDICTION	TOTAL PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
City of Penelope	\$0	\$0
City of Whitney	\$382,000	\$5,600
Planning Area	\$35,629,900	\$520,100

ASSESSMENT OF IMPACTS

Tornadoes have the potential to pose a significant risk to the population and can create dangerous situations. Often, providing and preserving public health and safety is difficult. The impact of climate change could produce larger, more severe tornado events, exacerbating the current tornado impacts. More destructive tornado conditions can be frequently associated with a variety of impacts, including:

- Individuals exposed to the storm can be struck by flying debris, falling limbs, or downed trees causing serious injury or death.
- Structures can be damaged or crushed by falling trees, which can result in physical harm to the occupants.
- Manufactured homes (17 percent of total housing stock) may suffer substantial damage as they would be more vulnerable than typical site-built structures.
- Portable classrooms may also suffer substantial damage as they would be more vulnerable than other classroom structures.
- Significant debris and downed trees can result in emergency response vehicles being unable to access areas of the community.
- Downed power lines may result in roadways being unsafe for use, which may prevent first responders from answering calls for assistance or rescue.
- Tornadoes often result in widespread power outages increasing the risk to more vulnerable portions of the population who rely on power for health and/or life safety.
- Extended power outages can result in an increase in structure fires and/or carbon monoxide poisoning as individuals attempt to cook or heat their home with alternate, unsafe cooking or heating devices, such as grills.
- Tornadoes can destroy or make residential structures uninhabitable, requiring shelter or relocation of residents in the aftermath of the event.
- First responders must enter the damage area shortly after the tornado passes to begin rescue operations and to organize cleanup and assessments efforts, therefore they are exposed to downed power lines, unstable and unusual debris, hazardous materials, and generally unsafe conditions, elevating the risk of injury to first responders and potentially diminishing emergency response capabilities.
- Emergency operations and services may be significantly impacted due to damaged facilities, loss of communications, and damaged emergency vehicles and equipment.
- Private sector entities such as utility providers, financial institutions, and medical care providers may not be fully operational and may require assistance from neighboring communities until full services can be restored.
- Economic disruption negatively impacts the programs and services provided by the community due to short- and long-term loss in revenue, especially if damage is sustained to major employers within the planning area.

SECTION 12: TORNADO

- Damage to infrastructure may slow economic recovery since repairs may be extensive and lengthy.
- When the community is affected by significant property damage it is anticipated that funding would be required for infrastructure repair and restoration, temporary services and facilities, overtime pay for responders, and normal day-to-day operating expenses.
- Displaced residents may not be able to immediately return to work, further slowing economic recovery.
- Residential structures destroyed by a tornado may not be rebuilt for years, reducing the tax base for the community.
- Large or intense tornadoes may result in a dramatic population fluctuation, as people are unable to return to their homes or jobs and must seek shelter and/or work outside of the affected area.
- Businesses that are uninsured or underinsured may have difficulty reopening, which results in a net loss of jobs for the community and a potential increase in the unemployment rate.
- Recreation activities may be unavailable, and tourism can be unappealing for years following a large tornado, devastating directly related local businesses.
- Tornadoes may destroy or degrade endangered species habitat; currently, there are eight federally endangered, threatened, or candidate species in the planning area.
- Historical sites and properties are placed at a higher risk of impact due to materials used and the inability to change properties due to their historic status. There are 23 historical buildings and sites listed on the National Register of Historic Places for Hill County.

The economic and financial impacts of a tornado event on the community will depend on the scale of the event, what is damaged, costs of repair or replacement, lost business days in impacted areas, and how quickly repairs to critical components of the economy can be implemented. The level of preparedness and pre-event planning done by the community, local businesses, and citizens will contribute to the overall economic and financial conditions in the aftermath of a tornado event.



Section 13

Wildfire



SECTION 13: WILDFIRE

Hazard Description	1
Location	2
Extent.....	17
Historical Occurrences.....	33
Significant Events.....	37
Probability of Future Events.....	37
Climate Change Considerations	37
Vulnerability and Impact.....	38
Assessment of Impacts	62

HAZARD DESCRIPTION

Wildfire is an unplanned fire burning in natural or wildland areas such as forests, shrub lands, grasslands, or prairies.¹ Texas is one of the fastest growing states in the nation, with much of this growth occurring adjacent to metropolitan areas. This increase in population across the state will impact counties and communities that are located within the Wildland Urban Interface (WUI). The WUI is described as the area where structures and other human improvements meet and intermingle with undeveloped wildland or vegetative fuels. Population growth within the WUI substantially increases the risk of wildfire. In Texas nearly 85 percent of wildfires occur within two miles of a community.

Wildfires have the potential to spread quickly given the right environmental conditions, particularly within the wildland urban interface and intermix. Most ignition sources for wildfires are a result of human activities, such as an electrical line sparking dry grasses, an improperly discarded cigarette, burning debris, or arson.

Development has increased in east Texas, resulting in more populated areas within the wildland interface / intermix. Additionally, the area is experiencing hotter, drier climatic conditions. These factors combine to make south Texas at risk from wildfires. While the planning area is continually at some risk for wildfires, that risk is elevated during two periods each year: the winter wildfire season (February through April) and the summer wildfire season (August through October).²

The Hill County population is expected to increase over time following population trends over the last few decades. Continued housing development in the WUI will put more people at a greater risk of catastrophic wildfire and put more pressure on land managers and fire department personnel to mitigate fire risk.

Wildfires spread based on the type and quantity of fuel that surrounds it. Fuel can include everything from trees, underbrush and dry grassy fields to homes. The amount of flammable material that surrounds a fire is referred to as the fuel load. Conditions in the weather and environment, such as drought, winds and extreme heat, can cause a fire to spread more quickly.³

¹ FEMA: <https://hazards.fema.gov/nri/wildfire>

² Austin American Statesman, "Winter wildfire risk is rising in Central Texas. Here's what you should know." January 2023: <https://www.statesman.com/story/news/environment/2023/01/30/wildfire-risk-is-rising-in-central-texas-what-you-should-know/69845234007/>

³ NOAA Weather Forecasting: <https://scijinks.gov/wildfires/>

SECTION 13: WILDFIRE

A wildfire event often begins unnoticed and spreads quickly, lighting brush, trees, and homes on fire. For example, a wildfire may be started by a campfire that was not doused properly, a tossed cigarette, or arson. Additionally, the Hill County planning team reports that wildfires are often caused by lightning and thunderstorm wind events.

Texas has seen a significant increase in the number of wildfires in the past 30 years, including wildland, urban interface, or intermix fires. Wildland fires are fueled almost exclusively by natural vegetation, while interface or intermix fires are urban / wildland fires in which vegetation and the built environment provide the fuel.

LOCATION

A wildfire incident can have devastating consequences due to human activities, drought conditions, lightning, or wind events, if the conditions allow. Wildfires can vary greatly in terms of size, location, intensity, and duration. While wildfires are not confined to any specific geographic location, they are most likely to occur in open grasslands.

The Texas A&M Forest Service Wildfire Risk Assessment Portal (TxWRAP) provides historical wildfire data for Texas counties along with mapping resources that include data layers on the WUI, ignition density, and fire damage potential for communities throughout the Hill County planning area, along with multiple tips, recommendations and mitigation solutions for communities and residents. The TxWRAP portal was utilized to produce the maps found in this profile.

The threat to people and property from a wildfire event is greater in the fringe areas where developed areas meet open grass lands, such as the Functional Wildland Urban Interface (WUI) (Figures 13-1 through 13-15). The Functional WUI is based on a comprehensive building footprint dataset, fire intensity modeling, and a simulation of ember production and transport. The Zones used in the Functional WUI are described below. Critical facilities are only mapped within the Direct Exposure Zone of the WUI, as these structures face the greatest risk from wildfire due to their proximity to flammable vegetation and potential fire pathways.

The **Direct Exposure Zone** is burnable land cover within 75 meters of a structure. Reducing fire intensity and ember production in this zone would reduce the exposure of nearby buildings to heat and embers. Buildings in this zone also require hardening of the structure to resist ignition.

The **Indirect Exposure Zone** is non-burnable land cover within 1,500 meters of burnable land cover that is within 75 meters of a structure, meaning that embers and home-to-home spread could reach within this zone. Indirectly exposed structures would benefit from the hardening of the structure to resist ignition from embers and nearby structures, but defensible space is usually not required due to the heavily developed nature of the zone.

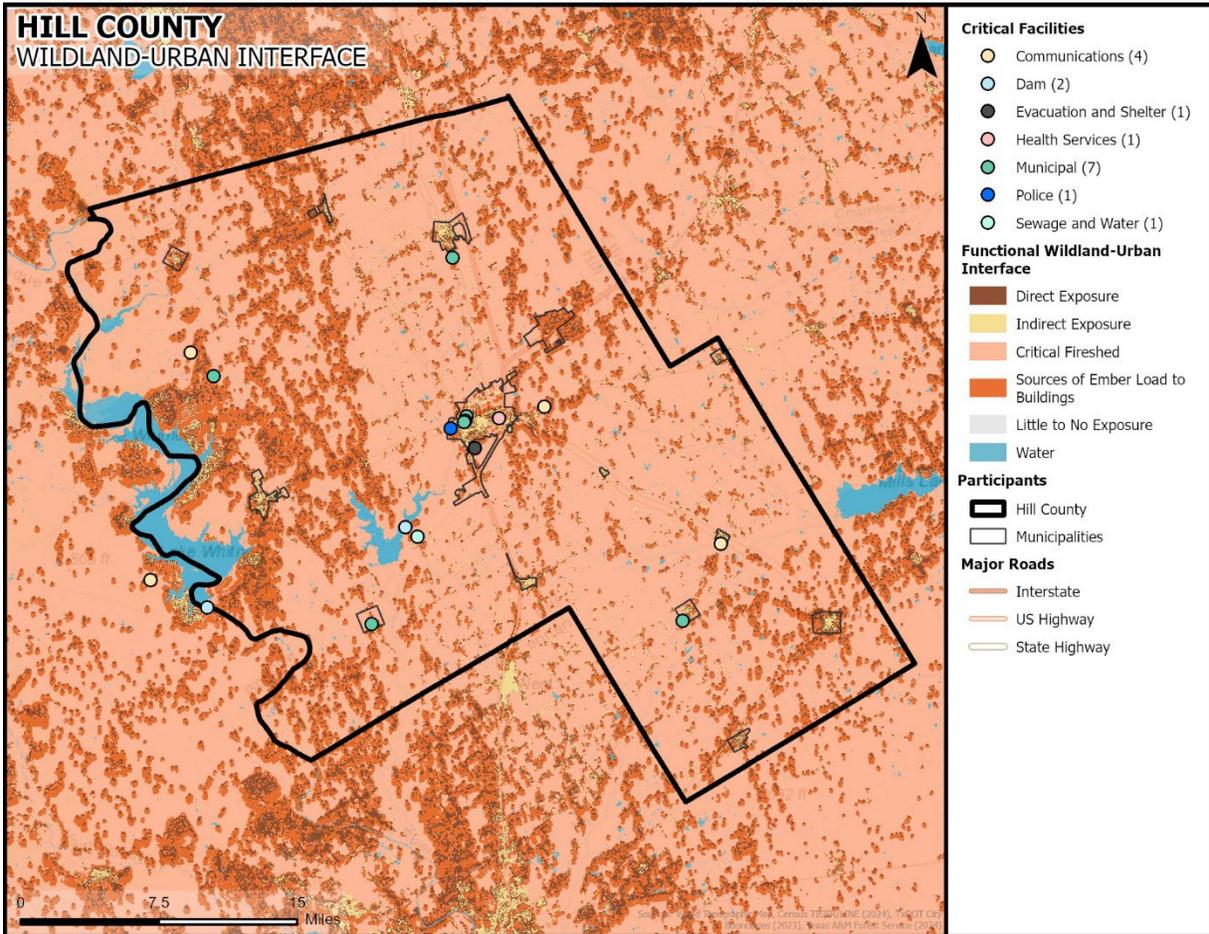
The **Critical Fireshed** is the unpopulated land within about 2.4 kilometers of a group of structures. Fires that originate within or spread to the Critical Fireshed have an immediate threat of reaching the nearby structures; fuel treatments that slow fire spread in this zone can reduce risk to these structures.

The **Sources of Ember Load to Buildings (SELB) Zone** is a critical area or burnable land cover that produces embers capable of reaching nearby buildings. Ember production is a function of fire type and intensity, and ember travel is a function of wind speed and direction. Fuel treatment in this zone is a priority for reducing ember load to the nearby buildings.

SECTION 13: WILDFIRE

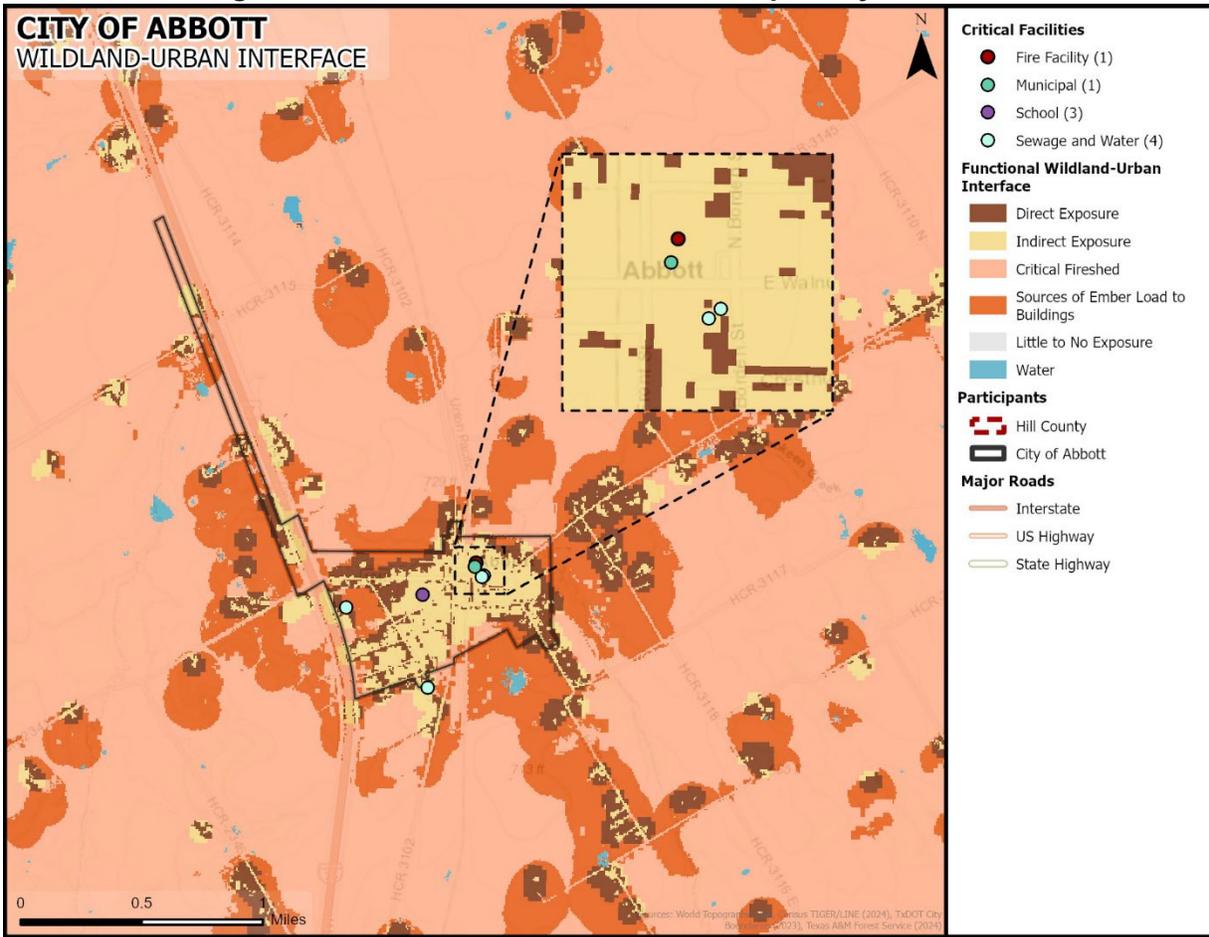
The **Little-to-No Exposure Zone** is non-burnable land that is within 75 meters of a structure but greater than 1,500 meters from a large contiguous block of burnable land cover. Flames, even from home-to-home spread, and embers are unlikely to reach the Little-to-No Exposure Zone. However, smoke and evacuations could still impact this area. Support should be given to those most vulnerable in the community. The need for a wildfire evacuation in this zone is unlikely.

Figure 13-1. Wildland Urban Interface Map – Hill County



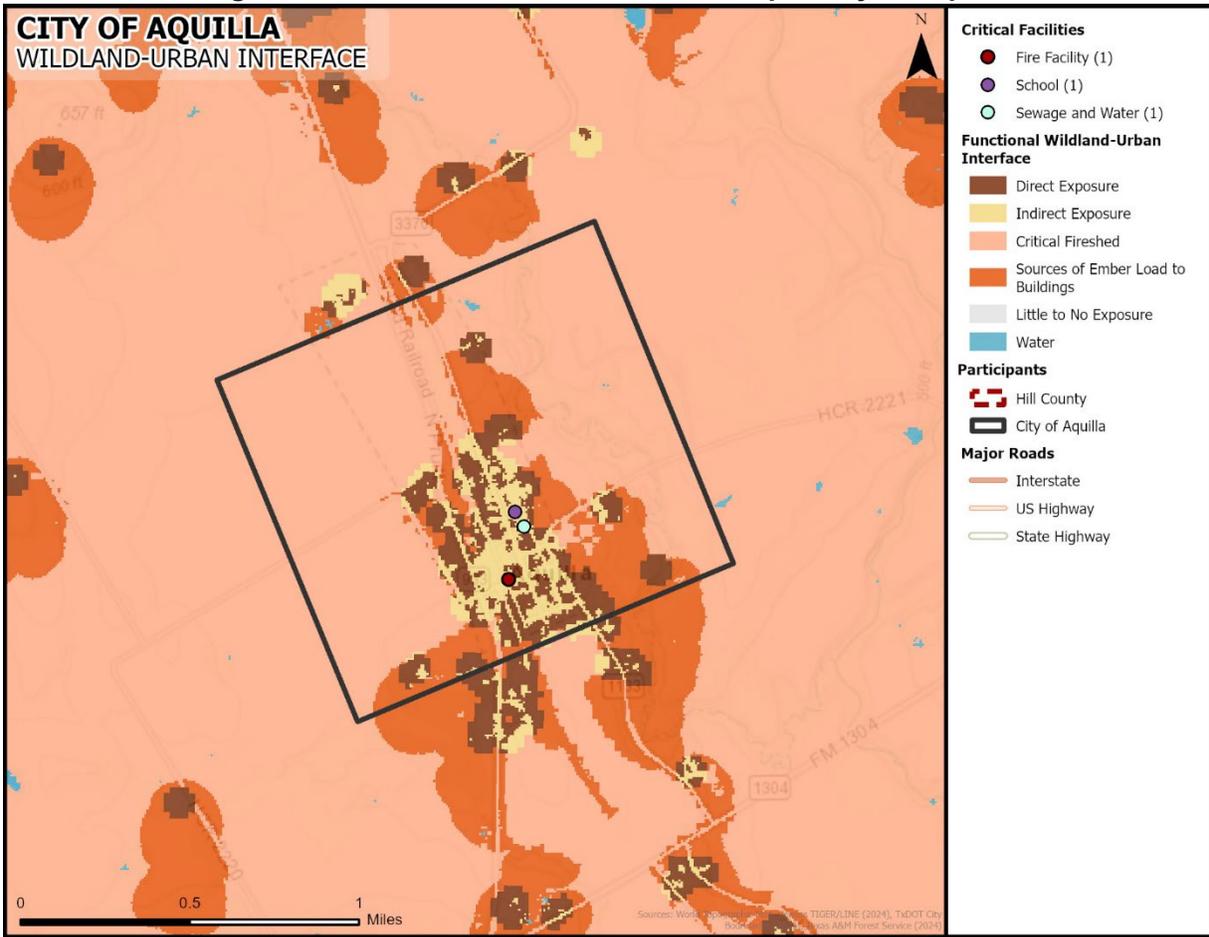
SECTION 13: WILDFIRE

Figure 13-2. Wildland Urban Interface Map – City of Abbott



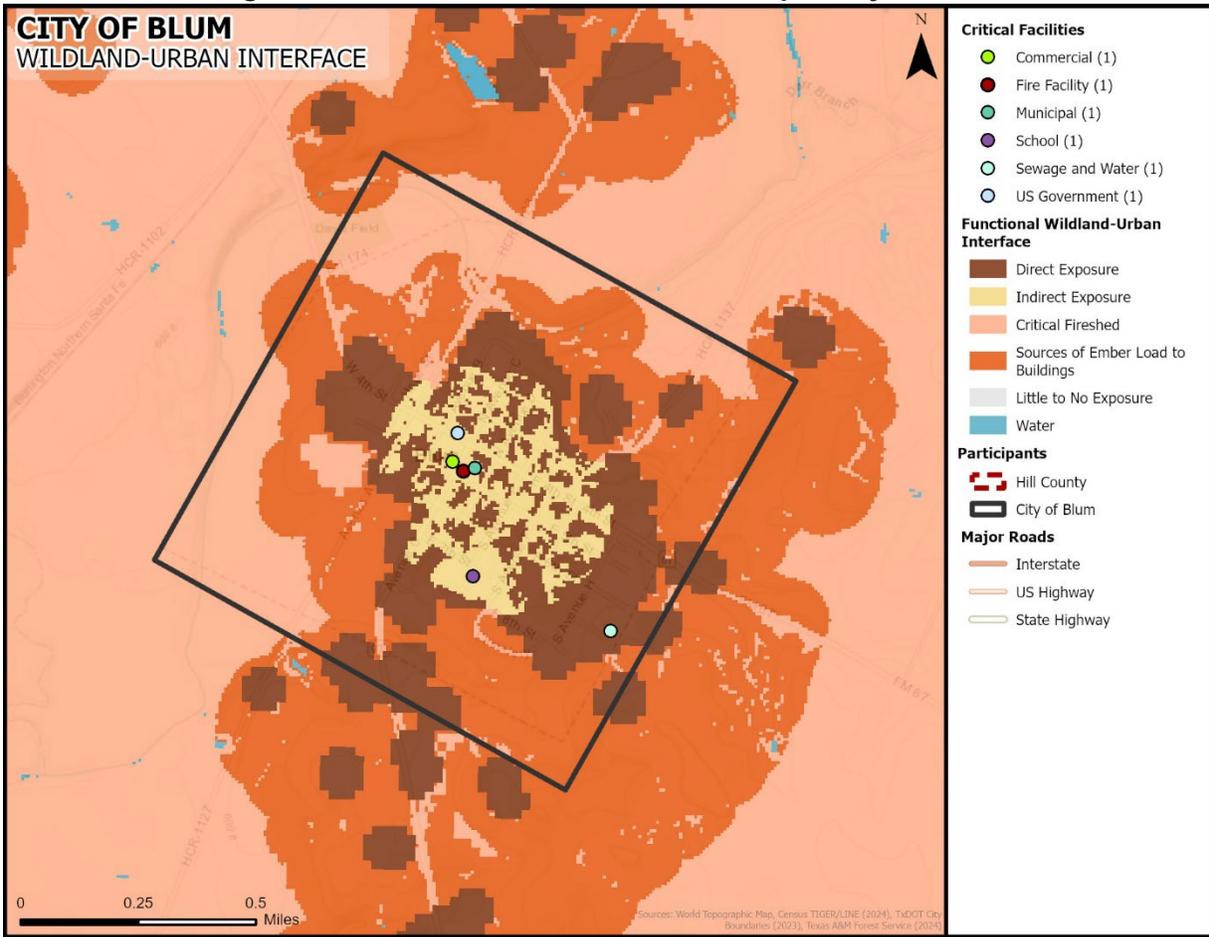
SECTION 13: WILDFIRE

Figure 13-3. Wildland Urban Interface Map – City of Aquilla



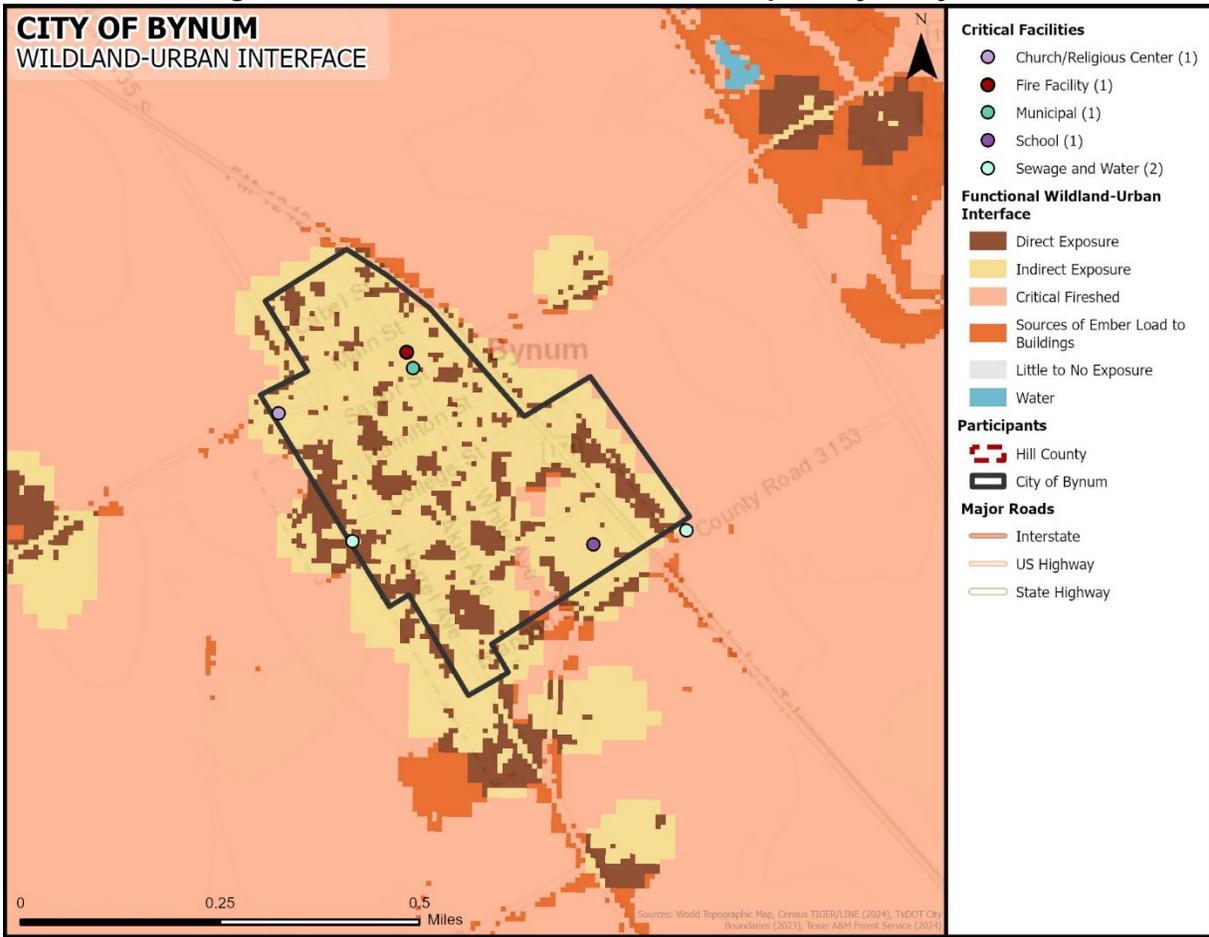
SECTION 13: WILDFIRE

Figure 13-4. Wildland Urban Interface Map – City of Blum



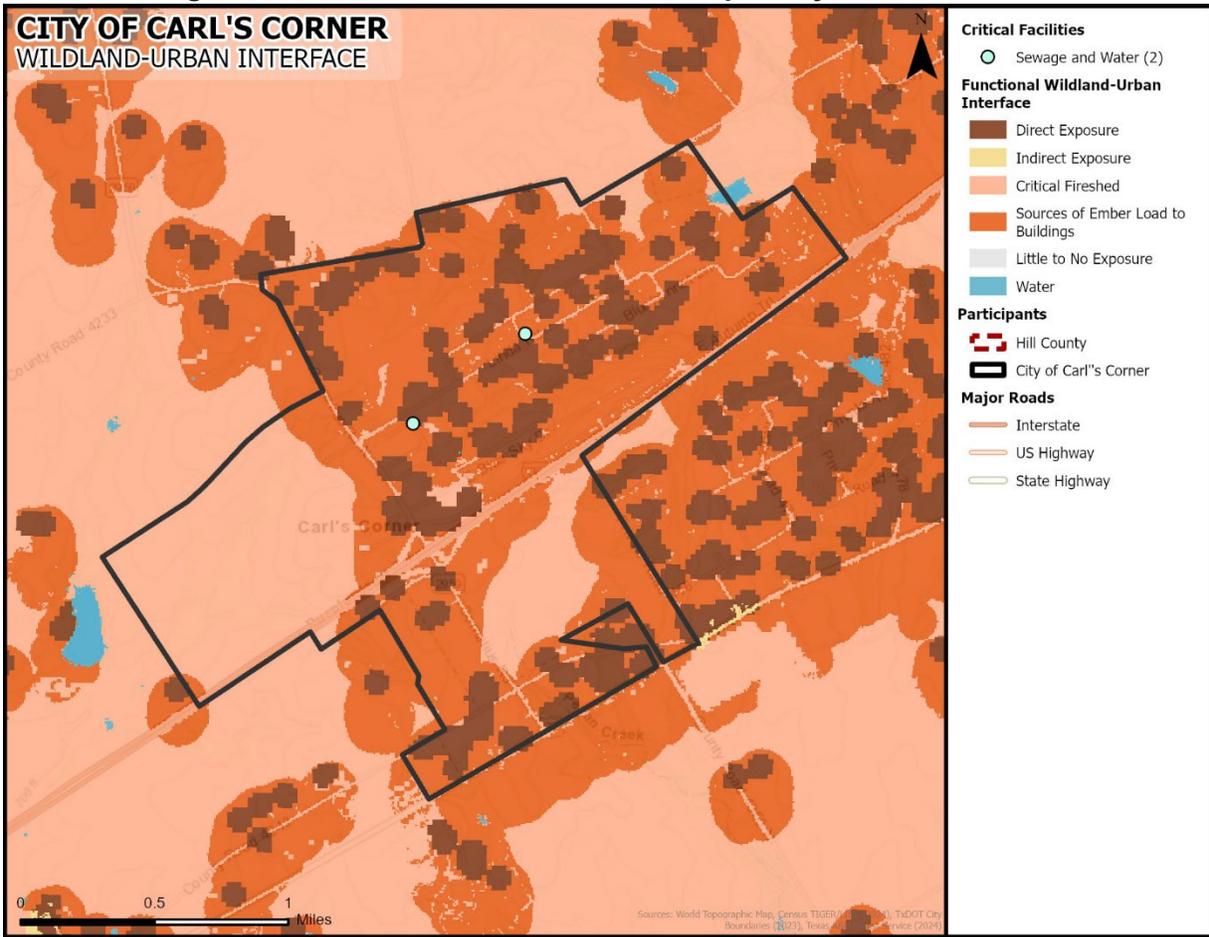
SECTION 13: WILDFIRE

Figure 13-5. Wildland Urban Interface Map – City of Bynum



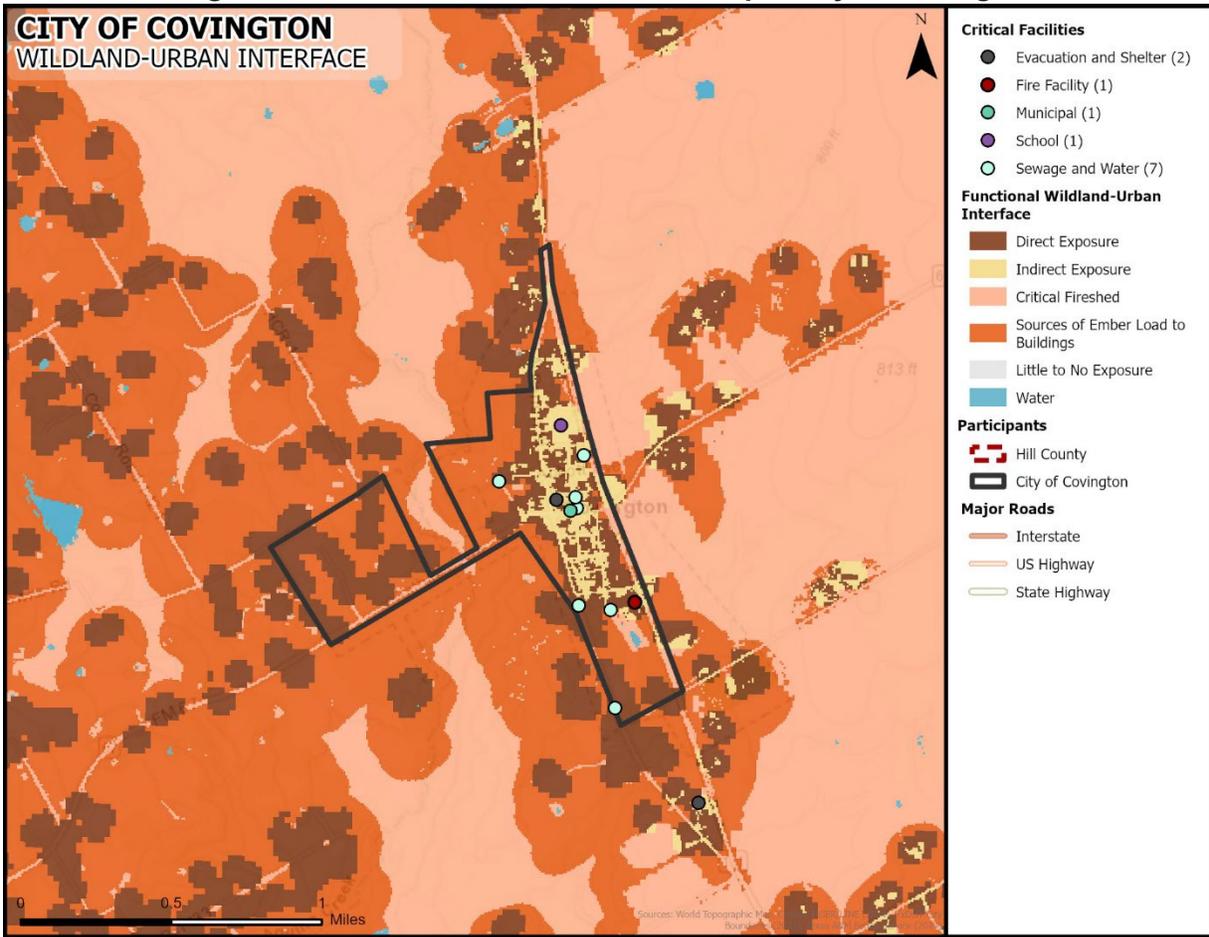
SECTION 13: WILDFIRE

Figure 13-6. Wildland Urban Interface Map – City of Carl's Corner



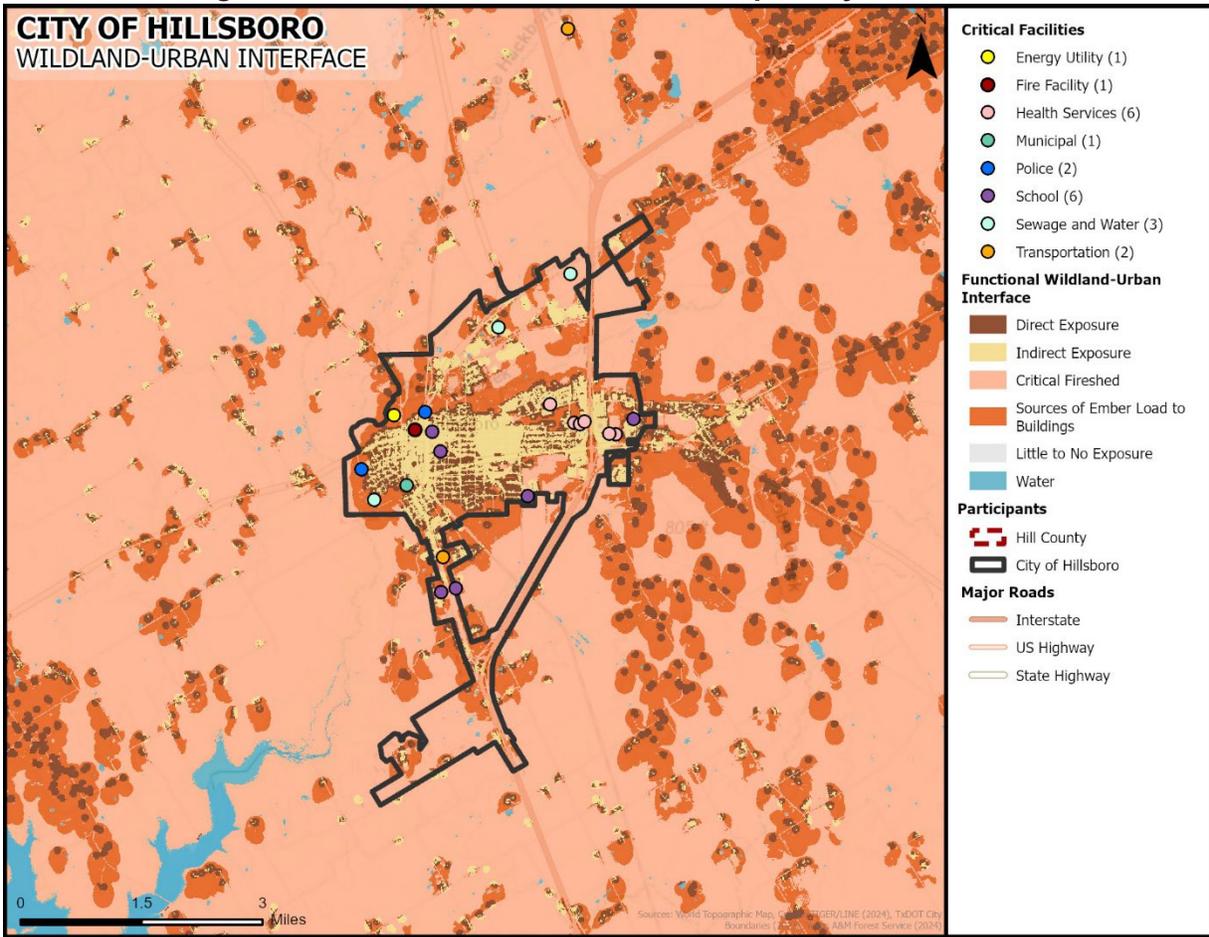
SECTION 13: WILDFIRE

Figure 13-7. Wildland Urban Interface Map – City of Covington



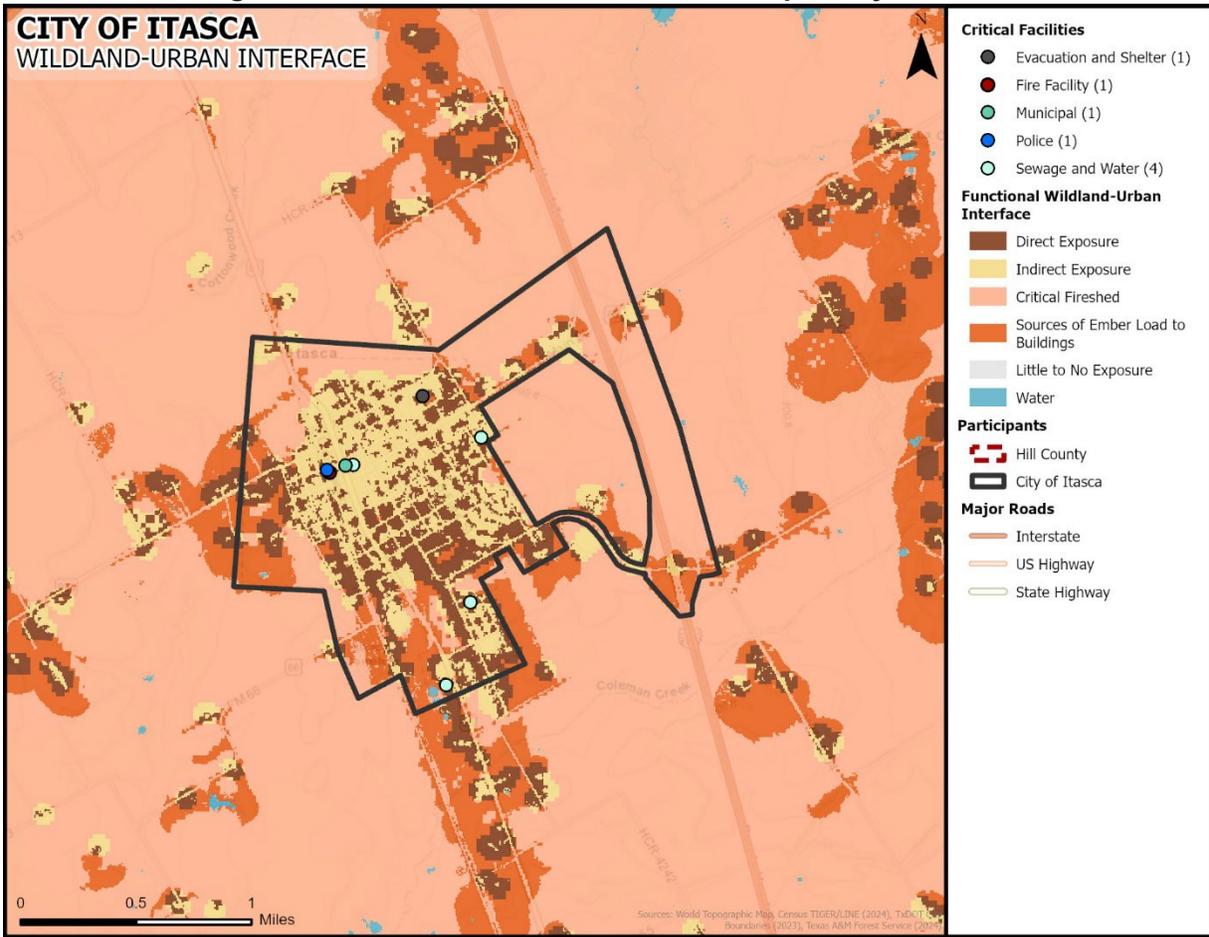
SECTION 13: WILDFIRE

Figure 13-8. Wildland Urban Interface Map – City of Hillsboro



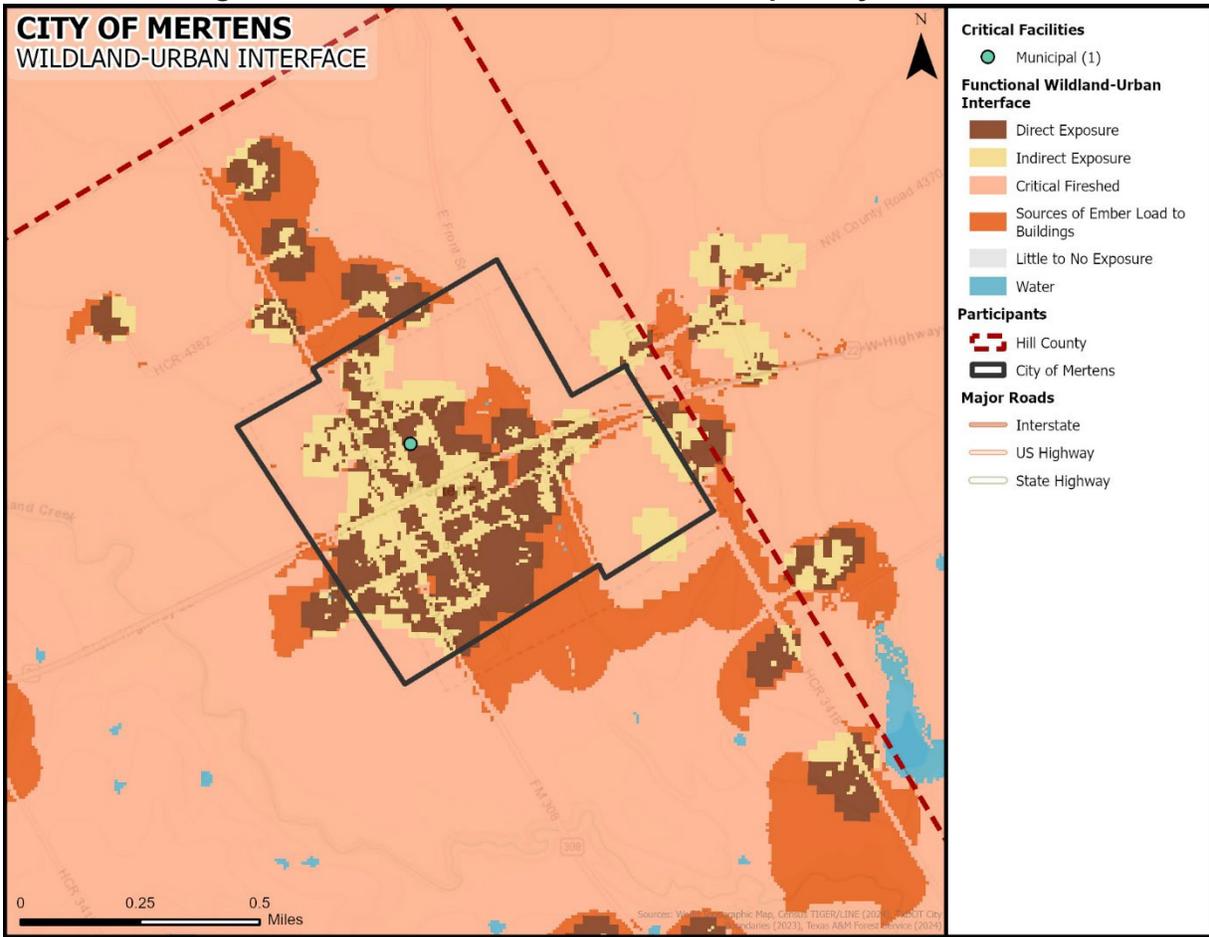
SECTION 13: WILDFIRE

Figure 13-10. Wildland Urban Interface Map – City of Itasca



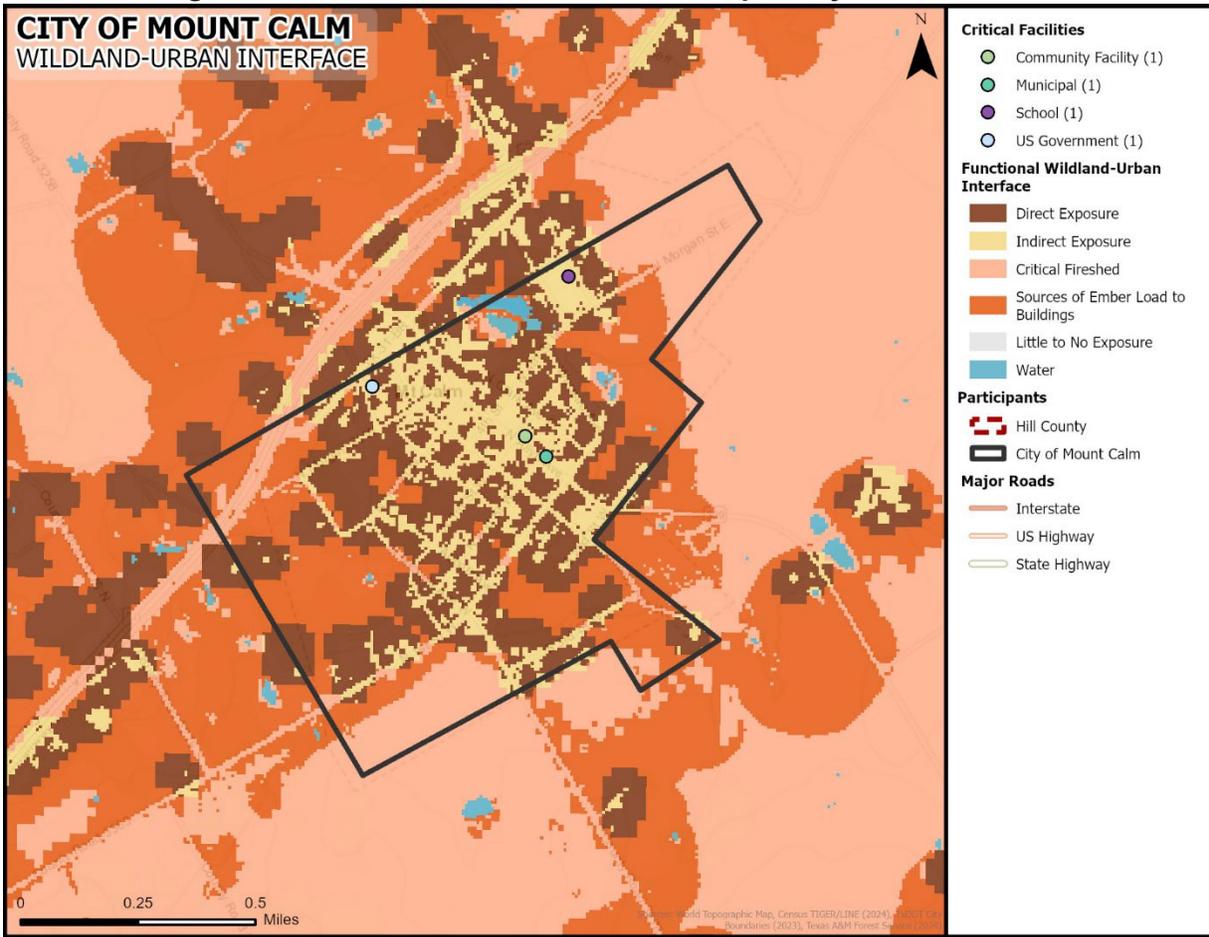
SECTION 13: WILDFIRE

Figure 13-12. Wildland Urban Interface Map – City of Mertens



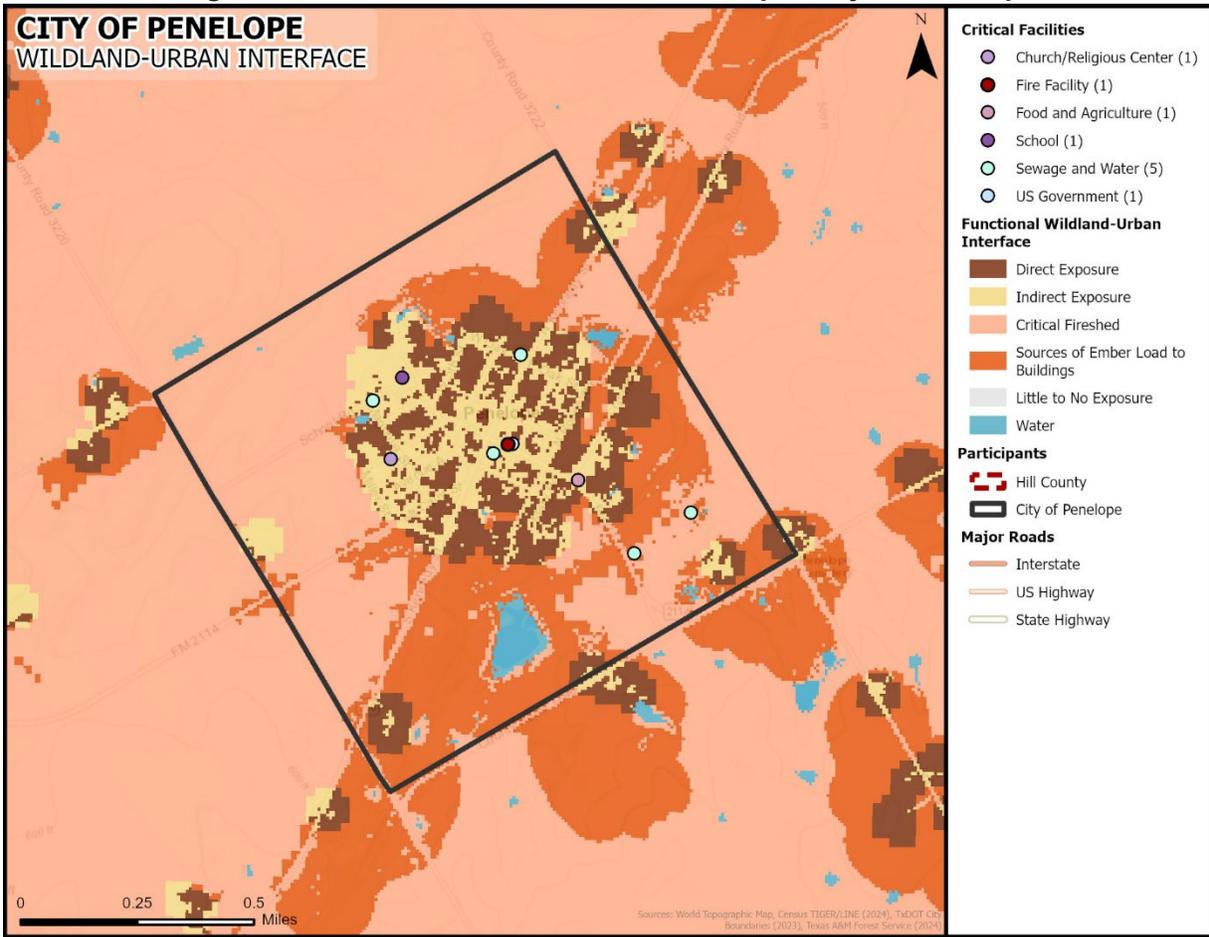
SECTION 13: WILDFIRE

Figure 13-13. Wildland Urban Interface Map – City of Mount Calm



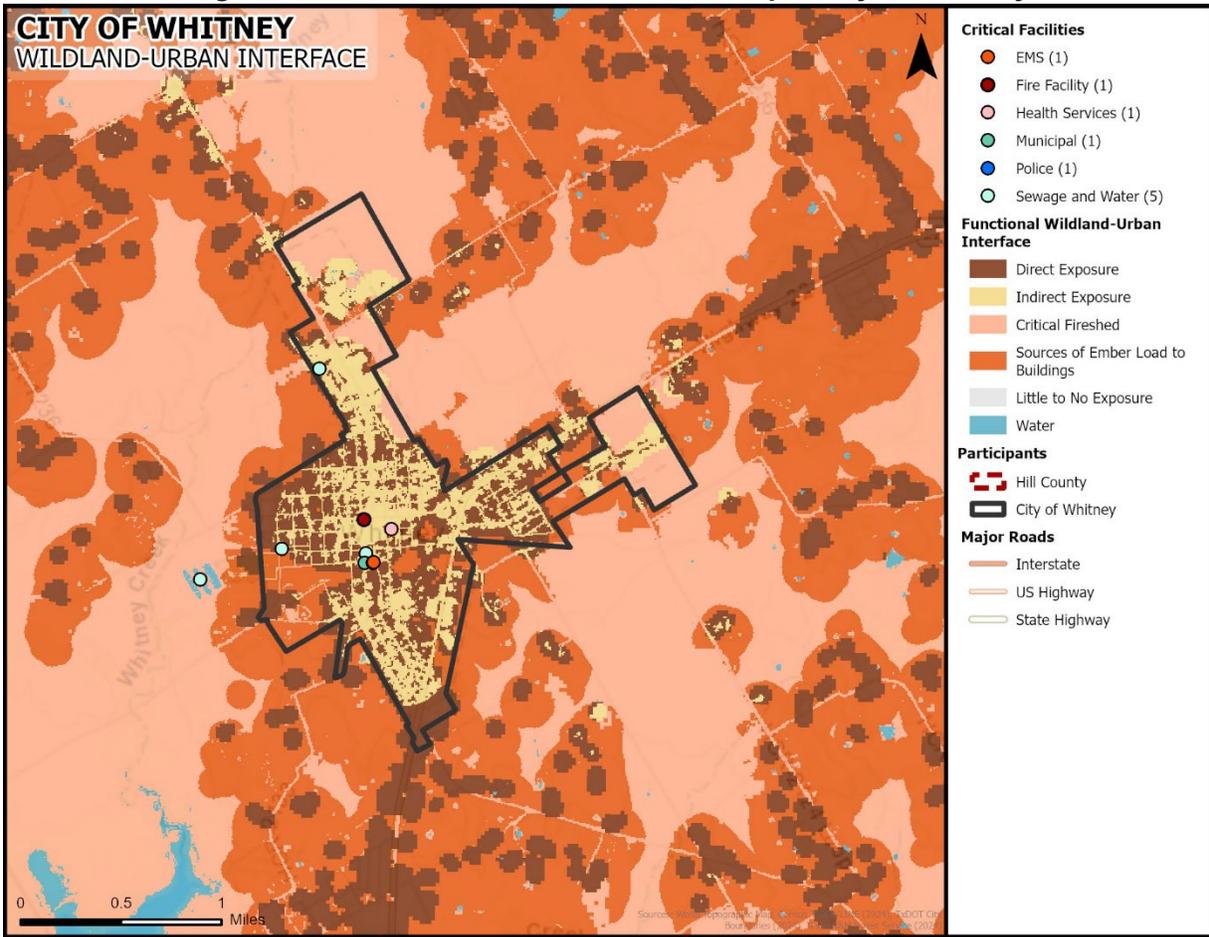
SECTION 13: WILDFIRE

Figure 13-14. Wildland Urban Interface Map – City of Penelope



SECTION 13: WILDFIRE

Figure 13-15. Wildland Urban Interface Map – City of Whitney



EXTENT



The Texas Forest Service’s Fire Intensity Scale (FIS) identifies areas with high fuel hazards and dangerous fire behavior potential. This scale considers fuel conditions along with a range of wind and weather scenarios. These estimates include the contribution of crown fuel and crowning fire intensity. Crown fuels (the branches, leaves, and needles of tall trees) are the primary fuel layer in crown fires, and the intensity of a crown fire is determined by factors like fuel load, moisture content, and wind conditions, leading to rapid fire spread and high temperatures.

The FIS provides a standard scale to measure potential wildfire intensity. The FIS consists of 5 classes where the order of magnitude between classes is ten-fold. The minimum class, Class 1, represents very low wildfire intensities and the maximum class, Class 5, represents very high wildfire intensities. Refer to descriptions below.

SECTION 13: WILDFIRE

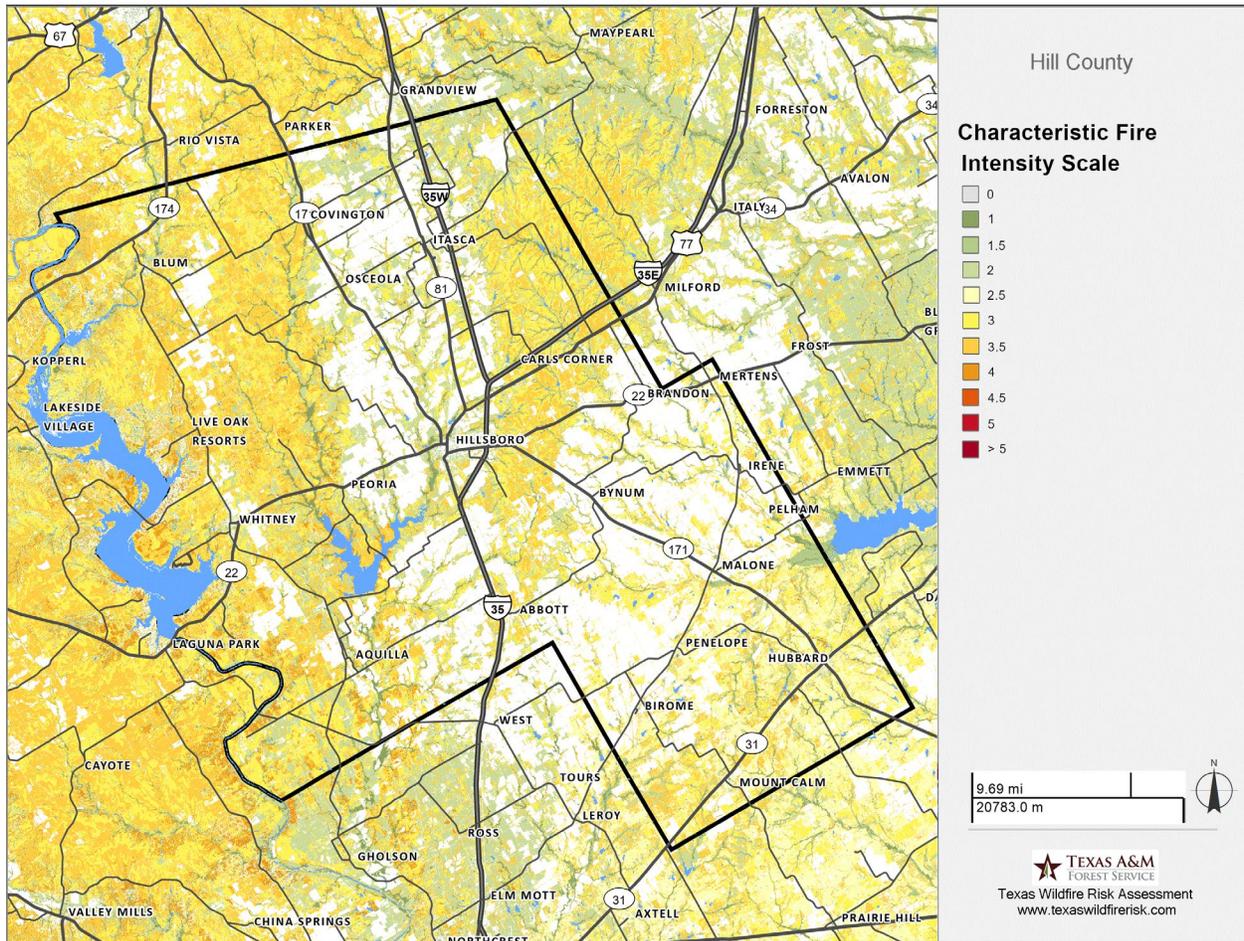
Table 13-1. Characteristic Fire Intensity Scale (FIS)

FIS CLASS	CLASS DESCRIPTION
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.
Class 2 (Low)	Small flames, usually less than 2 feet long; small amount of very short range spotting possible. Fires are easy to suppress by trained firefighters with protective equipment and specialized tools.
Class 3 (Moderate)	Flames up to 9 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.
Class 4 (High)	Large Flames, up to 40 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.
Class 5 (Very High)	Flames exceed 200 feet in length; expect extreme fire behavior.

The Hill County planning area is susceptible to wildfires of varying intensities. Figures 13-16 through 13-30 identifies the wildfire intensity for the planning area.

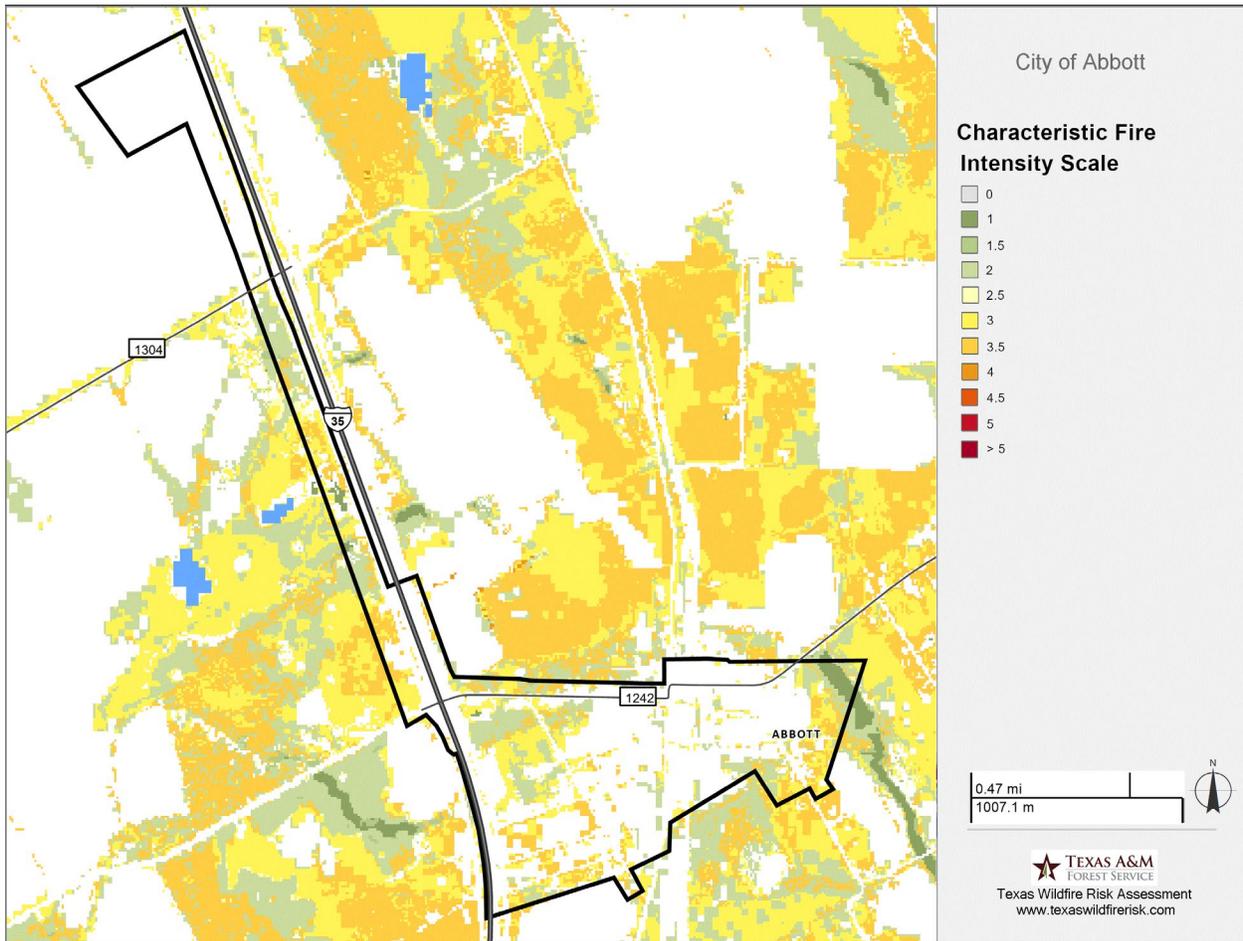
SECTION 13: WILDFIRE

Figure 13-16. Fire Intensity Scale Map – Hill County



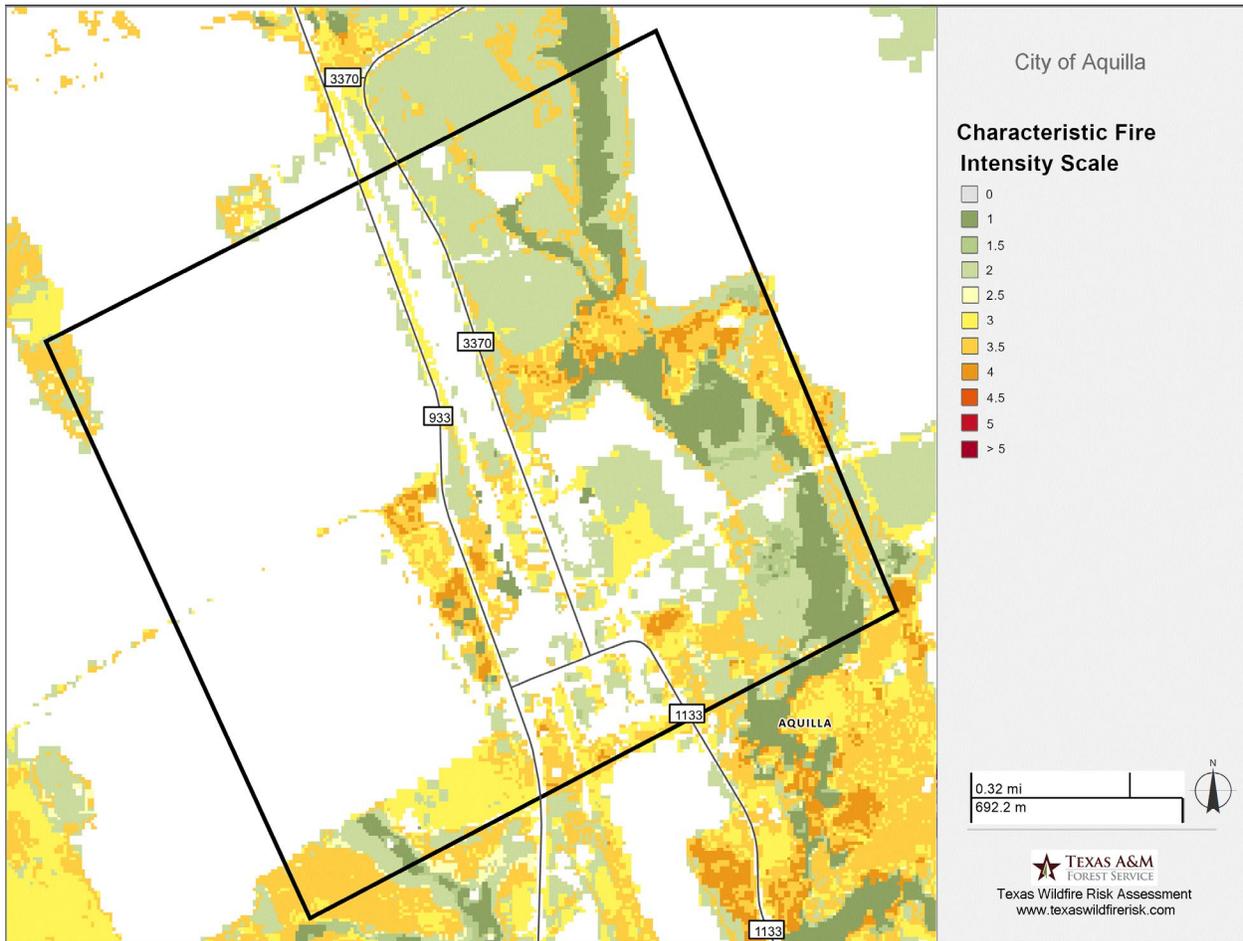
SECTION 13: WILDFIRE

Figure 13-17. Fire Intensity Scale Map – City of Abbott



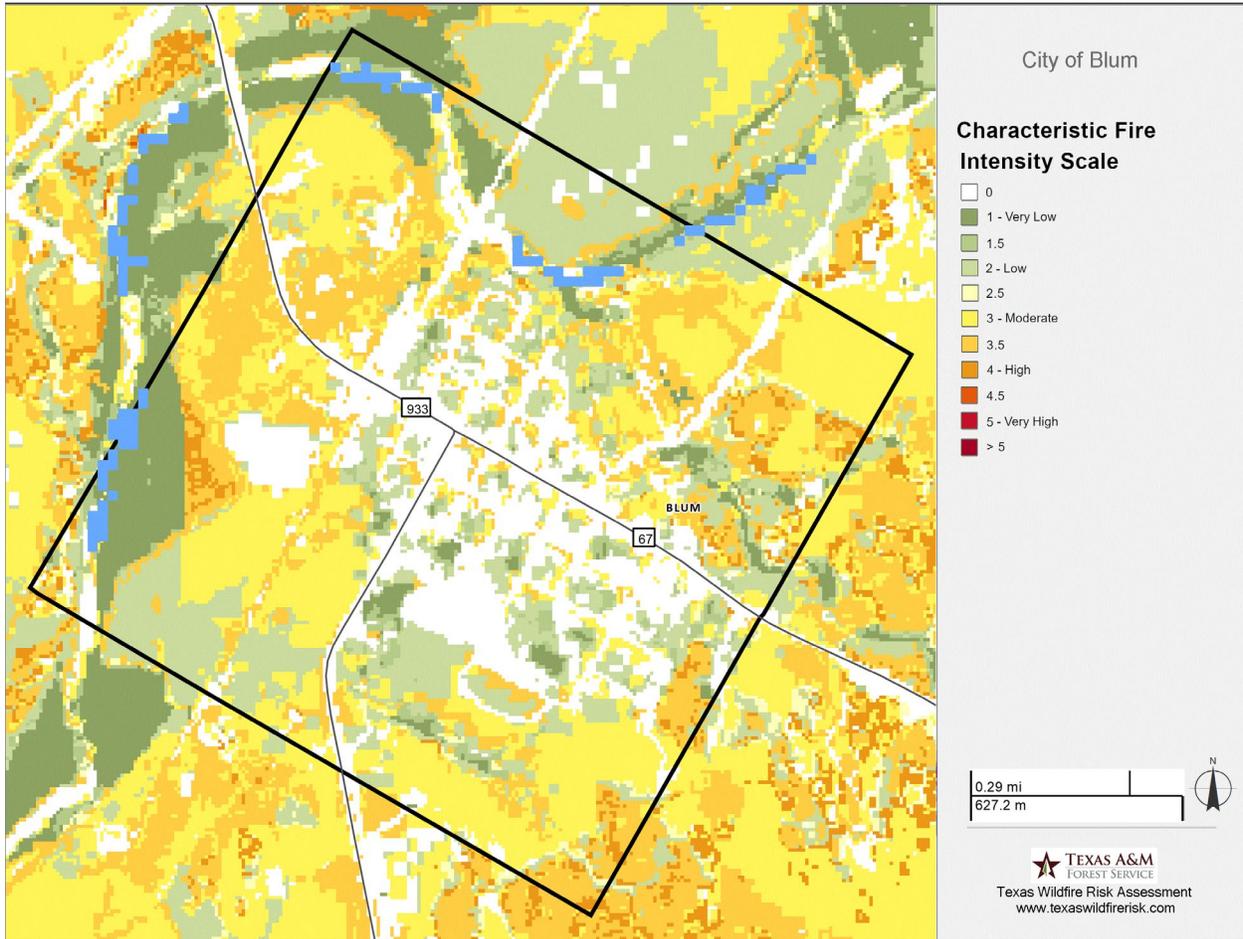
SECTION 13: WILDFIRE

Figure 13-18. Fire Intensity Scale Map – City of Aquilla



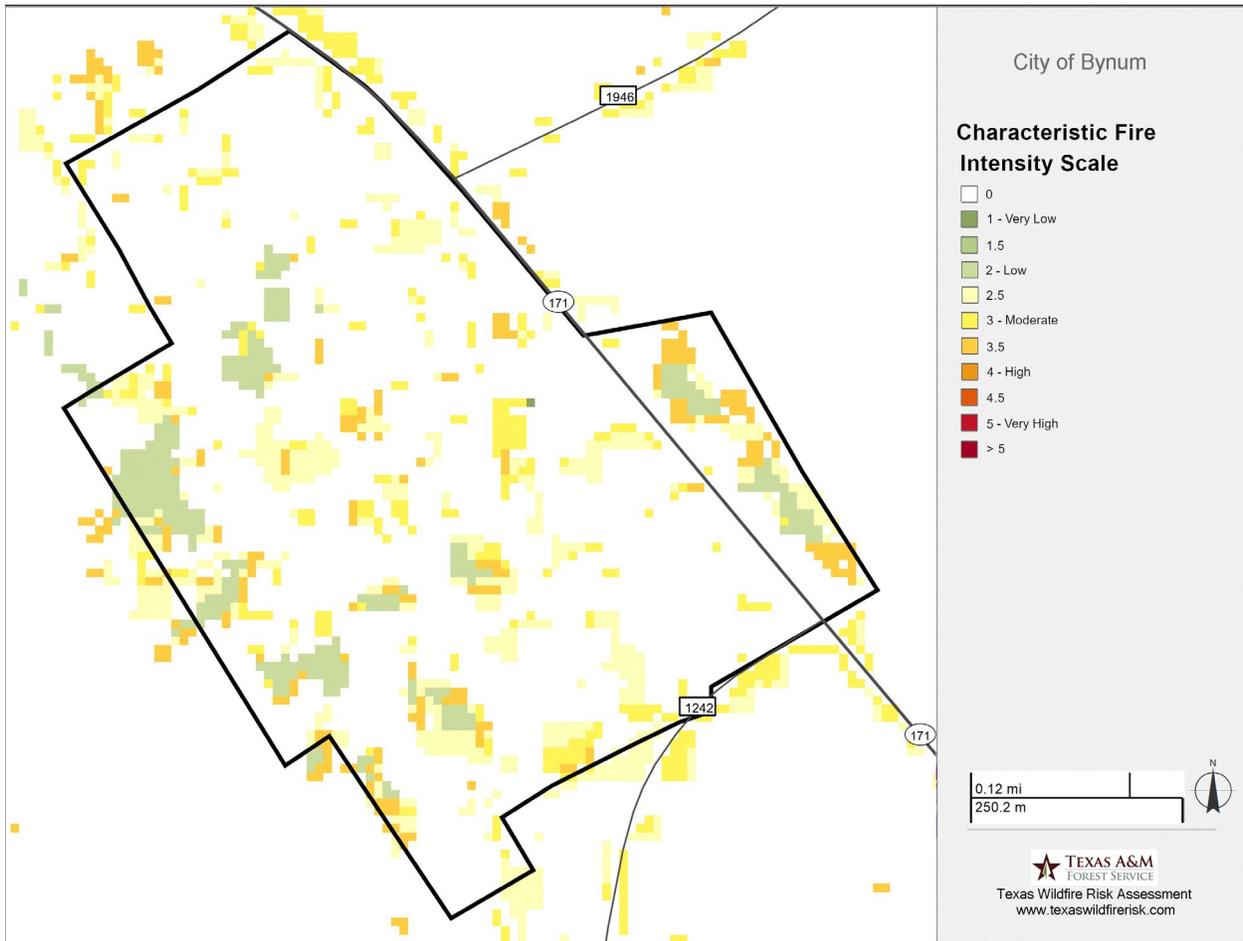
SECTION 13: WILDFIRE

Figure 13-19. Fire Intensity Scale Map – City of Blum



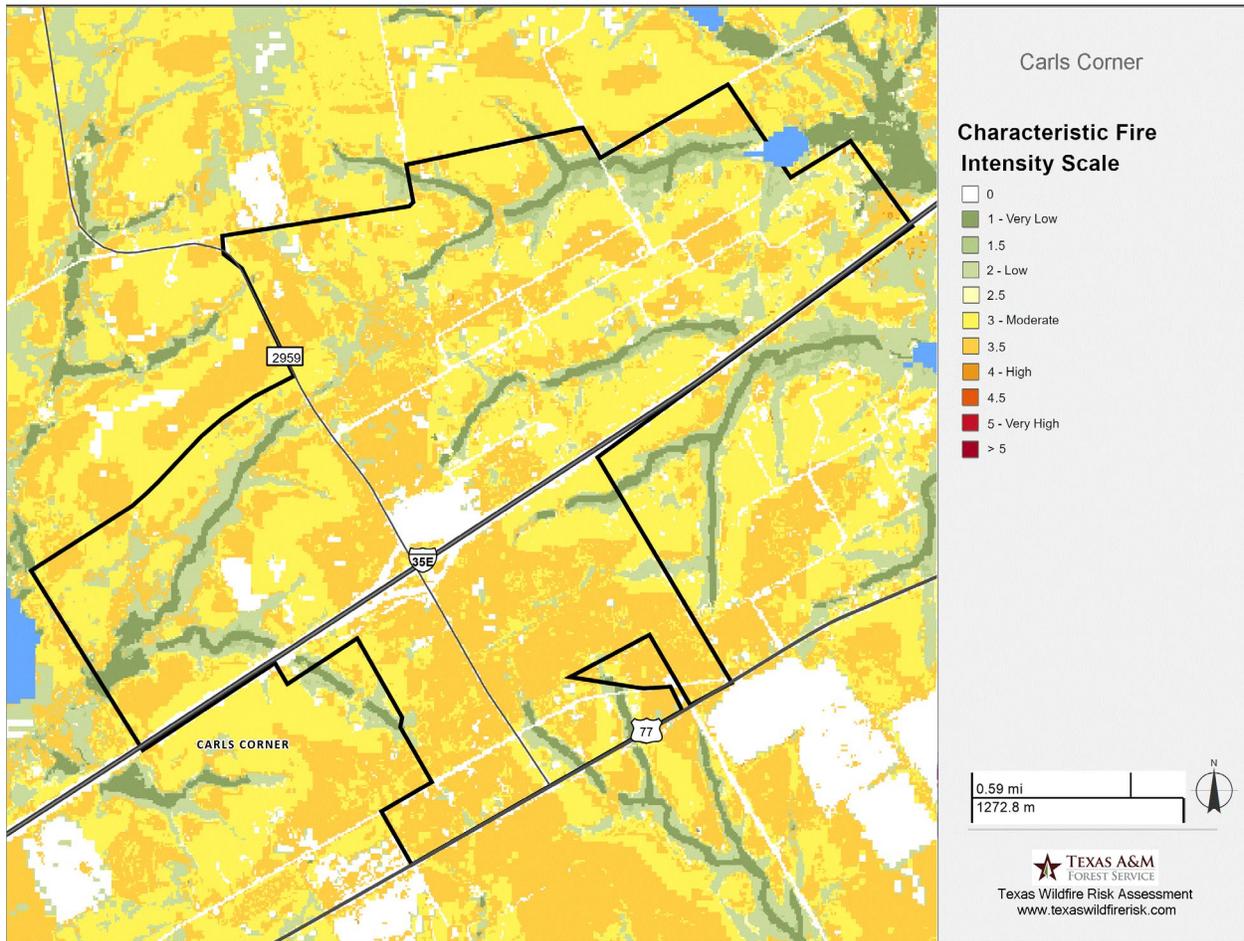
SECTION 13: WILDFIRE

Figure 13-20. Fire Intensity Scale Map – City of Bynum



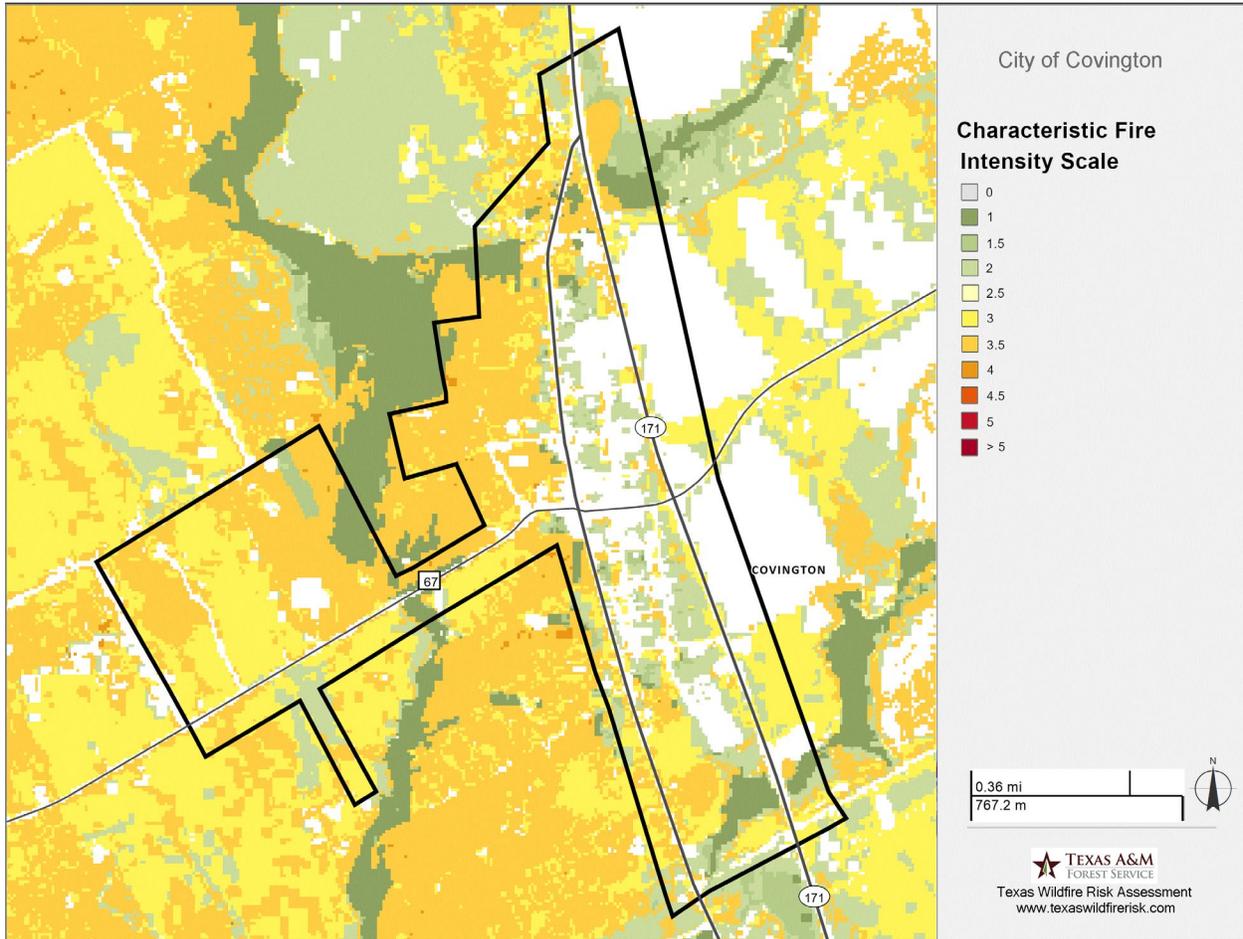
SECTION 13: WILDFIRE

Figure 13-21. Fire Intensity Scale Map – City of Carl’s Corner



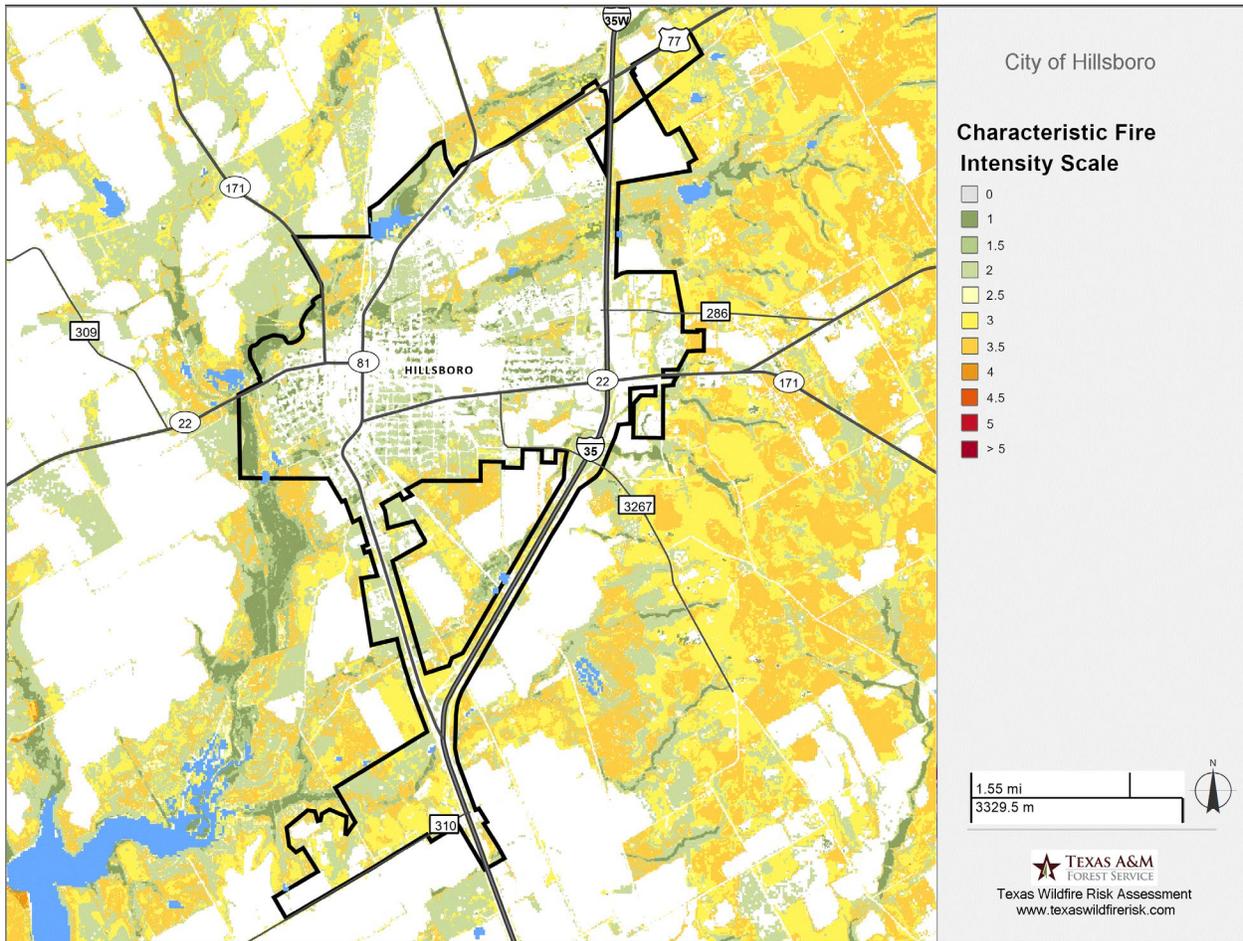
SECTION 13: WILDFIRE

Figure 13-22. Fire Intensity Scale Map – City of Covington



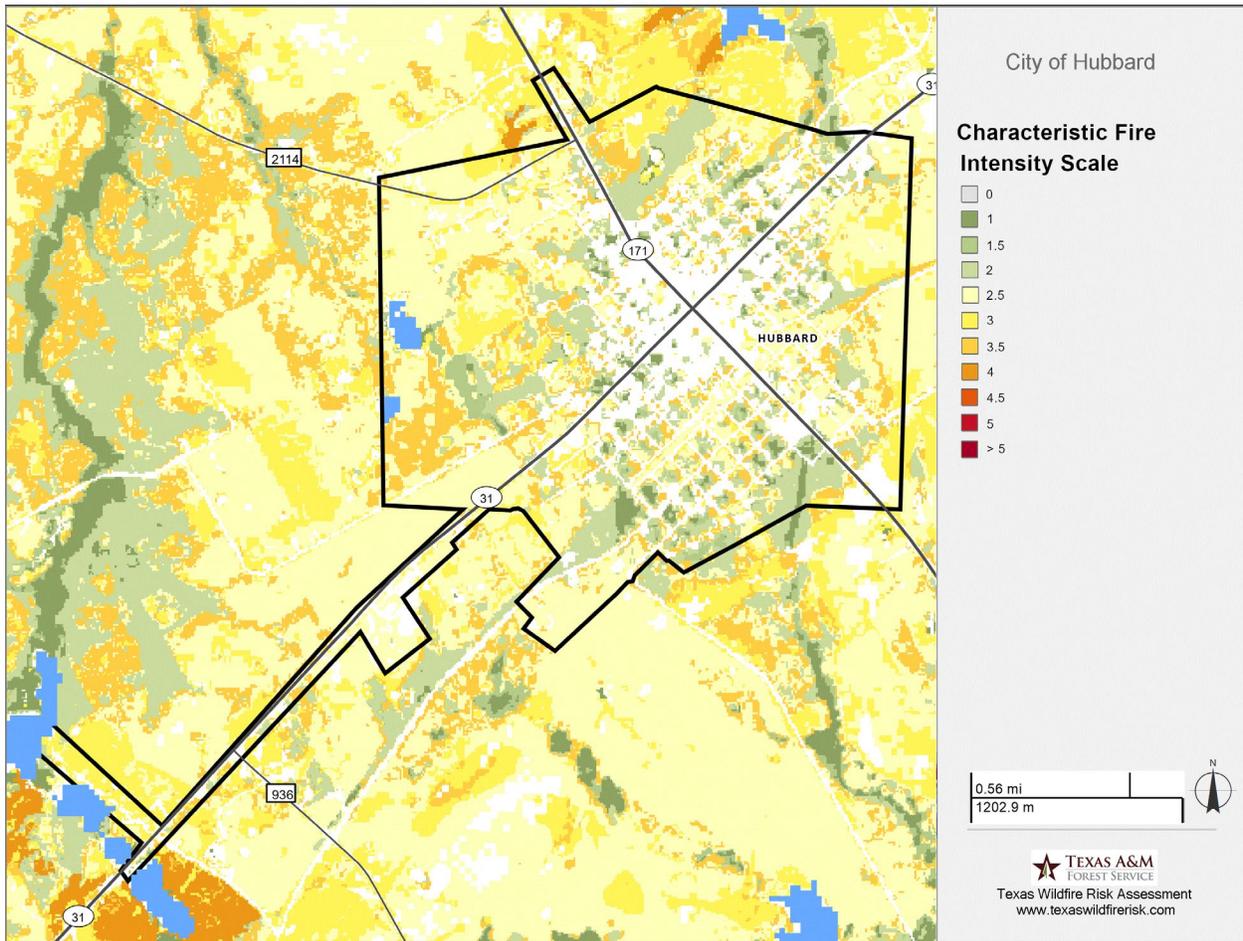
SECTION 13: WILDFIRE

Figure 13-23. Fire Intensity Scale Map – City of Hillsboro



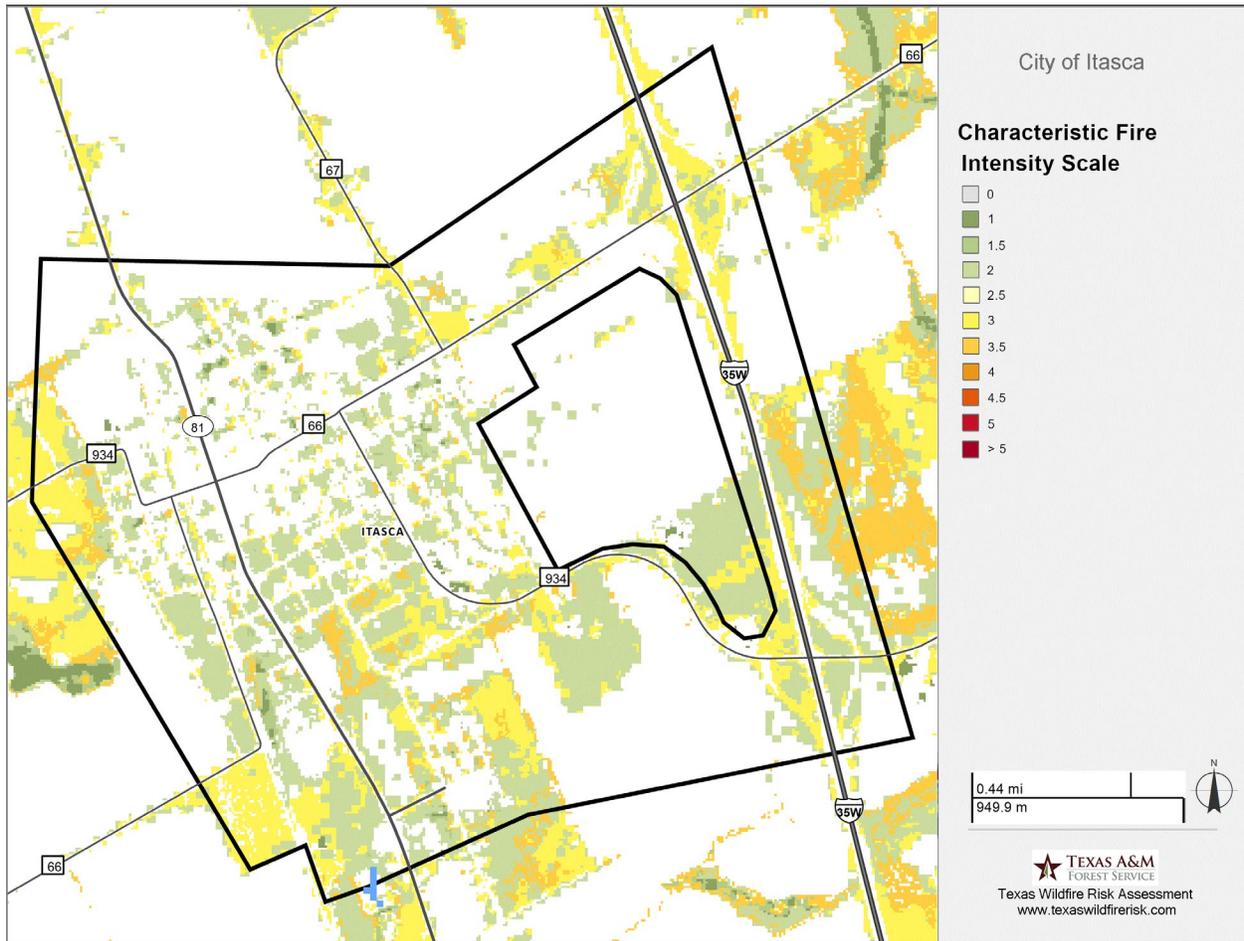
SECTION 13: WILDFIRE

Figure 13-24. Fire Intensity Scale Map – City of Hubbard



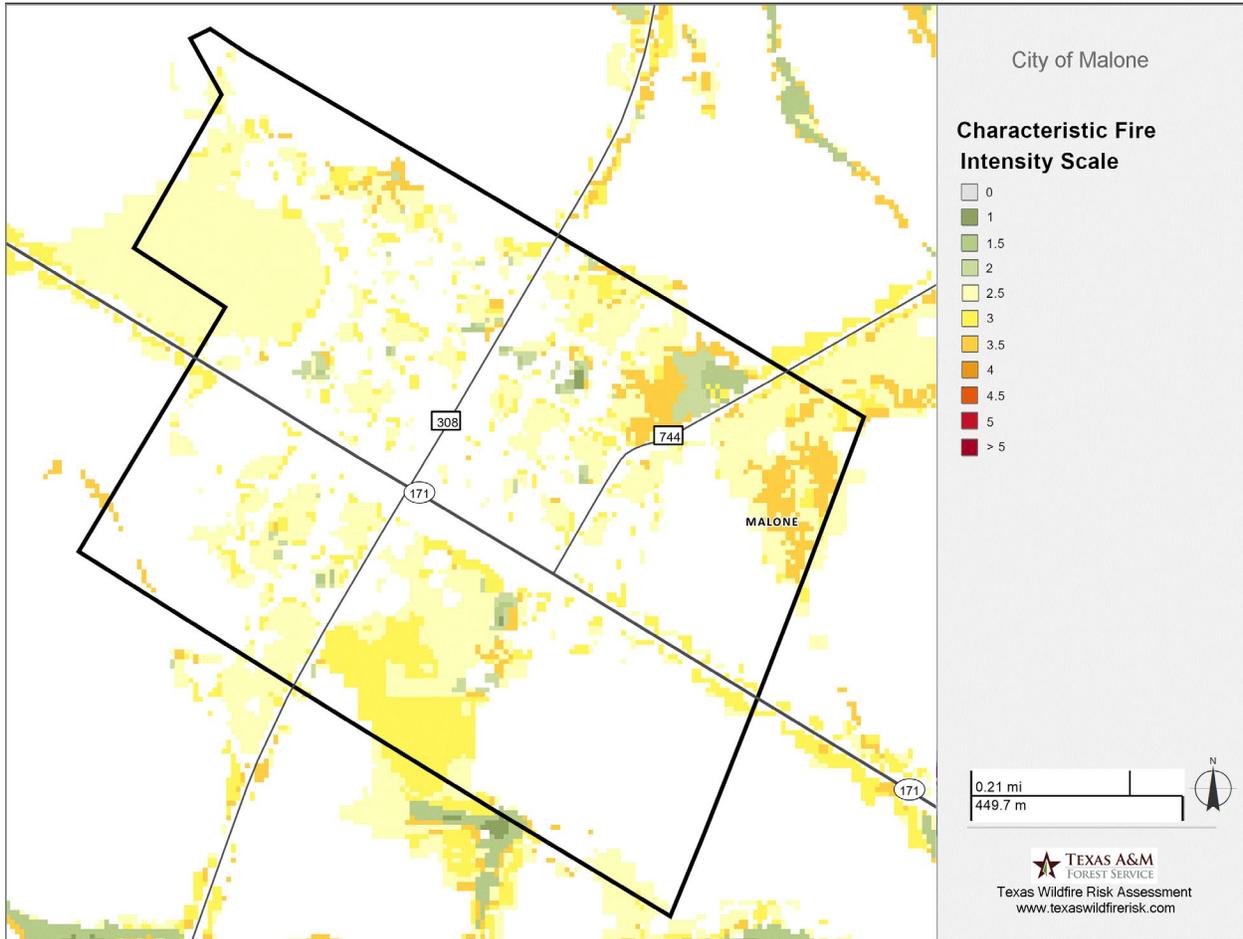
SECTION 13: WILDFIRE

Figure 13-25. Fire Intensity Scale Map – City of Itasca



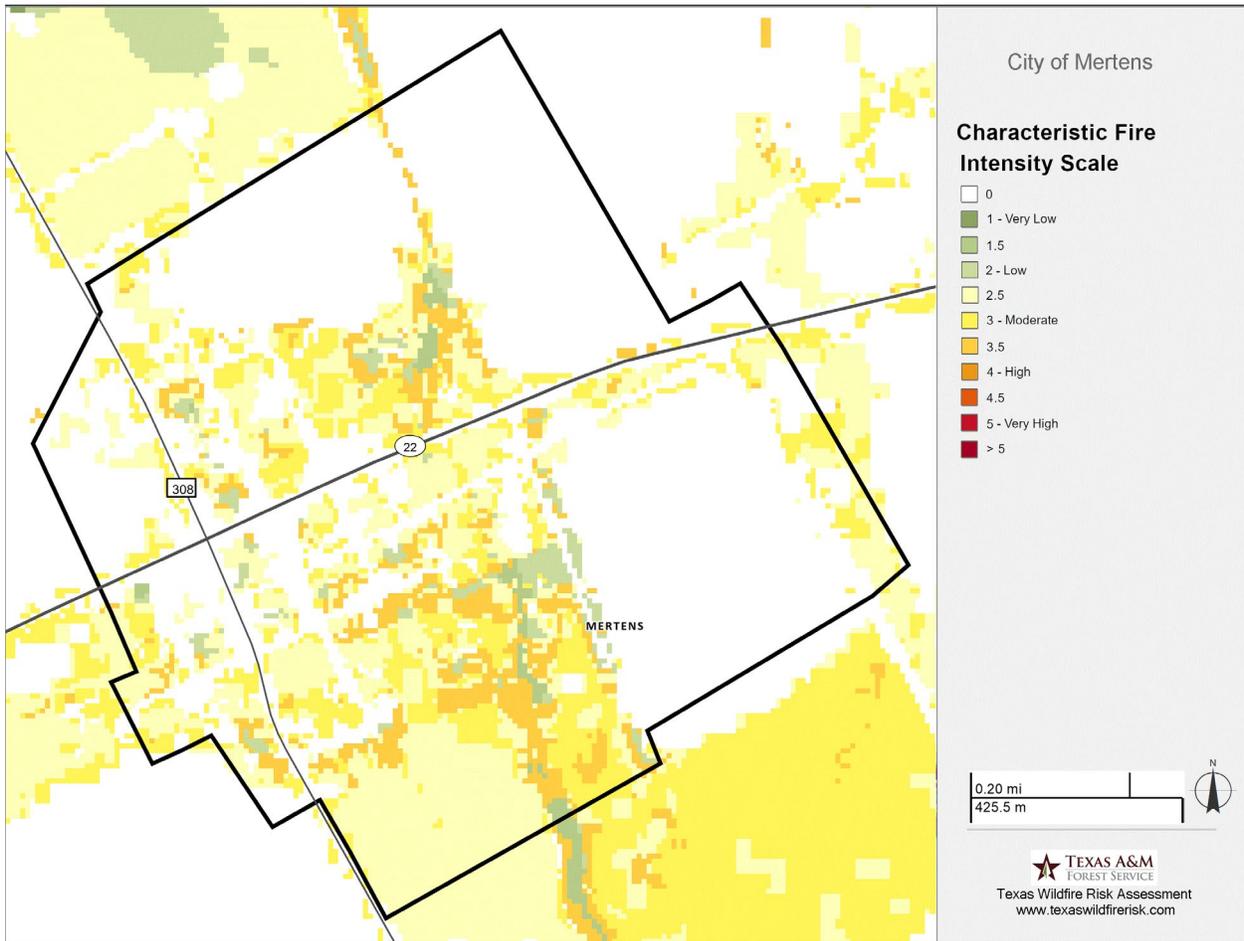
SECTION 13: WILDFIRE

Figure 13-26. Fire Intensity Scale Map – City of Malone



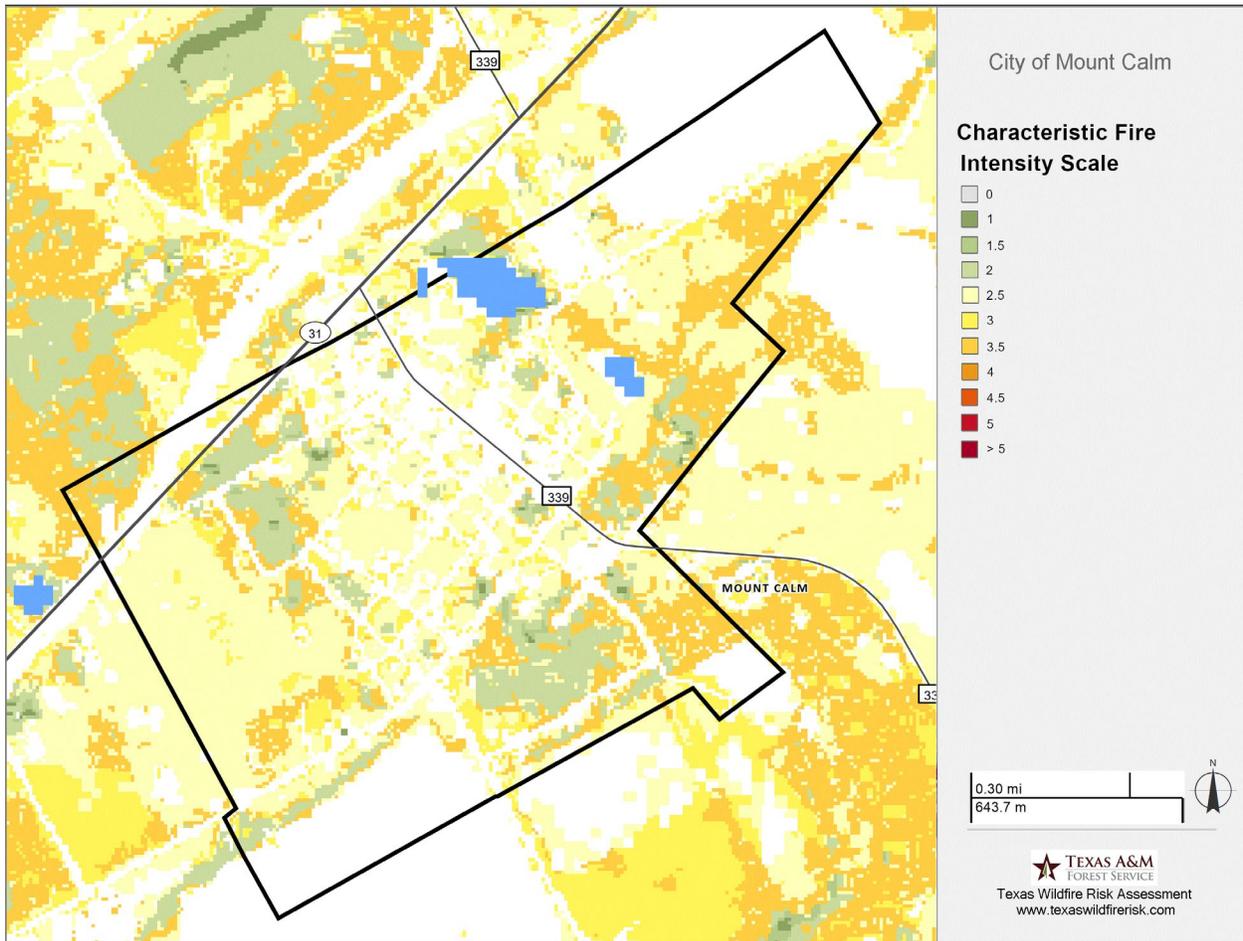
SECTION 13: WILDFIRE

Figure 13-27. Fire Intensity Scale Map – City of Mertens



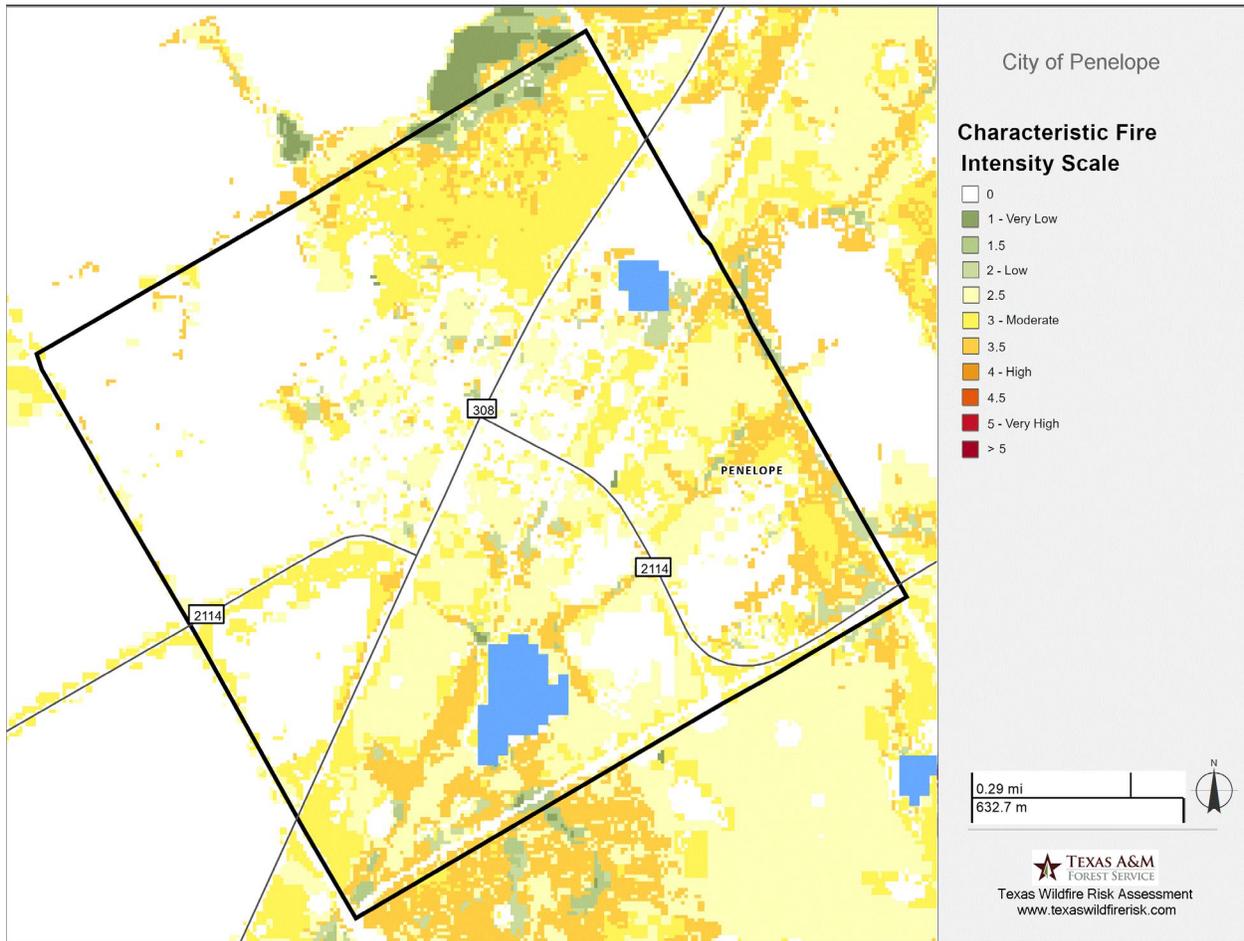
SECTION 13: WILDFIRE

Figure 13-28. Fire Intensity Scale Map – City of Mount Calm



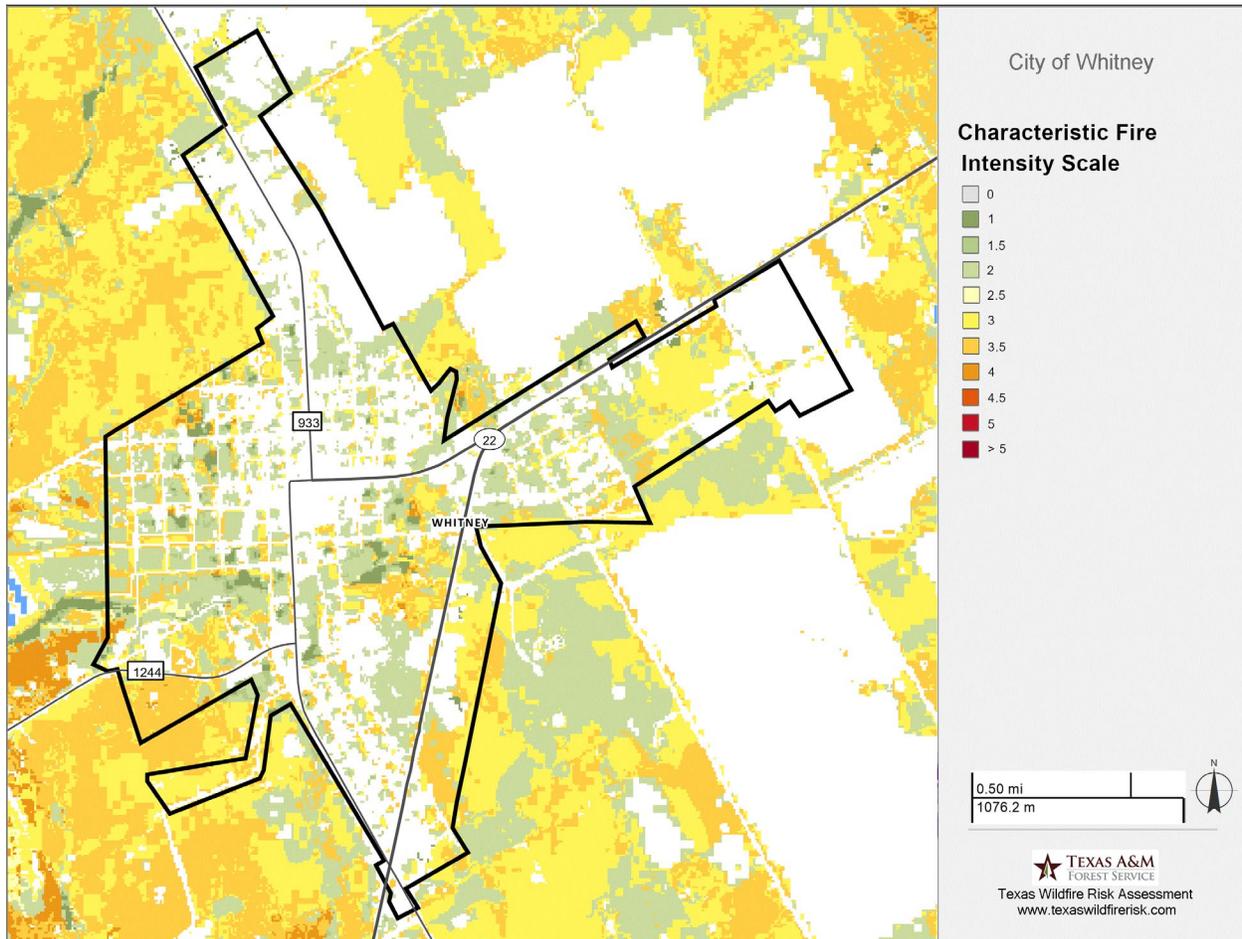
SECTION 13: WILDFIRE

Figure 13-29. Fire Intensity Scale Map – City of Penelope



SECTION 13: WILDFIRE

Figure 13-30. Fire Intensity Scale Map – City of Whitney



HISTORICAL OCCURRENCES

The National Centers for Environmental Information (NCEI) Storm Events Database includes three records of wildfire events from 1996 through 2025. The events took place in 2011, 2016, and 2023 and were related to the Dam Fire and Blum Fire. There are no reported injuries or fatalities for the events reported in the NCEI. The Dam Fire resulted in an estimated total of \$1,374,300 (2025 dollars) in property damages, while the Blum Fire resulted in \$600 (2025 dollars) in property damages. The 2016 fire resulted in \$40,500 (2025 dollars) of crop damages. Wildfire events are historically underreported in the NCEI database. This database is utilized to supplement the comprehensive reporting found in the Texas A&M Forest Service (TFS) Wildfire Risk Assessment Portal (TxWRAP).

The TFS reported 4,434 wildfire events for the Hill County planning area between 2005 and 2024. The TFS started collecting wildfire reported by volunteer fire departments in 2005. Due to a lack of recorded data for wildfire events prior to 2005 and after 2024, frequency calculations are based on a 20-year reporting period, using only data from recorded years. Tables 13-2 through 13-4 identify the number of wildfires and total acreage burned each year within the county boundaries.

SECTION 13: WILDFIRE

Table 13-2. Historical Wildfire Events Summary, 2005 - 2024⁴

JURISDICTION	NUMBER OF EVENTS	ACRES BURNED
Hill County	3,710	42,985
City of Abbott	30	93
City of Aquilla	33	429
City of Blum	43	642
City of Bynum	21	340
City of Carl's Corner	33	147
City of Covington	21	25
City of Hillsboro	137	883
City of Hubbard	100	414
City of Itasca	61	339
City of Malone	51	197
City of Mertens	14	25
City of Mount Calm	81	449
City of Penelope	19	146
City of Whitney	80	1,137

⁴ Source: Texas A&M Forest Service

SECTION 13: WILDFIRE

Table 13-3. Historical Wildfire Events by Year

JURISDICTION	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Hill County	5	16	8	191	112	135	325	285	234	218	261	277	373	411	165	159	127	262	98	48	3,710
City of Abbott	0	0	0	0	0	1	6	2	1	2	3	2	4	5	0	1	0	2	1	0	30
City of Aquilla	0	0	0	3	0	0	7	2	6	5	0	0	1	2	0	2	1	1	2	1	33
City of Blum	0	0	0	1	0	2	7	9	6	2	1	6	4	3	0	0	0	2	0	0	43
City of Bynum	0	0	0	0	0	1	4	2	1	1	0	2	2	3	2	2	0	0	0	1	21
City of Carl's Corner	0	0	0	2	0	1	3	5	2	1	0	2	2	5	3	3	3	1	0	0	33
City of Covington	0	0	0	0	0	2	4	2	4	1	1	1	5	1	0	0	0	0	0	0	21
City of Hillsboro	0	0	0	14	1	1	16	15	18	4	10	14	13	14	1	4	5	4	2	1	137
City of Hubbard	0	0	0	0	0	0	2	17	7	8	13	7	26	13	2	0	0	2	3	0	100
City of Itasca	0	0	0	0	0	2	5	9	5	7	14	4	8	6	1	0	0	0	0	0	61
City of Malone	0	0	0	0	0	0	8	12	0	14	4	2	6	3	0	2	0	0	0	0	51
City of Mertens	0	0	0	0	0	2	1	1	2	2	0	3	2	0	1	0	0	0	0	0	14
City of Mount Calm	0	0	0	0	0	9	2	4	6	5	8	7	17	18	4	0	0	1	0	0	81
City of Penelope	0	0	0	1	0	0	1	0	3	2	1	3	3	2	0	0	0	3	0	0	19
City of Whitney	0	0	0	1	1	5	6	3	5	7	10	7	12	10	1	1	2	4	5	0	80

Based on the list of historical wildfire events for the Hill County planning area (Table 13-2), 769 events have occurred since the 2020 plan.

SECTION 13: WILDFIRE

Table 13-4. Acreage of Suppressed Wildfire by Year

JURISDICTION	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Hill County	820	685	264	2,410	989	1,485	6,658	949	2,061	735	1,639	927	3,840	11,953	1,459	1,461	609	2,444	1,596	1	42,985
City of Abbott	0	0	0	0	0	25	13	10	0	2	6	3	16	11	0	5	2	0	0	0	93
City of Aquilla	0	0	0	4	0	0	99	12	142	6	0	0	2	35	0	36	1	85	7	0	429
City of Blum	0	0	0	30	0	40	414	56	104	2	2	6	17	4	0	0	0	3	0	0	642
City of Bynum	0	0	0	0	0	0	151	4	100	1	0	3	3	35	2	41	0	0	0	0	340
City of Carl's Corner	0	0	0	1	0	5	11	16	23	1	0	2	2	20	46	7	12	1	0	0	147
City of Covington	0	0	0	0	0	3	3	4	5	0	1	2	6	1	0	0	0	0	0	0	25
City of Hillsboro	0	0	0	6	3	1	110	34	27	26	105	44	64	380	1	27	45	3	2	5	883
City of Hubbard	0	0	0	0	0	0	2	40	21	19	157	8	65	91	1	0	0	6	4	0	414
City of Itasca	0	0	0	0	0	100	12	6	23	22	125	21	6	24	0	0	0	0	0	0	339
City of Malone	0	0	0	0	0	0	45	11	0	44	42	0	41	12	0	2	0	0	0	0	197
City of Mertens	0	0	0	0	0	2	5	1	1	10	0	3	2	0	1	0	0	0	0	0	25
City of Mount Calm	0	0	0	0	0	18	6	5	20	81	8	3	54	251	2	0	0	1	0	0	449
City of Penelope	0	0	0	80	0	0	3	0	46	2	3	2	0	4	0	0	0	6	0	0	146
City of Whitney	0	0	0	1	0	2	118	30	12	27	108	40	621	141	0	1	20	4	12	1	1,137

SECTION 13: WILDFIRE

SIGNIFICANT EVENTS

There have been five declared disasters related to wildfire in Hill County between 1996 and 2025 (Table 13-5). Additional details on certain wildfire events are described below.

Table 13-5. Disaster Declarations for Wildfire, 1996-2025

YEAR	DECLARATION TITLE	DECLARATION TYPE	DISASTER NO.
1993	Extreme Fire Hazards	EM	EM-3113
1999	Extreme Fire Hazards	EM	EM-3142
2000	Live Oak Loop Fire	EM	EM-2325
2006	Extreme Wildfire Threat	DR	DR-1624
2008	Wildfires	DR	DR-4029

September 8, 2011

Dry conditions and above-average temperatures in early September left the region vulnerable to grass fires. Between September 6th and 9th, several small grass fires caused damage, including a fatal fire on September 6th that claimed the life of an elderly man when it spread to his mobile home. On September 8th, the Dam Fire in Hill County ignited, burning 580 acres south of Lake Whitney and destroying 9 homes and 25 outbuildings. The fire, which started along SH 22 near the Hill / Bosque County line, had an unknown cause. One firefighter was treated for smoke inhalation.

February 8, 2016

Dry conditions in early February led to multiple wildfires, requiring responses from several agencies. Some wildfires caused structural damage. A grass fire near the City of Itasca, between Hill County Road 4228 and State Highway 81, burned farm and ranch land but caused no structural damage.

July 26, 2023

A 300-acre grass fire, known as the Blum Fire, burned southeast of the City of Blum in Hill County, approximately 3.5 miles south along FM 933. One outbuilding was destroyed. The fire was nearly fully contained by the end of the month, with minor cleanup efforts continuing into early August.

PROBABILITY OF FUTURE EVENTS

Wildfires can occur at any time of the year. As Hill County communities move into wildland, the potential area of occurrence of wildfire increases. With 4,434 events in a 20-year period, an event within the Hill County planning area, including all participating jurisdictions, is “Highly Likely”, meaning an event is probable within the next year.

CLIMATE CHANGE CONSIDERATIONS

Wildfires require the alignment of a number of factors, including temperature, humidity, and the lack of moisture in fuels, such as trees, shrubs, grasses, and forest debris. All these factors have strong direct or indirect ties to climate variability and climate change. Research shows that

SECTION 13: WILDFIRE

changes in climate create warmer, drier conditions, leading to longer and more active fire seasons. Increases in temperatures and the thirst of the atmosphere due to human-caused climate change have increased aridity of forest fuels during the fire season.⁵

Vapor pressure deficit, an indicator of the ability of moisture to evaporate, is projected to increase as temperatures rise and carbon dioxide fertilization reduces transpiration, leading to both lower humidity and increased surface dryness. Overall, increased dryness should extend the wildfire season in places where the fire season is presently constrained by low levels of aridity, such as eastern Texas.⁶

Additionally, it is projected that future changes to Hill County will include increased temperatures, which according to the U.S. Climate Explorer, the planning area may experience a 6°F increase in the average extreme heat temperatures. Historically, extreme temperatures averaged 101°F in Hill County, but between 2035 and 2064 the average will be 107°F, increasing the severity and frequency of extreme heat events, contributing to favorable wildfire conditions.

Extreme heat and extended periods of drought contribute to wildfire risk in the planning area. Extreme temperatures and periods of drought destroy vegetation in the area, contributing to available fuels that spread wildfires. Additional climate change impacts from drought and extreme heat are discussed in Sections 6 and 7 of this Plan. The projected rise of severity in drought and extreme heat events suggest a growing likelihood of conditions that favor wildfires. Additional information and studies are needed to determine the degree and rate of any increased wildfire risk.

VULNERABILITY AND IMPACT

Periods of drought, dry conditions, high temperatures, and low humidity are factors that contribute to the occurrence of a wildfire event. Less developed areas, such as along interstates or in more remote areas where fuels are more prevalent have an increased risk of being affected by wildfire.

The more heavily populated areas of the planning area are not highly likely to experience large, sweeping fires. Unoccupied buildings and open spaces that have not been maintained have the greatest vulnerability to wildfire. The overall level of concern for wildfires is located across the county where wildland and urban areas interface. Figures 13-31 through 13-45⁷ illustrate the areas that are the most vulnerable to wildfire throughout the Hill County planning area.

The Hill County Planning Team identified the following critical facilities (Table 13-6) as assets that are considered the most important to the planning area and are susceptible to a range of impacts caused by wildfire events. Critical facilities within the Direct Exposure Zone of the WUI are at the greatest risk from wildfire. For a comprehensive list of critical facilities by participating jurisdiction, please see Appendix C.

⁵ NOAA Wildfire Climate Connection, August 2022: wildfire-climate-connection.

⁶ Assessment of Historic and Future Trends of Extreme Weather in Texas, 1900-2036, Texas A&M University Office of the Texas State Climatologist, 2021 update.

⁷ TxWRAP portal at the following site: <https://texaswildfirerisk.com/>

SECTION 13: WILDFIRE

Table 13-6. Critical Facilities and Critical Services Vulnerable to Wildfire Events

CRITICAL FACILITIES	CRITICAL FACILITIES AT RISK	POTENTIAL IMPACTS
<p>Emergency Response Services (EOC, Fire, Police, EMS), Hospitals and Medical Centers</p>	<p>Hill County: 1 Hospital, 1 Sheriff's Station,</p> <p>City of Blum: 1 City Hall</p> <p>City of Bynum: 1 City Hall</p> <p>City of Covington: 1 Fire Station, 1 City Hall</p> <p>City of Hillsboro: 1 Police Station, 1 Sheriff's Station, 1 Hospital, 1 Dialysis Center</p> <p>City of Hubbard: 1 Police Station</p> <p>City of Mertens: 1 City Hall</p> <p>City of Whitney: 1 Urgent Care</p>	<ul style="list-style-type: none"> • Emergency services may be disrupted during a wildfire if facilities are impacted, roadways are inaccessible, or personnel are unable to report for duty. • First responders are at greater risk of injury when in close proximity to the hazard while extinguishing flames, protecting property, or evacuating residents in the area. • Critical city departments may not be able to function and provide necessary services depending on the location of the fire and the structures or personnel impacted. • Roadways in or near the WUI could be damaged or closed due to smoke and limited visibility, slowing or preventing access for emergency response vehicles. • Fire suppression costs can be substantial, exhausting the financial resources of the community. • First responders can experience heart disease, respiratory problems, and other long-term related illnesses from prolonged exposure to smoke, chemicals, and heat. • Emergency operations and services may be significantly impacted due to damaged facilities and/or loss of communications. • Power outages could disrupt communications, delaying emergency response times. • Structures can be damaged or destroyed in the path of the wildfire. • Power outages could disrupt critical care. • Backup power sources could be damaged or destroyed. • Critical staff may be injured or otherwise unable to report for duty, limiting response capabilities.
<p>Airport, Academic Institutions, Animal Shelter, Evacuation Centers & Shelters, Governmental Facilities, Residential/ Assisted Living Facilities</p>	<p>Hill County: 1 Evacuation Shelter</p> <p>City of Aquilla: 1 School Administration Building</p> <p>City of Bynum: 1 Church, 1 Primary / Secondary School</p>	<ul style="list-style-type: none"> • Facilities or infrastructure may be damaged, destroyed or otherwise inaccessible. • Essential supplies like medicines, water, food, and equipment deliveries may be significantly delayed. • Additional emergency responders and critical aid workers may not be able to reach the area for days. • Power outages and infrastructure damage may prevent larger airports from acting as temporary command centers for logistics, communications, and emergency operations.

SECTION 13: WILDFIRE

CRITICAL FACILITIES	CRITICAL FACILITIES AT RISK	POTENTIAL IMPACTS
	<p>City of Covington: 1 Evacuation Shelter, 1 Primary / Secondary School</p> <p>City of Hillsboro: 1 College, 3 Primary / Secondary Schools, 1 Airport, 1 Elderly Care Center</p> <p>City of Hubbard: 2 Primary / Secondary Schools</p> <p>City of Itasca: 1 Evacuation Shelter</p> <p>City of Malone: 2 Primary / Secondary Schools</p> <p>City of Mount Calm: 1 Primary / Secondary School</p> <p>City of Penelope: 1 Primary / Secondary School</p>	
<p>Commercial Supplier (food, fuel, etc.)</p>	<p>City of Penelope: 1 Farm</p>	<ul style="list-style-type: none"> • Facilities, infrastructure, or critical equipment including communications may be damaged, destroyed or otherwise inoperable. • Essential supplies like medicines, water, food, and equipment deliveries may be delayed. • Economic disruption due to power outages and fires negatively impact services as well as area businesses reliant on commercial suppliers.
<p>Utility Services and Infrastructure (electric, water, wastewater, communications)</p>	<p>Hill County: 2 Municipal Maintenance Offices, 1 Water Treatment Plant</p> <p>City of Abbott: 1 Lift Station, 1 Water Tank / Tower</p>	<ul style="list-style-type: none"> • Wastewater and drinking water facilities and infrastructure may be damaged or destroyed resulting in service disruption or outage for multiple days or weeks. • Disruptions and outages impact public welfare as safe drinking water is critical. • A break in essential and effective wastewater collection and treatment is a health concern, potentially spreading disease.

SECTION 13: WILDFIRE

CRITICAL FACILITIES	CRITICAL FACILITIES AT RISK	POTENTIAL IMPACTS
	City of Aquilla: 1 Water Distribution / Supply City of Blum: 1 Well City of Bynum: 1 Water Tank / Tower City of Carl's Corner: 1 Well City of Covington: 3 Lift Stations, 1 Wastewater Treatment Plant City of Hillsboro: 1 Wastewater Treatment Plant, 1 Water Tank / Tower City of Itasca: 4 Wells City of Malone: 1 Wastewater Treatment Plant, 1 Water Treatment Plant City of Penelope: 1 Wastewater Treatment Plant City of Whitney: 2 Wells	<ul style="list-style-type: none"> • Exposure to untreated wastewater is harmful to people and the environment. • Any service disruptions can negatively impact or delay emergency management operations.

Within the Hill County planning area, including all participating jurisdictions, a total of 4,433 fire events were reported from 2005 through 2024 by Texas A&M Forest Service. All events were suspected wildfires. Historic loss and annualized estimates of acres burned due to wildfires are presented in Table 13-7 below. The average frequency is approximately 222 events every year.

SECTION 13: WILDFIRE

Table 13-7. Average Annualized Acreage Losses⁸

JURISDICTION	TOTAL ACRES BURNED	AVERAGE ANNUAL ACRE LOSSES
Hill County	42,985	2,149
City of Abbott	93	5
City of Aquilla	429	21
City of Blum	642	32
City of Bynum	340	17
City of Carl's Corner	147	7
City of Covington	25	1
City of Hillsboro	883	44
City of Hubbard	414	21
City of Itasca	339	17
City of Malone	197	10
City of Mertens	25	1
City of Mount Calm	449	22
City of Penelope	146	7
City of Whitney	1,137	57
TOTALS	48,251	2,411

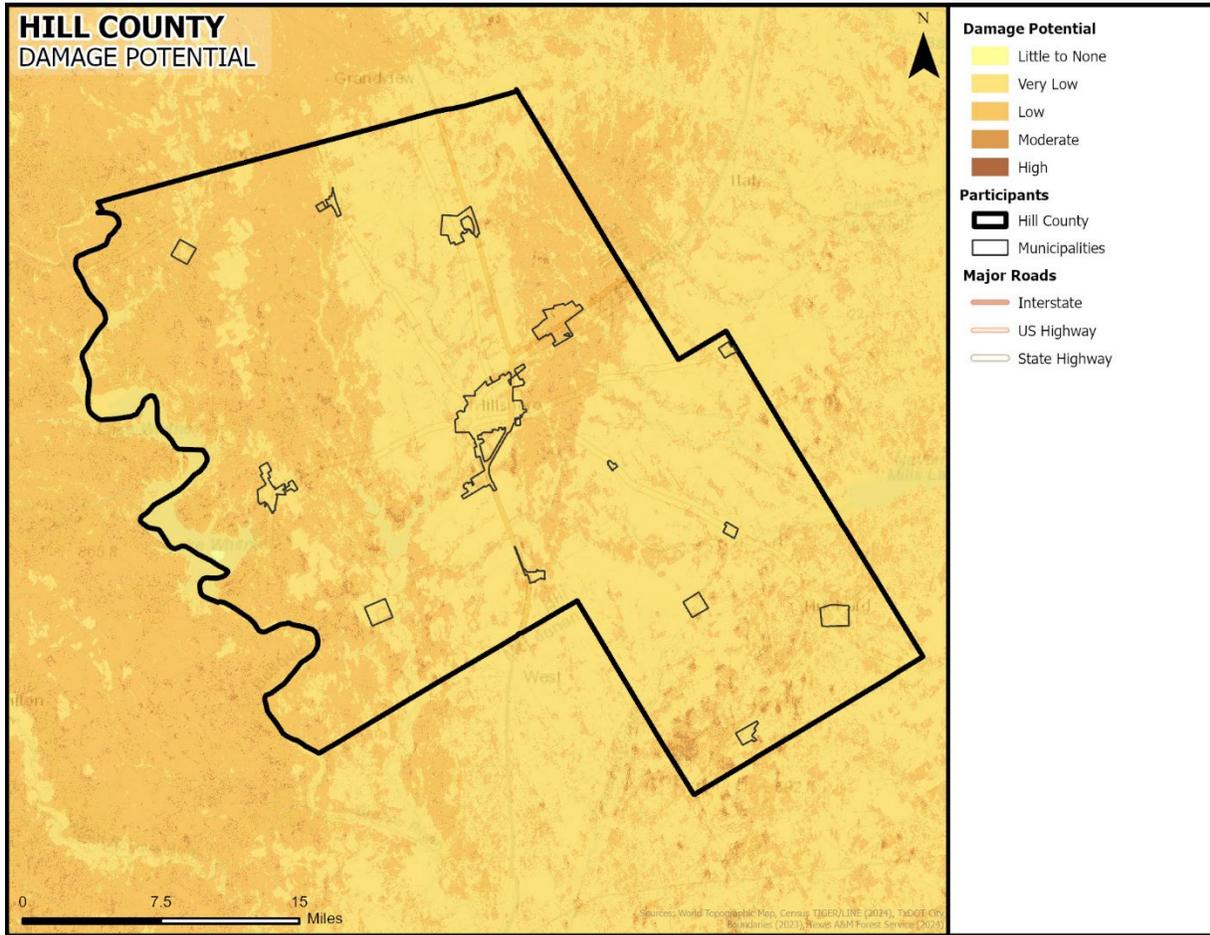
Damage Potential provides an index of potential damage to homes from wildfire. It considers factors like flame length and embers lofted from nearby fuel. Damage Potential is a relative index (from low to high), that provides a broad measure of the possible damage from wildfire, based generally on the landscape, rather than specific characteristics of a home or parcel. For planning uses and broad applications, the index is calculated for all areas regardless of whether a structure currently exists at that location. This index does not incorporate a measure of wildfire likelihood.⁹ Figures 13-31 through 13-45 show the level of potential damage of wildfires in the Hill County planning area.

⁸ Events divided by 20 years of data.

⁹ TxWRAP portal at the following site: <https://texaswildfirerisk.com/>

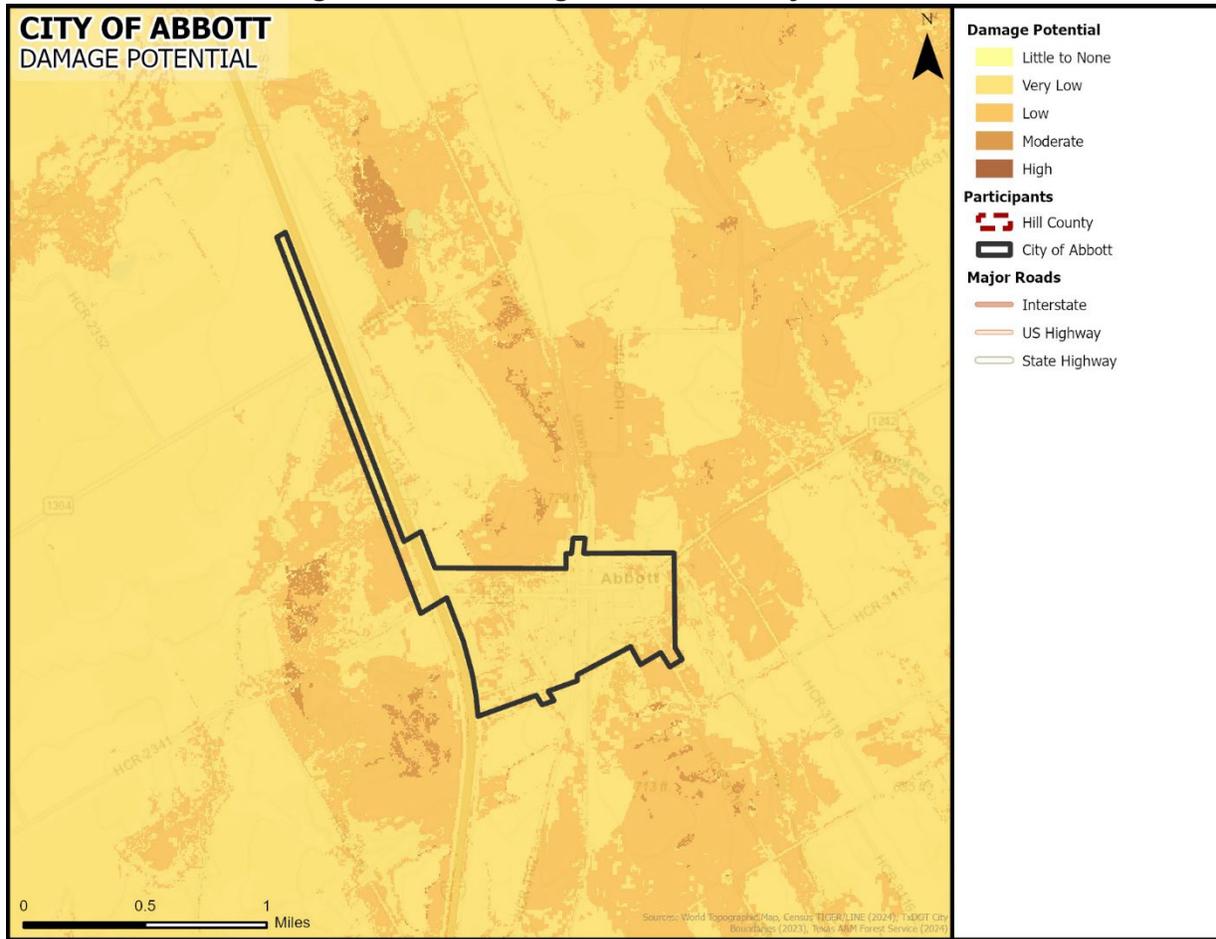
SECTION 13: WILDFIRE

Figure 13-31. Damage Potential – Hill County



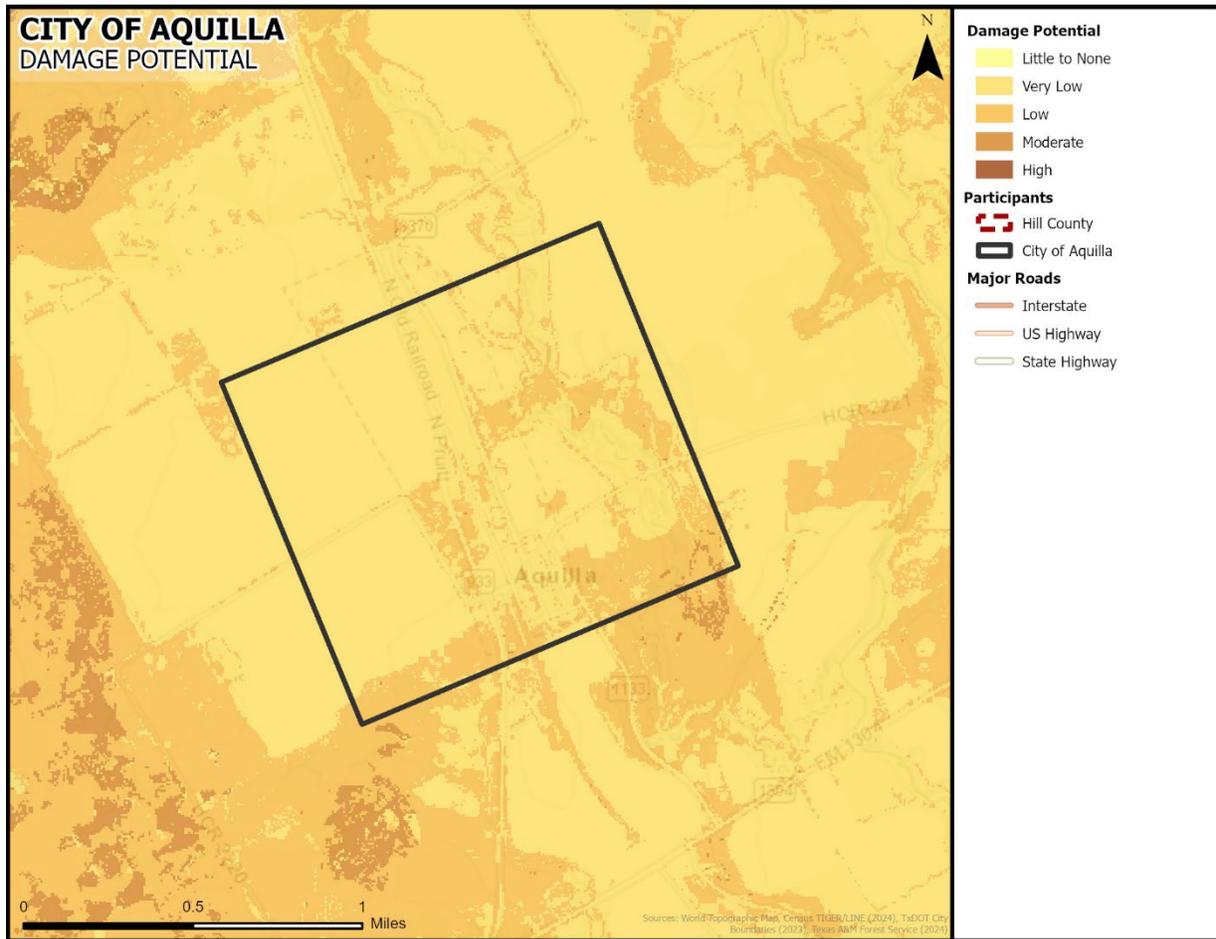
SECTION 13: WILDFIRE

Figure 13-32. Damage Potential – City of Abbott



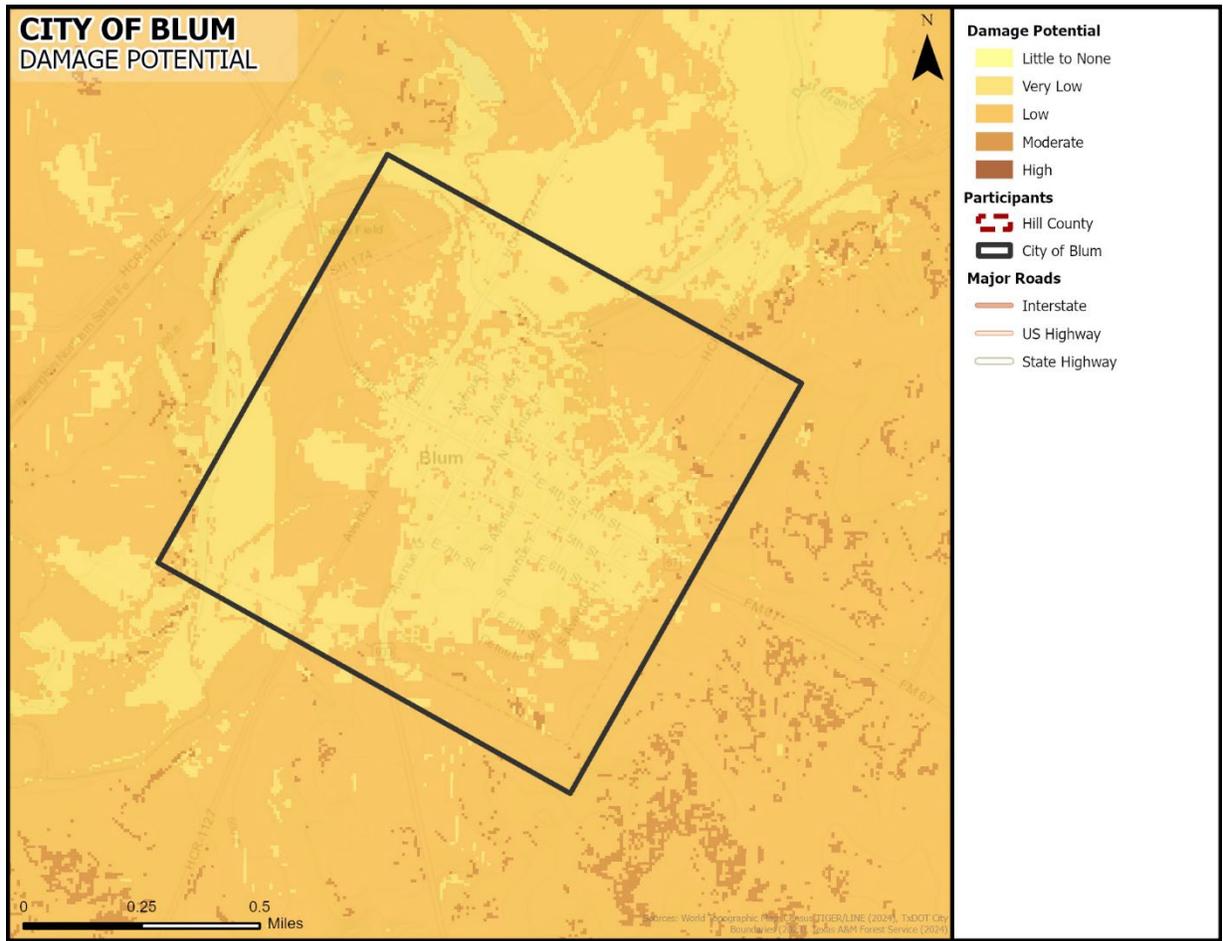
SECTION 13: WILDFIRE

Figure 13-33. Damage Potential – City of Aquilla



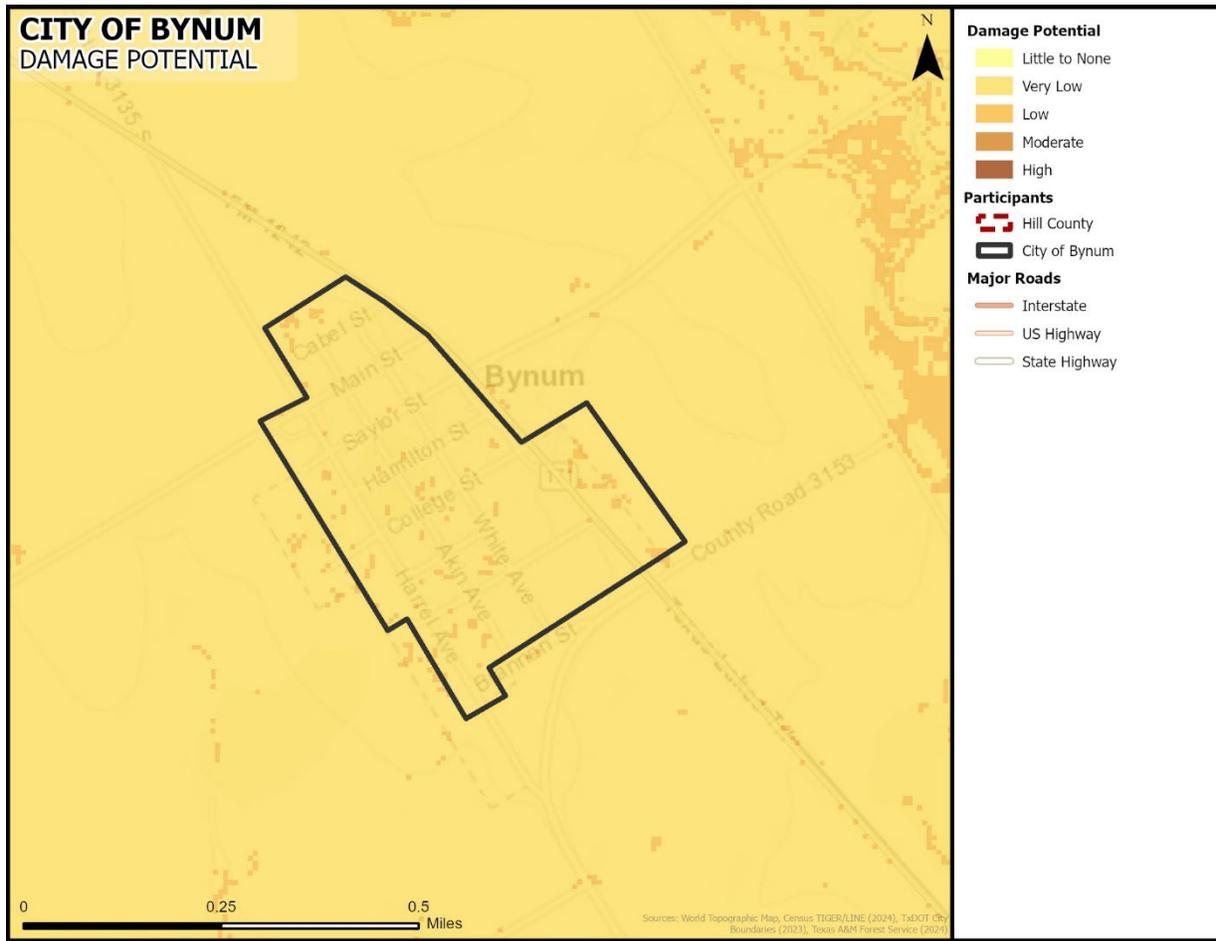
SECTION 13: WILDFIRE

Figure 13-34. Damage Potential – City of Blum



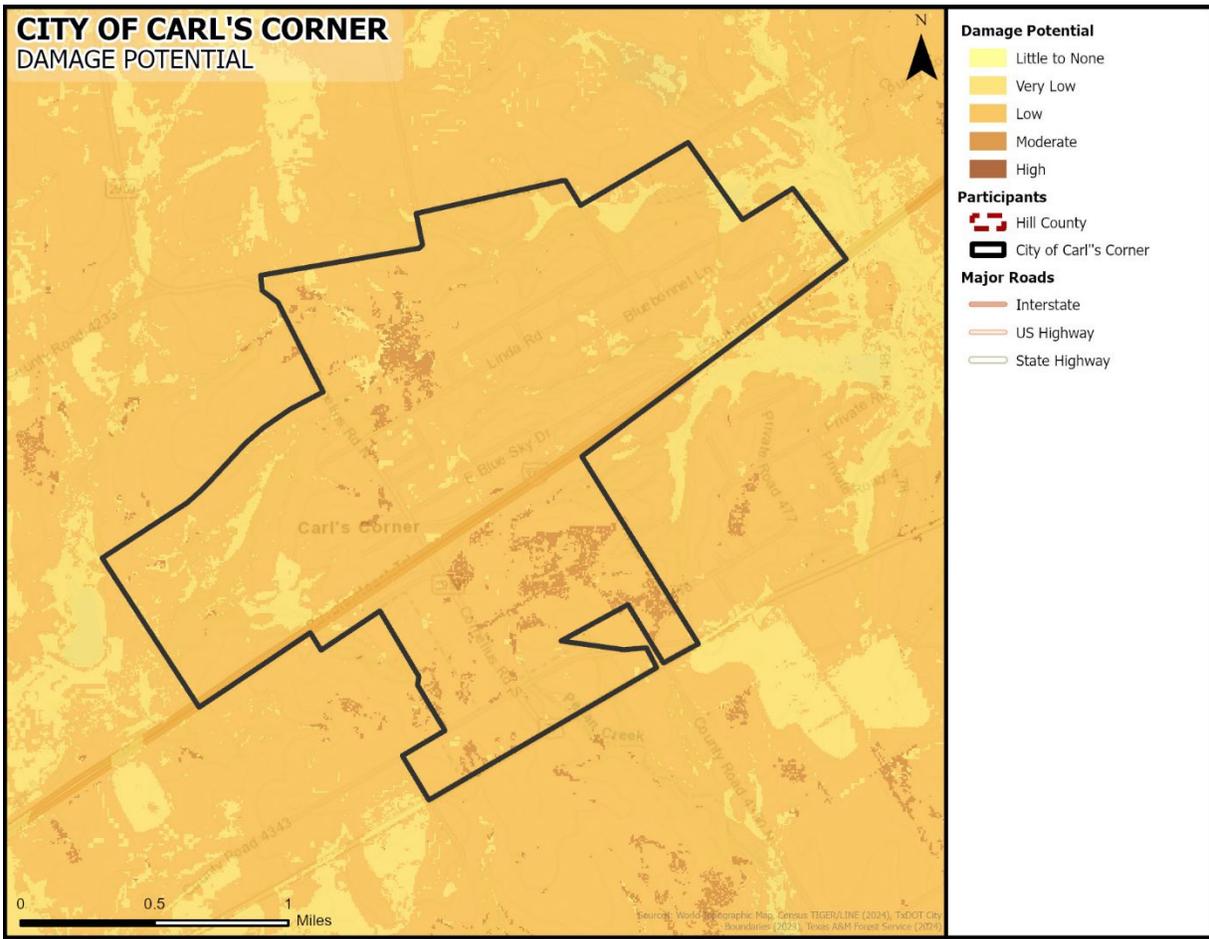
SECTION 13: WILDFIRE

Figure 13-35. Damage Potential – City of Bynum



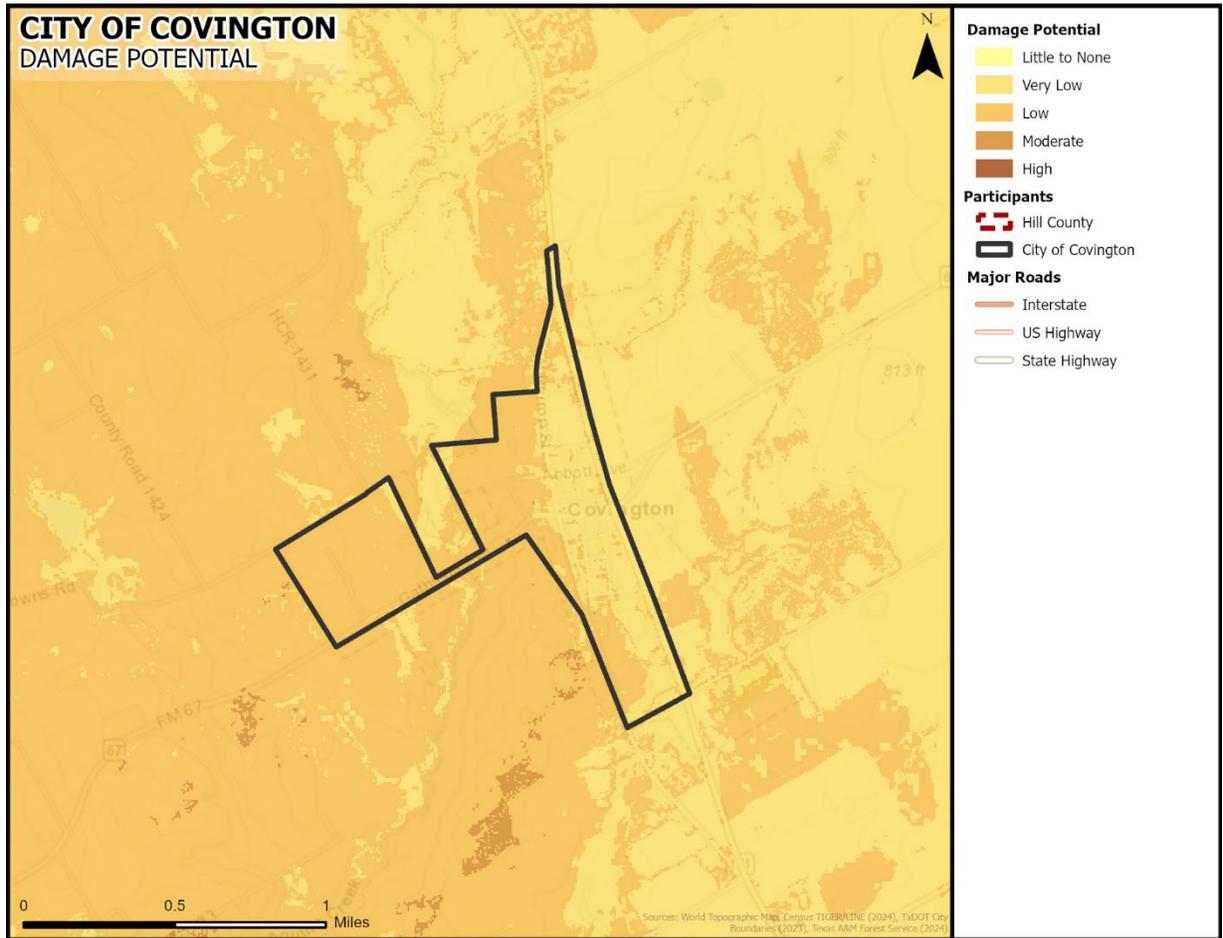
SECTION 13: WILDFIRE

Figure 13-36. Damage Potential – City of Carl's Corner



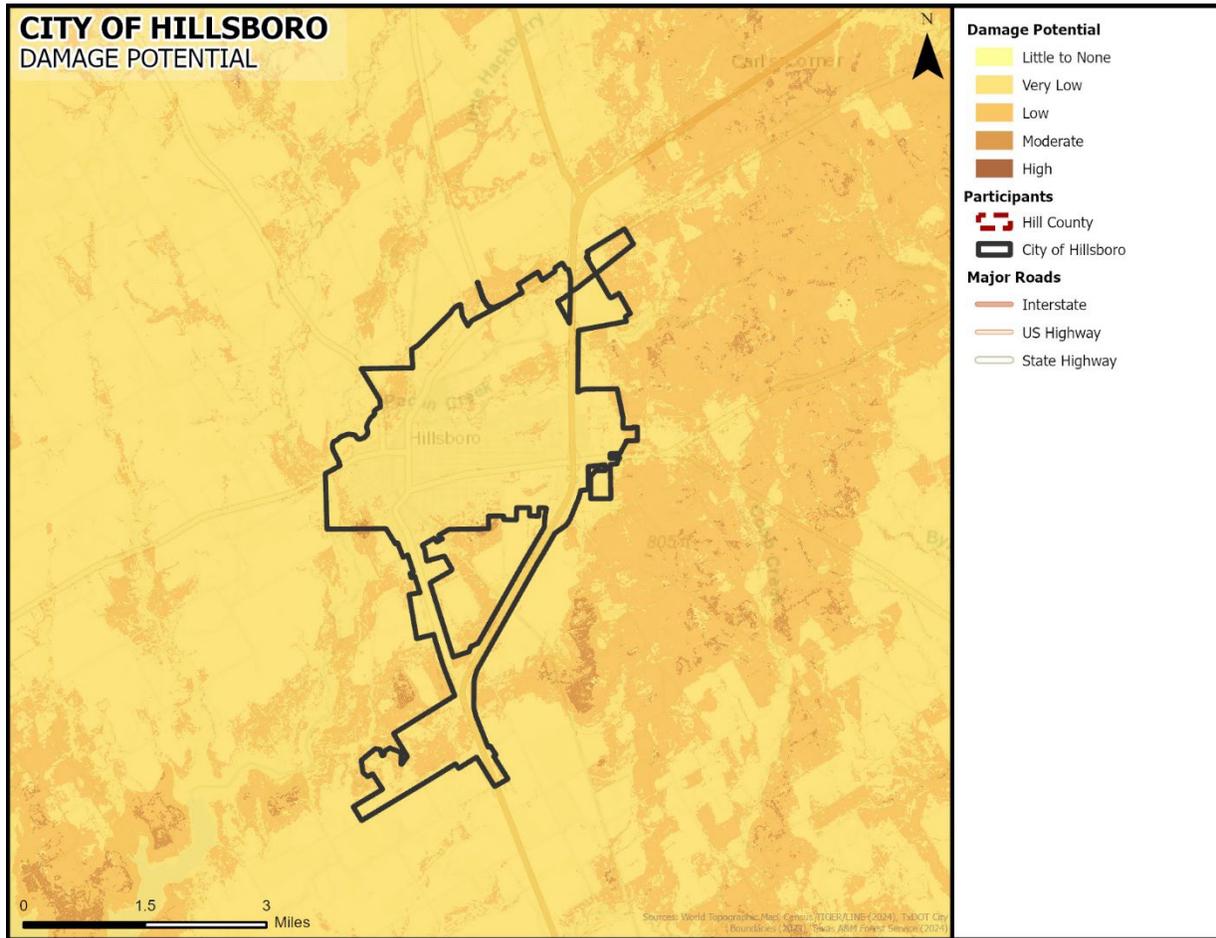
SECTION 13: WILDFIRE

Figure 13-37. Damage Potential – City of Covington



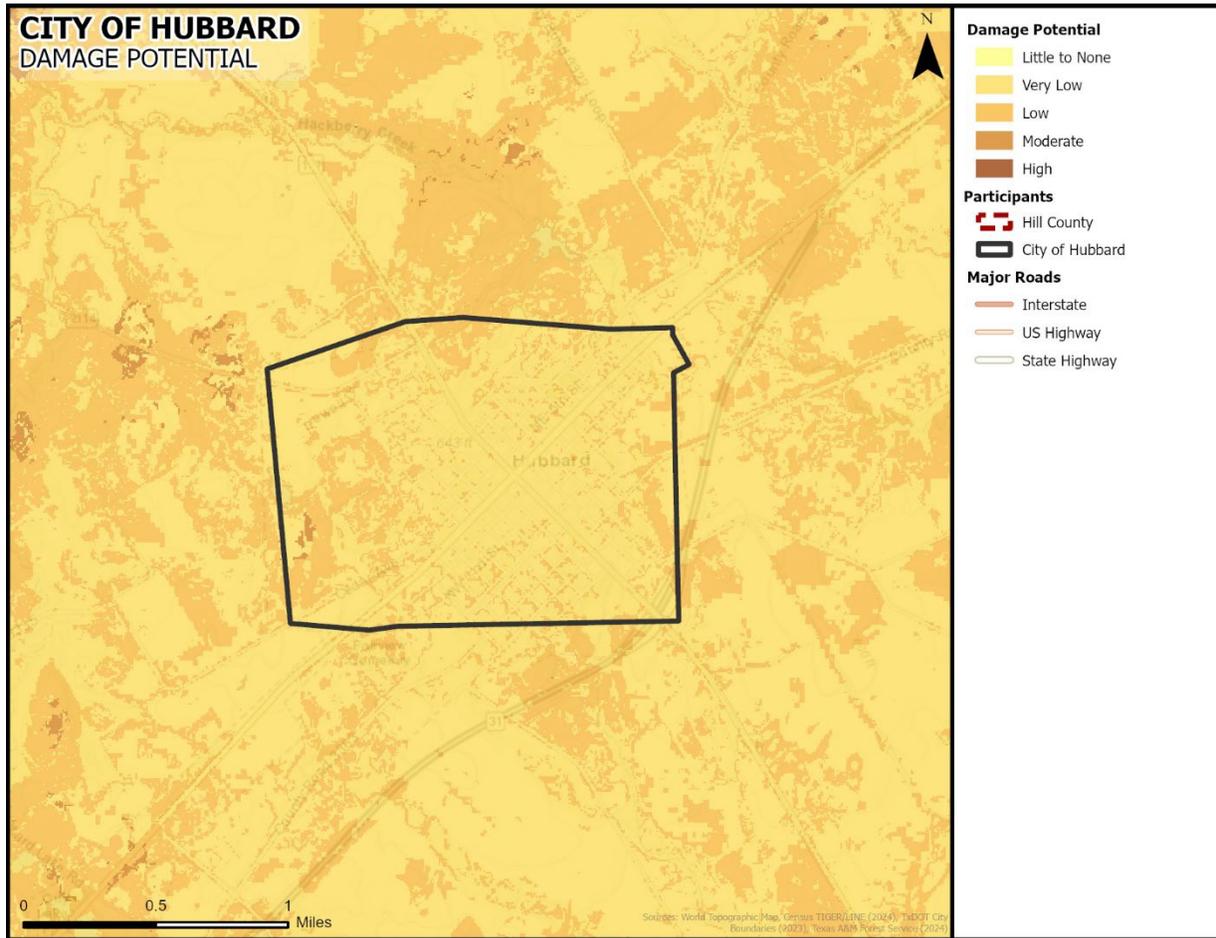
SECTION 13: WILDFIRE

Figure 13-38. Damage Potential – City of Hillsboro



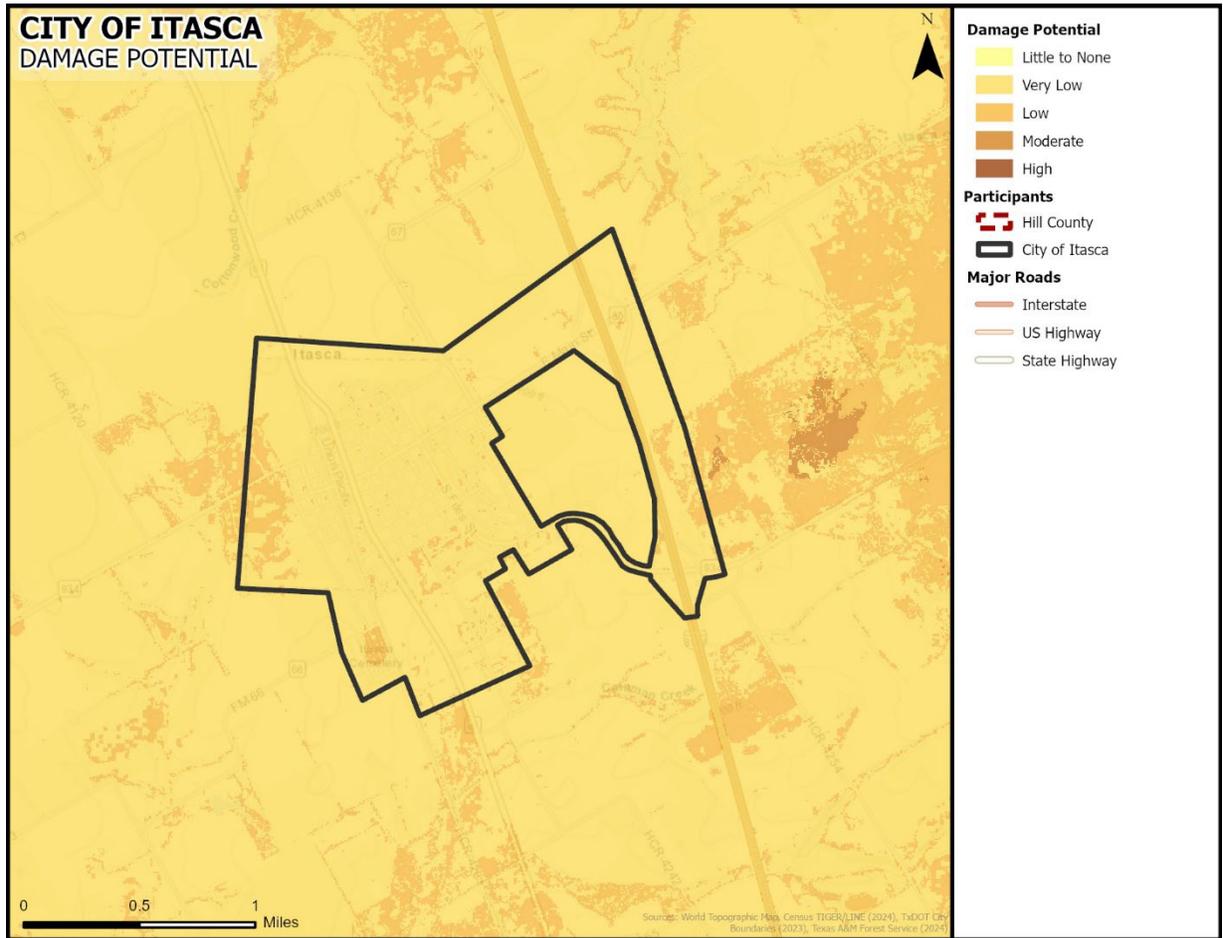
SECTION 13: WILDFIRE

Figure 13-39. Damage Potential – City of Hubbard



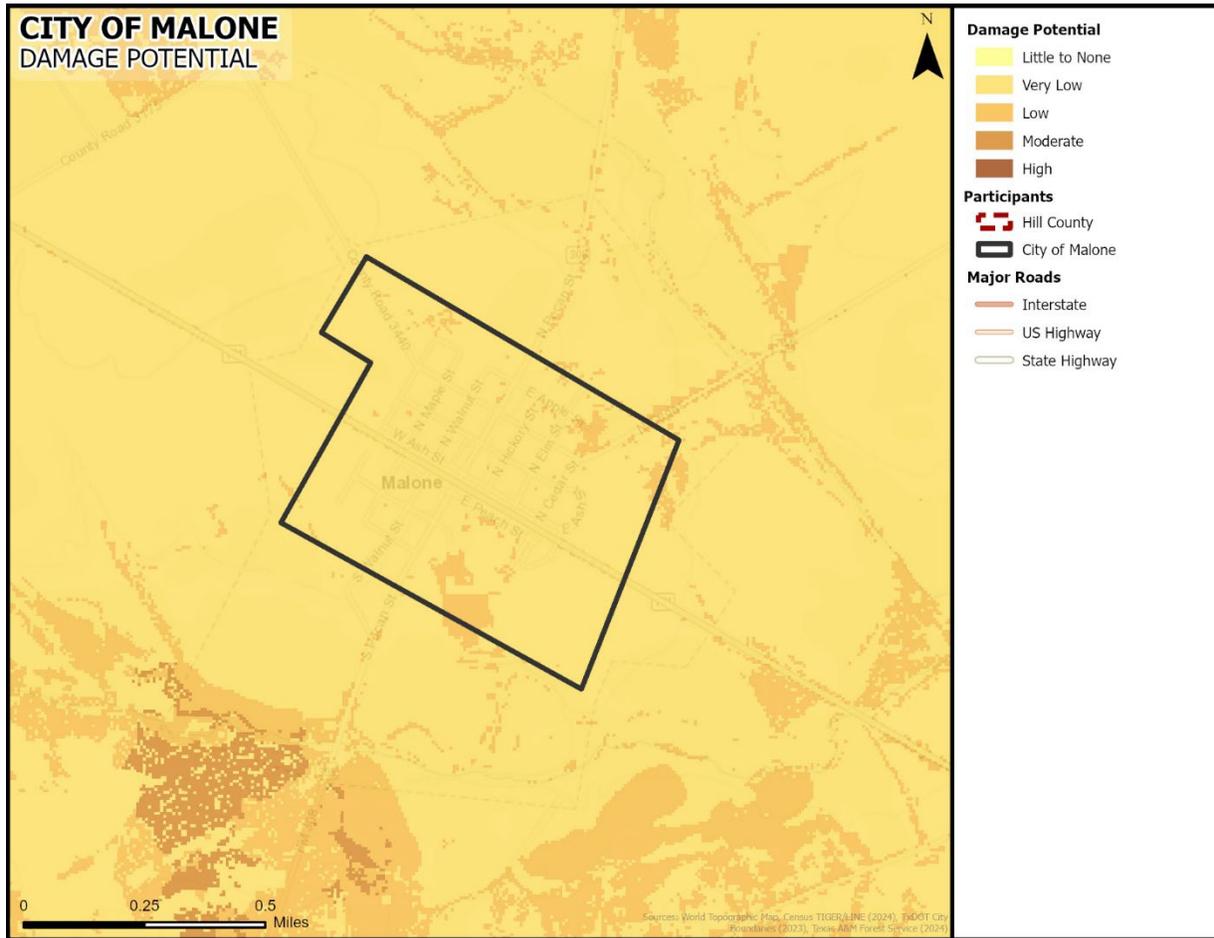
SECTION 13: WILDFIRE

Figure 13-40. Damage Potential – City of Itasca



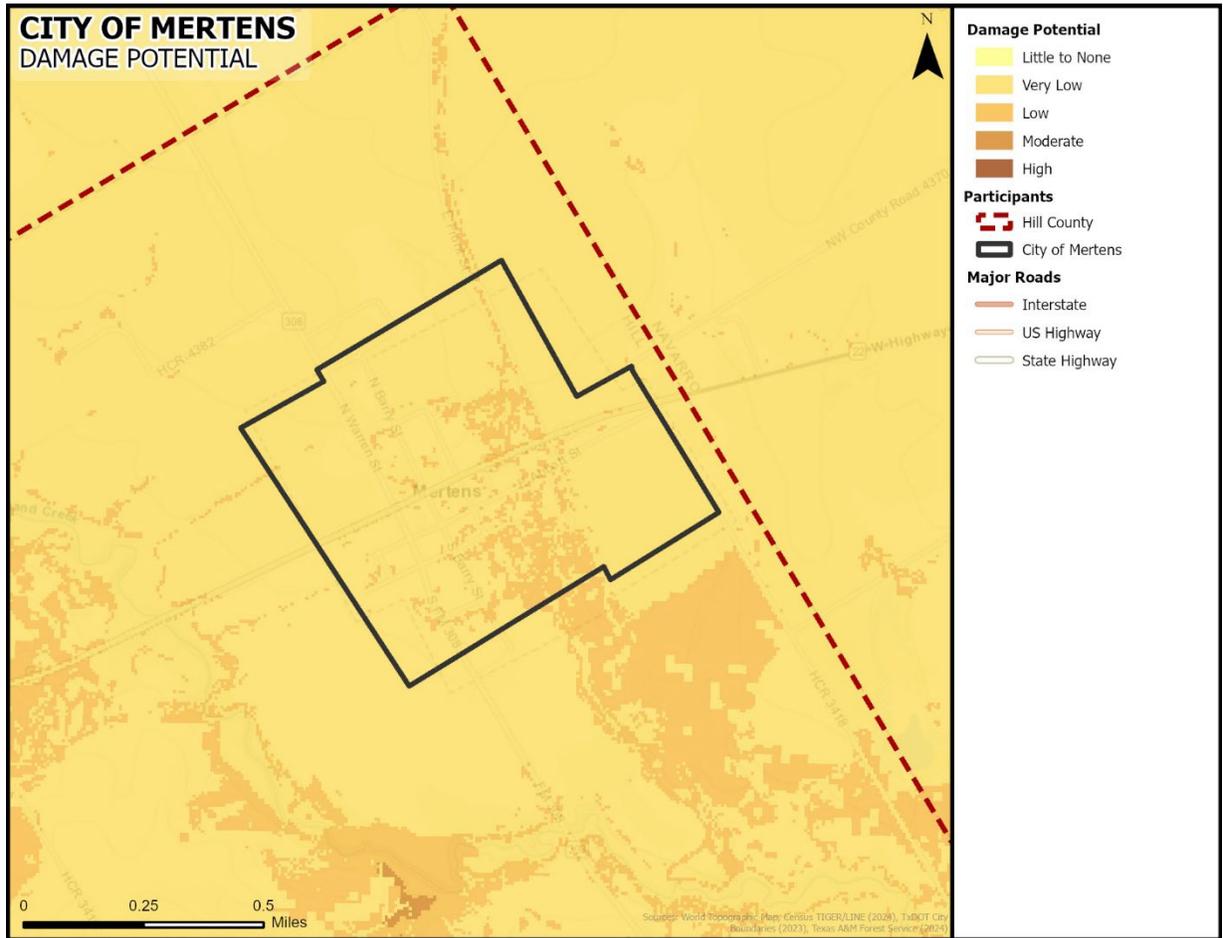
SECTION 13: WILDFIRE

Figure 13-41. Damage Potential – City of Malone



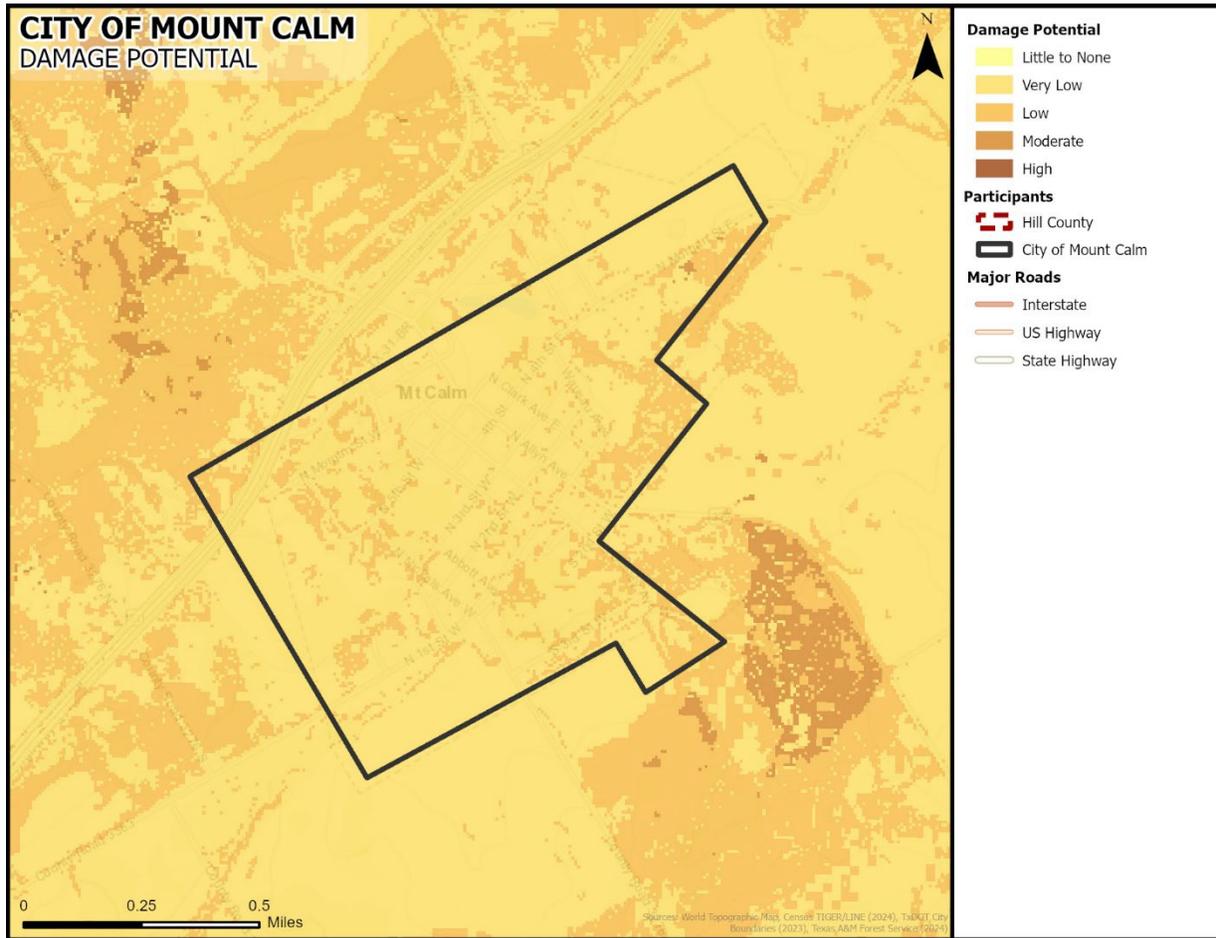
SECTION 13: WILDFIRE

Figure 13-42. Damage Potential – City of Mertens



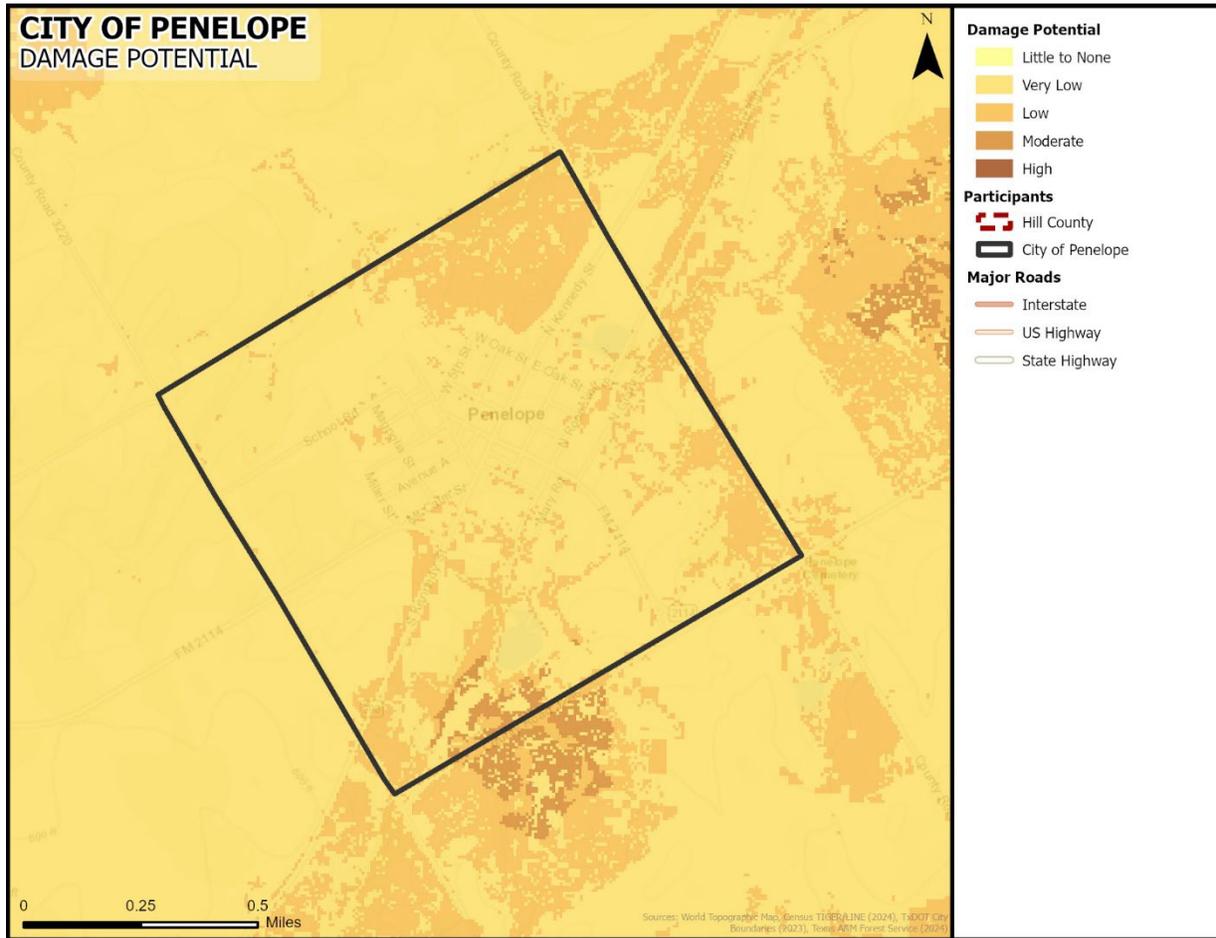
SECTION 13: WILDFIRE

Figure 13-43. Damage Potential – City of Mount Calm



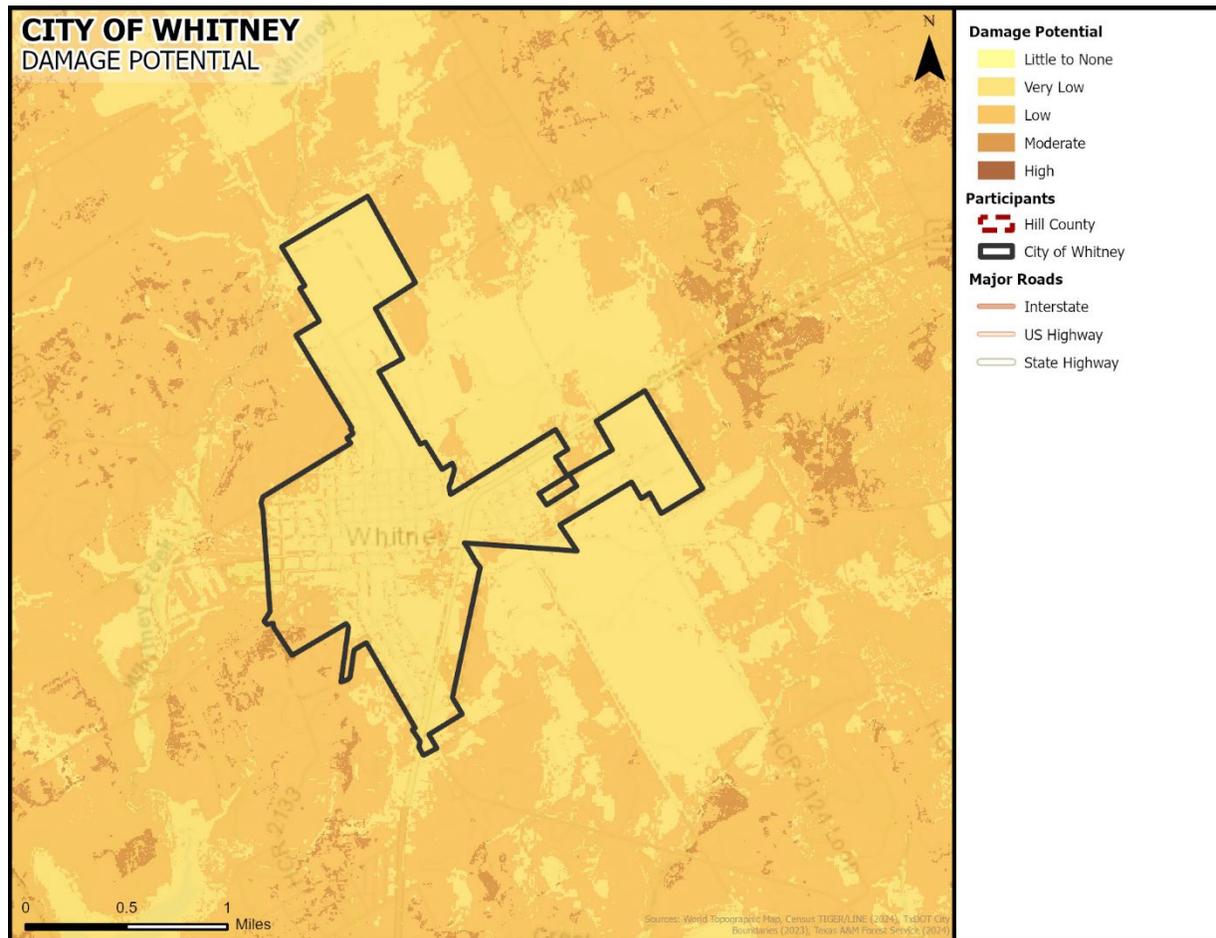
SECTION 13: WILDFIRE

Figure 13-44. Damage Potential – City of Penelope



SECTION 13: WILDFIRE

Figure 13-45. Damage Potential – City of Whitney

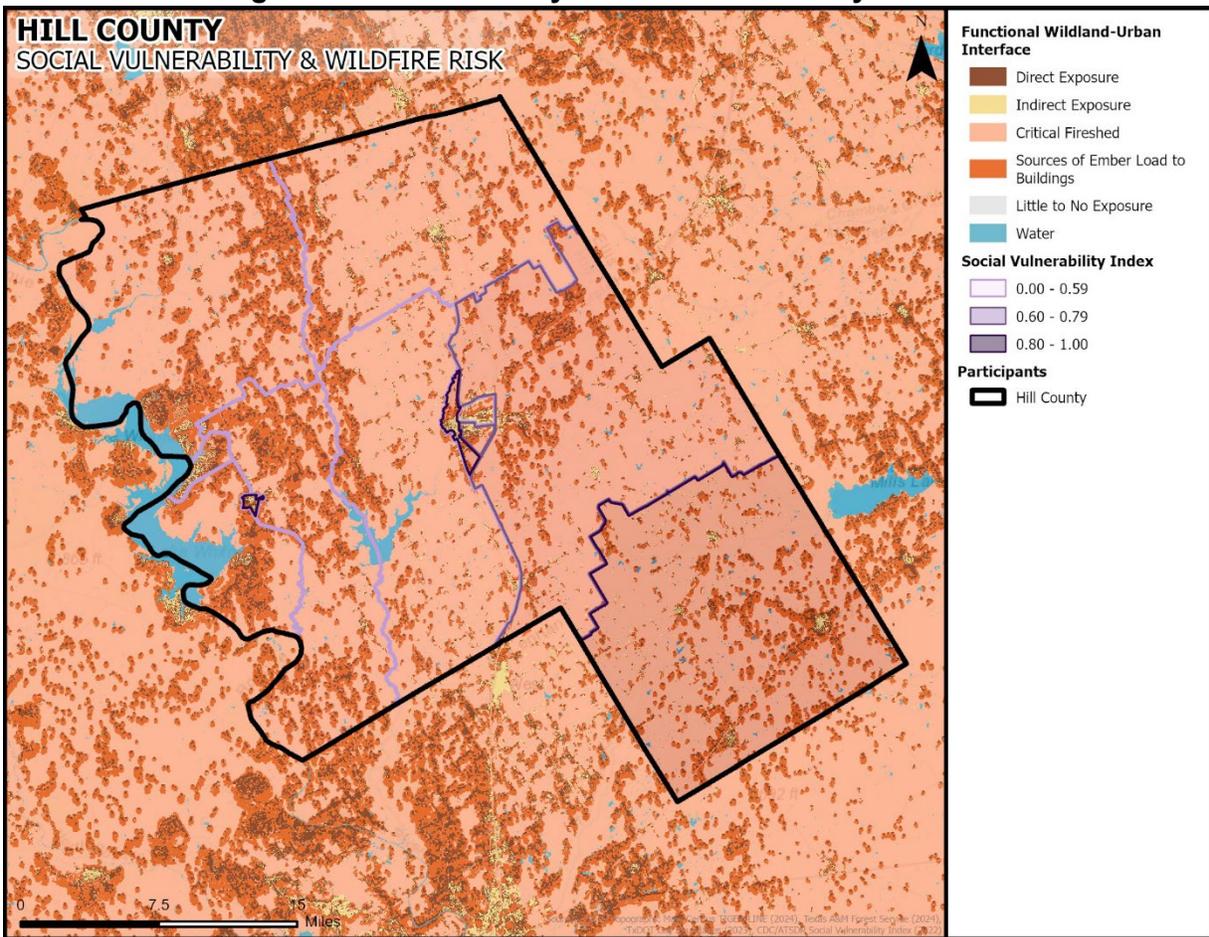


Diminished air quality is an environmental impact that can result from a wildfire event and pose a potential health risk. Wildfire smoke plumes may contain carcinogenic particles that can be inhaled. Fine particles of invisible soot and ash that are too small for the respiratory system to filter can cause immediate and possibly long-term health effects. The elderly or those individuals with compromised respiratory systems may be more vulnerable to the effects of diminished air quality after a wildfire event.

The Center for Disease Control (CDC) created a Social Vulnerability Index (SVI) which includes a database and mapping application that identifies and quantifies communities experiencing social vulnerability. The current CDC SVI uses 16 U.S. census variables from the 5-year American Community Survey (ACS) to identify communities that may need support before, during, or after disasters. All 16 variables fall under four broad categories including socioeconomic status (population in poverty, unemployment, etc.), household characteristics (age, disability status, etc.), racial and ethnic minority status, and housing type and transportation (mobile homes, no vehicles, etc.). Populations experiencing social vulnerability may be adversely impacted by natural hazards, disasters, and other community-level stressors. Figure 13-43 identifies areas of social vulnerability using the CDC's SVI and where these areas overlap with the Hill County WUI areas, where wildfire risk is considered the highest.

SECTION 13: WILDFIRE

Figure 13-43. Hill County's Social Vulnerability and WUI



Climatic conditions such as severe freezes and drought can significantly increase the intensity of wildfires since these conditions kill vegetation, creating a prime fuel source for wildfires. The intensity and rate at which wildfires spread are directly related to wind speed, temperature, and relative humidity.

For the Hill County planning area, including all participating jurisdictions, the impact from a wildfire event is considered "Limited," meaning injuries and/or illnesses are typically treatable with first-aid, complete shutdown of facilities and services for 24 hours or less and less than 10 percent of property is destroyed or with major damage. The severity of impact is gauged by acreage burned, homes and structures lost, injuries and fatalities.

SECTION 13: WILDFIRE

Table 13-8. Impact for Hill County

JURISDICTION	IMPACT	DESCRIPTION
Hill County	Limited	A majority of the county (55 percent) is in the “very low” damage potential category. In addition, 43 percent is in the “low” category, 2 percent is in the “moderate” category, and 0 percent is in the “High” category. County residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.
City of Abbott	Limited	A majority of the city (83 percent) is in the “very low” damage potential category. In addition, 17 percent is in the “low” category, 0 percent is in the “moderate” category, 0 percent is in the “high” category, and 0 percent is in the “little to none” category. City residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.
City of Aquilla	Limited	A majority of the city (81 percent) is in the “very low” damage potential category. In addition, 19 percent is in the “low” category, 0 percent is in the “moderate” category, 0 percent is in the “high” category, and 0 percent is in the “little to none” category. City residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.
City of Blum	Limited	A majority of the city (46 percent) is in the “very low” damage potential category. In addition, 54 percent is in the “low” category, 1 percent is in the “moderate” category, 0 percent is in the “high” category, and 0 percent is in the “little to none” category. City residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.
City of Bynum	Limited	A majority of the city (96 percent) is in the “very low” damage potential category. In addition, 4 percent is in the “low” category, 0 percent is in the “moderate” category, 0 percent is in the “high” category, and 0 percent is in the “little to none” category. City residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.

SECTION 13: WILDFIRE

JURISDICTION	IMPACT	DESCRIPTION
City of Carl's Corner	Limited	A majority of the city (88 percent) is in the "low" damage potential category. In addition, 7 percent is in the "very low" category, 4 percent is in the "moderate" category, 0 percent is in the "high" category, and 0 percent is in the "little to none" category. City residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.
City of Covington	Limited	A majority of the city (45 percent) is in the "very low" damage potential category. In addition, 55 percent is in the "low" category, 0 percent is in the "moderate" category, 0 percent is in the "high" category, and 0 percent is in the "little to none" category. City residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.
City of Hillsboro	Limited	A majority of the city (55 percent) is in the "very low" damage potential category. In addition, 15 percent is in the "low" category, 0 percent is in the "moderate" category, 0 percent is in the "high" category, and 0 percent is in the "little to none" category. City residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.
City of Hubbard	Limited	A majority of the city (76 percent) is in the "very low" damage potential category. In addition, 24 percent is in the "low" category, 0 percent is in the "moderate" category, 0 percent is in the "high" category, and 0 percent is in the "little to none" category. City residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.
City of Itasca	Limited	A majority of the city (94 percent) is in the "very low" damage potential category. In addition, 6 percent is in the "low" category, 0 percent is in the "moderate" category, 0 percent is in the "high" category, and 0 percent is in the "little to none" category. City residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.

SECTION 13: WILDFIRE

JURISDICTION	IMPACT	DESCRIPTION
City of Malone	Limited	A majority of the city (93 percent) is in the “very low” damage potential category. In addition, 7 percent is in the “low” category, 0 percent is in the “moderate” category, 0 percent is in the “high” category, and 0 percent is in the “little to none” category. City residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.
City of Mertens	Limited	A majority of the city (87 percent) is in the “very low” damage potential category. In addition, 13 percent is in the “low” category, 0 percent is in the “moderate” category, 0 percent is in the “high” category, and 0 percent is in the “little to none” category. City residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.
City of Mount Calm	Limited	A majority of the city (82 percent) is in the “very low” damage potential category. In addition, 18 percent is in the “low” category, 0 percent is in the “moderate” category, 0 percent is in the “high” category, and 0 percent is in the “little to none” category. City residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.
City of Penelope	Limited	A majority of the city (77 percent) is in the “very low” damage potential category. In addition, 22 percent is in the “low” category, 2 percent is in the “moderate” category, 0 percent is in the “high” category, and 0 percent is in the “little to none” category. City residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.
City of Whitney	Limited	A majority of the city (78 percent) is in the “very low” damage potential category. In addition, 21 percent is in the “low” category, 1 percent is in the “moderate” category, 0 percent is in the “high” category, and 0 percent is in the “little to none” category. City residents may suffer injuries that are treatable with first aid. Critical facilities could be shut down for 24 hours, and less than 10 percent of total property could be damaged.

SECTION 13: WILDFIRE

ASSESSMENT OF IMPACTS

A wildfire event poses a potentially significant risk to public health and safety, particularly if the wildfire is initially unnoticed and spreads quickly. The impacts associated with wildfire are not limited to direct damage. Significant wildfire events can be frequently associated with a variety of impacts, including:

- The Hill County planning area contains numerous open space areas. Wildfire may adversely affect or destroy endangered species' habitat, reduce air quality, increase erosion and risk of flash flooding, contribute to increased local temperatures, and disrupt other ecological functions.
- Recreation activities throughout the county and city parks may be unavailable and tourism can be unappealing for years following a large wildfire event, devastating directly related local businesses and negatively impacting economic recovery.
- Persons, pets, and wildlife in the area at the time of the fire are at risk for injury or death from burns and/or smoke inhalation. First responders are at greater risk of physical injury when in close proximity to the hazard while extinguishing flames, protecting property, or evacuating residents in the area.
- First responders can experience heart disease, respiratory problems, and other long-term related illnesses from prolonged exposure to smoke, chemicals, and heat.
- Emergency services may be disrupted during a wildfire if facilities are impacted, roadways are inaccessible, or personnel are unable to report for duty.
- Critical county and city departments may not be able to function and provide necessary services depending on the location of the fire and the structures or personnel impacted.
- Non-critical businesses may be directly damaged, suffer loss of utility services, or be otherwise inaccessible, delaying normal operations and slowing the recovery process.
- Displaced residents may not be able to immediately return to work, slowing economic recovery.
- Roadways in or near the WUI could be damaged or closed due to smoke and limited visibility.
- Older homes are generally exempt from modern building code requirements, which may require fire suppression equipment in the structure. An estimated 43 percent (7,075 structures) of homes in the planning area were built before 1980. Similarly, historic buildings may lack fire mitigation materials or measures due to their historic status. There are 23 historical buildings and sites listed on the National Register of Historic Places for Hill County.
- Some high-density neighborhoods feature small lots with structures close together, increasing the potential for fire to spread rapidly.
- Air pollution from smoke may exacerbate respiratory problems of vulnerable residents.
- Charred ground after a wildfire cannot easily absorb rainwater, increasing the risk of flooding and potential mudflows.
- Wildlife may be displaced or destroyed.
- Historical or cultural resources may be damaged or destroyed.
- Tourism can be significantly disrupted, further delaying economic recovery for the area.
- Economic disruption negatively impacts the programs and services provided by the community due to short- and long-term loss in revenue.
- Fire suppression costs can be substantial, exhausting the financial resources of the community.

SECTION 13: WILDFIRE

- Residential structures lost in wildfire may not be rebuilt for years, reducing the tax base for the community.
- Direct impacts to municipal water supply may occur through contamination of ash and debris during the fire, destruction of aboveground delivery lines, and soil erosion or debris deposits into waterways after the fire.

The economic and financial impacts of a wildfire event on local government will depend on the scale of the event, what is damaged, costs of repair or replacement, lost business days in impacted areas, and how quickly repairs to critical components of the economy can be implemented. The level of preparedness and pre-event planning done by the community, local businesses, and citizens will contribute to the overall economic and financial conditions in the aftermath of a wildfire event.



Section 14

Winter Storm



SECTION 14: WINTER STORM

Hazard Description	1
Location	3
Extent	3
Historical Occurrences	5
Significant Events	6
Probability of Future Events	7
Climate Change Considerations	7
Vulnerability and Impact	8
Assessment of Impacts	11

HAZARD DESCRIPTION



A severe winter storm event is identified as a storm with snow, ice, or freezing rain. This type of storm can cause significant problems for area residents. Winter storms are associated with freezing or frozen precipitation such as freezing rain, sleet, snow, and the combined effects of winter precipitation and strong winds. Wind chill is a function of temperature and wind. Low wind chill is a product of high winds and freezing temperatures.

Winter storms that threaten the Hill County planning area usually begin as powerful cold fronts that push south from central Canada. Although the county is at risk of ice hazards, extremely cold temperatures, and snow, the effects and frequencies of winter storm events are generally mild and short-lived.

As indicated in Figure 14-1, the Hill County planning area is located in USDA Hardiness Zone 8b, indicating annual minimum temperatures between 15°F and 20°F. During times of ice and snow accumulation, response times will increase until public works road crews are able to make major roads passable. Table 14-1 describes the types of winter weather possible to occur in the Hill County planning area.

SECTION 14: WINTER STORM

Figure 14-1. Annual Minimum Temperature¹

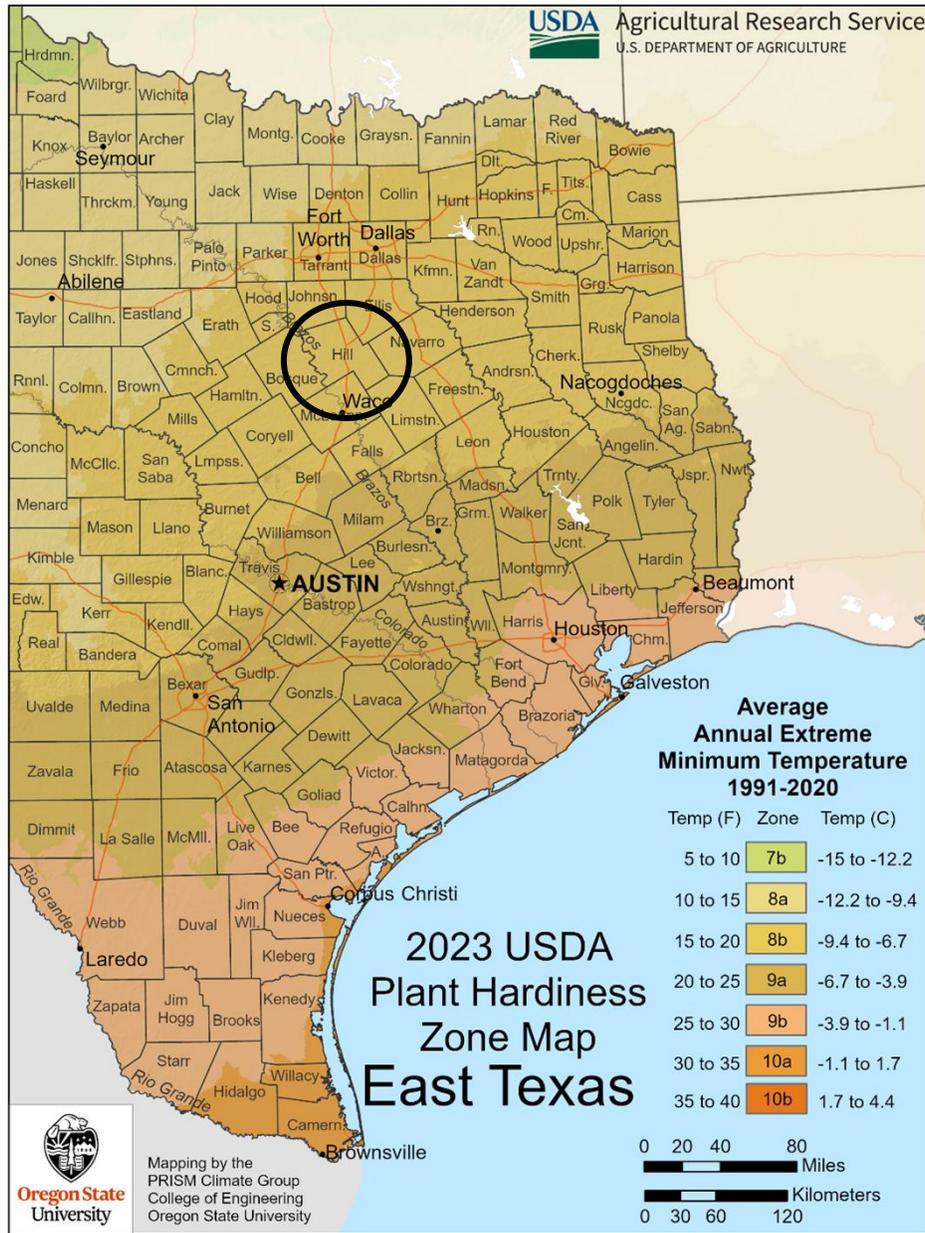


Table 14-1. Types of Winter Weather

TYPE OF WINTER WEATHER	DESCRIPTION
Freezing Rain or Freezing Drizzle	Rain or drizzle is likely to freeze upon impact, resulting in a coating of ice glaze on roads and all other exposed objects.

¹ USDA

SECTION 14: WINTER STORM

TYPE OF WINTER WEATHER	DESCRIPTION
Sleet	Small particles of ice usually mixed with rain. If enough sleet accumulates on the ground, it makes travel hazardous.
Blizzard	Sustained wind speeds of at least 35 mph are accompanied by considerable falling or blowing snow. This alert is the most perilous winter storm with visibility dangerously restricted.
Frost / Freeze	Below freezing temperatures are expected and may cause significant damage to plants, crops, and fruit trees.
Wind Chill	A strong wind combined with a temperature slightly below freezing can have the same chilling effect as a temperature nearly 50 degrees lower in a calm atmosphere. The combined cooling power of the wind and temperature on exposed flesh is called the wind-chill factor.

LOCATION

Winter storm events are not confined to specific geographic boundaries. Therefore, all existing and future buildings, facilities, and populations in the Hill County planning area are vulnerable to a winter storm hazard and could potentially be impacted.

EXTENT

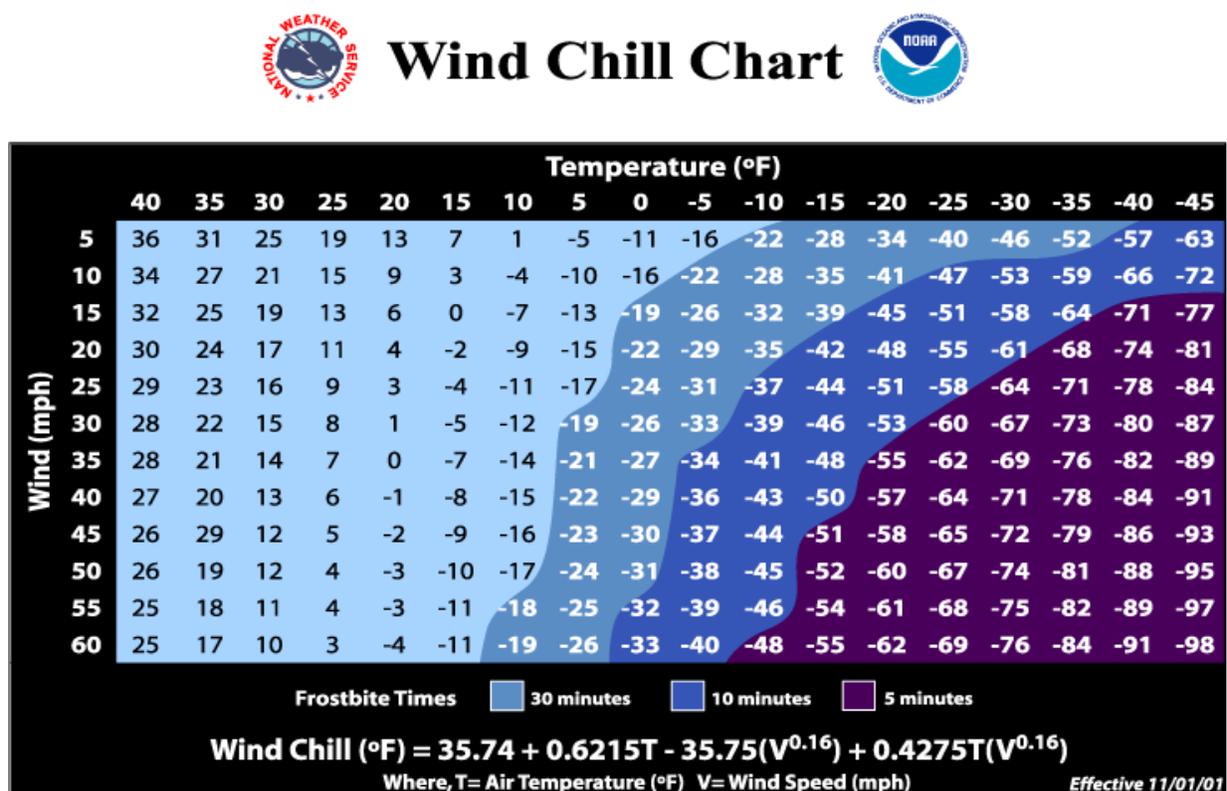
The extent or magnitude of a severe winter storm is measured in intensity based on the temperature and level of accumulations as shown in Table 14-2. Table 14-2 should be read in conjunction with the wind-chill factor described in Figure 14-2 to determine the intensity of a winter storm. The chart is not applicable when temperatures are over 50°F or winds are calm. This is an index developed by the National Weather Service.

Table 14-2. Magnitude of Severe Winter Storms

INTENSITY	TEMPERATURE RANGE (Fahrenheit)	EXTENT DESCRIPTION
Mild	40° – 50°	Winds less than 10 mph and freezing rain or light snow falling for short durations with little or no accumulations
Moderate	30° – 40°	Winds 10 – 15 mph and sleet and/or snow up to 4 inches
Significant	25° – 30°	Intense snow showers accompanied with strong gusty winds between 15 and 20 mph with significant accumulation
Extreme	20° – 25°	Wind driven snow that reduces visibility, heavy winds (between 20 to 30 mph), and sleet or ice up to 5 millimeters in diameter
Severe	Below 20°	Winds of 35 mph or more and snow and sleet greater than 4 inches

SECTION 14: WINTER STORM

Figure 14-2. Wind Chill Chart



Wind chill temperature is a measure of how cold the wind makes real air temperature feel to the human body. Since wind can dramatically accelerate heat loss from the body, a blustery 30°F day would feel just as cold as a calm day with 10°F temperatures. The Hill County planning area has 35 previous occurrences recorded from 1996 through 2025 in the National Centers for Environmental Information (NCEI) Storm Events Database. The planning area has never experienced a blizzard, but it has been subject to heavy snow, frost / freeze, ice storm, cold / wind chill, winter storm, and winter weather.

The average number of cold days is similar for the entire planning area, with the average low for winter months being above 35°F.² The intensity or extent of a winter storm event to be mitigated for the area ranges from moderate to severe according to the definitions in Table 14-2. The Hill County planning area can expect anywhere between 0.1 to 1.0 inches of ice and 0.1 to 9.0 inches of snow during a winter storm event, and temperatures between 15°F and 20°F with winds ranging from 0 to over 50 mph. During Winter Storm Uri in February 2021, several days of persistent below-freezing temperatures, ice accumulations, and snow up to 7 inches were reported in Hill County. This is likely the greatest extent the planning area can anticipate in the future, based on historical events.

The National Weather Service issues a winter storm watch, advisory or warning in advance of an event in order to give people enough time to prepare for an event. Hill County could be under any

² National Weather Service

SECTION 14: WINTER STORM

of these warning types in advance of a winter storm event. Table 14-3 describes when each warning type would be issued.

Table 14-3. Winter Storm Watch, Advisory, Warning Descriptions

TYPE OF WINTER WEATHER	DESCRIPTION
Winter Weather Advisory	This alert may be issued for a variety of severe conditions. Weather advisories may be announced for snow, blowing or drifting snow, freezing drizzle, freezing rain, or a combination of weather events.
Winter Storm Watch	Severe winter weather conditions may affect your area (freezing rain, sleet, or heavy snow may occur separately or in combination).
Winter Storm Warning	Severe winter weather conditions are imminent.
Freezing Rain or Freezing Drizzle	Rain or drizzle is likely to freeze upon impact, resulting in a coating of ice glaze on roads and all other exposed objects.
Sleet	Small particles of ice usually mixed with rain. If enough sleet accumulates on the ground, it makes travel hazardous.
Blizzard	Sustained wind speeds of at least 35 mph are accompanied by considerable falling or blowing snow. This alert is the most perilous winter storm with visibility dangerously restricted.
Frost / Freeze	Below freezing temperatures are expected and may cause significant damage to plants, crops, and fruit trees.
Wind Chill	A strong wind combined with a temperature slightly below freezing can have the same chilling effect as a temperature nearly 50 degrees lower in a calm atmosphere. The combined cooling power of the wind and temperature on exposed flesh is called the wind-chill factor.

HISTORICAL OCCURRENCES

According to historical records and the best available data there have been 35 recorded winter storm events in the Hill County planning area. Historical winter storm information, as provided by the NCEI, identifies winter storm activity across a multi-county forecast area for each event. The appropriate percentage of the total property and crop damage reported for the entire forecast area has been allocated to each county impacted by the event, when appropriate.

Historical winter storm data for the planning area is provided on a County-wide basis per the NCEI database. Table 14-4 shows historical incident information for the planning area.

SECTION 14: WINTER STORM

Table 14-4. Historical Winter Storm Events, 1996 – 2025³

JURISDICTION	DATE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Hill County	1/14/2007	0	0	\$47,400	\$0
Hill County	1/17/2007	0	0	\$15,800	\$0
Hill County	12/24/2009	0	0	\$111,100	\$0
Hill County	1/7/2010	0	0	\$147,600	\$0
Hill County	2/11/2010	0	0	\$368,900	\$0
Hill County	2/1/2011	0	0	\$216,800	\$0
Hill County	12/5/2013	0	0	\$137,300	\$0
Hill County	12/31/2017	0	0	\$6,500	\$0
Hill County	2/15/2021	2	0	\$701,000	\$0
TOTALS	35	2	0	\$1,752,400	

Table 14-5. Historical Winter Storm Events Summary, 1996 –2025

JURISDICTION	NUMBER OF EVENTS	DEATHS	INJURIES	PROPERTY DAMAGES	CROP DAMAGES
Hill County	35	2	0	\$1,752,400	\$0

Based on the list of historical winter storm events for the Hill County planning area, nine of the events have occurred since the 2020 Plan.

SIGNIFICANT EVENTS

January 14 to January 17, 2007

A combination of cold air, abundant moisture, and an upper-level disturbance resulted in a mix of freezing rain and rain across North Texas. The event led to dozens of winter weather and flash flood reports. Icy road conditions caused multiple accidents, and a power pole collapsed across Interstate 35 under the weight of the ice, forcing a shutdown of the highway on Monday morning. Power outages were also reported in the Cities of Blum and Mertens after ice caused power lines and poles to fail.

January 7, 2010

As a cold front moved through North Texas, a brief period of freezing drizzle and light freezing rain led to icy road conditions across parts of the region. The slick roads caused numerous accidents during the early morning commute, resulting in injuries to up to 50 people, all reported as minor.

³ No reports of injuries or fatalities were recorded in the NCEI database. Monetary damages have been inflated to their 2025 value. Only those events with recorded damages have been included in the table.

SECTION 14: WINTER STORM

Light icing from the freezing drizzle created hazardous driving conditions throughout the county. At least 20 vehicle and 18-wheeler accidents were reported. On Spur 579 in northern Hillsboro, two vehicles overturned after sliding on an icy patch, sending four people to the hospital. Several other vehicles slid off the road but sustained no damage. Road conditions gradually improved by the afternoon.

February 13, 2021 – Winter Storm Uri (Dr-4586)

Winter Storm Uri was one of the most impactful winter events in the state's history. The winter storm event lasted a week and brought snow, sleet, and freezing rain to much of the State of Texas. The presence of the storm began on February 10, 2021, when a cold front brought a surge of cold air to the Area. On February 13th, the winter storm hit the region, including Hill County, and many areas were placed under a Winter Storm Warning.

Fatalities across the state were attributed to hypothermia, vehicle accidents, carbon monoxide poisoning, and chronic medical conditions complicated by a lack of electricity over several days. Statewide, more than 69 percent of households lost power at some point during the event, with average disruptions lasting 42 hours. Water service was also disrupted, with 49 percent of households losing running water with an average disruption of 52 hours.⁴

An extended period of extreme cold gripped Hill County for several days, with overnight lows near or below 20°F throughout much of the week. The coldest conditions occurred from February 15 to 16 when low temperatures dropped into the single digits and slightly below zero. On February 15, the high temperature reached only around 15°F. Wind chill values between February 14 and 16 ranged from 10°F down to -15°F for much of the time. The prolonged cold caused significant damage to pipes, infrastructure, and the power grid. The State reported two fatalities in Hill County related to the winter storm, though no further details were available.

PROBABILITY OF FUTURE EVENTS

With 35 events in a 29.5 year reporting period, the Hill County planning area is expected to experience approximately one winter storm event every year. The probability of a future winter storm event affecting the Hill County planning area is considered "Highly Likely," with a winter storm probable to occur within the next year.

CLIMATE CHANGE CONSIDERATIONS

Climate change is expected to reduce the number of extreme cold events statewide but increase in the variability of events.⁵ Extreme cold events will continue to be possible but overall winters are becoming milder, and the frequency of extreme winter weather events are decreasing due to the warming of the Arctic and less extreme cold air coming from that region.⁶ A trend that is

⁴ Donald, Jess. "Winter Storm Uri. The Economic Impact of the Storm." October 2021. Fiscal Notes. Texas Comptroller of Public Accounts. <https://comptroller.texas.gov/economy/fiscal-notes/2021/oct/winter-storm-impact.php>

⁵ Fourth National Climate Assessment. Chapter 23 Southern Great Plains. U.S. Global Change Program. 2018.

⁶ Assessment of Historic and Future Trends of Extreme Weather in Texas, 1900-2036, Texas A&M University Office of the Texas State Climatologist, 2021 update.

SECTION 14: WINTER STORM

expected to continue with winter extremes estimated to be milder by 2036 compared to extremes in the historic record.⁷

VULNERABILITY AND IMPACT

During periods of extreme cold and freezing temperatures, water pipes can freeze and crack, and ice can build up on power lines, causing them to break under the weight. Tree limbs are also subject to break due to ice accumulation, often falling on power lines. These events can disrupt electric service for potentially long periods.

An economic impact may occur due to increased consumption of heating fuel, which can lead to energy shortages and higher prices. House fires and resulting deaths tend to occur more frequently from increased and improper use of alternate heating sources. Fires during winter storms also present a greater danger because water supplies may freeze and impede firefighting efforts.

The Hill County Planning Team identified the following critical facilities (Table 14-6) as assets that are considered the most important to the planning area and are susceptible to a range of impacts caused by winter storm events. For a comprehensive list by participating jurisdiction, please see Appendix C.

Table 14-6. Critical Facilities Vulnerable to Winter Storm Events

CRITICAL FACILITIES	POTENTIAL IMPACTS
<p>Emergency Response Services (EOC, Fire, Police, EMS), Hospitals and Medical Centers</p>	<ul style="list-style-type: none"> ● Emergency operations, services and response times may be significantly impacted due to power outages, and/or loss of communications. ● Exposure to extreme cold can cause illnesses in first responders if exposed for a period of time. ● Roads may become impassable due to snow and/or ice impacting response times by emergency services. ● Extended power outages due to increased usage may lead to possible looting, destruction of property, and theft, further burdening law enforcement resources.
<p>Airport, Academic Institutions, Animal Shelter, Evacuation Centers & Shelters, Governmental Facilities, Residential/ Assisted Living Facilities</p>	<ul style="list-style-type: none"> ● Power outages due to increased usage could disrupt critical care. ● Backup power sources could be damaged. ● Increased number of patients due to exposure to cold temperatures could lead to a strain on staff. ● Water pipes can freeze and burst leading to flooding within facilities. ● Facilities, infrastructure, or critical equipment including communications may be damaged, destroyed or otherwise inoperable. ● Essential supplies like medicines, water, food, and equipment deliveries may be delayed.

⁷ Assessment of Historic and Future Trends of Extreme Weather in Texas, 1900-2036, Texas A&M University Office of the Texas State Climatologist, 2021 update.

SECTION 14: WINTER STORM

CRITICAL FACILITIES	POTENTIAL IMPACTS
	<ul style="list-style-type: none"> • Economic disruption due to power outages negatively impact airport services as well as area businesses reliant on airport operations. • Exposure risks to outdoor workers.
Commercial Supplier (food, fuel, etc.)	<ul style="list-style-type: none"> • Facilities, infrastructure, or critical equipment including communications may be damaged, destroyed or otherwise inoperable. • Essential supplies like medicines, water, food, and equipment deliveries may be delayed.
Utility Services and Infrastructure (electric, water, wastewater, communications)	<ul style="list-style-type: none"> • Emergency operations, services and response times may be significantly impacted due to power outages, and/or loss of communications. • Roads may become impassable due to snow and/or ice impacting response times by emergency services. • Power outages due to increased usage could disrupt critical care. • Backup power sources could be damaged. • Water pipes can freeze and burst leading to flooding within facilities.

People and animals are subject to health risks from extended exposure to cold air (Table 14-7). Elderly people are at greater risk of death from hypothermia during these events, especially in the neighborhoods with older housing stock. According to the U.S. Center for Disease Control, every year hypothermia kills about 600 Americans, half of whom are 65 years of age or older.

Due to factors like limited mobility, communication difficulties, medical needs, sensitivity to cold temperatures, reliance on support services, transportation challenges, housing accessibility issues, and possible shortages in emergency shelter accommodations, people with disabilities are particularly vulnerable to winter storms. Inclusive measures are crucial to address these vulnerabilities and ensure their safety during severe weather events.

Populations living below the poverty level may not be able to afford to run heat on a regular basis or an extended period of time. In addition, people who speak a language other than English may face increased vulnerability due to language barriers that limit their access to important information such as weather-related warnings and instructions regarding safety measures.

The population over 65 in the Hill County planning area is estimated at 20 percent of the total population and children under the age of 5 are estimated at 6 percent. The population with a disability is estimated at 18 percent of the total population. An estimated 14 percent of the planning area population live below the poverty level and 5 percent of the populations speaks English less than 'very well' (Table 14-7).

SECTION 14: WINTER STORM

Table 14-7. Populations at Greater Risk of Winter Storm Events⁸

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Hill County	7,442	2,114	6,410	5,206	1,836
City of Abbot	75	26	33	1	1
City of Aquilla	7	8	7	10	5
City of Blum	41	25	48	120	14
City of Bynum	28	10	32	12	0
City of Carl's Corner	35	22	119	39	23
City of Covington	59	19	31	14	0
City of Hillsboro	1,246	699	1,370	1,633	923
City of Hubbard	288	81	325	218	72
City of Itasca	261	106	292	171	73
City of Malone	21	23	53	163	64
City of Mertens	14	8	49	13	17
City of Mount Calm	93	34	124	89	3
City of Penelope	56	25	47	12	24
City of Whitney	496	121	497	503	234

Older homes tend to be more vulnerable to the impacts of winter storm events. Approximately, 43 percent (7,075 structures) of the housing units in the planning area were built before 1980 (Table 14-8).

Table 14-8. Structures at Greater Risk of Winter Storm Events

JURISDICTION	STRUCTURES
	SFR BUILT BEFORE 1980
Hill County	7,075
City of Abbot	101

⁸ U.S. Census Bureau 2023 data for Hill County

SECTION 14: WINTER STORM

JURISDICTION	STRUCTURES
	SFR BUILT BEFORE 1980
City of Aquilla	13
City of Blum	65
City of Bynum	66
City of Carl's Corner	4
City of Covington	64
City of Hillsboro	2,054
City of Hubbard	490
City of Itasca	402
City of Malone	115
City of Mertens	31
City of Mount Calm	72
City of Penelope	66
City of Whitney	532

Winter storms have been known to cause injury to humans and occasionally have been fatal; two fatalities have resulted from winter storms in Hill County historically. The loss estimate for property and crops in the planning area is \$1,752,400 (in 2025 dollars) with an average annualized loss of \$59,400. In terms of structure and infrastructure damages, the impact of winter storm is considered limited, with critical facilities shut down for 24 hours or less and less than ten percent of property damaged. However, with two reported fatalities, the impact of winter storm damages on the Hill County planning area, including all participating jurisdictions, can be considered “Substantial,” with multiple deaths and injuries possible depending on the extent and duration of the event.

Table 14-9. Winter Storm Event Damage Totals, 1996 - 2025

JURISDICTION	PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
Hill County	\$1,752,400	\$59,400

ASSESSMENT OF IMPACTS

The greatest risk associated with a winter storm is the potential impact on public health and safety. The impact of climate change could produce longer, more intense winter storm events, exacerbating the current winter storm impacts. Worsening winter storm conditions can be frequently associated with a variety of impacts, including:

SECTION 14: WINTER STORM

- Vulnerable populations, particularly the elderly (20 percent of total population), children under 5 (6 percent of total population), and those with a disability (18 percent of total population), can face serious or life-threatening health problems from exposure to extreme cold including hypothermia and frostbite.
- Loss of electric power or other heat source can result in increased potential for fire injuries or hazardous gas inhalation because residents burn candles for light or use fires or generators to stay warm.
- Response personnel, including utility workers, public works personnel, debris removal staff, tow truck operators, and other first responders, are subject to injury or illness resulting from exposure to extreme cold temperatures.
- Response personnel would be required to travel in potentially hazardous conditions, elevating the life safety risk due to accidents and potential contact with downed power lines.
- Operations or service delivery may experience impacts from electricity blackouts due to winter storms.
- Power outages are possible throughout the planning area due to downed trees and power lines and/or rolling blackouts.
- Critical facilities without emergency backup power may not be operational during power outages.
- Emergency response and service operations may be impacted by limitations on access and mobility if roadways are closed, unsafe, or obstructed.
- Hazardous road conditions will likely lead to increases in automobile accidents, further straining emergency response capabilities.
- Depending on the severity and scale of damage caused by ice and snow events, damage to power transmission and distribution infrastructure can require days or weeks to repair.
- Winter storms can reduce the efficacy of shaded fuel breaks for wildfire mitigation as treated areas were more likely to have downed trees and limbs than untreated areas.
- Winter storms can result in damage to endangered species habitat and increased fuel loads within forested habitats.
- Older structures built to less stringent building codes may suffer greater damage as they are typically more vulnerable to impacts of winter storm events. Approximately 48 percent of homes in the County were built before 1980. Similarly, historic buildings and sites are placed at a higher risk of impact due to materials used and the inability to change properties due to their historic status. There are 23 historical buildings and sites listed on the National Register of Historic Places for Hill County.
- Schools may be forced to shut early due to treacherous driving conditions.
- Exposed water pipes may be damaged by severe or late season winter storms at both residential and commercial structures, causing significant damages.

The economic and financial impacts of winter weather on the community will depend on the scale of the event, what is damaged, and how quickly repairs to critical components of the economy can be implemented. The level of preparedness and pre-event planning done by the community, local businesses, and citizens will also contribute to the overall economic and financial conditions in the aftermath of a winter storm event.



Section 15

Hazardous Materials

SECTION 15: HAZARDOUS MATERIALS

Section 15 is For Official Use Only (FOUO) and may be exempt from public release under the Freedom of Information Act (FOIA).



Section 16

Mitigation Strategy

SECTION 16: MITIGATION STRATEGY

Mitigation Goals	1
Goal 1.....	1
Goal 2.....	1
Goal 3.....	2
Goal 4.....	2
Goal 5.....	2
Goal 6.....	2
Goal 7.....	3

MITIGATION GOALS

Based on the results of the risk and capability assessments, the Planning Team developed and prioritized the mitigation strategy. This involved utilizing the results of both assessments and reviewing the goals and objectives that were included in the previous 2020 Plan. At the Mitigation Strategy Workshop in September 2025, Planning Team members reviewed the mitigation strategy from the previous Plan. The consensus among all members present was that the strategy developed for the 2020 Plan required realignment, including expanding on existing goals and the addition of a goal pertaining to equity and vulnerable populations.

GOAL 1

Protect public health and safety.

OBJECTIVE 1.1

Advise the public about health and safety precautions to guard against injury and loss of life from hazards.

OBJECTIVE 1.2

Maximize utilization of the latest technology to provide adequate warning, communication, and mitigation of hazard events.

OBJECTIVE 1.3

Reduce the danger to and enhance protection of high risk areas during hazard events.

OBJECTIVE 1.4

Protect critical facilities and services.

GOAL 2

Build and support local capacity and commitment to continuously become less vulnerable to hazards.

OBJECTIVE 2.1

Foster ongoing local partnerships and collaborations to improve long-term vulnerability to hazards.

OBJECTIVE 2.2

Establish a cadre of committed volunteers to safeguard the community before, during, and after a disaster.

SECTION 16: MITIGATION STRATEGY

OBJECTIVE 2.3

Incorporate hazard mitigation concerns into County and City planning and budgeting processes.

GOAL 3

Increase public understanding, support, and demand for hazard mitigation.

OBJECTIVE 3.1

Heighten public awareness regarding the full range of natural hazards the public may face.

OBJECTIVE 3.2

Educate the public on actions they can take to prevent or reduce the loss of life or property from all hazards and increase individual efforts to respond to potential hazards.

OBJECTIVE 3.3

Publicize and encourage the adoption of appropriate hazard mitigation measures.

GOAL 4

Protect new and existing properties.

OBJECTIVE 4.1

Reduce National Flood Insurance Program (NFIP) repetitive loss occurrences through increased mitigative intervention to structures that have been identified to have sustained repeated damage from hazards

OBJECTIVE 4.2

Use the most cost-effective approach to protect existing buildings and public infrastructure from hazards.

OBJECTIVE 4.3

Enact and enforce regulatory measures to ensure that future development will not endanger or increase threats to people and existing properties.

GOAL 5

Maximize the resources for investment in hazard mitigation.

OBJECTIVE 5.1

Maximize the use of outside sources of funding.

OBJECTIVE 5.2

Maximize participation of property owners in protecting their properties.

OBJECTIVE 5.3

Maximize insurance coverage to provide financial protection against hazard events.

OBJECTIVE 5.4

Prioritize mitigation projects, based on cost-effectiveness and sites facing the greatest threat to life, health, and property.

GOAL 6

Promote growth in a sustainable manner.

OBJECTIVE 6.1

Incorporate hazard mitigation activities into long-range planning and development activities.

SECTION 16: MITIGATION STRATEGY

OBJECTIVE 6.2

Promote beneficial uses of hazardous areas while expanding open space and recreational opportunities.

OBJECTIVE 6.3

Utilize regulatory approaches to prevent the creation of future hazards to life and property.

GOAL 7

Promote equity and protect vulnerable populations and underserved communities through hazard mitigation activities.

OBJECTIVE 7.1

Allocate resources and funding to implement hazard mitigation activities that directly benefit vulnerable and underserved communities.

OBJECTIVE 7.2

Build and support local partnerships to leverage resources and expertise in addressing hazard-related equity concerns.

OBJECTIVE 7.3

Establish internal decision-making processes that integrate equity into project selection.

OBJECTIVE 7.4

Monitor and evaluate the effectiveness of mitigation activities to ensure equitable outcomes and protection of vulnerable populations.



Section 17

Previous Actions



SECTION 17: PREVIOUS ACTIONS

Summary	1
Hill County	2
City of Abbott	19
City of Aquilla	33
City of Blum	48
City of Bynum	63
City of Covington.....	80
City of Hillsboro.....	96
City of Hubbard.....	112
City of Itasca	128
City of Malone.....	144
City of Mertens.....	159
City of Mount Calm	174
City of Penelope.....	190
City of Whitney.....	206

SUMMARY

This section includes analysis from the 2020 Hill County Hazard Mitigation Plan. Planning Team members were given copies of the previous mitigation actions submitted in the 2020 Hill County Hazard Mitigation Plan at the mitigation workshop. Each previously participating jurisdiction reviewed the previous actions and provided an analysis as to whether the action had been completed, should be carried over as an ongoing activity, or be deleted from the Plan Update. The actions from the 2020 Plan are included in this section as they were written in 2020, except for the “2026 Analysis” section. **Any action in the analysis the team selected for future implementation (carried over) is considered a current action for potential implementation over the life cycle of this updated plan.** Additional new actions developed for this plan are detailed in Section 18. The City of Carl’s Corner did not participate in the 2020 plan; therefore, they have no previous actions.

SECTION 17: PREVIOUS ACTIONS

HILL COUNTY

Hill County – Previous Action #1	
Proposed Action:	Implement a program to keep water runoff areas free of debris to allow rapid runoff of flood waters
BACKGROUND INFORMATION	
Site and Location:	Countywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The proposed project would remove any debris that would obstruct the rapid runoff of a flash flood or other flooding event. By ensuring appropriate runoff, flood waters would be substantially less likely to damage new and existing structures or flood roadways.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	This action will reduce the effects of flooding on new buildings by ensuring that floodwaters can run off rapidly. This action will reduce the effects of flooding on existing buildings by ensuring that floodwaters can run off rapidly.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$20,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP, Local Funds
Lead Agency/Department Responsible:	County Commissioners
Implementation Schedule:	12 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #2	
Proposed Action:	Implement an aggressive public education campaign targeted toward improving participation in the National Flood Insurance Program.
BACKGROUND INFORMATION	
Site and Location:	Countywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Currently, the only advertisements for the NFIP are television and radio spots provided through the national Floodmart program. Further supporting their initiatives through local public education activities would increase resident awareness of the NFIP. Increased awareness would likely lead to increased participation in the NFIP.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	Increased participation in the National Flood Insurance Program will reduce uninsured and underinsured property losses for new buildings within the county due to flooding. Increased participation in the National Flood Insurance Program will reduce uninsured and underinsured property losses for existing buildings within the county due to flooding.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000.00
Potential Funding Sources:	PDM Grant Program, EMPG Grant Program, Local Funds
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #3	
Proposed Action:	Flood proof critical facilities in A Zones, including attendant utility and sanitary facilities, to meet existing FEMA NFIP standards
BACKGROUND INFORMATION	
Site and Location:	Countywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Currently, critical facilities within A Zones are not flood proof. This action will ensure that all critical facilities in such zones are retrofitted to be flood proof and watertight below the base flood elevation

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New facilities within A Zones will be flood proof. Existing facilities within A Zones will be flood proof.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000.00
Potential Funding Sources:	PDM Grant Program, EMPG Grant Program, Local Funds
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #4	
Proposed Action:	Implement a tree-trimming program that routinely clears tree limbs hanging in right-of-way of existing structures.
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This program will help keep roadways clear by removing tree limbs that are hanging in the right of way that could cause roadway obstructions after a tornado. This will minimize the loss of life and property.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	This action will reduce the effects of tornados on new buildings by removing tree limbs from areas they shouldn't be that could potentially affect structures. This action will reduce the effects of tornados on existing buildings by removing tree limbs from areas they shouldn't be that could potentially affect structures.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$50,000.00
Potential Funding Sources:	General Fund
Lead Agency/Department Responsible:	Emergency Management
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #5	
Proposed Action:	Construct a hardened “Community Safe Room”
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By constructing a Community “Safe Room” the County will be providing emergency shelter for its citizens who are unable to afford the cost of building a safe room for themselves, such as the elderly, disabled and the poor. This project will save untold numbers of lives in the area where the safe room is located.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,500,000.00
Potential Funding Sources:	PDM, HMGP, EMPG
Lead Agency/Department Responsible:	Emergency Management
Implementation Schedule:	Three years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #6	
Proposed Action:	Retrofit existing buildings and implement design and construction for community shelters and/or public facilities.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Utilizing current specifications through FEMA publications, “safe” rooms will be installed at centralized critical facility locations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	This action will reduce the effects of tornados on new buildings by adding and strengthening the shelters in the buildings. This action will reduce the effects of tornados on existing buildings by adding and strengthening the shelters in the buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$250,000.00
Potential Funding Sources:	PDM Grant Program, EMPG Grant Program, HMGP, SHSP
Lead Agency/Department Responsible:	Emergency Management
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #7	
Proposed Action:	Develop a county wildfire protection plan that addresses the specific wildfire-related concerns within each jurisdiction as well as the unincorporated areas and established actions to be implemented to reduce vulnerability and risk to wildfire losses.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Wildfire mitigation measures are not widely known in rural areas such as Hill County. Developing a plan of action through working relationships with other agencies to include the Texas Forest Service would decrease the impact wildfires would have on the county through a more aggressive approach to combating the wildfires. The plan should contain specific actions to be taken that will decrease vulnerability and risk to wildfire losses, such as fuel reduction measures and other actions.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the education of how to protect buildings from wildfire. This action will reduce the effects of wildfire on existing buildings through the education of how to protect buildings from wildfire.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$25,000
Potential Funding Sources:	PDM Grant Program, EMPG Grant Program, HMGP, SHSP
Lead Agency/Department Responsible:	Emergency Management/Volunteer Fire Depts/ESD #1
Implementation Schedule:	2 years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #8	
Proposed Action:	Install fuels reduction and fire resistant landscaping at critical facilities.
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Wildfire mitigation measures are not widely known in rural areas such as Hill County. This action will increase that knowledge and reduce the effects of wildfires with the potential decrease of damage to critical infrastructure. Installing fire resistant landscaping would cut down on the potential for wildfires around critical county-owned facilities.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings by ensuring the fuel for a wildfire is not near a building. This action will reduce the effects of wildfire on existing buildings by ensuring the fuel for a wildfire is not near a building.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$250,000
Potential Funding Sources:	General Fund, PDM Grant Program, HMGP, SHSP
Lead Agency/Department Responsible:	County Commissioners
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #9	
Proposed Action:	Create and implement a program to educate the public about reducing the fuel load around homes and buildings.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This program would be to create and implement a program to educate the public through local print media and the internet about reducing the fuel load around homes and buildings.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings by ensuring that the fuel loads for wildfires are not around buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	General Fund, EMPG, HMGP, SHSP, PDM
Lead Agency/Department Responsible:	Emergency Service District #1
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #10	
Proposed Action:	Create and implement a public education program on drought for the unincorporated areas of the county regarding water conservation and drought resistant landscaping.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	During times of drought, the demand for potable water may exceed the capacity to produce sufficient potable water for domestic, sanitation and fire protection. The educational materials that will be displayed would educate the public about water conservation measures that they can take that would help ensure a sufficient supply of potable water for the public and Fire service.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings directly and could impact the building through future water conservation measures. This action will reduce the effects of drought on existing buildings directly and will impact the building through water conservation measures.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$400.00
Potential Funding Sources:	General Fund
Lead Agency/Department Responsible:	Emergency Management
Implementation Schedule:	One year after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #11	
Proposed Action:	Develop and implement a drought contingency plan to include water conservation and mandatory water rationing.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	During times of drought, the demand for potable water may exceed the capacity to produce sufficient potable water for domestic, sanitation and fire protection. The drought contingency plan provides the ability to regulate the use of potable water for non-essential uses.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will not reduce the effects of drought on new buildings directly but could impact the building through future building codes. This action will not reduce the effects of drought on existing buildings directly but could impact the building through future building codes.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000.00
Potential Funding Sources:	Local funds, SHSP, HMGP, PDM, EMPG
Lead Agency/Department Responsible:	Emergency Management
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Complete.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #12	
Proposed Action:	Implement an extreme heat public awareness campaign to educate county residents about the effects and dangers of extreme heat.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The project would increase public awareness and educate county residents about the effects and dangers of extreme heat and actions that can be taken to mitigate the effects.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by educating residents about the effects and dangers of extreme heat. This action will reduce the effects of extreme heat on existing buildings by educating residents about the effects and dangers of extreme heat.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$1,000.00
Potential Funding Sources:	PDM Grant Program, EMPG Grant Program, HMGP, SHSP, local funds
Lead Agency/Department Responsible:	Emergency Management
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #13	
Proposed Action:	Retrofit existing shelters into “Cooling Centers” for special needs populations.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The project would identify the centralized location and retrofit the location with additional and more efficient air conditioners to better accommodate the facility.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by eliminating potential overloading of circuits and potential fire danger. This action will reduce the effects of extreme heat on existing buildings by eliminating potential overloading of circuits and potential fire danger.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$250,000
Potential Funding Sources:	HMGP, SHSP, PDM, EMPG
Lead Agency/Department Responsible:	Emergency Management
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #14	
Proposed Action:	Install covered parking at county critical infrastructure to provide protection for county vehicles, employees, and residents from hail storms.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The project can be implemented by the County Commissioners and will provide great cost savings by preventing hail damage to county vehicles and potential injury to employees and residents by providing covered parking around critical infrastructure.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	This action will reduce the effects of hail on new buildings by making the building more resistant to hail damage. This action will reduce the effects of hail on existing buildings through less damage to buildings and defraying cost of repairs
Priority (High, Moderate, Low):	High
Estimated Cost:	\$60,000.00
Potential Funding Sources:	HMGP, SHSP, Local funds, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	County Commissioners
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #15	
Proposed Action:	Update existing websites and social media platforms to address common types of hail damage and injuries and how to prevent them
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This action will lessen the potential for property damage and injury by educating the public on ways to prevent such effects of hail

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	This action will reduce the effects of hail on new buildings by educating residents on how to make the building more resistant to hail damage. This action will reduce the effects of hail on existing buildings through less damage to buildings and defraying cost of repairs by educating the public on how to prevent hail damage from occurring
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #16	
Proposed Action:	Establish a memoranda of understanding between the County and the Texas Department of Transportation to allow for the dissemination of warning messages on roadway signboards
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	The program will be used to purchase information signs to inform travelers of road conditions in other locations so they can make contingency plans. This will prevent travelers from becoming stranded between towns away from shelters.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	Emergency Management
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

Hill County – Previous Action #17	
Proposed Action:	Establish procedures to maintain road sanding or salting capabilities during winter months when there is the greatest likelihood of winter storm events.
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	The procedures would establish a capability for reducing the risk to life from severe weather events by ensuring that affected roads were sanded or salted when ice or snow accumulates.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$60,000.00
Potential Funding Sources:	HMGP, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	County Commissioners
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

CITY OF ABBOTT

City of Abbott – Previous Action #1	
Proposed Action:	Transform city-owned properties in flood-prone areas into open-space parks
BACKGROUND INFORMATION	
Site and Location:	Low areas along Bordon Street
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This action would decrease property damage in a flood-prone area of the city. By preventing new construction in this area and converting it to open-space parks, property losses due to flooding would be effectively mitigated in this area. This project would consist of relocation and possibly demolition, as allowed under the NFIP's eligible mitigation measures, in order to remove existing structures from the properties.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	This action will reduce the effects of flooding on new buildings by preventing the construction of new structures in flood-prone areas. This action will reduce the effects of flooding on existing buildings by removing existing structures that are in flood-prone areas.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$120,000
Potential Funding Sources:	PDM Grant, HMGP Grant
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Abbott – Previous Action #2	
Proposed Action:	Implement a program to keep water runoff areas free of debris to allow rapid runoff of flood waters
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By ensuring that residents and property owners are aware of their risk of flood-related damages, thereby increasing the likelihood that they will seek additional insurance coverage or implement flood mitigating measures. This regulatory action would serve as a mechanism for public education to ensure that flooding risks are reduced.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	This action will reduce the effects of flooding on new buildings by ensuring that floodwaters can run off rapidly. This action will reduce the effects of flooding on existing buildings by ensuring that floodwaters can run off rapidly.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP, Local Funds
Lead Agency/Department Responsible:	City Public Works
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Abbott – Previous Action #3	
Proposed Action:	Incorporate building codes that require wind-resistant construction techniques
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This action would utilize regulatory measures to improve the structural capability for new and existing buildings to withstand windstorms and tornadoes. Currently no building codes within the city require the implementation of wind-resistant construction methods.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	New buildings would be required to implement wind-resistant construction techniques that minimize damages from high winds and tornadoes. This action would require existing buildings permitted for major modifications or repairs to implement wind-resistant construction techniques to mitigate damages from high winds and tornadoes.
Priority (High, Moderate, Low):	Medium
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Abbott – Previous Action #4	
Proposed Action:	Develop and implement processes to ensure continued operation of utility infrastructure in easements and rights of ways remain free of obstruction from excessive debris and brush.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The implementation of processes to ensure that tree branches, dead trees, and brush are cleared from utility infrastructure and rights of way would prevent much of the loss of utilities during windstorms and tornadoes. The reduction of potential debris also reduces the risk of damage to new and existing buildings.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	This action would prevent the loss of utility and communication services to new buildings by reducing the likelihood of power and telephone outages due to downed lines caused by falling tree branches and other debris. This action would prevent the loss of utility and communication services to existing buildings by reducing the likelihood of power and telephone outages due to downed lines caused by falling tree branches and other debris.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$30,000.00
Potential Funding Sources:	HMGP, SHSP, PDM Grant, EMPG Grant, Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Abbott – Previous Action #5	
Proposed Action:	Create and implement program to lessen fire sources on public lands near residences by reducing the sources of ignition
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This new program would remove ignition sources and fuel loads on public property near residential areas. This would decrease the likelihood of occurrence of wildfire damage to new and existing buildings while minimizing the impact to life safety.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings by removing sources of ignition from public lands near the buildings. This action will not reduce the effects of wildfire on existing buildings by removing fuels and sources of ignitions from public lands near the buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$3,000.00
Potential Funding Sources:	General fund
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Abbott – Previous Action #6	
Proposed Action:	Create and implement a program to educate the public about reducing the fuel load around homes and buildings.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This program would be to create and implement a program to educate the public through local print media and the internet about reducing the fuel load around homes and buildings.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings by ensuring that the fuel loads for wildfires are not around buildings. This action will reduce the effects of wildfire on existing buildings by ensuring that the fuel load for wildfires are not around buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	General Fund, EMPG, HMGP, SHSP, PDM
Lead Agency/Department Responsible:	Volunteer Fire Department
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Abbott – Previous Action #7	
Proposed Action:	Develop brochure to inform citizens on water conservation and safety precautions.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Brochures would be developed from information from state and federal agencies by the City Manager's Office, printed by the city and distributed to citizens through a mass mailing; they would also be on hand at public buildings.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increased awareness on water conservation. This action will reduce the effects of drought on existing buildings through increased awareness on water conservation.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$1,000
Potential Funding Sources:	Local funds, HMGP, PDM, SHSP, EMPG
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	One year after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Abbott – Previous Action #8	
Proposed Action:	Develop and implement a drought contingency plan to include water conservation and mandatory water rationing.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	During times of drought, the demand for potable water for drinking, sanitation, Fire protection, may exceed the city’s capacity to produce sufficient quantity. The drought contingency plan provides the ability to regulate the use of potable water for non-essential uses.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increased awareness on water conservation. This action will reduce the effects of drought on existing buildings through increased awareness on water conservation.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	Local funds, HMGP, PDM, EMPG, SHSP
Lead Agency/Department Responsible:	City Manager’s Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Abbott – Previous Action #9	
Proposed Action:	Install back-up power facilities at city-owned critical infrastructure.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The installation of a generator at critical infrastructure would allow for continued operations during power outages that might occur from excessive heat events

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by eliminating damage to equipment and circuits from loss of power. This action will reduce the effects of extreme heat on existing buildings by eliminating damage to equipment and circuits from loss of power.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$250,000
Potential Funding Sources:	PDM Grant Program. EMPG Grant program, HMGP, SHSP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Abbott – Previous Action #10	
Proposed Action:	Retrofit City Hall to create “Cooling Shelters” for Special Needs populations.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The project would identify the centralized location with additional and more efficient air conditioners to better accommodate the facility so that it can be used as a cooling center for residents, particularly the at-risk population.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	No effect on new buildings. This action will reduce the effects of extreme heat on existing buildings by eliminating damage to equipment and circuits from loss of power.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$1,000,000.00
Potential Funding Sources:	HMGP, SHSP, PDM Grant Program, EMPG Grant Program,
Lead Agency/Department Responsible:	City Manager’s Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Abbott – Previous Action #11	
Proposed Action:	Build public over-head shelters for hail storms throughout the city of Abbott.
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This program will lessen the potential injury to the citizens of Abbott by providing them basic over-head cover in the event that they are caught out in a hailstorm, thereby reducing the potential loss of life and injury. The shelters would be implemented as an extension of existing public buildings and be constructed in the form of covered gathering areas.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$100,000.00
Potential Funding Sources:	HMGP, General Fund, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Abbott – Previous Action #12	
Proposed Action:	Establish a community forum to educate homeowners on hail mitigation measures, identify, and address mitigation needs.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The development of a community capability to identify and address mitigation will assist in educating the public on mitigation techniques, encouraging property owners to implement mitigation techniques, and help to identify community-wide measure that need to be taken to reduce the risk to life and property from hail and other hazards.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	Mitigation measures for new buildings will be identified and potentially implemented by owners. Mitigation measures for existing buildings will be identified and potentially implemented by owners
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Abbott – Previous Action #13	
Proposed Action:	Implement and conduct public education programs to inform residents of the dangers of winter storms
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The programs would inform residents of the health and safety hazards caused by winter storms. By educating the public, the potential for loss of life, illness and injury will be decreased.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	This action will not reduce the effects of winter storm on new buildings. This action will not reduce the effects of winter storms on existing buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	HMGP, Local Funds, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Abbott – Previous Action #14	
Proposed Action:	Enhance early warning system by providing targeted facilities with weather radios.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project is to enhance early warning system by providing weather radios to critical facilities that will allow appropriate measures to be taken to mitigate the potential damage that winter storms can cause.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	This project will mitigate the effects of winter storms on new buildings by providing early warning of Winter Storms thereby permitting owners to take appropriate measures to reduce the effects of the storm. This project will mitigate the effects of winter storms on existing buildings by providing early warning of Winter Storms thereby permitting owners to take appropriate measures to reduce the effects of the storm.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500.00
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	2 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

CITY OF AQUILLA

City of Aquilla – Previous Action #1	
Proposed Action:	Relocate or flood proof critical facilities in A Zones, including attendant utility and sanitary facilities, to meet existing FEMA NFIP standards
BACKGROUND INFORMATION	
Site and Location:	A zones
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Currently, critical facilities within A Zones are not flood proof. This action will ensure that all critical facilities in such zones are relocated outside of the zones or else retrofitted to be flood proof and watertight below the base flood elevation if the structure cannot be relocated.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	This action will reduce the effects of flooding on new buildings by ensuring that floodwaters can run off rapidly. This action will reduce the effects of flooding on existing buildings by ensuring that floodwaters can run off rapidly.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000.00
Potential Funding Sources:	PDM Grant Program, EMPG Grant Program, Local Funds
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Aquilla– Previous Action #2	
Proposed Action:	Purchase and install metal warning signs that show areas prone to flash flooding.
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This would increase public awareness of flood hazards within the city while also reducing the potential for loss of life during flooding events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	This action will reduce the effects of flooding on new buildings by increasing awareness of flood-prone areas within the city. This action will reduce the effects of flooding on existing buildings by reminding the citizens of the danger of flooding and to take proactive measures to protect life and property.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$7,000.00
Potential Funding Sources:	PDM Grant, EMPG Grant, HMGP Grant
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	12 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Aquilla – Previous Action #3	
Proposed Action:	Catalog, evaluate, and update any floodplain regulations within the City to comply with the latest FEMA regulations
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This would prevent future construction of non-flood hardened structures in flood-prone areas. The prevention of such construction would decrease future property losses to Flood.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to conform to the latest floodplain regulations, which would prevent building from being constructed in flood-prone areas and decrease property losses due to flooding. Existing buildings would be required to conform to existing and updated floodplain regulations, which would decrease property losses due to flooding and prevent reconstruction in flood-prone areas.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local Funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Aquilla – Previous Action #4	
Proposed Action:	Establish and conduct public education activities on the removal of potential debris near homes and businesses
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By educating the public on effective debris reduction techniques, including the removal of trees and branches over structures and the effective storage of outdoor furniture and items, potential damages from these items when blown by the severe winds produced by windstorms or tornadoes will be reduced.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	This action will reduce the effects of tornados and windstorms on new buildings by educating the owners on the most up to date methods of removing potential debris surrounding their home or business. This action will reduce the effects of tornados and windstorms on existing buildings by educating the owners on the most up to date methods for the removal of potential debris surrounding their home or business.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000.00
Potential Funding Sources:	General Fund, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Aquilla – Previous Action #5	
Proposed Action:	Upgrade / Improve Existing warning systems to notify residents of approaching windstorms and tornadoes.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Currently, the City relies on an antiquated system at the Volunteer Fire Department to alert its residents of approaching weather hazards, including tornadoes and windstorms. An upgrade to a new modern system would allow for greater coverage by the system with enhanced capabilities.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$25,000.00
Potential Funding Sources:	General Fund, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Aquilla – Previous Action #6	
Proposed Action:	Develop and design a program that places smoke detectors in the homes of the senior citizens and children
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Wildfire mitigation measures are not widely known in small towns such as the City of Aquilla. Installation of smoke alarms in all buildings would greatly increase the safety factor on the city through a more aggressive approach to combating the wildfires and preventing the loss of life due to wildfires.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the installation of smoke alarms in buildings. This action will reduce the effects of wildfire on existing buildings through the installation of smoke alarms in buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	Volunteer Fire Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Aquilla – Previous Action #7	
Proposed Action:	Establish a vegetation management program to reduce the availability of dense fuels that contribute to wildfires
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Wildfire mitigation measures are not widely known in small towns such as the City of Aquilla. By managing vegetation within the city and removing large fuel loads that contribute to wildfires, the likelihood of occurrence for wildfire will be decreased.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings by removing large fuel loads that are present within the city. This action will reduce the effects of wildfire on existing buildings by removing large fuel loads that are present within the city.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$15,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP, SHSP, PDM
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Aquilla – Previous Action #8	
Proposed Action:	Plant drought resistant plants and trees around critical city facilities.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	During times of drought, the demand for potable water for drinking, sanitation, Fire protection, may exceed the city’s capacity to produce sufficient quantity. The planting of drought resistant plants and trees around critical facilities will reduce the demand for potable water for landscaping purposes.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increased awareness on water conservation. This action will reduce the effects of drought on existing buildings through increased awareness on water conservation.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$25,000.00
Potential Funding Sources:	Local funds, PDM, HMGP
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Aquilla – Previous Action #9	
Proposed Action:	Utilize public information capabilities, including social media and printed media, to inform the public of the importance of water conservation and water rationing during drought conditions
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Educating the public on the necessity for water conservation and rationing will decrease the consumption of water resources that rapidly become limited during drought.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	Local funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	1 year after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Aquilla – Previous Action #10	
Proposed Action:	Install back-up power facilities at city-owned critical infrastructure.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The installation of a generator would allow for continued operations during power outages that might occur during periods of extreme heat due to the heavy demand on the electrical grid, or from a windstorm and other disasters.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by eliminating damage to equipment and circuits from loss of power. This action will reduce the effects of extreme heat on existing buildings by eliminating damage to equipment and circuits from loss of power.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$250,000
Potential Funding Sources:	SHSP, General Fund, PDM Grant Program, EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Aquilla – Previous Action #11	
Proposed Action:	Implement a public education program to educate residents about life safety concerns during extreme heat events
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Educating the public about the risks associated with extreme heat events will reduce the potential for loss of life during such events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by educating the residents of new buildings on the health and safety concerns related to extreme heat events. This action will reduce the effects of extreme heat on existing buildings by educating the residents of existing buildings on the health and safety concerns related to extreme heat events.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	HMGP, SHSP, General Fund, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Aquilla – Previous Action #12	
Proposed Action:	Update existing websites and social media platforms to address common types of hail damage and injuries and how to prevent them
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This action will lessen the potential for property damage and injury by educating the public on ways to prevent such effects of hail

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	This action will reduce the effects of hail on new buildings by educating residents on how to make the building more resistant to hail damage. This action will reduce the effects of hail on existing buildings through less damage to buildings and defraying cost of repairs by educating the public on how to prevent hail damage from occurring
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Aquilla – Previous Action #13	
Proposed Action:	Establish permit discounting mechanism to encourage the use of hardening products for roofing
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	By encouraging the construction or replacement of roofing with hardened roofing materials, the damages from hail can be reduced on both new and existing buildings.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	New buildings will be more likely to be constructed with roofs capable of withstanding hail. Existing buildings will be more likely to be retrofitted with hail-resistant roofing
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Aquilla – Previous Action #14	
Proposed Action:	Purchase back-up generators to maintain power to city hall.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project is to enhance citizen safety by providing emergency generator in the event of a winter storm that may make travel conditions too hazardous for staff to leave City Hall. This project would also ensure the continuity of government, including emergency services, during winter storm events

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. This project will mitigate the effects of winter storms on existing buildings by providing emergency power to the Aquilla City Hall.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$85,000
Potential Funding Sources:	HMGP, SHSP, General Fund, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Aquilla – Previous Action #15	
Proposed Action:	Establish road clearance and closure protocols to ensure that passable roads are deiced and hazardous roads are closed during winter storm events
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The program would establish standard operating practices that would ensure the protection of life and property by closing unsafe roads and deicing roads during winter storm events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	This action will not reduce the effects of winter storm on new buildings. This action will not reduce the effects of winter storms on existing buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

CITY OF BLUM

City of Blum – Previous Action #1	
Proposed Action:	Deepen and widen drainage ditches to eliminate flooding hazards.
BACKGROUND INFORMATION	
Site and Location:	All roads west of Avenue B
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This would minimize the possible effects of flooding in a low-lying area by ensuring the rapid water runoff can occur safely without damaging new or existing structures.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	Deeper and wider drainage ditches would allow for rapid runoff of storm water from properties with new buildings. Deeper and wider drainage ditches would allow for rapid runoff of storm water from properties with existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$75,000.00
Potential Funding Sources:	PDM Grant, HMGP Grant, EMPG Grant
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Blum – Previous Action #2	
Proposed Action:	Establish coordinated flood warning education and outreach program for residents.
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This action would ensure that residents with new or existing structures are aware of the risk of flooding and what steps they can take to minimize or negate the likelihood of flooding damages.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	Owners of new buildings would be more aware of their flooding risks and the potential mitigation actions that they can implement to reduce flooding losses. Owners of existing buildings would be more aware of their flooding risks and the potential mitigation actions that they can implement to reduce flooding losses.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000.00
Potential Funding Sources:	PDM Grant, EMPG Grant
Lead Agency/Department Responsible:	Emergency Management
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Blum – Previous Action #3	
Proposed Action:	Catalog, evaluate, and update any floodplain regulations within the City to comply with the latest FEMA regulations
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This would prevent future construction of non-flood hardened structures in flood-prone areas. The prevention of such construction would decrease future property losses to Flood.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to conform to the latest floodplain regulations, which would prevent building from being constructed in flood-prone areas and decrease property losses due to flooding. Existing buildings would be required to conform to existing and updated floodplain regulations, which would decrease property losses due to flooding and prevent reconstruction in flood-prone areas.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Blum – Previous Action #4	
Proposed Action:	Implement the utilization of advanced warning systems to notify residents of approaching windstorms and tornadoes
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Currently, the City relies on the county to alert its citizens on approaching storms. By establishing an agreement with the County, officials with the City of Blum would have the capability to alert its residents of approaching weather hazards, including tornadoes and windstorms, without the delay in contacting the County.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$15,000.00
Potential Funding Sources:	General Fund, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Complete.

SECTION 17: PREVIOUS ACTIONS

City of Blum – Previous Action #5	
Proposed Action:	Implement local ordinances to require that utility lines from utility poles to residential and commercial structures be buried
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	No city ordinances require the burial of utility lines. The implementation of such ordinances would decrease property damage by preventing the shearing of utility lines from new and existing structures. Furthermore, this would prevent the potential for loss of life due to electrocution by downed lines that are sheared from structures as a result of tornadoes and windstorms.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	The burial of utility lines from the service pole to the new building will reduce the damages caused by debris from tornadoes and windstorms. Existing buildings permitted for structural modification would be required to bury utility lines in order to reduce potential damages from debris caused by tornadoes and windstorms.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Blum – Previous Action #6	
Proposed Action:	Establish a fuel modification plan that addresses the modification of wildfire fuels within the wild land urban interface
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Establishing and implementing a plan for the long-term reduction and modification of wildfire fuels in the wild land urban interface will provide long-term mitigation of wildfire damages by reducing fuel loads and implementing heat-resistant vegetation that slows the movement of wildfires through the area.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through long-term reduction of wildfire fuels. This action will reduce the effects of wildfire on existing buildings through long-term reduction of wildfire fuels
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP, SHSP
Lead Agency/Department Responsible:	City Maintenance Department/Volunteer Fire Department
Implementation Schedule:	Two years for securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Blum – Previous Action #7	
Proposed Action:	Conduct public education initiatives that target property owners and focus on the reduction and modification of wildfire fuels
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By educating residents on the reduction, removal, or modification of wildfire fuels around homes and businesses, the effects of wildfire on these properties will be reduced.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through public education on the reduction and modification of wildfire fuels. This action will reduce the effects of wildfire on existing buildings through public education on the reduction and modification of wildfire fuels
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	Volunteer Fire Department
Implementation Schedule:	6 months are funding is secured

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Blum – Previous Action #8	
Proposed Action:	Promote xeriscaping and low-water consumption activities through public education programs
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Educating the public on the necessity for water conservation and xeriscaping will decrease the consumption of water resources that rapidly become limited during drought.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increased awareness on water conservation and xeriscaping practices. This action will reduce the effects of drought on existing buildings through increased awareness on water conservation and xeriscaping practices.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	Local Funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	1 year after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Blum – Previous Action #9	
Proposed Action:	Establish incentive programs that promote soil health, preserve soil moisture, and help to minimize the loss of crops and topsoil during drought events
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Agricultural losses make up most drought losses for the City. Utilizing an incentive program that encourages drought-resistant agricultural development and activities provides a mechanism to reduce the effects of drought within the area.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	No impact on new buildings. No impact on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$40,000
Potential Funding Sources:	Local Funds, EMPG, HMGP, PD<
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	2 years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Blum – Previous Action #10	
Proposed Action:	Implement a public education program to educate residents about life safety concerns during extreme heat events
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Educating the public about the risks associated with extreme heat events will reduce the potential for loss of life during such events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by educating the residents of new buildings on the health and safety concerns related to extreme heat events. This action will reduce the effects of extreme heat on existing buildings by educating the residents of existing buildings on the health and safety concerns related to extreme heat events.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	HMGP, SHSP, General Fund, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Blum – Previous Action #11	
Proposed Action:	Install quick-connect emergency generator hookups for air conditioning backup at critical facilities during electrical outages that result from increased electricity demand due to extreme heat
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The installation of generator hookups would allow for continued operations during power outages that might occur during periods of extreme heat due to the heavy demand on the electrical grid, or from a windstorm and other disasters.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by eliminating damage to equipment and circuits from loss of power. This action will reduce the effects of extreme heat on existing buildings by eliminating damage to equipment and circuits from loss of power.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$70,000
Potential Funding Sources:	SHSP, General Fund, PDM Grant Program, EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Blum – Previous Action #12	
Proposed Action:	Review local building codes to determine if revisions are necessary to increase requirements for hail-impact-resistant roofing and other materials
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This action would improve existing codes to incorporate hail-resistant construction requirements that decrease the potential for property damage due to hail

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	This action will reduce the effects of hail on new buildings by requiring they be more resistant to hail damage. This action will reduce the effects of hail on existing buildings by requiring they be more resistant to hail damage
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	2 years

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Blum – Previous Action #13	
Proposed Action:	Incorporate outdoor warning sirens
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The installation of outdoor warning sirens will drastically reduce the potential for injury and the loss of life resulting from hail. In addition to installing warning sirens, the city will develop a policy for using the sirens to provide early notification of severe weather events, including hail.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$100,000.00
Potential Funding Sources:	HMGP, PDM Grant Program, EMPG Grant Program, SHSP
Lead Agency/Department Responsible:	City Manager’s Office
Implementation Schedule:	18 months after securing financing

2026 ANALYSIS:
Complete.

SECTION 17: PREVIOUS ACTIONS

City of Blum – Previous Action #14	
Proposed Action:	Support and encourage the burial of power lines in new and existing subdivisions to alleviate downed power lines.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project is to support and encourage utility provider decisions for the burial of power lines in new and existing subdivisions. This would alleviate the event of downed power lines due to ice accumulation during Winter Storms.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	This project will mitigate the effects of winter storms on new buildings by preventing snow and ice from accumulating on nearby power lines and causing those lines to break. This project will mitigate the effects of winter storms on existing buildings by preventing snow and ice from accumulating on nearby power lines and causing those lines to break.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Not applicable
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Blum – Previous Action #15	
Proposed Action:	Implement vegetation management ordinances that require the removal of branches and limbs that are at risk of collapse under ice accumulation in order to prevent injury, loss of life, damage to property, or obstruction of roadways.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project will implement an ordinance that required that property owners manage vegetation to ensure that trees, branches and limbs that are not capable of withstanding ice accumulation are removed so that they do not pose a risk to life or property.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Not applicable
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Complete.

SECTION 17: PREVIOUS ACTIONS

CITY OF BYNUM

City of Bynum – Previous Action #1	
Proposed Action:	Establish designated floodways and encroachment lines to prevent construction and land-filling in flood-prone areas.
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This would minimize the possible effects of flooding in low-lying areas by preventing new buildings from being construction in areas with the greatest propensity for flooding.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	The prevention of construction and land-filling would prevent new buildings from being raised in flood-prone areas. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	No Cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Bynum - Previous Action #2	
Proposed Action:	Require approved site control plans and storm water runoff plans before long-duration construction projects are permitted to begin.
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This would minimize the possible effects of flooding on newly constructed buildings by ensuring that storm water runoff has been appropriately addressed for the property and type of construction project. This will be accomplished by ensuring that developers establish mechanisms that allow for effective storm water runoff, thereby preventing flooding in and around newly developed areas. Permits will not be granted until storm water drainage has been addressed appropriately>

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	Site control and storm water runoff plans would be required prior to new buildings being constructed; This would prevent the development of areas in a manner that would prohibit effective storm water runoff to reduce flooding. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Delete action, the City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Bynum – Previous Action #3	
Proposed Action:	Relocate or flood proof critical facilities in A Zones, including attendant utility and sanitary facilities, to meet existing FEMA NFIP standards
BACKGROUND INFORMATION	
Site and Location:	A Zones
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Currently, critical facilities within A Zones are not flood proof. This action will ensure that all critical facilities in such zones are relocated outside of the zones or else retrofitted to be flood proof and watertight below the base flood elevation if the structure cannot be relocated.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New facilities within A Zones will be flood proof Existing facilities within A Zones will be retrofitted to be flood proof or else relocated outside of the A Zones
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000.00
Potential Funding Sources:	PDM Grant Program, EMPG Grant Program, Local Funds
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Bynum – Previous Action #4	
Proposed Action:	Catalog, evaluate, and update any floodplain regulations within the City to comply with the latest FEMA regulations
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This would prevent future construction of non-flood hardened structures in flood-prone areas. The prevention of such construction would decrease future property losses to Flood.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to conform to the latest floodplain regulations, which would prevent building from being constructed in flood-prone areas and decrease property losses due to flooding. Existing buildings would be required to conform to existing and updated floodplain regulations, which would decrease property losses due to flooding and prevent reconstruction in flood-prone areas.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Bynum – Previous Action #5	
Proposed Action:	Establish standard operating procedures to utilize social media platforms, including Facebook and Twitter, to disseminate warning of impending storm conditions.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Advanced warning for tornadoes and windstorms is accomplished by the county. By establishing local practices to utilize social media to provide additional information and alerts, residents will be more aware of the potential dangers of approaching storms, allowing them to take cover, thereby reducing the loss of life resulting from windstorms and tornadoes.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	3 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Bynum – Previous Action #6	
Proposed Action:	Acquire and integrate NOAA All-Hazards Weather Radios into school district campuses
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Currently, the school district has one weather radio per campus. By expanding the number of weather radios throughout the campuses and ensuring that all school district buildings are equipped with a weather radio, advanced warnings will be received quicker than having to relay the message once received from a single point.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	New school district buildings would be equipped with weather radios that would provide advanced warnings for severe windstorms and tornadoes. Existing school district buildings would be equipped with weather radios that would provide advanced warnings for windstorms and tornadoes.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$3,000
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	Bynum ISD
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Bynum – Previous Action #7	
Proposed Action:	Establish public education initiatives to encourage the construction and utilization of safe rooms during severe weather events
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	No public education campaign exists within the city to encourage the construction and utilization of safe rooms to protect lives during severe weather events, including tornadoes and windstorms.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	New buildings will be more likely to construct a safe room within the building. Existing buildings will be more likely to retrofit the building with a safe room.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	Local funds, EMPG, SHSP, PDM, HMGP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of – Previous Action #8	
Proposed Action:	Utilize comprehensive public information capabilities, including print media, social networking, and websites to encourage active wildfire mitigation through vegetation management around homes and businesses
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Effective vegetation management by property owners greatly reduced the risk and effects of wildfire on new and existing buildings. By educating the public on effective vegetation management activities, residents will possess the knowledge and capability of better managing vegetation to create defensible space around homes and businesses.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the public education on reducing wildfire fuels around businesses and homes. This action will reduce the effects of wildfire on existing buildings through public education on reducing wildfire fuels around businesses and homes
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	Volunteer Fire Department
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of – Previous Action #9	
Proposed Action:	Establish a vegetation management program to reduce the availability of dense fuels that contribute to wildfires
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Wildfire mitigation measures are not widely known in small towns such as the City of Aquilla. By managing vegetation within the city and removing large fuel loads that contribute to wildfires, the likelihood of occurrence for wildfire will be decreased.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings by removing large fuel loads that are present within the city. This action will reduce the effects of wildfire on existing buildings by removing large fuel loads that are present within the city.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$15,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP, SHSP, PDM
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Bynum – Previous Action #10	
Proposed Action:	Encourage, through public education initiatives, agricultural drought management strategies that include the planning of crops that tolerate low moisture levels
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Educating local farmers on agricultural drought management strategies will lessen the economic effects of drought on the area

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	Local funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	1 year after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Bynum – Previous Action #11	
Proposed Action:	Establish ordinances to prioritize and control water use during drought events
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Regulating water use will help in protecting existing water resources that become limited during times of drought.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through the regulation of water use during times of drought. This action will reduce the effects of drought on existing buildings through the regulation of water use during times of drought
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	1 year after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Bynum – Previous Action #12	
Proposed Action:	Utilize new and existing public information assets to disseminate health and safety warnings to residents during extreme temperatures.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Alerting the public of extreme heat events and disseminating health and safety information will reduce the potential for loss of life during such events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by alerting residents of health hazards due to extreme heat events. This action will reduce the effects of extreme heat on existing buildings by alerting residents of health hazards due to extreme heat events.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Bynum – Previous Action #13	
Proposed Action:	Retrofit City Hall to create “Cooling Shelters” for Special Needs populations.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The project would identify the centralized location with additional and more efficient air conditioners to better accommodate the facility so that it can be used as a cooling center for residents, particularly the at-risk population.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	No impact on future buildings. Existing public facilities may be utilized in a manner that will prevent illness and the loss of life
Priority (High, Moderate, Low):	High
Estimated Cost:	\$275,000
Potential Funding Sources:	SHSP, General Fund, PDM Grant Program, EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	City Manager’s Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Delete action, the City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Bynum – Previous Action #14	
Proposed Action:	Install hail resistant roofing on critical infrastructure buildings.
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Damage from hail can be underestimated, although not preventable, damage and life safety risks from this hazard can be lessened by installing hail-resistant roofing on county-owned critical infrastructure facilities

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	This action will reduce the effects of hail on new buildings by making the building less resistant to hail damage. This action will reduce the effects of hail on existing buildings through less damage to buildings and defraying cost of repairs
Priority (High, Moderate, Low):	High
Estimated Cost:	\$125,000
Potential Funding Sources:	HMGP, Local Funds, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	County Commissioners
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Bynum – Previous Action #15	
Proposed Action:	Increase public education and awareness of the potential severity of hailstorms
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This action will provide public education and awareness of potential hazards to life safety and building damage caused by hail. A better education population will likely take the recommended actions to reduce the risk to property and life.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	This action will reduce the effects of hail on new buildings by educating residents of the potential severity for hailstorms and the damages that hail can cause. This action will reduce the effects of hail on existing buildings by educating residents of the potential severity for hailstorms and the damages that hail can cause
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	HMGP, Local funds, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Bynum – Previous Action #16	
Proposed Action:	Enhance early warning system by providing targeted facilities with weather radios.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project is to enhance early warning system by providing weather radios to critical facilities that will allow appropriate measures to be taken to mitigate the potential damage that winter storms can cause.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	This project will mitigate the effects of winter storms on new buildings by providing early warning of Winter Storms thereby permitting owners to take appropriate measures to reduce the effects of the storm. This project will mitigate the effects of winter storms on existing buildings by providing early warning of Winter Storms thereby permitting owners to take appropriate measures to reduce the effects of the storm.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500.00
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	2 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Bynum – Previous Action #17	
Proposed Action:	Utilize existing public preparedness activities, including those activities of Citizen Corps program, to inform and encourage citizens to implement mitigation actions to prevent the loss of life and property during winter storms
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This action will utilize public education activities to encourage residents and property owners to take appropriate actions to protect their property while minimizing exposure to winter storms. This will reduce the potential for loss of life and property damage resulting from winter storms.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	Owners and residents of new buildings will be more knowledgeable of ways to reduce the damage to or loss of property. Owners and residents of existing buildings will be more knowledgeable of ways to reduce the damage to or loss of property
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Not applicable
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	3 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

CITY OF COVINGTON

City of Covington – Previous Action #1	
Proposed Action:	Establish subdivision regulations that require flood-resistant construction methods be used in flood-prone areas.
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This would minimize the possible effects of flooding in flood-prone areas through effective structural and regulatory measures.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to utilize flood-resistant construction methods in order to minimize future flooding damage. Existing buildings would be required to implement flood-resistant construction methods if major remodeling or retrofitting is permitted in order to minimize future flooding damage.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Covington – Previous Action #2	
Proposed Action:	Catalog, evaluate, and update any floodplain regulations within the City to comply with the latest FEMA regulations
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This would prevent future construction of non-flood hardened structures in flood-prone areas. The prevention of such construction would decrease future property losses to floods.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to conform to the latest floodplain regulations, which would prevent building from being constructed in flood-prone areas and decrease property losses due to flooding. Existing buildings would be required to conform to existing and updated floodplain regulations, which would decrease property losses due to flooding and prevent reconstruction in flood-prone areas.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Covington – Previous Action #3	
Proposed Action:	Purchase and install automated floodgates at water crossings
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	By installing automated floodgates at water crossings, residents would not be able to drive through areas with a high likelihood of flooding. This would drastically decrease the potential for the loss of life due to flooding events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	This action would have no impact on new buildings. This action would have no impact on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	To Be Determined
Potential Funding Sources:	NFMF, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Covington – Previous Action #4	
Proposed Action:	Relocate or flood proof critical facilities in A Zones, including attendant utility and sanitary facilities, to meet existing FEMA NFIP standards
BACKGROUND INFORMATION	
Site and Location:	A Zones
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Currently, critical facilities within A Zones are not flood proof. This action will ensure that all critical facilities in such zones are relocated outside of the zones or else retrofitted to be flood proof and watertight below the base flood elevation if the structure cannot be relocated.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New facilities within A Zones will be flood proof Existing facilities within A Zones will be retrofitted to be flood proof or else relocated outside of the A Zones
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000.00
Potential Funding Sources:	PDM Grant Program, EMPG Grant Program, Local Funds
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Covington – Previous Action #5	
Proposed Action:	Encourage and support, through public education, the avoidance of standing seam roofing to reduce wind damage to roofs
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Standing seam roofing has proven to be the most susceptible to wind damage, especially from windstorms and tornadoes. By educating the public on how prevent property damage by using alternate roofing types, overall property damage resulting from tornadoes and windstorms will be reduced.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	New buildings will be less likely to utilize roofing types that are the most susceptible to wind damage. Existing buildings that require roofing repairs will be less likely to utilize roofing types that are the most susceptible to wind damage.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	Local funds, SHSP, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months from the time funding is secured

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Covington – Previous Action #6	
Proposed Action:	Establish a memorandum of understanding between the school district and the City to utilize public address system capabilities at the school district for alerting citizens
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The ability to provide advanced notification of tornado and windstorm activity is limited within the city. The school campuses are often the areas where large masses of individuals are gathered, such as during football games, basketball games, and ceremonies. By establishing an MOU that will allow advanced warning to be issued over school public address systems, the potential for the loss of life can be drastically reduced when facing windstorms or tornado activity.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	Public address systems at new school district buildings would be utilized to disseminate advanced warnings for tornado and windstorm activity. Public address systems in place at existing school district buildings would be utilized to disseminate advanced warnings for tornado and windstorm activity.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of – Previous Action #7	
Proposed Action:	Increase defensible space around public facilities to ensure continuity of government operations in the event of a wildfire occurrence
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By increasing defensible space around existing public facilities, the risk of interruption of government operations and loss of property can be drastically reduced

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	No effect on new buildings. This action will reduce the effects of wildfire on existing buildings through the increase of defensible space around existing public facilities
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	12 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of – Previous Action #8	
Proposed Action:	Implement open space preservation measures into existing master plans to reduce wildfire risk through effective land use planning
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By incorporating open space preservation concepts that focus on wildfire prevention and fuel reduction into existing master plans, the future risk of wildfire occurrence and damage will be reduced.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through effective land use planning and fuel reduction. This action will reduce the effects of wildfire on existing buildings through effective land use planning and fuel reduction
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Covington – Previous Action #9	
Proposed Action:	Educate the agricultural community on the availability of crop insurance programs that reduce economic losses during drought events
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Educating the agricultural community on the availability of crop insurance will decrease the economic losses that occur because of drought.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	Local funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	1 year after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Covington– Previous Action #10	
Proposed Action:	Develop and implement a drought contingency plan to include water conservation and mandatory water rationing.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	During times of drought, the demand for potable water for drinking, sanitation, Fire protection, may exceed the city’s capacity to produce enough quantity. The drought contingency plan provides the ability to regulate the use of potable water for non-essential uses.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increased awareness on water conservation. This action will reduce the effects of drought on existing buildings through increased awareness on water conservation.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	Local funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager’s Office
Implementation Schedule:	1 year after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Covington– Previous Action #11	
Proposed Action:	Establish working relationships with local non-profit organizations in order to acquire air conditioning units for homes without air conditioning and without the means to purchase one.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The lack of air conditioning during extreme heat events presents a major threat to human and pet life and health. By working with local organizations, these at-risk populations can prevent personal injury, illness or death by acquiring air conditioning for their homes when they have no other capability of doing so.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by providing a means for at-risk residents to acquire an air conditioner. This action will reduce the effects of extreme heat on existing buildings by providing a means for at-risk residents to acquire an air conditioner
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Covington– Previous Action #12	
Proposed Action:	Implement a public education program to educate residents about life safety concerns during extreme heat events
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Educating the public about the risks associated with extreme heat events will reduce the potential for loss of life during such events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by educating the residents of new buildings on the health and safety concerns related to extreme heat events. This action will reduce the effects of extreme heat on existing buildings by educating the residents of existing buildings on the health and safety concerns related to extreme heat events.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	HMGP, SHSP, General Fund, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Covington– Previous Action #13	
Proposed Action:	Implement hail-resistant roofing and window designs into existing building codes.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Updating building codes to include the use of impact-resistant roofing materials will reduce the damages done to new and existing buildings by hail.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	New buildings would be required to utilize impact-resistant roofing to prevent damage to property. Existing buildings that require roofing repair or remodeling would be required to utilize impact-resistant roofing materials to reduce damage to buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Covington– Previous Action #14	
Proposed Action:	Increase public awareness of protective measures that can be taken during hailstorms to prevent injury and the loss of life
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Increasing public awareness of protective measures from hail will reduce the potential for loss of life and injury resulting from hail

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	HMGP, Local funds, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Covington– Previous Action #15	
Proposed Action:	Implement public awareness programs that educate residents on the importance of having and using NOAA All-Hazards weather radios
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project will educate the public on the importance of receiving early notifications from the National Weather Service using weather radios. Advanced notification will reduce the loss of life from winter storm events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	EMPG, SHSP, PDM, HMGP, Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Covington– Previous Action #16	
Proposed Action:	Establish processes for public works personnel to pre-emptively sand or salt primary roadways to reduce the risk to life and property prior to the impact of a severe winter weather event.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project will allow for deicing activities to be implemented prior to the effects of winter storms on the city’s roadway infrastructure. This will reduce the potential for loss of life and property due to winter storms.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$40,000
Potential Funding Sources:	EMPG, SHSP, PDM, HMGP
Lead Agency/Department Responsible:	Public Works Department
Implementation Schedule:	12 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

CITY OF HILLSBORO

City of Hillsboro – Previous Action #1	
Proposed Action:	Request an update to existing Flood Insurance Rate Maps for the City
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Existing FIRMS are more than three decades old. By updating the maps, the city and its residents would have a better understand of the flood risk that they face and the future mitigation actions necessary to prevent losses to property that result from flooding.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	Updating FIRMS would increase jurisdictional and resident knowledge on flooding hazards within the city as it pertains to both new and existing buildings. Updating FIRMS would increase jurisdictional and resident knowledge on flooding hazards within the city as it pertains to both new and existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	No Cost
Potential Funding Sources:	Local Funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #2	
Proposed Action:	Flood proof critical facilities in A Zones, including attendant utility and sanitary facilities, to meet existing FEMA standards
BACKGROUND INFORMATION	
Site and Location:	A Zones
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Currently, critical facilities within A Zones are not flood proof. This action will ensure that all critical facilities in such zones are retrofitted to be flood proof and watertight below the base flood elevation

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New facilities within A Zones will be flood proof Existing facilities within A Zones will be flood proof
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000.00
Potential Funding Sources:	PDM Grant Program, EMPG Grant Program, Local Funds
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #3	
Proposed Action:	Establish an open space preservation program that encourages rapid drainage of populated areas.
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This would minimize the possible effects of flooding in low-lying areas by utilizing open spaces to allow for rapid storm water drainage.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	Properties containing new buildings would have the necessary drainage to prevent flooding damage while not damaging surrounding properties. Properties with existing buildings would have the necessary drainage to prevent flooding damage while not damaging surrounding properties.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$50,000.00
Potential Funding Sources:	NFMF, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #4	
Proposed Action:	Catalog, evaluate, and update any floodplain regulations within the City to comply with the latest FEMA regulations
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This would prevent future construction of non-flood hardened structures in flood-prone areas. The prevention of such construction would decrease future property losses to floods.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to conform to the latest floodplain regulations, which would prevent building from being constructed in flood-prone areas and decrease property losses due to flooding. Existing buildings would be required to conform to existing and updated floodplain regulations, which would decrease property losses due to flooding and prevent reconstruction in flood-prone areas.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #5	
Proposed Action:	Expand outdoor warning siren system to better cover the populated areas of the city, including areas of mass gathering.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By expanding the outdoor warning siren system to include intramural fields, practice fields, and other places of mass public gathering, the potential for loss of life can be greatly reduced through having a stronger capability to provide advanced warning.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	200,000
Potential Funding Sources:	SHSP, HMGP, PDM
Lead Agency/Department Responsible:	Emergency Management
Implementation Schedule:	2 years from the time funding is secured

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #6	
Proposed Action:	Implement a residential safe room program aimed at increasing the number of safe rooms in residences by leveraging grant funds
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	No safe room program is in place within the City. If grant funds can be secured to support such a program, new and existing buildings within the city could be enabled to incorporate safe rooms that reduce the potential for the loss of life resulting from windstorms and tornadoes.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	New buildings could be equipped with safe rooms that protect from the loss of life. Existing buildings could be retrofitted with safe rooms that protect from the loss of life.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000,000
Potential Funding Sources:	SHSP, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	2 years from the time funding is secured

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #7	
Proposed Action:	Improving and lowering the public protection (PPE) rating in accordance with Insurance Service Office (ISO).
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Improving and lowering the public protection (PPE) rating with Insurance Service Office (ISO) will enhance the city’s wildfire protection. This will be accomplished by working with the State Fire Marshalls Office (SFMO), City Council and other local officials to address the needs of the Hillsboro community by improving response times and city staffing to lower our PPE rating.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the education of how to protect buildings from wildfire. This action will reduce the effects of wildfire on existing buildings through the education of how to protect buildings from wildfire
Priority (High, Moderate, Low):	High
Estimated Cost:	\$300,000.00
Potential Funding Sources:	General Fund, HMGP, SHSP, EMPG, PDM
Lead Agency/Department Responsible:	Fire Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #8	
Proposed Action:	Establish enforceable construction standards that are conducive to wildfire mitigation, including expansive defensible space and fire-resistant vegetation requirements
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Requiring the implementation of expansive defensible space and fire-resistant vegetation will reduce the risk of property loss to new buildings as a result of wildfire occurrence.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the requirement that fire-resistant vegetation materials and expansive defensible space be incorporated. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #9	
Proposed Action:	Incorporate drought-resistant water supply infrastructure into community development plans
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Implementing the installation of water conserving and drought-resistant infrastructure into community plans will ensure the long-term drought mitigation occurs. The installation of water reclamation reservoirs that can be utilized to produce potable water will increase the availability of the already limited water resources during drought.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through the long-term implementation of water conservation and drought-resistant infrastructure installation. This action will reduce the effects of drought on existing buildings through the long-term implementation of water conservation and drought-resistant infrastructure installation.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$250,000
Potential Funding Sources:	Local funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	2 years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #10	
Proposed Action:	Distribute printed materials at City Hall to promote xeriscaping to reduce water use for landscaping purposes
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Educating the public on the necessity for water conservation and xeriscaping will decrease the consumption of water resources that rapidly become limited during drought. Printed materials will be distributed from City Hall, as well distributed in water bills and at public meetings.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increased awareness on water conservation and xeriscaping practices. This action will reduce the effects of drought on existing buildings through increased awareness on water conservation and xeriscaping practices.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,800
Potential Funding Sources:	Local funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	1 year after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #11	
Proposed Action:	Incorporate cooling features in public areas, such as water misters or fountains in parks, that provide respite from heat while conserving water
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Utilizing existing public venues, such as parks and other recreational areas, to implement measure that provide respite or protection from extreme heat is ways that conserve water will reduce the potential for heat-related illness, injury and death.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	New public recreational facilities will be equipped with water-conserving equipment that provides protection or respite from extreme heat. Existing public recreational facilities will be equipped with water-conserving equipment that provides protection or respite from extreme heat
Priority (High, Moderate, Low):	High
Estimated Cost:	\$30,000
Potential Funding Sources:	HMGP, SHSP, General Fund, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #12	
Proposed Action:	Implement and conduct public education programs to inform residents of the dangers of working or exercising outdoors during extreme heat events
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Educating the public of health risks associated with working or exercising outdoors will reduce the potential for loss of life and injury/illness from extreme heat events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	No impact to new buildings. No impact to existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	HMGP, SHSP, General Fund, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #13	
Proposed Action:	Utilize housing authorities to educate residents on hailstorm mitigation measures
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This action would utilize existing organizations to promote awareness of measures that can be taken to prevent damage to property and injury to persons by hail. This measure would have no cost to the city and would leverage existing relationships to increase public awareness.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	No effect on new buildings. No effect with existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	Emergency Management
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #14	
Proposed Action:	Build public over-head shelters for hail storms through the city of Hillsboro.
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This program will lessen the potential injury to the citizens of Hillsboro by providing them basic over-head cover in the event that they are caught out in a hailstorm. Thereby reducing the potential loss of life and injury.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	New public buildings may be utilized to implement overhead shelters. Existing public buildings may be utilized to implement overhead shelters
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$500,000.00
Potential Funding Sources:	HMGP, PDM Grant Program, EMPG Grant Program, SHSP
Lead Agency/Department Responsible:	Public Works Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #15	
Proposed Action:	Establish standard operating procedures to utilize available public buildings as emergency warming areas during winter storms
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project will leverage new and existing public facilities as emergency warming stations to provide protection from the cold to residents. No processes are currently in place by the city to provide warming stations to residents. The provision of warming stations would decrease the potential for loss of life, injury, and illness due to winter storms.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	New public buildings may be used as emergency warming stations during winter storms. Existing public buildings may be used as emergency warming stations during winter storms
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Not applicable
Lead Agency/Department Responsible:	Emergency Management
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hillsboro – Previous Action #16	
Proposed Action:	Review and revise existing building codes to improve structural ability to withstand snow and ice weight
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project will revise existing building standards to include winter storm mitigation measures. This will provide a mechanism for ensuring that buildings are capable of withstanding the normal snow and ice loading that can be expected within the city.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	New buildings will be required to conform to building codes that prevent structural damage due to snow and ice accumulation. Existing buildings that undergo major modification will be required to conform to building codes that prevent structural damage from snow and ice accumulation
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Not applicable
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

CITY OF HUBBARD

City of Hubbard – Previous Action #1	
Proposed Action:	Establish an open space preservation program that encourages rapid drainage of populated areas and limits construction of new structures within flood-prone areas.
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	A large area of the city is prone to flooding. By utilizing land use and environmental planning measures, the City can establish an open space preservation program that facilitates the runoff of storm waters and limits construction in areas that are the most prone for flooding.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	Properties containing new buildings would have the necessary drainage to prevent flooding damage while not damaging surrounding properties. Properties with existing buildings would have the necessary drainage to prevent flooding damage while not damaging surrounding properties.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$85,000.00
Potential Funding Sources:	NFMF, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #2	
Proposed Action:	Incorporate building codes that require flood-resistant construction techniques to be used when constructing new buildings or remodeling existing buildings for those properties located in flood-prone areas.
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This action would provide a mechanism to enforce sound building practices to reduce flood losses for properties in areas with a high likelihood of flooding.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to implement flood-resistant construction techniques, decreasing future losses to property from flooding. Existing buildings would be required to implement flood-resistant construction techniques while undergoing remodeling, reducing future losses to existing buildings from flooding.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #3	
Proposed Action:	Catalog, evaluate, and update any floodplain regulations within the City to comply with the latest FEMA regulations
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This would prevent future construction of non-flood hardened structures in flood-prone areas. The prevention of such construction would decrease future property losses to floods.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to conform to the latest floodplain regulations, which would prevent building from being constructed in flood-prone areas and decrease property losses due to flooding. Existing buildings would be required to conform to existing and updated floodplain regulations, which would decrease property losses due to flooding and prevent reconstruction in flood-prone areas.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Complete.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #4	
Proposed Action:	Relocate or flood proof critical facilities in A Zones, including attendant utility and sanitary facilities, to meet existing FEMA NFIP standards
BACKGROUND INFORMATION	
Site and Location:	A Zones
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Currently, critical facilities within A Zones are not flood proof. This action will ensure that all critical facilities in such zones are relocated outside of the zones or else retrofitted to be flood proof and watertight below the base flood elevation if the structure cannot be relocated.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New facilities within A Zones will be flood proof Existing facilities within A Zones will be retrofitted to be flood proof or else relocated outside of the A Zones
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000.00
Potential Funding Sources:	PDM Grant Program, EMPG Grant Program, Local Funds
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #5	
Proposed Action:	Acquire and integrate NOAA All-Hazards Weather Radios into school district campuses
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By enhancing public education initiatives within the City, residents will be more aware of the windstorm and tornado hazards that they face. Additionally, residents will be educated on how to prevent property damage and the loss of life resulting from tornadoes and windstorms.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	New school district buildings would be equipped with weather radios that would provide advanced warnings for severe windstorms and tornadoes. Existing school district buildings would be equipped with weather radios that would provide advanced warnings for windstorms and tornadoes.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$3,000
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	Hubbard ISD
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #6	
Proposed Action:	Support and encourage electrical utilities and communication service providers to use underground construction methods, where possible, to reduce power hazards, power outages, and communication outages resulting from tornadoes and windstorms
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The City has no measures in place to encourage the burial of utility and communication lines. The burial of these lines aids in preventing outages and prevents electrocution from downed lines following tornadoes and windstorms.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	The loss of power and communications, damage from separated utility lines, and risk of electrocution following tornadoes and windstorms will be drastically reduced for new buildings. The loss of power and communications, damage from separated utility lines, and risk of electrocution following tornadoes and windstorms will be drastically reduced for existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #7	
Proposed Action:	Implement requirements for fire-resistant building materials be used on structures built or remodeled that are located within or near the wild land urban interface
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The use of fire-resistant building materials drastically reduces the potential for property loss and damage due to wildfires.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the requirement that fire-resistant building materials be used when constructing new buildings. This action will reduce the effects of wildfire on existing buildings through the requirement that fire-resistant building materials be used when remodeling existing buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #8	
Proposed Action:	Utilize social media capabilities, including Facebook and Twitter, to disseminate warning of approaching wildfires
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	As with tornadoes and other natural hazards, advanced warning is one of the most effective measures in preventing the loss of life. The use of social media will help residents to receive early warning of potential wildfire threats, thereby decreasing the potential for loss of life.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	3 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #9	
Proposed Action:	Distribute printed materials at City Hall to promote xeriscaping to reduce water use for landscaping purposes
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Educating the public on the necessity for water conservation and xeriscaping will decrease the consumption of water resources that rapidly become limited during drought.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increased awareness on water conservation and xeriscaping practices. This action will reduce the effects of drought on existing buildings through increased awareness on water conservation and xeriscaping practices.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$800
Potential Funding Sources:	Local funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	1 year after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #10	
Proposed Action:	Revise and update landscaping ordinances to allow flexibility for xeriscaping
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Current ordinances do not allow for the flexibility necessary to implement water-conserving xeriscaping practices.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through the allowance of xeriscaping practices. This action will reduce the effects of drought on existing buildings through the allowance of xeriscaping practices.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #11	
Proposed Action:	Retrofit rear wing of the Police Department to serve as a cooling station during extreme heat events.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By retrofitting the Police Department with industrial, high-capacity air conditioning units, the rear wing of the building would be able to be used as a cooling station that will be capable of reducing the impacts of extreme heat events. The rear wing of the building has a capacity of approximately 100 persons.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	No effect to new buildings. Existing Police Department will be converted into a cooling station during extreme heat events
Priority (High, Moderate, Low):	High
Estimated Cost:	\$120,000
Potential Funding Sources:	Local funds, EMPG, HSGP, PDM, HMGP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #12	
Proposed Action:	Implement the utilization of existing notification systems and public information assets to inform the public of extreme heat hazards, thereby improving
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The city has no procedures in place to use emergency alerting capabilities to notify citizens of health and safety risks associated with extreme heat events. The utilization of such tools will assist in decreasing the risk to health, including the potential for loss of life, resulting from extreme heat events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	Residents of new buildings will be more aware of the health and safety concerns related to extreme heat events. Residents of existing buildings will be more aware of the health and safety concerns related to extreme heat events
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Local funds	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #13	
Proposed Action:	Expand existing outdoor warning siren system
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	The expansion of the existing outdoor warning siren system will drastically reduce the potential for injury and the loss of life resulting from hail

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$100,000.00
Potential Funding Sources:	HMGP, PDM Grant Program, EMPG Grant Program, SHSP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	18 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #14	
Proposed Action:	Update building codes to require the use of hail-impact-resistant roofing materials
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Updating building codes to include the use of impact-resistant roofing materials will reduce the damages done to new and existing buildings by hail.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	New buildings would be required to utilize impact-resistant roofing to prevent damage to property. Existing buildings that require roofing repair or remodeling would be required to utilize impact-resistant roofing materials to reduce damage to buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #15	
Proposed Action:	Implement a program to trim tree and remove vegetative debris in the right of way
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project will remove tree limbs, branches, and dead trees, as well as other vegetative debris that can cause the interruption of electrical service and damage to homes. The interruption of electrical service during winter storms can present a threat to health and life. Furthermore, this project would reduce roadway hazards to drivers during winter storms, further preventing injury and loss of life.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	This project will mitigate the effects of winter storms on new buildings by preventing vegetative debris from falling and severing power lines, which can cause damage to buildings. This project will mitigate the effects of winter storms on existing buildings by preventing vegetative debris from falling and severing power lines, which can cause damage to buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	\$40,000
Potential Funding Sources:	HMGP, PDM, SHSP, EMPG
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Hubbard – Previous Action #16	
Proposed Action:	Establish procedures to maintain road sanding or salting capabilities during winter months when there is the greatest likelihood of winter storm events.
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	The procedures would establish a capability for reducing the risk to life from severe weather events by ensuring that affected roads were sanded or salted when ice or snow accumulates.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$20,000.00
Potential Funding Sources:	HMGP, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

CITY OF ITASCA

City of Itasca – Previous Action #1	
Proposed Action:	Establish zoning regulations to prohibit residential construction in flood-prone areas.
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This action, over time, would decrease property losses from flooding in areas that are deemed as flood-prone.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	Under the new zoning regulations, new structures would not be allowed to be constructed within flood-prone areas, reducing the potential for flood losses to property. The new zoning regulations would prohibit existing buildings from being rebuilt in flood-prone areas once they are deemed irreparable.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #2	
Proposed Action:	Implement strategic land-use planning mechanisms to ensure flood-resistant development occurs in flood-prone areas.
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This would minimize the possible effects of flooding in a low-lying area.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	Considerations would be taken prior to the construction of new buildings in flood-prone areas. Over time, existing structures that are deemed unsafe or beyond repair would be razed and permitting processes would take flood mitigation into consideration before the structure could be replaced.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #3	
Proposed Action:	Catalog, evaluate, and update any floodplain regulations within the City to comply with the latest FEMA regulations
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This would prevent future construction of non-flood hardened structures in flood-prone areas. The prevention of such construction would decrease future property losses to floods.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to conform to the latest floodplain regulations, which would prevent building from being constructed in flood-prone areas and decrease property losses due to flooding. Existing buildings would be required to conform to existing and updated floodplain regulations, which would decrease property losses due to flooding and prevent reconstruction in flood-prone areas.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #4	
Proposed Action:	Relocate or flood proof critical facilities in A Zones, including attendant utility and sanitary facilities, to meet existing FEMA NFIP standards
BACKGROUND INFORMATION	
Site and Location:	A Zones
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Currently, critical facilities within A Zones are not flood proof. This action will ensure that all critical facilities in such zones are relocated outside of the zones or else retrofitted to be flood proof and watertight below the base flood elevation if the structure cannot be relocated.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New facilities within A Zones will be flood proof Existing facilities within A Zones will be retrofitted to be flood proof or else relocated outside of the A Zones
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000.00
Potential Funding Sources:	PDM Grant Program, EMPG Grant Program, Local Funds
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #5	
Proposed Action:	Implement public awareness programs that educate residents on the importance of having and using NOAA All-Hazards weather radios
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	By educating the public on the use of weather radios, the public can be notified in advance of the occurrence of tornadoes and windstorms, thereby reducing the potential for the loss of life.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	Local funds, SHSP, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	3 months from the time funding is secured

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #6	
Proposed Action:	Establish a protocol to utilize government facilities as shelters during windstorms and tornadoes
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	City facilities are not used as shelters from storm activity. However, the implementation of a protocol to utilize such facilities as a shelter during tornadoes and windstorms would prevent the loss of life by establishing a safe place for residents to take cover from tornadoes and windstorms.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #7	
Proposed Action:	Establish emergency alerting capabilities, including the use of reverse-911 telephone notification systems, to provide advanced warning of wildfires that threaten life and property
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Historically, existing emergency alerting technologies have not been used within the city to alert residents of impending wildfire impact. The use of emergency alerting tools would decrease the potential for property damage and loss of life from wildfires by decreasing notification time for residents to be alerted of an active wildfire that poses a threat to them or their property.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the advanced warning of potential wildfire threats. This action will reduce the effects of wildfire on existing buildings through the advanced warning of potential wildfire threats
Priority (High, Moderate, Low):	High
Estimated Cost:	\$15,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP, SHSP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	18 months after funding is secured

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #8	
Proposed Action:	Encourage, through public education, the use of fire-resistant landscaping to establish defensible space around new and existing buildings
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Utilizing public education activities to inform residents of the importance of defensible space and the utilization of fire-resistant landscaping to create defensible space will decrease fuel loads around new and existing buildings, thereby reducing the potential for loss of life and property from wildfires.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through public education on fuel reduction and the implementation of defensible space. This action will reduce the effects of wildfire on existing buildings through public education on fuel reduction and the implementation of defensible space
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	Volunteer Fire Department
Implementation Schedule:	3 months after funding is secured

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #9	
Proposed Action:	Promote water conservation education and incentives for low-flow toilets and plumbing, efficient washers, and rain harvesting to decrease water consumption during drought
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Educating the public on the necessity for water conservation and establishing economic incentives for installing water conserving appliances and plumbing will reduce the use of water during drought.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through economic incentives and increased awareness on water conservation measures. This action will reduce the effects of drought on existing buildings through economic incentives and increased awareness on water conservation measures.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	Local funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	1 year after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #10	
Proposed Action:	Reduce water use during the first stages of drought through effective public education programs and the development of a water conservation plan
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Reducing the use of water during the first stages of drought is highly important in ensuring that water resources remain available during long periods of drought. By educating the public on the need for water use reduction, long-term effects of drought can be reduced. The development of a water conservation plan that includes specific actions to reduce water use will provide a long-term, actionable guide to ensure effective water conservation during drought.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increased reduction measures implemented during the first stages of drought. This action will reduce the effects of drought on existing buildings through increased reduction measures implemented during the first stages of drought
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	Local funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	1 year after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #11	
Proposed Action:	Implement and conduct public education programs to inform residents of the dangers of working or exercising outdoors during extreme heat events
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Educating the public of health risks associated with working or exercising outdoors will reduce the potential for loss of life and injury/illness from extreme heat events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	No impact to new buildings. No impact to existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	HMGP, SHSP, Local funds, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #12	
Proposed Action:	Establish working relationships with local non-profit organizations in order to acquire air conditioning units for homes without air conditioning and without the means to purchase one.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The lack of air conditioning during extreme heat events presents a major threat to human and pet life and health. By working with local organizations, these at-risk populations can prevent personal injury, illness or death by acquiring air conditioning for their homes when they have no other capability of doing so.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by providing a means for at-risk residents to acquire an air conditioner. This action will reduce the effects of extreme heat on existing buildings by providing a means for at-risk residents to acquire an air conditioner
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #13	
Proposed Action:	Incorporate outdoor warning sirens
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The installation of outdoor warning sirens will drastically reduce the potential for injury and the loss of life resulting from hail

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$100,000.00
Potential Funding Sources:	HMGP, PDM Grant Program, EMPG Grant Program, SHSP
Lead Agency/Department Responsible:	City Manager’s Office
Implementation Schedule:	18 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #14	
Proposed Action:	Implement and conduct public education programs to inform residents of the dangers of hail
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Increasing public awareness of protective measures from hail will reduce the potential for loss of life and injury resulting from hail. Additionally, improving knowledge of hail-resistant construction materials and techniques will equip building owners with the capability of reducing hail damage to their property through building techniques and retrofitting.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	Owners of new buildings will be more aware of construction methods that reduce damages from hail. Owners of existing buildings will be more aware of construction methods that reduce damages from hail
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	HMGP, Local funds, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #15	
Proposed Action:	Establish processes for public works personnel to pre-emptively sand or salt primary roadways to reduce the risk to life and property prior to the impact of a severe winter weather event.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project will allow for deicing activities to be implemented prior to the effects of winter storms on the city’s roadway infrastructure. This will reduce the potential for loss of life and property due to winter storms.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$40,000
Potential Funding Sources:	EMPG, SHSP, PDM, HMGP
Lead Agency/Department Responsible:	Public Works Department
Implementation Schedule:	12 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Itasca – Previous Action #16	
Proposed Action:	Ensure that all bridges and overpasses have signage posted for travelers to be aware of the potential for icing on bridges during winter storms
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This project will install signage at all bridges and overpasses to alert drivers of possible roadway icing. This will prevent injury and the loss of life by providing a mechanism for notifying drivers of the needs to decrease speed and proceed with caution.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$15,000
Potential Funding Sources:	EMPG, SHSP, PDM, HMGP
Lead Agency/Department Responsible:	Public Works Department
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

CITY OF MALONE

City of Malone – Previous Action #1	
Proposed Action:	Develop storm water retention capacity in new subdivisions
BACKGROUND INFORMATION	
Site and Location:	Areas east of 2 nd Street
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Storm water retention ponds in the area would provide a place for storm waters to go within the low-lying area. This would allow for better runoff and drainage of the properties which would reduce damages from flooding events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings built in the area would have improved storm water drainage from the property, which would decrease damages to property Existing buildings built in the area would have improved storm water drainage from the property, which would decrease damages to property
Priority (High, Moderate, Low):	High
Estimated Cost:	\$30,000.00
Potential Funding Sources:	NFMF, PDM Grant Program, HMGP Grant Program
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action, the City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Malone – Previous Action #2	
Proposed Action:	Catalog, evaluate, and update any floodplain regulations within the City to comply with the latest FEMA regulations
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This would prevent future construction of non-flood hardened structures in flood-prone areas. The prevention of such construction would decrease future property losses to floods.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to conform to the latest floodplain regulations, which would prevent building from being constructed in flood-prone areas and decrease property losses due to flooding. Existing buildings would be required to conform to existing and updated floodplain regulations, which would decrease property losses due to flooding and prevent reconstruction in flood-prone areas.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Malone – Previous Action #3	
Proposed Action:	Elevate roadways in flood-prone areas through bridge improvements.
BACKGROUND INFORMATION	
Site and Location:	W. 8 th Street
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	The existing roadway and bridge is not elevated to allow the continuation of traffic flow and the prevention of flooding during flood events. Elevating the bridge and roadway would prevent loss of life by mitigating roadway flooding in the area. The bridge should be elevated to a height above the base flood elevation in order to meet current FEMA standards.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	No effect on New buildings No effect on existing buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	\$275,000.00
Potential Funding Sources:	
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Malone – Previous Action #4	
Proposed Action:	Establish measures to reduce the amount of potential debris through effective tree trimming and branch removal activities
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By reducing debris that can impact new and existing buildings, property damage will be reduced from debris caused by tornadoes and windstorms

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	New buildings would have less exposure to potential debris from tornadoes and windstorms. Existing buildings would have less exposure to potential debris from tornadoes and windstorms.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000
Potential Funding Sources:	Local funds, EMPG, SHSP, PDM, HMGP
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	12 months from the time funding is secured

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Malone – Previous Action #5	
Proposed Action:	Establish partnerships with local vendors and private sector partners to disseminate information on windstorm and tornado mitigation measures
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	While few residents and property owners come to City Hall, most, if not all, of the population does business with local vendors and private sector partners. By establishing partnerships with these businesses and organizations, residents will have the opportunity to be better informed of the hazards that they face and how to prevent the damage to property and the loss of life from windstorms and tornadoes.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	New building owners would be educated on effective mitigation measures that will prevent the loss of life and damage to property from windstorms and tornadoes. Existing building owners would be educated on effective mitigation measures that will prevent the loss of life and damage to property from windstorms and tornadoes.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Malone – Previous Action #6	
Proposed Action:	Establish standardized and proactive measures for preventing burning within the city limits in order to reduce the sources of ignition for wildfires
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By preventing burning through enforcement within the city, the potential for wildfire ignition will be drastically reduced.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the reduction of wildfire ignition sources within the city. This action will reduce the effects of wildfire on existing buildings through the reduction of wildfire ignition sources within the city
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	Volunteer Fire Department/City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Complete.

SECTION 17: PREVIOUS ACTIONS

City of Malone – Previous Action #7	
Proposed Action:	Establish a program that places smoke detectors in the homes of the senior citizens, children, and other at-risk populations
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Installation of smoke alarms in all buildings would greatly increase the safety factor on the city through a more aggressive approach to combating the wildfires and preventing the loss of life due to wildfires.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the installation of smoke alarms in buildings. This action will reduce the effects of wildfire on existing buildings through the installation of smoke alarms in buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	Volunteer Fire Department
Implementation Schedule:	2 years after securing funding

2026 ANALYSIS:
Delete action, the City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Malone – Previous Action #8	
Proposed Action:	Increase the use of ground-water resources within the City by increasing the number of wells within the city.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The City's ability to produce water is often overwhelmed during times of drought when water demand is the highest. By increasing the use of groundwater resources through the addition of wells, water production can be increased, allowing additional water resources to be available for life safety activities.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increased water resource availability for fire suppression measures. This action will reduce the effects of drought on existing buildings through increased water resource availability for fire suppression measures
Priority (High, Moderate, Low):	High
Estimated Cost:	\$1,500,000.00
Potential Funding Sources:	HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	2 years after securing funding

2026 ANALYSIS:
Delete action, the City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Malone – Previous Action #9	
Proposed Action:	Develop and implement a drought contingency plan to include water conservation and mandatory water rationing.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	During times of drought, the demand for potable water for drinking, sanitation, Fire protection, may exceed the city's capacity to produce sufficient quantity. The drought contingency plan provides the ability to regulate the use of potable water for non-essential uses.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increased awareness on water conservation. This action will reduce the effects of drought on existing buildings through increased awareness on water conservation.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	Local funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Complete.

SECTION 17: PREVIOUS ACTIONS

City of Malone – Previous Action #10	
Proposed Action:	Educate the public on extreme heat safety and health issues by distributing information through printed media, social media, internet resources, and digital media.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Educating the public about the risks associated with extreme heat events will reduce the potential for loss of life during such events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by educating the residents of new buildings on the health and safety concerns related to extreme heat events. This action will reduce the effects of extreme heat on existing buildings by educating the residents of existing buildings on the health and safety concerns related to extreme heat events.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	HMGP, SHSP, General Fund, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Malone – Previous Action #11	
Proposed Action:	Retrofit the truck bay of the fire department to serve as a cooling station during extreme heat events.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By retrofitting the Fire Department with industrial, high-capacity air conditioning units, the truck bay of the building would be able to be used as a cooling station that will be capable of reducing the impacts of extreme heat events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	No effect on new buildings. Existing Fire Department truck bay will be converted into a cooling station during extreme heat events
Priority (High, Moderate, Low):	High
Estimated Cost:	\$120,000
Potential Funding Sources:	Local funds, EMPG, HSGP, PDM, HMGP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action, the City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Malone – Previous Action #12	
Proposed Action:	Establish a community forum to educate homeowners on hail mitigation measures, identify, and address mitigation needs.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The development of a community capability to identify and address mitigation will assist in educating the public on mitigation techniques, encouraging property owners to implement mitigation techniques, and help to identify community-wide measure that need to be taken to reduce the risk to life and property from hail and other hazards.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	Mitigation measures for new buildings will be identified and potentially implemented by owners. Mitigation measures for existing buildings will be identified and potentially implemented by owners
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager’s Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Malone – Previous Action #13	
Proposed Action:	Incorporate outdoor warning sirens
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The installation of outdoor warning sirens will drastically reduce the potential for injury and the loss of life resulting from hail. In addition to installing warning sirens, the city will develop a policy for using the sirens to provide early notification of severe weather events, including hail.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$150,000.00
Potential Funding Sources:	HMGP, PDM Grant Program, EMPG Grant Program, SHSP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	18 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Malone – Previous Action #14	
Proposed Action:	Establish procedures to maintain road sanding or salting capabilities during winter months when there is the greatest likelihood of winter storm events.
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	The procedures would establish a capability for reducing the risk to life from severe weather events by ensuring that affected roads were sanded or salted when ice or snow accumulates.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$20,000.00
Potential Funding Sources:	HMGP, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Council
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action, the City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Malone – Previous Action #15	
Proposed Action:	Retrofit community buildings to serve as warming stations during winter storm events.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project will reduce the impact of winter storm events by retrofitting existing community buildings to serve as warming stations. These warming stations will reduce the health risks to the population, especially the special needs population, by ensuring that residents are able to escape from the detrimental health effects of exposure to winter storms.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. This action will retrofit existing community buildings to serve as warming stations during winter storm events.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	4 months after securing funding

2026 ANALYSIS:
Delete action, the City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

CITY OF MERTENS

City of Mertens – Previous Action #1	
Proposed Action:	Incorporate building codes that require flood-resistant construction techniques to be utilized in areas that are designated as flood hazard areas.
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This would minimize the possible effects of flooding in a low-lying area by requiring that sound and proven flood mitigation measures are implemented into new and existing buildings.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings constructed in flood hazard areas along the creek would be required to implement flood-resistant construction techniques that would reduce damages and losses due to flooding. Modifications to existing buildings would require the implementation of flood-resistant construction techniques that would reduce damages and losses from flooding
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	NFMF, PDM Grant, EMPG Grant, HMGP Grant
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Mertens – Previous Action #2	
Proposed Action:	Develop a coordinated education, outreach, and training program to inform and educate the public about the dangers of flooding and how to prevent flood damages to property.
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	By making residents more aware of flooding hazards in their community and what steps they can take to prevent the loss of life and property, residents can become an integral part in the City's flood mitigation activities. Also, increasing awareness of the National Flood Insurance Program could decrease long-term flood losses by improving the number of insured properties in flood-prone areas.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	Residents of new buildings would be more aware of their risk for flooding and the measures necessary to prevent the loss of life and property due to flooding. Residents of existing buildings would be more aware of their risk for flooding and the measures necessary to prevent the loss of life and property due to flooding.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,500
Potential Funding Sources:	NFMF, PDM Grant Program, EMPG Grant Program, Local funds
Lead Agency/Department Responsible:	Emergency Management
Implementation Schedule:	12 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Mertens – Previous Action #3	
Proposed Action:	Catalog, evaluate, and update any floodplain regulations within the City to comply with the latest FEMA regulations
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This would prevent future construction of non-flood hardened structures in flood-prone areas. The prevention of such construction would decrease future property losses to floods.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to conform to the latest floodplain regulations, which would prevent building from being constructed in flood-prone areas and decrease property losses due to flooding. Existing buildings would be required to conform to existing and updated floodplain regulations, which would decrease property losses due to flooding and prevent reconstruction in flood-prone areas.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Mertens – Previous Action #4	
Proposed Action:	Implement public education programs on wind-resistant building practices
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	No public education initiatives to encourage the use of wind-resistant building practices occur within the City. The implementation of such activities would increase the awareness of building owners and increase the likelihood of wind-resistant construction techniques being used.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	New buildings will be more likely to be constructed using wind-resistant building practices. Existing buildings that undergo remodeling or retrofitting will be more likely to be constructed using wind-resistant building practices.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$1,500
Potential Funding Sources:	Local funds, PDM, HMGP, SHSP, EMPG
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	4 months from the time funding is secured

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Mertens – Previous Action #5	
Proposed Action:	Establish an outdoor warning siren system capable of notifying the populated areas of the city of impending tornado or windstorm activity
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	There is no outdoor warning system in place within the City. Due to the small land area of the city, A multisite outdoor siren system would drastically improve the effectiveness of advanced warning within the city.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$130,000
Potential Funding Sources:	EMPG, SHSP, PDM, HMGP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months from the time funding is secured

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Mertens – Previous Action #6	
Proposed Action:	Utilize non-fire suppression volunteers within the volunteer fire department to education the public on wildfire risk mitigation measures
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Educating the public on ways that they can reduce the potential for loss of life and property resulting from wildfire occurrence will better assist them in implementing measures such as fire-resistant vegetation and increasing defensible space around new and existing buildings, thereby reducing loss of life and property

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the education of the public on wildfire risk mitigation measures that can be implemented by property owners. This action will reduce the effects of wildfire on existing buildings through public education on wildfire risk mitigation measures that can be implemented by property owners.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$1,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	Volunteer Fire Department
Implementation Schedule:	3 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Mertens – Previous Action #7	
Proposed Action:	Working with the Texas Forest Service, establish a comprehensive fuel management plan that addresses the reduction of wildfire risk to the community
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Establishing a comprehensive fuel management plan that addresses the reduction of wildfire risk will assist in identifying and implementing additional processes to management vegetation and fuels in order to prevent the occurrence of wildfires.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through improved vegetation and fuel management practices. This action will reduce the effects of wildfire on existing buildings through improved vegetation and fuel management practices.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Mertens – Previous Action #8	
Proposed Action:	Expand existing water storage facilities and identify new sources of water
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	During times of drought, the demand for potable water for drinking, sanitation, Fire protection, may exceed the city’s capacity to produce sufficient quantity. Increasing water system storage and identifying new sources of water will increase the availability of water resources for drinking, sanitation, and fire protection activities.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increasing the availability of water resources within the city. This action will reduce the effects of drought on existing buildings through increasing the availability of water resources within the city
Priority (High, Moderate, Low):	High
Estimated Cost:	\$20,000.00
Potential Funding Sources:	HMGP, PDM, EMPG, SHSP
Lead Agency/Department Responsible:	City Manager’s Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Mertens – Previous Action #9	
Proposed Action:	Develop drought contingency plans that outline actions to take at varying levels of drought or water supply interruptions that require restricted water consumption
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	During times of drought, the demand for potable water for drinking, sanitation, Fire protection, may exceed the city’s capacity to produce sufficient quantity. The drought contingency plan provides the ability to regulate the use of potable water for non-essential uses. Identifying actions to be taken at varying levels of drought will allow proactive mitigation measures to be put into place prior to the effects of drought setting in.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increased awareness on water conservation. This action will reduce the effects of drought on existing buildings through increased awareness on water conservation.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	Local funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager’s Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Mertens – Previous Action #10	
Proposed Action:	Retrofit City Hall to create “Cooling Shelters” for Special Needs populations.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The project would identify the centralized location with additional and more efficient air conditioners to better accommodate the facility so that it can be used as a cooling center for residents, particularly the at-risk population.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	No effect on new buildings. This action will reduce the effects of extreme heat on existing buildings by eliminating damage to equipment and circuits from loss of power.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000.00
Potential Funding Sources:	HMGP, SHSP, PDM Grant Program, EMPG Grant Program,
Lead Agency/Department Responsible:	City Manager’s Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mertens – Previous Action #11	
Proposed Action:	Partner with government agencies, the media, and the private sector to heighten awareness of safety concerns related to extreme temperatures
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By utilizing partnerships with government agencies, the media, and the private sector, additional public education opportunities can be undertaken to reduce the effects of extreme heat to health and safety through effective public education practices.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by educating the residents of new buildings on the health and safety concerns related to extreme heat events. This action will reduce the effects of extreme heat on existing buildings by educating the residents of existing buildings on the health and safety concerns related to extreme heat events.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Mertens – Previous Action #12	
Proposed Action:	Utilize existing relationships with the county, regional planning entities, and state and federal agencies to disseminate mitigation and protective measure information to the citizens.
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Increasing public awareness of mitigation and protective measures from hail will reduce the potential for loss of life, injury, and property damage resulting from hail

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	Owners of new buildings will be more aware of hail hazards and how to prevent damages to property. Owners of existing buildings will be more aware of hail hazards and how to prevent damages to property
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Mertens – Previous Action #13	
Proposed Action:	Incorporate outdoor warning sirens
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	The installation of outdoor warning sirens will drastically reduce the potential for injury and the loss of life resulting from hail

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$50,000.00
Potential Funding Sources:	HMGP, PDM Grant Program, EMPG Grant Program, SHSP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	18 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Mertens – Previous Action #14	
Proposed Action:	Implement public awareness programs that educate residents on the importance of having and using NOAA All-Hazards weather radios
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project will educate the public on the importance of receiving early notifications from the National Weather Service using weather radios. Advanced notification will reduce the loss of life from winter storm events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	EMPG, SHSP, PDM, HMGP, Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Mertens – Previous Action #15	
Proposed Action:	Establish standard operating procedures to utilize available public buildings as emergency warming areas during winter storms
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project will leverage new and existing public facilities as emergency warming stations to provide protection from the cold to residents. No processes are currently in place by the city to provide warming stations to residents. The provision of warming stations would decrease the potential for loss of life, injury, and illness due to winter storms.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	New public buildings may be used as emergency warming stations during winter storms. Existing public buildings may be used as emergency warming stations during winter storms
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Not applicable
Lead Agency/Department Responsible:	Emergency Management
Implementation Schedule:	6 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

CITY OF MOUNT CALM

City of Mount Calm – Previous Action #1	
Proposed Action:	Require sewage backflow prevention measures to reduce damage to structures from sewage backup following a flooding event
BACKGROUND INFORMATION	
Site and Location:	East of 1 st Street and North of Clark Avenue
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Currently there are no requirements for sewage backflow prevention within the City. Flooding can cause sewage backup into new and existing buildings that can cost thousands of dollars to repair. The implementation of prevention devices will mitigate these damages.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to put sewage backflow prevention measures in place, reducing damages from sewage backup following a flooding event. Existing buildings that require major plumbing repair would be required to implement sewage backflow prevention devices to reduce damages from sewage backup following a flooding event.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #2	
Proposed Action:	Relocate or flood proof critical facilities in A Zones, including attendant utility and sanitary facilities, to meet existing FEMA NFIP standards
BACKGROUND INFORMATION	
Site and Location:	A Zones
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Currently, critical facilities within A Zones are not flood proof. This action will ensure that all critical facilities in such zones are relocated outside of the zones or else retrofitted to be flood proof and watertight below the base flood elevation if the structure cannot be relocated.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New facilities within A Zones will be flood proof. Existing facilities within A Zones will be retrofitted to be flood proof or else relocated outside of the A Zones.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000.00
Potential Funding Sources:	PDM Grant Program, EMPG Grant Program, Local Funds
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #3	
Proposed Action:	Deepen and widen drainage ditches to eliminate flooding hazards by improving storm water runoff within the City.
BACKGROUND INFORMATION	
Site and Location:	North of Clark Avenue
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This would minimize the possible effects of flooding in a low-lying area by ensuring the rapid water runoff can occur safely without damaging new or existing structures. Much of the area north of Clark Avenue has very shallow ditches, which reduces the ability for storm water to effectively runoff.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	Deeper and wider drainage ditches would allow for rapid runoff of storm water from properties with new buildings. Deeper and wider drainage ditches would allow for rapid runoff of storm water from properties with existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000.00
Potential Funding Sources:	PDM Grant, HMGP Grant, EMPG Grant
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #4	
Proposed Action:	Catalog, evaluate, and update any floodplain regulations within the City to comply with the latest FEMA regulations
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This would prevent future construction of non-flood hardened structures in flood-prone areas. The prevention of such construction would decrease future property losses to floods.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to conform to the latest floodplain regulations, which would prevent building from being constructed in flood-prone areas and decrease property losses due to flooding. Existing buildings would be required to conform to existing and updated floodplain regulations, which would decrease property losses due to flooding and prevent reconstruction in flood-prone areas.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #5	
Proposed Action:	Update building ordinances to require new constructions to incorporate safe rooms or underground shelter, depending upon the type of new construction
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	There is no requirement within the City of Mount Calm for safe rooms or shelters. By requiring that safe rooms be incorporated into new buildings, or underground shelters be constructed on properties containing manufactured housing, the potential for loss of life from tornadoes and windstorms will be drastically reduced.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	New buildings would be required to incorporate safe rooms or underground shelters, depending upon the type of building being construction or moved in. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #6	
Proposed Action:	Establish a protocol to utilize government facilities as shelters during windstorms and tornadoes
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	City facilities are not used as shelters from storm activity. However, the implementation of a protocol to utilize such facilities as a shelter during tornadoes and windstorms would prevent the loss of life by establishing a safe place for residents to take cover from tornadoes and windstorms.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #7	
Proposed Action:	Establish a construction permit rebate program for owners and builders that utilize fire-resistant and fire-retardant materials during new construction and remodeling/retrofitting of existing structures
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The use of fire-resistant and fire-retardant building materials decreases the likelihood of major damage to structures during wildfires. By implementing a rebate program for some of the cost of a building permit, owners and builders will be encouraged to utilize such materials, thereby decreasing the risk of property damage from wildfires.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the use of fire-resistant and fire-retardant construction materials. This action will reduce the effects of wildfire on existing buildings through the use of fire-resistant and fire-retardant construction materials during remodeling or retrofitting
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #8	
Proposed Action:	Implement a public awareness program to educate residents on the risk of wildfires within the community
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The loss of lives can be prevented by ensuring that the public is aware of the wildfire risk that they face and the actions necessary to protect themselves when faced with a wildfire.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	1,500.00
Potential Funding Sources:	EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	Volunteer Fire Department
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #9	
Proposed Action:	Develop and implement a drought contingency plan to include water conservation and mandatory water rationing.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	During times of drought, the demand for potable water for drinking, sanitation, Fire protection, may exceed the city’s capacity to produce sufficient quantity. The drought contingency plan provides the ability to regulate the use of potable water for non-essential uses.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increased awareness on water conservation. This action will reduce the effects of drought on existing buildings through increased awareness on water conservation.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	Local funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager’s Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #10	
Proposed Action:	Promote planting windbreaks for farm crops and areas near building foundations
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Educating the public on the how wind rapidly dries soil, resulting in foundation damages and the loss of crops, while encouraging the use of drought-resistant windbreaks to prevent the drying effect will decrease water consumption, property damages, and crop losses during drought events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increased awareness on the drying effects of wind during drought. This action will reduce the effects of drought on existing buildings through increased awareness on the drying effects of wind during drought.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	Local funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	1 year after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #11	
Proposed Action:	Increase tree planting in public right of ways to reduce heat levels in urbanized areas
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Adding shading by planting additional trees in public right of ways will reduce the heat levels in the most populated areas of the city, thereby decreasing extreme heat's effects to life and property.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by reducing the heat levels in urbanized areas. This action will reduce the effects of extreme heat on existing buildings by reducing the heat levels in urbanized areas
Priority (High, Moderate, Low):	High
Estimated Cost:	\$40,000
Potential Funding Sources:	HMGP, SHSP, General Fund, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #12	
Proposed Action:	Develop an awareness campaign for extreme temperatures and promote the campaign through existing websites, pamphlets in water bills, and flyers to neighborhood associations.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Educating the public about the risks associated with extreme heat events will reduce the potential for loss of life during such events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by educating the residents of new buildings on the health and safety concerns related to extreme heat events. This action will reduce the effects of extreme heat on existing buildings by educating the residents of existing buildings on the health and safety concerns related to extreme heat events.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	HMGP, SHSP, General Fund, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #13	
Proposed Action:	Increase public education and awareness of the potential severity of hailstorms
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This action will provide public education and awareness of potential hazards to life safety and building damage caused by hail. A better educated population will likely take the recommended actions to reduce the risk to property and life.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	This action will reduce the effects of hail on new buildings by educating residents of the potential severity for hailstorms and the damages that hail can cause. This action will reduce the effects of hail on existing buildings by educating residents of the potential severity for hailstorms and the damages that hail can cause
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000
Potential Funding Sources:	HMGP, Local funds, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #14	
Proposed Action:	Implement hail-resistant roofing and window designs into existing building codes.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Updating building codes to include the use of impact-resistant roofing materials will reduce the damages done to new and existing buildings by hail.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	New buildings would be required to utilize impact-resistant roofing to prevent damage to property. Existing buildings that require roofing repair or remodeling would be required to utilize impact-resistant roofing materials to reduce damage to buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #15	
Proposed Action:	Implement a program to trim tree and remove vegetative debris in the right of way
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project will remove tree limbs, branches, and dead trees, as well as other vegetative debris that can cause the interruption of electrical service and damage to homes. The interruption of electrical service during winter storms can present a threat to health and life. Furthermore, this project would reduce roadway hazards to drivers during winter storms, further preventing injury and loss of life.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	This project will mitigate the effects of winter storms on new buildings by preventing vegetative debris from falling and severing power lines, which can cause damage to buildings. This project will mitigate the effects of winter storms on existing buildings by preventing vegetative debris from falling and severing power lines, which can cause damage to buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	\$30,000
Potential Funding Sources:	HMGP, PDM, SHSP, EMPG
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Mount Calm – Previous Action #16	
Proposed Action:	Establish procedures to maintain road sanding or salting capabilities during winter months when there is the greatest likelihood of winter storm events.
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	The procedures would establish a capability for reducing the risk to life from severe weather events by ensuring that affected roads were sanded or salted when ice or snow accumulates.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$10,000.00
Potential Funding Sources:	HMGP, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

CITY OF PENELOPE

City of Penelope – Previous Action #1	
Proposed Action:	Install an automated flood gate that prevents traffic flow on FM 2114 within the flood-prone area during flooding events.
BACKGROUND INFORMATION	
Site and Location:	Low-lying area of FM 2114 south of the City
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This would prevent the flow of traffic along the low-lying area of FM 2114 when it is flooded. By preventing the flow of traffic along the roadway while it is flooded, the loss of life can be prevented.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$30,000.00
Potential Funding Sources:	NFMF, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #2	
Proposed Action:	Install metal warning signs that identify flood-prone areas.
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This would increase public awareness of flood hazards within the city while also reducing the potential for loss of life during flooding events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	This action will reduce the effects of flooding on new buildings by increasing awareness of flood-prone areas within the city. This action will reduce the effects of flooding on existing buildings by reminding the citizens of the danger of flooding and to take proactive measures to protect life and property.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000.00
Potential Funding Sources:	PDM Grant, EMPG Grant, HMGP Grant
Lead Agency/Department Responsible:	City Maintenance Department
Implementation Schedule:	12 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #3	
Proposed Action:	Catalog, evaluate, and update any floodplain regulations within the City to comply with the latest FEMA regulations
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This would prevent future construction of non-flood hardened structures in flood-prone areas. The prevention of such construction would decrease future property losses to floods.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to conform to the latest floodplain regulations, which would prevent building from being constructed in flood-prone areas and decrease property losses due to flooding. Existing buildings would be required to conform to existing and updated floodplain regulations, which would decrease property losses due to flooding and prevent reconstruction in flood-prone areas.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #4	
Proposed Action:	Relocate or flood proof critical facilities in A Zones, including attendant utility and sanitary facilities, to meet existing FEMA NFIP standards
BACKGROUND INFORMATION	
Site and Location:	A Zones
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Currently, critical facilities within A Zones are not flood proof. This action will ensure that all critical facilities in such zones are relocated outside of the zones or else retrofitted to be flood proof and watertight below the base flood elevation if the structure cannot be relocated.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New facilities within A Zones will be flood proof. Existing facilities within A Zones will be retrofitted to be flood proof or else relocated outside of the A Zones.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$500,000.00
Potential Funding Sources:	PDM Grant Program, EMPG Grant Program, Local Funds
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #5	
Proposed Action:	Implement NOAA weather radios into public gathering places
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	NOAA weather radios provide a mechanism for the dissemination of advanced warning for tornadoes and windstorms. By including these types of radios at places of public gathering, the potential for the loss of life can be greatly reduced through advanced warning.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	New buildings that are used as a public gathering place will be equipped with weather radios that provide advanced warning for windstorms and tornadoes. Existing buildings that serve as public gathering places will be equipped with weather radios that provide advanced warning for windstorms and tornadoes.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$1,000
Potential Funding Sources:	Local funds, PDM, HMGP, EMPG, SHSP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	2 months from time that funding is secured

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #6	
Proposed Action:	Utilize existing relationships with regional planning entities to disseminate mitigation and protective measure information to the public
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	The City does not have a website and has limited ability to disseminate mitigation and preparedness information to its residents. Many residents utilize well water and are not serviced by the municipal water system; therefore they do not receive water bills from the city. This causes literature mailed in water bills to not reach much of the population. By leveraging existing relationships with the County and regional planning entities, the City can utilize their assets to provide information on damage prevention and protective measures to its residents. The City would leverage existing relationships with the County Office of Emergency Management, Heart of Texas Council of Governments, Heart of Texas Regional Advisory Committee, and County Commissioners to disseminate information to the public.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	Owners of new buildings will be educated on appropriate and effective mitigation measures that they can implement to reduce the damage to properties from windstorms and tornadoes. Owners of existing buildings will be educated on appropriate and effective mitigation measures that they can implement to reduce the damage to properties from tornadoes and windstorms.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #7	
Proposed Action:	Implement a program that places smoke detectors in the homes of the senior citizens, children, and other at risk populations
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Installation of smoke alarms in all buildings would greatly increase the safety factor on the city through a more aggressive approach to combating the wildfires and preventing the loss of life due to wildfires.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the installation of smoke alarms in buildings. This action will reduce the effects of wildfire on existing buildings through the installation of smoke alarms in buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,500
Potential Funding Sources:	EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	Volunteer Fire Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #8	
Proposed Action:	Utilize non-fire suppression volunteers within the volunteer fire department to education the public on wildfire risk mitigation measures
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Educating the public on ways that they can reduce the potential for loss of life and property resulting from wildfire occurrence will better assist them in implementing measures such as fire-resistant vegetation and increasing defensible space around new and existing buildings, thereby reducing loss of life and property

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the education of the public on wildfire risk mitigation measures that can be implemented by property owners. This action will reduce the effects of wildfire on existing buildings through public education on wildfire risk mitigation measures that can be implemented by property owners.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$1,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	Volunteer Fire Department
Implementation Schedule:	3 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #9	
Proposed Action:	Revise and update landscaping ordinances to allow flexibility for xeriscaping
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Current ordinances do not allow for the flexibility necessary to implement water-conserving xeriscaping practices.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through the allowance of xeriscaping practices. This action will reduce the effects of drought on existing buildings through the allowance of xeriscaping practices.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #10	
Proposed Action:	Educate the agricultural community on the availability of crop insurance programs that reduce economic losses during drought events
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Educating the agricultural community on the availability of crop insurance will decrease the economic losses that occur because of drought.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	Local funds, EMPG, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	1 year after securing funding

2026 ANALYSIS:
Complete.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #11	
Proposed Action:	Utilize public alerting and notification measures and the media to heighten awareness when extreme temperatures threaten life safety
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Utilizing public alerting mechanisms will increase the potential for reaching at-risk populations to warn them of the effects of extreme heat events. The media can assist the notification of these populations, as well as the population at-large to reduce the potential for loss of life and threat to public health caused by extreme heat events.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by educating the residents of new buildings on the health and safety concerns related to extreme heat events. This action will reduce the effects of extreme heat on existing buildings by educating the residents of existing buildings on the health and safety concerns related to extreme heat events.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$1,500
Potential Funding Sources:	HMGP, SHSP, General Fund, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #12	
Proposed Action:	Install back-up power facilities at city-owned critical infrastructure.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The installation of a generator would allow for continued operations during power outages that might occur during periods of extreme heat due to the heavy demand on the electrical grid, or from a windstorm and other disasters.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by eliminating damage to equipment and circuits from loss of power. This action will reduce the effects of extreme heat on existing buildings by eliminating damage to equipment and circuits from loss of power.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$75,500
Potential Funding Sources:	SHSP, General Fund, PDM Grant Program, EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #13	
Proposed Action:	Utilize existing relationships with the county, regional planning entities, and state and federal agencies to disseminate mitigation and protective measure information to the citizens.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Increasing public awareness of mitigation and protective measures from hail will reduce the potential for loss of life, injury, and property damage resulting from hail

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	Owners of new buildings will be more aware of hail hazards and how to prevent damages to property. Owners of existing buildings will be more aware of hail hazards and how to prevent damages to property
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #14	
Proposed Action:	Incorporate outdoor warning sirens
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	The installation of outdoor warning sirens will drastically reduce the potential for injury and the loss of life resulting from hail

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$100,000.00
Potential Funding Sources:	HMGP, PDM Grant Program, EMPG Grant Program, SHSP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	18 months after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #15	
Proposed Action:	Purchase back-up generators to maintain power to city hall.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project is to enhance citizen safety by providing emergency generator in the event of a winter storm that may make travel conditions too hazardous for staff to leave City Hall. This project would also ensure the continuity of government, including emergency services, during winter storm events

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. This project will mitigate the effects of winter storms on existing buildings by providing emergency power to the Penelope City Hall.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$85,000.00
Potential Funding Sources:	HMGP, SHSP, General Fund, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Penelope – Previous Action #16	
Proposed Action:	Review and revise existing building codes to improve structural ability to withstand snow and ice weight
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project will revise existing building standards to include winter storm mitigation measures. This will provide a mechanism for ensuring that buildings are capable of withstanding the normal snow and ice loading that can be expected within the city.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	New buildings will be required to conform to building codes that prevent structural damage due to snow and ice accumulation. Existing buildings that undergo major modification will be required to conform to building codes that prevent structural damage from snow and ice accumulation
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Not applicable
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

CITY OF WHITNEY

City of Whitney – Previous Action #1	
Proposed Action:	Incorporate a property buyout program for properties within flood-prone areas
BACKGROUND INFORMATION	
Site and Location:	Areas South of Polk Avenue and North of Lee Avenue
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This would minimize the possible effects of flooding in the area by reducing the number of buildings within flood-prone areas, thereby reducing the potential for property and structural losses due to flooding.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would not be permitted to be constructed in the flood-prone area. Existing buildings within the flood-prone area could be purchased and razed in order to reduce losses from flooding.
Priority (High, Moderate, Low):	Medium
Estimated Cost:	\$2,000,000.00
Potential Funding Sources:	NFMF, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Five years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Whitney – Previous Action #2	
Proposed Action:	Flood proof critical facilities in A Zones, including attendant utility and sanitary facilities, to meet existing FEMA standards
BACKGROUND INFORMATION	
Site and Location:	A Zones
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Currently, critical facilities within A Zones are not flood proof. This action will ensure that all critical facilities in such zones are retrofitted to be flood proof and watertight below the base flood elevation

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New facilities within A Zones will be flood proof. Existing facilities within A Zones will be flood proof.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$750,000.00
Potential Funding Sources:	PDM Grant Program, EMPG Grant Program, Local Funds
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	6 months after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Whitney – Previous Action #3	
Proposed Action:	Catalog, evaluate, and update any floodplain regulations within the City to comply with the latest FEMA regulations
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	This would prevent future construction of non-flood hardened structures in flood-prone areas. The prevention of such construction would decrease future property losses to floods.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	New buildings would be required to conform to the latest floodplain regulations, which would prevent building from being constructed in flood-prone areas and decrease property losses due to flooding. Existing buildings would be required to conform to existing and updated floodplain regulations, which would decrease property losses due to flooding and prevent reconstruction in flood-prone areas.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Whitney – Previous Action #4	
Proposed Action:	Establish an open space preservation program that encourages rapid drainage of populated areas and limits construction of new structures within flood-prone areas.
BACKGROUND INFORMATION	
Site and Location:	Citywide
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	A large area of the city is prone to flooding. By utilizing land use and environmental planning measures, the City can establish an open space preservation program that facilitates the runoff of storm waters and limits construction in areas that are the most prone for flooding.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Floods
Effect on New/Existing Buildings:	Properties containing new buildings would have the necessary drainage to prevent flooding damage while not damaging surrounding properties. Properties with existing buildings would have the necessary drainage to prevent flooding damage while not damaging surrounding properties.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$85,000.00
Potential Funding Sources:	NFMF, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Whitney – Previous Action #5	
Proposed Action:	Implement a reverse-911 and public registration capable telephone notification system
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	While the county provides telephone notification capabilities, the city must contact the county to activate the system. By implementing its own system, advanced notification can occur in a timelier manner.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$15,000
Potential Funding Sources:	Local funds, EMPG, SHSP, HMGP, PDM
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months from the time funding is secured

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Whitney – Previous Action #6	
Proposed Action:	Collect, design, and disseminate useful educational information to property owners to reduce risk from falling trees to life, property, and utility systems.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By educating the citizens on how falling trees and other such debris can be a hazard to life safety and can cause damage to property and utility lines, as well as how to prevent the loss of life and damage to property from occurring, residents will be capable of reducing losses from tornadoes and windstorms.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorms & Tornadoes
Effect on New/Existing Buildings:	New building owners will possess the knowledge to prevent property damage from falling trees and other such debris caused by windstorms and tornadoes. Existing buildings owners will possess the knowledge to prevent property damage from falling trees and other such debris caused by tornadoes and windstorms.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,500
Potential Funding Sources:	Local funds, SHSP, EMPG, PDM, HMGP
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	6 months from the time funding is secured

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Whitney – Previous Action #7	
Proposed Action:	Implement cost modification on construction permits to encourage the use of fire-retardant and fire-resistant building materials and vegetation
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The use of fire-resistant and fire-retardant building materials and vegetation on new and existing buildings decreases the potential for damage and loss due to wildfire. Establishing a lower cost for permitting for those construction projects that will use such materials will encourage the use of the materials while reducing the potential for property damage and loss.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the use of fire-retardant and fire-resistant building materials and vegetation to reduce property losses to wildfires. This action will reduce the effects of wildfire on existing buildings through the use of fire-resistant and fire-retardant building materials and vegetation to reduce property losses to wildfires
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Whitney – Previous Action #8	
Proposed Action:	Develop and design a program that places smoke detectors in the homes of at-risk populations
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Installation of smoke alarms in all buildings would greatly increase the safety factor on the city through a more aggressive approach to combating the wildfires and preventing the loss of life due to wildfires.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the installation of smoke alarms in buildings. This action will reduce the effects of wildfire on existing buildings through the installation of smoke alarms in buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	\$15,000.00
Potential Funding Sources:	EMPG Grant Program, HMGP
Lead Agency/Department Responsible:	Volunteer Fire Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Whitney – Previous Action #9	
Proposed Action:	Improve the public protection rating in accordance with Insurance Service Office (ISO).
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Improving and lowering the public protection (PPE) rating with Insurance Service Office (ISO) will enhance the city's wildfire protection.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfires
Effect on New/Existing Buildings:	This action will reduce the effects of wildfire on new buildings through the education of how to protect buildings from wildfire. This action will reduce the effects of wildfire on existing buildings through the education of how to protect buildings from wildfire
Priority (High, Moderate, Low):	High
Estimated Cost:	\$150,000.00
Potential Funding Sources:	General fund, HMGP, SHSP, EMPG, PDM
Lead Agency/Department Responsible:	Fire Department
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Whitney– Previous Action #10	
Proposed Action:	Integrate water reclamation system to reduce water use on public properties during drought
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	Implementing water reclamation systems that reduce water use on public properties reduce the effects of drought by increasing the availability of water resources while preventing structural damage to existing and new public buildings

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	Reclamation systems will allow for new public buildings to water areas around their foundation during drought, decreasing the likelihood of foundation and structural damage to the building. Reclamation systems will allow for existing public buildings to water areas around their foundation during drought, decreasing the likelihood of foundation and structural damage to the building
Priority (High, Moderate, Low):	High
Estimated Cost:	\$80,000.00
Potential Funding Sources:	EMPG, HMGP, PDM
Lead Agency/Department Responsible:	Public Works Department
Implementation Schedule:	2 years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Whitney– Previous Action #11	
Proposed Action:	Develop drought contingency plans that outline actions to take at varying levels of drought or water supply interruptions that require restricted water consumption
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	During times of drought, the demand for potable water for drinking, sanitation, Fire protection, may exceed the city’s capacity to produce sufficient quantity. The drought contingency plan provides the ability to regulate the use of potable water for non-essential uses. Identifying actions to be taken at varying levels of drought will allow proactive mitigation measures to be put into place prior to the effects of drought setting in.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought
Effect on New/Existing Buildings:	This action will reduce the effects of drought on new buildings through increased awareness on water conservation. This action will reduce the effects of drought on existing buildings through increased awareness on water conservation.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$2,000.00
Potential Funding Sources:	Local funds, HMGP, PDM, EMPG, SHSP
Lead Agency/Department Responsible:	City Manager’s Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Whitney– Previous Action #12	
Proposed Action:	Partner with government agencies, the media, and the private sector to heighten awareness of safety concerns related to extreme temperatures
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	By utilizing partnerships with government agencies, the media, and the private sector, additional public education opportunities can be undertaken to reduce the effects of extreme heat to health and safety through effective public education practices.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	This action will reduce the effects of extreme heat on new buildings by educating the residents of new buildings on the health and safety concerns related to extreme heat events. This action will reduce the effects of extreme heat on existing buildings by educating the residents of existing buildings on the health and safety concerns related to extreme heat events.
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager’s Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Whitney– Previous Action #13	
Proposed Action:	Increase tree planting in public right of ways to reduce heat levels in urbanized areas
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Adding shading by planting additional trees in public right of ways will reduce the heat levels in the most populated areas of the city, thereby decreasing extreme heat's effects to life and property.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat
Effect on New/Existing Buildings:	
Priority (High, Moderate, Low):	High
Estimated Cost:	\$400,000
Potential Funding Sources:	HMGP, SHSP, General Fund, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Whitney– Previous Action #14	
Proposed Action:	Develop a local television program to be broadcast on local cable access to advise citizens of the dangers from hail and the precautions they need to take to decrease damage from hail storms.
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	The program can be produced by the City Manager’s Office with assistance from the Police and Fire Departments and broadcast over current local TV channels. Information would be gathered from state and federal agencies and National Weather Service.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	Owners and residents of new buildings will be more aware of measures that can be taken to reduce damages from hail. Owners and residents of existing buildings will be more aware of measures that can be taken to reduce damages from hail
Priority (High, Moderate, Low):	High
Estimated Cost:	\$5,000.00
Potential Funding Sources:	HMGP, SHSP, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager’s Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Carryover to Plan Update.

SECTION 17: PREVIOUS ACTIONS

City of Whitney– Previous Action #15	
Proposed Action:	Update building codes to require the use of hail-impact-resistant roofing materials
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	Updating building codes to include the use of impact-resistant roofing materials will reduce the damages done to new and existing buildings by hail.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hail
Effect on New/Existing Buildings:	New buildings would be required to utilize impact-resistant roofing to prevent damage to property. Existing buildings that require roofing repair or remodeling would be required to utilize impact-resistant roofing materials to reduce damage to buildings
Priority (High, Moderate, Low):	High
Estimated Cost:	No cost
Potential Funding Sources:	Local funds
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	12 months

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Whitney– Previous Action #16	
Proposed Action:	Install emergency generator hookups to critical facilities to allow for continuity of government and emergency services during winter storms
BACKGROUND INFORMATION	
Risk Reduction Benefit: (Current Cost/Losses Avoided)	This project is to enhance citizen safety by providing emergency generator in the event of a winter storm that may make travel conditions too hazardous for staff to leave City Hall, the police department, or the fire department. This project would also ensure the continuity of government, including emergency services, during winter storm events

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. This project will mitigate the effects of winter storms on existing buildings by providing alternative power capabilities for essential public facilities.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$150,000.00
Potential Funding Sources:	HMGP, SHSP, General Fund, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Manager's Office
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.

SECTION 17: PREVIOUS ACTIONS

City of Whitney– Previous Action #17	
Proposed Action:	Establish procedures to maintain road sanding or salting capabilities during winter months when there is the greatest likelihood of winter storm events.
BACKGROUND INFORMATION	
Risk Reduction Benefit: <i>(Current Cost/Losses Avoided)</i>	The procedures would establish a capability for reducing the risk to life from severe weather events by ensuring that affected roads were sanded or salted when ice or snow accumulates.

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Winter Storm
Effect on New/Existing Buildings:	No effect on new buildings. No effect on existing buildings.
Priority (High, Moderate, Low):	High
Estimated Cost:	\$20,000.00
Potential Funding Sources:	HMGP, PDM Grant Program, EMPG Grant Program
Lead Agency/Department Responsible:	City Council
Implementation Schedule:	Two years after securing funding

2026 ANALYSIS:
Delete action. The City no longer considers this action a priority.



Section 18

Mitigation Actions

SECTION 18: MITIGATION ACTIONS

Summary.....	1
Hill County.....	4
City of Abbott	8
City of Aquilla	14
City of Blum.....	19
City of Bynum.....	26
City of Carl’s Corner.....	31
City of Covington.....	36
City of Hillsboro.....	41
City of Hubbard	46
City of Itasca	51
City of Malone	56
City of Mertens.....	61
City of Mount Calm	66
City of Penelope.....	72
City of Whitney.....	77

SUMMARY

The 44 CFR § 201.6(c)(3)(ii) states that the plan must include “A section that *identifies* and *analyzes* a comprehensive range of specific mitigation actions and projects *being considered* to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.” The mitigation planning process is designed to help communities identify feasible and cost-effective mitigation strategies, but implementation of actions is dependent on factors such as funding, staff time, and evolving community priorities, and there is no penalty for jurisdictions unable to implement projects throughout the plan’s life.¹

As discussed in Section 2, at the Mitigation Strategy Workshop, the Planning Team and stakeholders met to develop mitigation actions for each of the natural hazards included in the Plan Update. Each of the actions in this section were prioritized based on FEMA’s Social, Technical, Administrative, Political, Legal, Economic, and Environmental (STAPLEE) criteria necessary for the implementation of each action.

As part of the economic evaluation of the STAPLEE analysis, jurisdictions analyzed each action in terms of the overall costs, measuring whether the potential benefit to be gained from the action outweighed the costs associated with it. As a result of this exercise, priority was assigned to each mitigation action by marking them as High (H), Moderate (M), or Low (L). An action that is ranked as “High” indicates that the action will be implemented as soon as funding is received. A “Moderate” action is one that may not be implemented right away, depending on the cost and number of citizens served by the action. Actions ranked as “Low” indicate that they will not be

¹ Cost, funding sources, and implementation schedules are subject to change upon full scoping of project and grant availability.

SECTION 18: MITIGATION ACTIONS

implemented without first seeking grant funding, and after “High” and “Moderate” actions have been completed.

Within each mitigation action worksheet, the Planning Team considered all potential funding sources that could be utilized to implement the proposed project. To ensure all potential funding resources are considered and are not limited to those sources identified within the action worksheet, please see Appendix G for a list of all available State and Federal grant programs as of 2025. The Planning Team will continue to seek out other available funding sources during the 5-year cycle as notices of funding opportunity (NOFO) are released.

All new mitigation actions created by Planning Team members are presented in this section in the form of a Mitigation Action Table. More than one hazard is sometimes listed for an action, if appropriate. Actions presented in this section represent a comprehensive range of mitigation actions per current State and FEMA Guidelines, including one action per hazard, and at least two different types for each participating jurisdiction. Section 17 includes an analysis of the actions identified in the previous 2020 Hill County Plan. **Any action in the analysis the team selected for future implementation (carried over) is considered a current action for potential implementation over the life cycle of this updated plan, in addition to the new actions outlined here in Section 18.**

Hill County and the Cities of Blum, Hillsboro, Hubbard, Itasca, Malone, Mertens, and Whitney, are participants in the National Flood Insurance Program (NFIP). Flooding was identified as a significant risk for the community; therefore, many of the mitigation actions were developed with flood mitigation in mind. Actions related to NFIP compliance include additional narrative when deemed appropriate.

Table 18-1. Hill County Mitigation Action Matrix

TYPE OF ACTION	
Action #1 – Plans/Regulations (Blue)	Action #4 – Structural (Orange)
Action #2 – Education/Awareness (Red)	Action #5 – Preparedness/Response (Black)
Action #3 – Natural Systems Protections (Green)	

Jurisdiction	Dam Failure	Drought	Extreme Heat	Flood	Hail	Lightning	Thunderstorm Wind	Tornado	Wildfire	Winter Storm	Hazardous Materials
Hill County	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●
City of Abbott	N/A	●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●
City of Aquilla	●●●●	●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●

SECTION 18: MITIGATION ACTIONS

Jurisdiction	Dam Failure	Drought	Extreme Heat	Flood	Hail	Lightning	Thunderstorm Wind	Tornado	Wildfire	Winter Storm	Hazardous Materials
City of Blum	N/A	●●	●●●	●●●●●	●●●	●●●	●●●●	●●●●	●●●●●	●●●●	●●
City of Bynum	N/A	●●	●●●	●●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●
City of Carl's Corner	●●	●●	●●●	●●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●
City of Covington	●●	●●	●●●	●●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●
City of Hillsboro	●●●	●●	●●●	●●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●
City of Hubbard	N/A	●●	●●●	●●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●
City of Itasca	N/A	●●	●●●	●●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●
City of Malone	●●●	●●	●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●
City of Mertens	N/A	●●	●●●	●●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●
City of Mount Calm	N/A	●●	●●●	●●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●
City of Penelope	N/A	●●	●●●	●●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●
City of Whitney	●●●	●●	●●●	●●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●

SECTION 18: MITIGATION ACTIONS

HILL COUNTY

HILL COUNTY MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	County-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Dam Failure, Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Hill County Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include: Dam Failure: Promote evacuation routes for the community; Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

HILL COUNTY MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities.	County-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Dam Failure, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Hill County Emergency Management	36 Months	Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	County-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Dam Failure, Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Hill County Emergency Management	36-48 Months	Emergency Management Action Plan	Helps ensure continuity of critical services.

SECTION 18: MITIGATION ACTIONS

HILL COUNTY MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	County-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Dam Failure, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Hill County Emergency Management	24 Months	Emergency Management Action Plan	Promotes public safety.
5	Create, adopt and enforce a water conservation ordinance.	County-wide	Reduce effect of drought through water conservation.	Local Plans and Regulations	Drought, Extreme Heat	Communication	N/A	M	\$10,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Hill County Emergency Management	12 Months	N/A	N/A

SECTION 18: MITIGATION ACTIONS

HILL COUNTY MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Upgrade critical facilities to include drought mitigation measures such as greywater reuse systems, drought tolerant landscaping, installation of a sprinkler system with regular watering schedule and installation of French drains where indicated.	County-wide	Reduce effect of drought through water conservation education.	Education and Awareness	Drought	N/A	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Hill County Emergency Management	12 Months	Emergency Management Action Plan	N/A
7	Implement program to promote water conservation by landscaping with low water usage plants at all public buildings and new residential development.	County-wide	Reduce damages at critical facilities.	Local Plans and Regulations	Drought	N/A	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Hill County Emergency Management	12 Months	N/A	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF ABBOTT

CITY OF ABBOTT MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Abbott Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

CITY OF ABBOTT MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities.	City-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Abbott Emergency Management	36 Months	Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Abbott Emergency Management	36-48 Months	Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

SECTION 18: MITIGATION ACTIONS

CITY OF ABBOTT MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Abbott Emergency Management	24 Months	Emergency Management Action Plan	Promotes public safety.
5	Create and Implement a program to initiate controlled burns throughout the City.	City-wide	Reduce risk of damages and injuries due to wildfire events.	Structure and Infrastructure	Wildfire	Safety/Security	Y	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Abbott Emergency Management	60 Months	N/A	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF ABBOTT MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Upgrade undersized stormwater drains and culverts.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Abbott Emergency Management	24 Months	Emergency Management Action Plan	Protects communities and reduces risk of flooding.
* Priority Locations: Third Street from Houston Street to Pine Street, Pine Street from Willie Nelson Road to I35 Frontage Road														
7	Implement and enhance an area-wide telephone Emergency Notification System ("Reverse 911").	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness	Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$10,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Abbott Emergency Management	36 Months	Emergency Management Action Plan	Promotes public safety.

SECTION 18: MITIGATION ACTIONS

CITY OF ABBOTT MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
8	Build safe room shelters throughout the jurisdiction so that residents can reach shelter in less than five minutes.	City-wide	Reduce risk to citizens by providing shelter in high-risk areas during extreme weather events.	Structure and Infrastructure	Thunderstorm Wind, Tornado	Safety/Security	N/A	M	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Abbott Emergency Management	36 Months	Emergency Management Action Plan	N/A
9	Increase drainage capacity; add stormwater detention and/or retention basins as deemed necessary to reduce flood risk.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$5,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Abbott Emergency Management	24 Months	Emergency Management Action Plan	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF ABBOTT MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
10	Create a master drainage plan.	City-wide	Reduce loss of life and property due to flooding.	Local Plans and Regulations	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Abbott Emergency Management	36 Months	Emergency Management Action Plan	Protects communities and reduces risk of flooding.
11	Join the National Flood Insurance Program (NFIP).	City-wide	Provide access to flood insurance for local residents; Reduce flood risk and build resiliency.	Local Plans and Regulations	Flood	Communication	Y	H	\$5,000	Local Funds (Staff Time)	Floodplain Administrator	12 Months	N/A	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

SECTION 18: MITIGATION ACTIONS

CITY OF AQUILLA

CITY OF AQUILLA MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Dam Failure, Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Aquilla Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include: Dam Failure: Promote evacuation routes for the community; Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

CITY OF AQUILLA MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities.	City-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Dam Failure, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Aquilla Emergency Management	36 Months	N/A	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Dam Failure, Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Aquilla Emergency Management	36-48 Months	N/A	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

SECTION 18: MITIGATION ACTIONS

CITY OF AQUILLA MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Dam Failure, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Aquilla Emergency Management	24 Months	N/A	Promotes public safety.
5	Create and Implement a program to initiate controlled burns throughout the City.	City-wide	Reduce risk of damages and injuries due to wildfire events.	Structure and Infrastructure	Wildfire	Safety/Security	Y	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Aquilla Emergency Management	60 Months	N/A	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF AQUILLA MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Upgrade undersized stormwater drains and culverts.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Aquilla Emergency Management	24 Months	N/A	Protects communities and reduces risk of flooding.
7	Increase drainage capacity; add stormwater detention and/or retention basins as deemed necessary to reduce flood risk.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$5,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Aquilla Emergency Management	24 Months	N/A	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF AQUILLA MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
8	Create a master drainage plan.	City-wide	Reduce loss of life and property due to flooding.	Local Plans and Regulations	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Aquilla Emergency Management	36 Months	N/A	Protects communities and reduces risk of flooding.
9	Join the National Flood Insurance Program (NFIP).	City-wide	Provide access to flood insurance for local residents; Reduce flood risk and build resiliency.	Local Plans and Regulations	Flood	Communication	Y	H	\$5,000	Local Funds (Staff Time)	Floodplain Administrator	12 Months	N/A	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

SECTION 18: MITIGATION ACTIONS

CITY OF BLUM

CITY OF BLUM MITIGATION ACTIONS

**Reduces risk to new and/or existing buildings and infrastructure*

Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Blum Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include: Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

CITY OF BLUM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities.	City-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Blum Emergency Management	36 Months	N/A	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Blum Emergency Management	36-48 Months	N/A	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

SECTION 18: MITIGATION ACTIONS

CITY OF BLUM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Blum Emergency Management	24 Months	N/A	Promotes public safety.
5	Create and Implement a program to initiate controlled burns throughout the City.	City-wide	Reduce risk of damages and injuries due to wildfire events.	Structure and Infrastructure	Wildfire	Safety/Security	Y	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Blum Emergency Management	60 Months	N/A	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF BLUM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Upgrade undersized stormwater drains and culverts.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Blum Emergency Management	24 Months	N/A	Protects communities and reduces risk of flooding.
7	Feasibility Study: Phase I: A study needs to be performed to determine what flood and runoff mitigation projects would be feasible due to the city being located on a hill. Phase II: Implement construction projects identified in Phase I.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Blum Emergency Management	24 Months	N/A	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF BLUM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
8	Create and implement a process to identify hazardous properties that will then be cleaned up to mitigate wildfire hazards, as these properties can act as fuel for wildfires.	City-wide	Reduce damages to structures and infrastructure; Reduce risk of injuries or fatalities.	Structure and Infrastructure	Wildfire	Safety/Security	N/A	H	\$100,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Blum Emergency Management	24 Months	N/A	N/A
9	Acquire high-risk vacant land and create a detention pond.	City-wide	Eliminate the risk of flood damage to high-risk structures and prevent future losses in high-risk flood hazard areas.	Natural Systems Protection (vacant land) Structure and Infrastructure	Flood	Safety/Security	N/A	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Blum Emergency Management	36 Months	N/A	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

SECTION 18: MITIGATION ACTIONS

CITY OF BLUM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
10	Develop a land acquisition program in flood hazard areas or areas of high wildfire risk. Acquire and demolish properties with repetitive loss. Acquire high-risk vacant land and maintain it as open space.	City-wide	Eliminate the risk of flood damage to high-risk structures and prevent future losses in high-risk flood hazard areas. Eliminate wildfire risks within the jurisdiction.	Natural Systems Protection (vacant land) Structure and Infrastructure	Flood, Wildfire	Safety/Security	N/A	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Blum Emergency Management	36 Months	N/A	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
11	Adopt zoning restrictions in known hazard areas.	City-wide	Reduce Risk to people and property, protect vulnerable populations, structures and critical facilities.	Local Plans and Regulations	Flood, Thunderstorm Wind, Tornado, Winter Storm, Wildfire	Safety/Security	N/A	H	\$10,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Blum Emergency Management	12 Months	N/A	Promotes public safety.

SECTION 18: MITIGATION ACTIONS

CITY OF BLUM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
12	Increase drainage capacity; add stormwater detention and/or retention basins as deemed necessary to reduce flood risk.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$5,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Blum Emergency Management	24 Months	N/A	Protects communities and reduces risk of flooding.
13	Create a master drainage plan.	City-wide	Reduce loss of life and property due to flooding.	Local Plans and Regulations	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Blum Emergency Management	36 Months	N/A	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF BYNUM

CITY OF BYNUM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Bynum Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include: Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

CITY OF BYNUM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities.	City-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Bynum Emergency Management	36 Months	Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Bynum Emergency Management	36-48 Months	Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

SECTION 18: MITIGATION ACTIONS

CITY OF BYNUM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Bynum Emergency Management	24 Months	Emergency Management Action Plan	Promotes public safety.
5	Create and Implement a program to initiate controlled burns throughout the City.	City-wide	Reduce risk of damages and injuries due to wildfire events.	Structure and Infrastructure	Wildfire	Safety/Security	Y	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Bynum Emergency Management	60 Months	N/A	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF BYNUM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Upgrade undersized stormwater drains and culverts.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Bynum Emergency Management	24 Months	Emergency Management Action Plan	Protects communities and reduces risk of flooding.
7	Increase drainage capacity; add stormwater detention and/or retention basins as deemed necessary to reduce flood risk.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$5,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Bynum Emergency Management	24 Months	Emergency Management Action Plan	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF BYNUM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
8	Create a master drainage plan.	City-wide	Reduce loss of life and property due to flooding.	Local Plans and Regulations	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Bynum Emergency Management	36 Months	Emergency Management Action Plan	Protects communities and reduces risk of flooding.
9	Join the National Flood Insurance Program (NFIP).	City-wide	Provide access to flood insurance for local residents; Reduce flood risk and build resiliency.	Local Plans and Regulations	Flood	Communication	Y	H	\$5,000	Local Funds (Staff Time)	Floodplain Administrator	12 Months	N/A	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

SECTION 18: MITIGATION ACTIONS

CITY OF CARL'S CORNER

CITY OF CARL'S CORNER MITIGATION ACTIONS

**Reduces risk to new and/or existing buildings and infrastructure*

Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Dam Failure, Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Carl's Corner Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include: Dam Failure: Promote evacuation routes for the community; Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

CITY OF CARL'S CORNER MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities.	City-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Dam Failure, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Carl's Corner Emergency Management	36 Months	Capital Improvement's Plan Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Dam Failure, Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Carl's Corner Emergency Management	36-48 Months	Capital Improvement's Plan Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

SECTION 18: MITIGATION ACTIONS

CITY OF CARL'S CORNER MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Dam Failure, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Carl's Corner Emergency Management	24 Months	Capital Improvement's Plan Emergency Management Action Plan	Promotes public safety.
5	Create and Implement a program to initiate controlled burns throughout the City.	City-wide	Reduce risk of damages and injuries due to wildfire events.	Structure and Infrastructure	Wildfire	Safety/Security	Y	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Carl's Corner Emergency Management	60 Months	CWPP	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF CARL'S CORNER MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Upgrade undersized stormwater drains and culverts.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Carl's Corner Emergency Management	24 Months	Comprehensive Plan Stormwater Management Plan	Protects communities and reduces risk of flooding.
7	Increase drainage capacity; add stormwater detention and/or retention basins as deemed necessary to reduce flood risk.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$5,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Carl's Corner Emergency Management	24 Months	Comprehensive Plan Stormwater Management Plan	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF CARL'S CORNER MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
8	Create a master drainage plan.	City-wide	Reduce loss of life and property due to flooding.	Local Plans and Regulations	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Carl's Corner Emergency Management	36 Months	Comprehensive Plan Stormwater Management Plan	Protects communities and reduces risk of flooding.
9	Join the National Flood Insurance Program (NFIP).	City-wide	Provide access to flood insurance for local residents; Reduce flood risk and build resiliency.	Local Plans and Regulations	Flood	Communication	Y	H	\$5,000	Local Funds (Staff Time)	Floodplain Administrator	12 Months	N/A	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

SECTION 18: MITIGATION ACTIONS

CITY OF COVINGTON

CITY OF COVINGTON MITIGATION ACTIONS

**Reduces risk to new and/or existing buildings and infrastructure*

Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Dam Failure, Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Covington Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include: Dam Failure: Promote evacuation routes for the community; Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

CITY OF COVINGTON MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities.	City-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Dam Failure, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Covington Emergency Management	36 Months	Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Dam Failure, Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Covington Emergency Management	36-48 Months	Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

SECTION 18: MITIGATION ACTIONS

CITY OF COVINGTON MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Covington Emergency Management	24 Months	Emergency Management Action Plan	Promotes public safety.
5	Create and Implement a program to initiate controlled burns throughout the City.	City-wide	Reduce risk of damages and injuries due to wildfire events.	Structure and Infrastructure	Wildfire	Safety/Security	Y	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Covington Emergency Management	60 Months	CWPP	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF COVINGTON MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Upgrade undersized stormwater drains and culverts.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Covington Emergency Management	24 Months	Emergency Management Action Plan	Protects communities and reduces risk of flooding.
7	Increase drainage capacity; add stormwater detention and/or retention basins as deemed necessary to reduce flood risk.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$5,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Covington Emergency Management	24 Months	Emergency Management Action Plan	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF COVINGTON MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
8	Create a master drainage plan.	City-wide	Reduce loss of life and property due to flooding.	Local Plans and Regulations	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Covington Emergency Management	36 Months	Emergency Management Action Plan	Protects communities and reduces risk of flooding.
9	Join the National Flood Insurance Program (NFIP).	City-wide	Provide access to flood insurance for local residents; Reduce flood risk and build resiliency.	Local Plans and Regulations	Flood	Communication	Y	H	\$5,000	Local Funds (Staff Time)	Floodplain Administrator	12 Months	N/A	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

SECTION 18: MITIGATION ACTIONS

CITY OF HILLSBORO

CITY OF HILLSBORO MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Dam Failure, Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hillsboro Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include: Dam Failure: Promote evacuation routes for the community; Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

CITY OF HILLSBORO MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities.	City-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Dam Failure, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hillsboro Emergency Management	36 Months	Capital Improvement s Plan Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Dam Failure, Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hillsboro Emergency Management	36-48 Months	Capital Improvement s Plan Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

SECTION 18: MITIGATION ACTIONS

CITY OF HILLSBORO MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Dam Failure Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hillsboro Emergency Management	24 Months	Capital Improvements Plan Emergency Management Action Plan	Promotes public safety.
5	Create and Implement a program to initiate controlled burns throughout the City.	City-wide	Reduce risk of damages and injuries due to wildfire events.	Structure and Infrastructure	Wildfire	Safety/Security	Y	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hillsboro Emergency Management	60 Months	N/A	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF HILLSBORO MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Upgrade undersized stormwater drains and culverts.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hillsboro Emergency Management	24 Months	Comprehensive Plan	Protects communities and reduces risk of flooding.
7	Increase drainage capacity; add stormwater detention and/or retention basins as deemed necessary to reduce flood risk.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$5,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hillsboro Emergency Management	24 Months	Comprehensive Plan	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF HILLSBORO MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
8	Create a master drainage plan.	City-wide	Reduce loss of life and property due to flooding.	Local Plans and Regulations	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hillsboro Emergency Management	36 Months	Capital Improvement Plan	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF HUBBARD

CITY OF HUBBARD MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hubbard Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include: Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

CITY OF HUBBARD MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities.	City-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hubbard Emergency Management	36 Months	Capital Improvement s Plan Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hubbard Emergency Management	36-48 Months	Capital Improvement s Plan Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

SECTION 18: MITIGATION ACTIONS

CITY OF HUBBARD MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hubbard Emergency Management	24 Months	Capital Improvements Plan Emergency Management Action Plan	Promotes public safety.
5	Create and Implement a program to initiate controlled burns throughout the City.	City-wide	Reduce risk of damages and injuries due to wildfire events.	Structure and Infrastructure	Wildfire	Safety/Security	Y	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hubbard Emergency Management	60 Months	N/A	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF HUBBARD MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Upgrade undersized stormwater drains and culverts.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hubbard Emergency Management	24 Months	Stormwater Management Plan	Protects communities and reduces risk of flooding.
7	Increase drainage capacity; add stormwater detention and/or retention basins as deemed necessary to reduce flood risk.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$5,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hubbard Emergency Management	24 Months	Stormwater Management Plan	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF HUBBARD MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
8	Create a master drainage plan.	City-wide	Reduce loss of life and property due to flooding.	Local Plans and Regulations	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Hubbard Emergency Management	36 Months	Stormwater Management Plan	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF ITASCA

CITY OF ITASCA MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Itasca Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include: Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

CITY OF ITASCA MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities.	City-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Itasca Emergency Management	36 Months	Capital Improvement s Plan Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Itasca Emergency Management	36-48 Months	Capital Improvement s Plan Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

SECTION 18: MITIGATION ACTIONS

CITY OF ITASCA MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Itasca Emergency Management	24 Months	Capital Improvements Plan Emergency Management Action Plan	Promotes public safety.
5	Create and Implement a program to initiate controlled burns throughout the City.	City-wide	Reduce risk of damages and injuries due to wildfire events.	Structure and Infrastructure	Wildfire	Safety/Security	Y	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Itasca Emergency Management	60 Months	N/A	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF ITASCA MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Upgrade undersized stormwater drains and culverts.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Itasca Emergency Management	24 Months	Emergency Management Action Plan	Protects communities and reduces risk of flooding.
7	Increase drainage capacity; add stormwater detention and/or retention basins as deemed necessary to reduce flood risk.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$5,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Itasca Emergency Management	24 Months	Emergency Management Action Plan	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF ITASCA MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
8	Create a master drainage plan.	City-wide	Reduce loss of life and property due to flooding.	Local Plans and Regulations	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Itasca Emergency Management	36 Months	Emergency Management Action Plan	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF MALONE

CITY OF MALONE MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Dam Failure, Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Malone Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include: Dam Failure: Promote evacuation routes for the community; Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

CITY OF MALONE MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities.	City-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Dam Failure, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Malone Emergency Management	36 Months	N/A	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Dam Failure, Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Malone Emergency Management	36-48 Months	N/A	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

SECTION 18: MITIGATION ACTIONS

CITY OF MALONE MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Dam Failure, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Malone Emergency Management	24 Months	N/A	Promotes public safety.
5	Create and Implement a program to initiate controlled burns throughout the City.	City-wide	Reduce risk of damages and injuries due to wildfire events.	Structure and Infrastructure	Wildfire	Safety/Security	Y	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Malone Emergency Management	60 Months	N/A	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF MALONE MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Upgrade undersized stormwater drains and culverts.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Malone Emergency Management	24 Months	N/A	Protects communities and reduces risk of flooding.
7	Create and implement a comprehensive and zoning plan.	City-wide	Reduce risk to life and property.	Local Plans and Regulations	Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm	Safety/Security	Y	H	\$250,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Malone Emergency Management	24 Months	N/A	Promotes public safety.

SECTION 18: MITIGATION ACTIONS

CITY OF MALONE MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
8	Create a master drainage plan.	City-wide	Reduce loss of life and property due to flooding.	Local Plans and Regulations	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Malone Emergency Management	36 Months	N/A	Protects communities and reduces risk of flooding.
9	Increase drainage capacity; add stormwater detention and/or retention basins as deemed necessary to reduce flood risk.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$5,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Malone Emergency Management	24 Months	N/A	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF MERTENS

CITY OF MERTENS MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mertens Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include: Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

CITY OF MERTENS MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities.	City-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mertens Emergency Management	36 Months	N/A	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mertens Emergency Management	36-48 Months	N/A	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

SECTION 18: MITIGATION ACTIONS

CITY OF MERTENS MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mertens Emergency Management	24 Months	N/A	Promotes public safety.
5	Create and Implement a program to initiate controlled burns throughout the City.	City-wide	Reduce risk of damages and injuries due to wildfire events.	Structure and Infrastructure	Wildfire	Safety/Security	Y	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mertens Emergency Management	60 Months	N/A	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF MERTENS MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Upgrade undersized stormwater drains and culverts.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mertens Emergency Management	24 Months	N/A	Protects communities and reduces risk of flooding.
7	Increase drainage capacity; add stormwater detention and/or retention basins as deemed necessary to reduce flood risk.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$5,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mertens Emergency Management	24 Months	N/A	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF MERTENS MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
8	Create a master drainage plan.	City-wide	Reduce loss of life and property due to flooding.	Local Plans and Regulations	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mertens Emergency Management	36 Months	N/A	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF MOUNT CALM

CITY OF MOUNT CALM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mount Calm Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include: Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

CITY OF MOUNT CALM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities.	City-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mount Calm Emergency Management	36 Months	N/A	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mount Calm Emergency Management	36-48 Months	N/A	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

SECTION 18: MITIGATION ACTIONS

CITY OF MOUNT CALM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mount Calm Emergency Management	24 Months	N/A	Promotes public safety.
5	Create and Implement a program to initiate controlled burns throughout the City.	City-wide	Reduce risk of damages and injuries due to wildfire events.	Structure and Infrastructure	Wildfire	Safety/Security	Y	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mount Calm Emergency Management	60 Months	N/A	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF MOUNT CALM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Acquire and distribute NOAA weather radios.	City-wide	Reduce risk to citizens through improved education.	Education and Awareness	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm	Communication	N/A	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mount Calm Emergency Management	36 Months	N/A	Promotes public safety.
7	Upgrade undersized stormwater drains and culverts.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mount Calm Emergency Management	24 Months	N/A	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF MOUNT CALM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
8	Build safe room shelters throughout the jurisdiction so that residents can reach shelter in less than five minutes.	City-wide	Reduce risk to citizens by providing shelter in high-risk areas during extreme weather events.	Structure and Infrastructure	Thunderstorm Wind, Tornado	Safety/Security	N/A	M	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mount Calm Emergency Management	36 Months	N/A	N/A
9	Increase drainage capacity; add stormwater detention and/or retention basins as deemed necessary to reduce flood risk.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$5,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mount Calm Emergency Management	24 Months	N/A	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF MOUNT CALM MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
10	Create a master drainage plan.	City-wide	Reduce loss of life and property due to flooding.	Local Plans and Regulations	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Mount Calm Emergency Management	36 Months	N/A	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF PENELOPE

CITY OF PENELOPE MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Penelope Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include: Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

CITY OF PENELOPE MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities, including pump stations.	City-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Penelope Emergency Management	36 Months	N/A	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Penelope Emergency Management	36-48 Months	N/A	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

SECTION 18: MITIGATION ACTIONS

CITY OF PENELOPE MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Penelope Emergency Management	24 Months	N/A	Promotes public safety.
5	Create and Implement a program to initiate controlled burns throughout the City.	City-wide	Reduce risk of damages and injuries due to wildfire events.	Structure and Infrastructure	Wildfire	Safety/Security	Y	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Penelope Emergency Management	60 Months	N/A	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF PENELOPE MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Upgrade undersized stormwater drains and culverts.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Penelope Emergency Management	24 Months	N/A	Protects communities and reduces risk of flooding.
7	Increase drainage capacity; add stormwater detention and/or retention basins as deemed necessary to reduce flood risk.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$5,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Penelope Emergency Management	24 Months	N/A	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF PENELOPE MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
8	Create a master drainage plan.	City-wide	Reduce loss of life and property due to flooding.	Local Plans and Regulations	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Penelope Emergency Management	36 Months	N/A	Protects communities and reduces risk of flooding.
9	Join the National Flood Insurance Program (NFIP).	City-wide	Provide access to flood insurance for local residents; Reduce flood risk and build resiliency.	Local Plans and Regulations	Flood	Communication	Y	H	\$5,000	Local Funds (Staff Time)	Floodplain Administrator	12 Months	N/A	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

SECTION 18: MITIGATION ACTIONS

CITY OF WHITNEY

CITY OF WHITNEY MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
1	Implement education and awareness program utilizing media, social media, bulletins, flyers, etc. to educate citizens of hazards that can threaten the area and mitigation measures to reduce injuries, fatalities, and property damages. Include links to weather alerts and departmental phone listings with contact personnel for residents.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Dam Failure, Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	M	\$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Whitney Emergency Management	24 Months	N/A	Promotes public safety.
<p>Description of the Solution: Monthly tips can be promoted for each hazard type via social media or other media outlets: Example messaging could include: Dam Failure: Promote evacuation routes for the community; Drought: Promote drought tolerant landscaping guidance for home and business owners; Extreme Heat: Promote the signs of heat exhaustion and heat stroke; Flood: Promote elevation of indoor and outdoor appliances or knowledge of the BFE; Hail: Promote hail resistant roofing, siding and windows.; Lightning: Make homeowners and businesses aware of indoor surge protection; Thunderstorm Wind: Promote securing of outdoor items and structures; Tornado: Inform home and business owners know when and where in their home or business they can take shelter; Wildfire: Create a defensible space for homeowners campaign; Winter Storm: Promote information on wrapping exposed and outdoor pipes.</p>														

SECTION 18: MITIGATION ACTIONS

CITY OF WHITNEY MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
2	Acquire and install generators with hard wired quick connections at all critical facilities.	City-wide	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Dam Failure, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Whitney Emergency Management	36 Months	Capital Improvement s Plan Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
3	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after events.	Structure and Infrastructure	Dam Failure, Drought, Extreme Heat, Flood, Hail, Lightning, Thunderstorm, Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication, Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Whitney Emergency Management	36-48 Months	Capital Improvement s Plan Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

SECTION 18: MITIGATION ACTIONS

CITY OF WHITNEY MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
4	Acquire and implement an outdoor hazard warning system, including a system that detects and provides warnings during hazard events. For locations that currently have sirens evaluate locations for upgrades or additional sirens.	City-wide	Reduce risk to citizens through improved communication and early warning.	Education and Awareness Preparedness/Response	Dam Failure, Extreme Heat, Flood, Hail, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Whitney Emergency Management	24 Months	Capital Improvement Plan	Promotes public safety.
5	Create and Implement a program to initiate controlled burns throughout the City.	City-wide	Reduce risk of damages and injuries due to wildfire events.	Structure and Infrastructure	Wildfire	Safety/Security	Y	M	\$50,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Whitney Emergency Management	60 Months	N/A	N/A

SECTION 18: MITIGATION ACTIONS

CITY OF WHITNEY MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
6	Upgrade undersized stormwater drains and culverts.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$1,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Whitney Emergency Management	24 Months	Comprehensive Plan	Protects communities and reduces risk of flooding.
7	Increase drainage capacity; add stormwater detention and/or retention basins as deemed necessary to reduce flood risk.	City-wide	Reduce risk of flood damages through improved drainage capacity.	Structure and Infrastructure	Flood	Safety/Security	Y	H	\$5,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Whitney Emergency Management	24 Months	Comprehensive Plan	Protects communities and reduces risk of flooding.

SECTION 18: MITIGATION ACTIONS

CITY OF WHITNEY MITIGATION ACTIONS														
*Reduces risk to new and/or existing buildings and infrastructure														
Action #	Proposed Action	Site	Benefit	Action Type	Hazards	Community Lifeline	Infra.*	Priority (High, Mod., Low)	Cost	Potential Funding Sources	Lead Agency	Timeline	Existing Plans	NFIP
8	Create a master drainage plan.	City-wide	Reduce loss of life and property due to flooding.	Local Plans and Regulations	Flood	Safety/Security	Y	H	\$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Whitney Emergency Management	36 Months	Comprehensive Plan	Protects communities and reduces risk of flooding.



Section 19

Plan Maintenance

SECTION 19: PLAN MAINTENANCE

Plan Maintenance Procedures	1
Incorporation.....	1
Process of Incorporation.....	1
Monitoring and Evaluation.....	5
Monitoring.....	6
Evaluation.....	7
Updating	7
Plan Revisions.....	7
Five (5) Year Review	8
Continued Public Involvement.....	8

PLAN MAINTENANCE PROCEDURES

The following is an explanation of how Hill County, the participating jurisdictions, and the general public will be involved in implementing, evaluating, and enhancing the Plan Update over time. When the Plan is discussed in all maintenance procedures it includes mitigation actions and hazard assessments. The sustained hazard mitigation planning process consists of four main parts:

- Incorporation
- Monitoring and Evaluation
- Updating
- Continued Public Involvement

INCORPORATION

Hill County and the participating jurisdictions will be responsible for further development and implementation of mitigation actions. Each action has been assigned to a specific department within the participating jurisdictions. The following describes the process by which participating jurisdictions will incorporate elements of the mitigation plan into other planning mechanisms.

PROCESS OF INCORPORATION

Once the Plan Update is adopted, Hill County and the participating jurisdictions will implement actions based on priority and the availability of funding. The planning area currently implements policies and programs to reduce loss of life and property from hazards. The mitigation actions developed for this Plan Update enhance this ongoing effort and will be implemented through other program mechanisms where possible.

The potential funding sources listed for each identified action may be used when the jurisdiction seeks funds to implement actions. An implementation time period or a specific implementation date has been assigned to each action as an incentive for completing each task and gauging whether actions are implemented in a timely manner.

Hill County and the participating jurisdictions will integrate implementation of their mitigation actions with other plans and policies, such as construction standards and emergency management plans, and ensure that these actions, or proposed projects, are reflected in other

SECTION 19: PLAN MAINTENANCE

planning efforts. Coordinating and integrating components of other plans and policies into the goals and objectives of the Plan Update will further maximize funding and provide possible cost-sharing of key projects, thereby reducing loss of lives and property and mitigating hazards affecting the area.

Upon formal adoption of the Plan Update, Planning Team members from each participating jurisdiction will work to integrate the hazard mitigation strategies into other plans and codes as they are developed. Participating team members will conduct periodic reviews of plans and policies, once per year at a minimum, and analyze the need for revisions in light of the approved Plan. The Planning Team will review all Comprehensive Land Use Plans (applicable jurisdictions only), Capital Improvement Plans (applicable jurisdictions only), annual budget reviews, Emergency Operations or Management Plans (applicable jurisdictions only), and Transportation Plans (applicable jurisdictions only) to guide and control development. Participating jurisdictions will ensure that capital improvement planning in the future will also contribute to the goals of this hazard mitigation Plan Update to reduce the long-term risk to life and property from all hazards. Within one year of formal adoption of the hazard mitigation Plan Update, existing planning mechanisms will be reviewed by each jurisdiction.

Hill County is committed to supporting the participating jurisdictions as they implement their mitigation actions. Planning Team members will review and revise, as necessary, the long-range goals and objectives in strategic plan and budgets to ensure that they are consistent with this Hazard Mitigation Action Plan Update. Additionally, the planning area will work to advance the goals of this Hazard Mitigation Plan through its routine, ongoing, long-range planning, budgeting, and work processes.

Table 19-1 identifies types of planning mechanisms and examples of methods for incorporating the Plan Update into other planning efforts. The team members, listed in Table 19-2 below, will be responsible for the review of these planning mechanisms and their incorporation of the Plan, with the exception of the Floodplain Management Plans; the jurisdictions who have a Floodplain Administrator on staff will be responsible for incorporating the Plan when Floodplain Management Plans are updated or new plans are developed.

Table 19-1. Methods of Incorporation of the Plan

PLANNING MECHANISM	DEPARTMENT / TITLE RESPONSIBLE	INCORPORATION OF PLAN
Annual Budget Review	<p>Hill County – Emergency Management: Emergency Management Coordinator</p> <p>City of Abbott – Administration: Bookkeeper</p> <p>City of Aquilla – Administration: Mayor</p> <p>City of Blum – Administration: City Secretary</p> <p>City of Bynum – Administration: Mayor</p> <p>City of Carl's Corner – Administration: Mayor</p>	<p>Various departments and key personnel that participated in the planning process for Hill County and the participating jurisdictions will review the Plan and mitigation actions therein when conducting their annual budget review. Allowances will be made in accordance with grant applications sought, and mitigation actions that will be undertaken, according to the implementation schedule of the specific action.</p>

SECTION 19: PLAN MAINTENANCE

PLANNING MECHANISM	DEPARTMENT / TITLE RESPONSIBLE	INCORPORATION OF PLAN
	<p>City of Covington – Administration: City Secretary</p> <p>City of Hillsboro – Community Enhancement / Code Enforcement: Code Enforcement / Deputy Fire Marshal</p> <p>City of Hubbard – Administration / Police: City Manager / Police Chief</p> <p>City of Itasca – Administration: City Secretary</p> <p>City of Malone – Administration: City Secretary</p> <p>City of Mertens – Administration: City Secretary</p> <p>City of Mount Calm – Administration: City Secretary</p> <p>City of Penelope – Administration: Secretary</p> <p>City of Whitney – Administration: Operations Director</p>	
Capital Improvement Plans	<p>City of Carl's Corner – Administration: Mayor</p> <p>City of Hillsboro – Community Enhancement / Code Enforcement: Code Enforcement / Deputy Fire Marshal</p> <p>City of Hubbard – Administration / Police: City Manager / Police Chief</p> <p>City of Itasca – Administration: City Secretary</p> <p>City of Whitney – Administration: Operations Director</p>	Several participating jurisdictions within Hill County have a Capital Improvement Plan (CIP) in place or under development. Prior to any revisions to the CIP, city departments will review the risk assessment and mitigation strategy sections of the HMAP, as limiting public spending in hazardous zones is one of the most effective long-term mitigation actions available to local governments.
Community Wildfire Protection Plans	<p>City of Carl's Corner – Administration: Mayor</p> <p>City of Covington – Administration: City Secretary</p>	Community Wildfire Protection Plans (CWPPs) include preventative and corrective actions to address a community's risk of damage from wildfire. Information found in Section 13 of this Plan Update discussing the people and property at risk to wildfire will be reviewed and revised when the Cities update their CWPPs or in the development of a new plan.

SECTION 19: PLAN MAINTENANCE

PLANNING MECHANISM	DEPARTMENT / TITLE RESPONSIBLE	INCORPORATION OF PLAN
Comprehensive Plans	<p>City of Carl's Corner – Administration: Mayor</p> <p>City of Hillsboro – Community Enhancement / Code Enforcement: Code Enforcement / Deputy Fire Marshal</p> <p>City of Hubbard – Administration / Police: City Manager / Police Chief</p> <p>City of Whitney – Administration: Operations Director</p>	<p>Several participating jurisdictions have a Comprehensive Land Use Plan in place or under development. Since Comprehensive Plans involve developing a unified vision for a community, the mitigation vision and goals of the Plan will be reviewed in the development or revision of a Comprehensive Plan.</p>
Floodplain Management Plans	<p>Hill County – Floodplain Administrator</p> <p>City of Blum – Floodplain Administrator</p> <p>City of Hillsboro – Floodplain Administrator</p> <p>City of Hubbard – Floodplain Administrator</p> <p>City of Itasca – Floodplain Administrator</p> <p>City of Malone – Floodplain Administrator</p> <p>City of Mertens – Floodplain Administrator</p> <p>City of Mount Calm – Floodplain Administrator</p> <p>City of Whitney – Floodplain Administrator</p>	<p>Floodplain Management Plans include preventative and corrective actions to address the flood hazard. Therefore, the actions for flooding and information found in Section 8 of this Plan Update discussing the people and property at risk to flood will be reviewed and revised when the County and Cities update their management plans.</p>
Grant Applications	<p>Hill County – Emergency Management: Emergency Management Coordinator</p> <p>City of Abbott – Administration: Bookkeeper</p> <p>City of Aquilla – Administration: Mayor</p> <p>City of Blum – Administration: City Secretary</p> <p>City of Bynum – Administration: Mayor</p> <p>City of Carl's Corner – Administration: Mayor</p> <p>City of Covington – Administration: City Secretary</p>	<p>The HMAP will be evaluated by Hill County and the participating jurisdictions when grant funding is sought for mitigation projects. If a project is not in the Plan Update, a Plan Revision may be necessary to include the action in the Plan.</p>

SECTION 19: PLAN MAINTENANCE

PLANNING MECHANISM	DEPARTMENT / TITLE RESPONSIBLE	INCORPORATION OF PLAN
	<p>City of Hillsboro – Community Enhancement / Code Enforcement: Code Enforcement / Deputy Fire Marshal</p> <p>City of Hubbard – Administration / Police: City Manager / Police Chief</p> <p>City of Itasca – Administration: City Secretary</p> <p>City of Malone – Administration: City Secretary</p> <p>City of Mertens – Administration: City Secretary</p> <p>City of Mount Calm – Administration: City Secretary</p> <p>City of Penelope – Administration: City Secretary</p> <p>City of Whitney – Administration: Operations Director</p>	
Regulatory Plans	<p>Hill County – Emergency Management: Emergency Management Coordinator</p> <p>City of Abbott – Administration: Bookkeeper</p> <p>City of Bynum – Administration: Mayor</p> <p>City of Carl's Corner – Administration: Mayor</p> <p>City of Covington – Administration: City Secretary</p> <p>City of Hillsboro – Community Enhancement / Code Enforcement: Code Enforcement / Deputy Fire Marshal</p> <p>City of Hubbard – Administration / Police: City Manager / Police Chief</p> <p>City of Itasca – Fire / Police: Fire Chief / Police Chief</p> <p>City of Whitney – Administration: Operations Director</p>	<p>Several participating jurisdictions within Hill County have regulatory plans in place or under development, such as Emergency Operations Plans, Land Use Plans, and/or Evacuation Plans. The Plan Update will be consulted when County and City departments review or revise their current regulatory planning mechanisms, or in the development of regulatory plans that are not currently in place.</p>

MONITORING AND EVALUATION

Periodic revisions of the Plan are required to ensure that goals, objectives, and mitigation actions are kept current. When the Plan is discussed in these sections, it includes the risk assessment

SECTION 19: PLAN MAINTENANCE

and mitigation actions as a part of the monitoring, evaluating, updating, and review process. Revisions may be required to ensure the Plan is in compliance with federal and state statutes and regulations. This section outlines the procedures for completing Plan revisions, updates, and review. Table 19-2 indicates the department and title of the party responsible for monitoring, evaluating, updating, and reviewing of the Plan.

Table 19-2. Team Members Responsible for Monitoring, Evaluating, Updating, and Reviewing of the Plan

ORGANIZATION / DEPARTMENT	TITLE
Hill County – Emergency Management	Emergency Management Coordinator
City of Abbott – Administration	Bookkeeper
City of Aquilla – Administration	Mayor
City of Blum – Administration	City Secretary
City of Bynum – Administration	Mayor Pro Tem
City of Carl’s Corner – Administration	Mayor
City of Covington – Administration	City Secretary
City of Hillsboro – Community Enhancement / Code Enforcement	Code Enforcement / Deputy Fire Marshal
City of Hubbard – Administration	City Secretary
City of Hubbard – Administration / Police	City Manager / Police Chief
City of Itasca – Administration	City Secretary
City of Malone – Administration	City Secretary
City of Mertens – Administration	City Secretary
City of Mount Calm – Administration	City Secretary
City of Penelope – Administration	City Secretary
City of Whitney – Administration	Operations Director

MONITORING

Designated Planning Team members are responsible for monitoring, evaluating, updating, and reviewing the Plan, as shown in Table 19-2. Individuals holding the title listed in Table 19-2 will be responsible for monitoring the Plan on an annual basis. Plan monitoring includes reviewing and incorporating into the Plan other existing planning mechanisms that relate or support goals and objectives of the Plan; monitoring the incorporation of the Plan into future updates of other existing planning mechanisms as appropriate; reviewing mitigation actions submitted and coordinating with various County and City departments to determine if mitigation actions need to be re-evaluated and updated; evaluating and updating the Plan as necessary; and monitoring

SECTION 19: PLAN MAINTENANCE

plan maintenance to ensure that the process described is being followed, on an annual basis, throughout the planning process. The Planning Team will develop a brief report that identifies policies and actions in the Plan that have been successfully implemented and any changes in the implementation process needed for continued success. A summary of meeting notes will report the particulars involved in developing an action into a project. In addition to the annual monitoring, the Plan will be similarly reviewed immediately after extreme weather events, including but not limited to state and federally declared disasters.

EVALUATION

As part of the evaluation process, the Planning Team will assess changes in risk; determine whether the implementation of mitigation actions is on schedule; determine whether there are any implementation problems, such as technical, political, legal, or coordination issues; and identify changes in land development or programs that affect mitigation priorities for each respective department or organization.

The Planning Team will meet on an annual basis to evaluate the Plan, identify any needed changes, and assess the effectiveness of the Plan in achieving its stated purpose and goals. The team will evaluate the number of mitigation actions implemented along with the loss reduction associated with each action. Actions that have not been implemented will be evaluated to determine if any social, political, or financial barriers are impeding implementation and if any changes are necessary to improve the viability of an action. The team will evaluate changes in land development and/or programs that affect mitigation priorities in their respective jurisdictions. The annual evaluation process will help to determine if any changes are necessary. In addition, the Plan will be similarly evaluated immediately after extreme weather events, including but not limited to state and federally declared disasters.

UPDATING

PLAN REVISIONS

At any time, minor technical changes may be made to update the Hill County Hazard Mitigation Action Plan Update 2026. Material changes to mitigation actions or major changes in the overall direction of the Plan or the policies contained within it must be subject to formal adoption by the participating jurisdictions.

The participating jurisdictions within Hill County will review proposed revisions and vote to accept, reject, or amend the proposed change. Upon ratification, the revision will be transmitted to the Texas Division of Emergency Management (TDEM).

In determining whether to recommend approval or denial of a Plan Revision request, participating jurisdictions will consider the following factors:

- Errors or omissions made in the identification of issues or needs during the preparation of the Plan Update;
- New issues or needs that were not adequately addressed in the Plan Update; and
- Changes in information, data, or assumptions from those on which the Plan Update was based.

SECTION 19: PLAN MAINTENANCE

FIVE (5) YEAR REVIEW

The Plan will be thoroughly reviewed by the Planning Team at the end of three years from the approval date to determine whether there have been significant changes in the planning area that necessitate changes in the types of mitigation actions proposed. Factors that may affect the content of the Plan include new development in identified hazard areas, increased exposure to hazards, disaster declarations, increase or decrease in capability to address hazards, and changes to federal or state legislation.

The Plan review process provides participating jurisdictions within Hill County an opportunity to evaluate mitigation actions that have been successful, identify losses avoided due to the implementation of specific mitigation measures, and address mitigation actions that may not have been successfully implemented as assigned.

It is recommended that the full Executive and Advisory Planning Team (Section 2, Tables 2-1 and 2-2) meet to review the Plan at the end of three years because grant funds may be necessary for the development of a five-year update. Reviewing planning grant options in advance of the five-year Plan update deadline is recommended considering the timelines for grant and planning cycles can be in excess of a year.

Following the Plan review, any revisions deemed necessary will be summarized and implemented according to the reporting procedures and Plan Revision process outlined herein. Upon completion of the review, update, and revision process the revised Plan will be submitted to TDEM for final review and approval in coordination with FEMA.

CONTINUED PUBLIC INVOLVEMENT

Public input was an integral part of the preparation of this Plan and will continue to be essential for Plan updates. The public will be directly involved in the annual evaluation, monitoring, reviews, and cyclical updates. Changes or suggestions to improve or update the Plan will provide opportunities for additional public input.

The public can review the Plan on the participating jurisdictions' websites, or at the County Courthouse, where officials and the public are invited to provide ongoing feedback via email. A paper copy of the entire Plan Update will be kept at the Hill County Courthouse, as well as at the respective jurisdictional municipal offices.

The Planning Team may also designate voluntary citizens from the planning area or willing stakeholder members from the private sector businesses that were involved in the Plan's development to provide feedback on an annual basis. It is important that stakeholders and the immediate community maintain a vested interest in preserving the functionality of the planning area as it pertains to the overall goals of the Mitigation Plan. The Planning Team is responsible for notifying stakeholders and community members on an annual basis and maintaining the Plan.

Media, including local newspapers and radio stations, will be used to notify the public of any maintenance or periodic review activities during the implementation, monitoring, and evaluation phases. Additionally, local news media will be contacted to cover information regarding Plan updates, the status of grant applications, and project implementation. Local and social media outlets, such as Facebook, will keep the public and stakeholders apprised of potential opportunities to fund and implement mitigation projects identified in the Plan.



Appendix A

Planning Team

APPENDIX A: PLANNING TEAM

Planning Team Members 1
 Stakeholders 3

PLANNING TEAM MEMBERS

The Hill County Hazard Mitigation Action Plan Update 2026 was organized using a direct representative model. An Executive Planning Team from the participating jurisdictions, shown in Table A-1, was formed to coordinate planning efforts and request input and participation in the planning process. Table A-2 reflects the Advisory Planning Team, consisting of area organizations and departments that participated throughout the planning process. Table A-3 is comprised of stakeholders who were invited to provide Plan input. Public outreach efforts and meeting documentation is provided in Appendix E.

Table A-1. Executive Planning Team

ORGANIZATION / DEPARTMENT	TITLE
Hill County – Emergency Management	Emergency Management Coordinator
City of Abbott – Administration	Bookkeeper
City of Aquilla – Administration	Mayor
City of Blum – Administration	City Secretary
City of Bynum – Administration	Mayor Pro Tem
City of Carl’s Corner – Administration	Mayor
City of Covington – Administration	City Secretary
City of Hillsboro – Community Enhancement / Code Enforcement	Code Enforcement / Deputy Fire Marshal
City of Hubbard – Administration	City Secretary
City of Hubbard – Administration / Police	City Manager / Police Chief
City of Itasca – Administration	City Secretary
City of Malone – Administration	City Secretary
City of Mertens – Administration	City Secretary
City of Mount Calm – Administration	City Secretary
City of Penelope – Administration	City Secretary
City of Whitney – Administration	Operations Director

APPENDIX A: PLANNING TEAM

Table A-2. Advisory Planning Team

ORGANIZATION / DEPARTMENT	TITLE
Hill County – Administration	County Clerk
Hill County – Auditor	County Auditor
Hill County – Government	County Judge
Hill County – Sheriff	County Sheriff
Hill County – Surveying	County Surveyor
City of Abbott – Administration	Mayor
City of Abbott – Fire	Fire Chief
City of Abbott – Fire	Firefighter
City of Abbott – Utilities	Waterworks Superintendent
City of Aquilla – Administration	City Secretary
City of Blum – Administration	Mayor
City of Blum – Administration	Mayor Pro Tem
City of Bynum – Administration	City Secretary
City of Bynum – Emergency Management	Emergency Management Coordinator
City of Bynum – Utilities	Waterworks Superintendent
City of Carl's Corner – Administration	City Council Member
City of Covington – Administration	Mayor
City of Covington – Public Works	Department Head
City of Hillsboro – Administration	City Manager
City of Hillsboro – Administration	Communications & Executive Assistant
City of Hillsboro – Administration	Mayor
City of Hillsboro – Administration	Special Projects Coordinator
City of Hillsboro – Public Safety	Chief
City of Hillsboro – Public Safety	Commander
City of Hillsboro – Public Works	Director
City of Hubbard – Administration	Mayor

APPENDIX A: PLANNING TEAM

ORGANIZATION / DEPARTMENT	TITLE
City of Hubbard – Fire	Fire Chief
City of Itasca – Administration	City Administrator
City of Itasca – Administration	Mayor
City of Itasca – Code Compliance and Planning & Zoning	Code Enforcement
City of Itasca – Fire / Police	Fire Chief / Police Chief
City of Itasca – Water / Utilities	Maintenance Supervisor / Emergency Contact
City of Malone – Administration	Mayor
City of Mertens – Administration	Mayor
City of Mount Calm – Administration	Mayor
City of Mount Calm – Fire	Fire Chief
City of Penelope – Administration	Mayor
City of Whitney – Administration	City Secretary
City of Whitney – Administration	Mayor
City of Whitney – Code Enforcement	Code Enforcement Officer
City of Whitney – Emergency Medical Services (EMS)	Director
City of Whitney – Fire	Fire Chief
City of Whitney – Planning and Zoning	Court Clerk
City of Whitney – Police	Police Chief
City of Whitney – Public Works	Director

STAKEHOLDERS

The following groups listed in Table A-3 represent a list of organizations invited to stakeholder meetings, public meetings, and workshops throughout the planning process and include members of community groups, non-profit organizations, private businesses, utility providers, neighboring counties, schools, state, and federal agencies. The public were also invited to participate via e-mail throughout the planning process. Many of the invited organizations and stakeholders participated and were integral to providing comments and data for the Plan Update. For a list of attendees at meetings, please see Appendix E.¹

¹ Information contained in Appendix E is exempt from public release under the Freedom of Information Act (FOIA).

APPENDIX A: PLANNING TEAM

Table A-3. Stakeholders

AGENCY	TITLE	STAKEHOLDER TYPE
2604 VFD	Fire Chief	Community Organization
Abbott ISD	Superintendent	Academia
Advanced Command Force	Founder	Regional and Local Agency
American Red Cross Central and South Texas Region	Regional Communication Director (Heart of Texas)	Non-Profit / Community Organization
Aquilla VFD	Fire Chief	Community Organization
Aquilla ISD	Chief of Police	Academia
Blum Fire and Rescue	Fire Chief	Community Organization
Blum ISD	Superintendent	Academia
Bosque County	Emergency Manager	Neighboring Jurisdiction
Brazos River Authority	Region G Resource Representative	Utility Provider
Bynum ISD	Administrative Assistant	Academia
Bynum VFD	Fire Chief	Community Organization
Covington ISD	Superintendent	Academia
Covington VFD	Fire Chief	Community Organization
Department of Homeland Security	Media Representative	Federal Agency
Ellis County	Emergency Management Coordinator	Neighboring Jurisdiction
Environmental Protection Agency (EPA)	Director of Superfund and Emergency Management Division	Federal Agency
Environmental Protection Agency (EPA)	Regional Administrator	Federal Agency
Habitat for Humanity	General Representative	Non-Profit / Community Organization
Heart of Texas Council of Governments	Emergency Preparedness Planner	Regional and Local Agency
HILCO Electric Cooperative	General Manager	Utility Provider
Hill College	Campus Safety Officer	Academia
Hill College	Executive Assistant	Academia

APPENDIX A: PLANNING TEAM

AGENCY	TITLE	STAKEHOLDER TYPE
Hill County - Blackland SWCD (Soil Water Conservation District)	Field Representative	Utility Provider
Hill County ESD 1	President	Local Department
Hill County Indigent Health Care	General Representative	Healthcare Agency
Hill County Kids	General Representative	Non-Profit / Community Organization
Hill County Paw Pals	General Representative	Community Organization
Hill County Veteran Service Office	Veteran Service Officer	Regional and Local Agency
Hill Regional Hospital	Chief Financial Officer / Administrator	Healthcare Agency
Hillsboro Area Chambers of Commerce	General Representative	Community Organization
Hillsboro Economic Development Corporation	Executive Director	Regional and Local Agency
Hillsboro Fire and Rescue	Fire Chief	Community Organization
Hillsboro ISD	School Resource Officer	Academia
Hillsboro Library	Librarian	Community Organization
Hubbard VFD	Fire Chief	Community Organization
Itasca Fire Department	Fire Chief	Community Organization
Itasca ISD	Superintendent	Academia
Johnson County	Emergency Management Coordinator	Neighboring Jurisdiction
Lake Whitney Public Library	Library Director	Community Organization
Lake Whitney Search and Rescue	Fire Chief	Community Organization
Lakeview VFD	Fire Chief	Community Organization
Limestone County	Floodplain Administrator	Neighboring Jurisdiction
Malone VFD	Fire Chief	Community Organization
McLennan County	Emergency Management Coordinator	Neighboring Jurisdiction
McLennan - Hill County Tehuacana Creek WCID 1	General Manager	Utility Provider

APPENDIX A: PLANNING TEAM

AGENCY	TITLE	STAKEHOLDER TYPE
Mertens VFD	Fire Chief	Community Organization
Mission Hillsboro	General Representative	Non-Profit / Community Organization
Mount Calm Public Library	Librarian	Community Organization
Mount Calm VFD	Fire Chief	Community Organization
National Weather Service (NWS)	Dallas/Fort Worth Representative	Federal Agency
Navarro County	Emergency Management Coordinator	Neighboring Jurisdiction
Penelope ISD	Superintendent	Academia
Penelope VFD	Fire Chief	Community Organization
Peoria VGD	Fire Chief	Community Organization
Peterson Health	Chief Information Officer	Healthcare Agency
Texas A&M AgriLife Extension	County Representative	State Agency
Texas A&M Forest Service	Area Operations Chief	State Agency
Texas Commission on Environmental Quality, Region 9	Executive Assistant	State Agency
Texas Commission on Environmental Quality, Region 9	Regional Director	State Agency
Texas Department of Health and Human Services	Deputy Executive Commissioner, Community Services	State Agency
Texas Department of Health and Human Services	General Representative	State Agency
Texas Department of Housing and Community Affair	Director of Single Family and Homeless Program	State Agency
Texas Department of Housing and Community Affair	Manager of Single-Family Program	State Agency
Texas Department of Transportation	District Engineer	State Agency
Texas Department of Transportation	Hillsboro Engineer	State Agency
Texas Division of Emergency Management, Region 8	District Chief, DC 11	State Agency

APPENDIX A: PLANNING TEAM

AGENCY	TITLE	STAKEHOLDER TYPE
Texas Division of Emergency Management, Region 8	Section Chief	State Agency
Texas State Representative	House District 13	State Legislature
Texas State Senate	Senate District 22	State Legislature
Texas State Soil & Water	Program Supervisor	State Agency
Texas Water Development Board	Regional Water Planning Assistant	State Agency
Texas Windstorm Associations	Regional Water Project Development Assistant	State Agency
The Lakelander Newspaper	General Representative	Community Organization
US Army Corps of Engineers	Fort Worth & Galveston District	Federal Agency
US Fish & Wildlife	Southwest Regional Representative	Federal Agency
White Bluff on Lake Whitney VFD	Fire Chief	Community Organization
Whitney Fire and Rescue	Fire Chief	Community Organization
Whitney ISD	Director of Operations	Academia
Whitney ISD	Security	Academia
Woodbury VFD	Fire Chief	Community Organization



Appendix B

Public Survey Results

APPENDIX B: PUBLIC SURVEY RESULTS

Overview 1
Public Survey Results 2

OVERVIEW

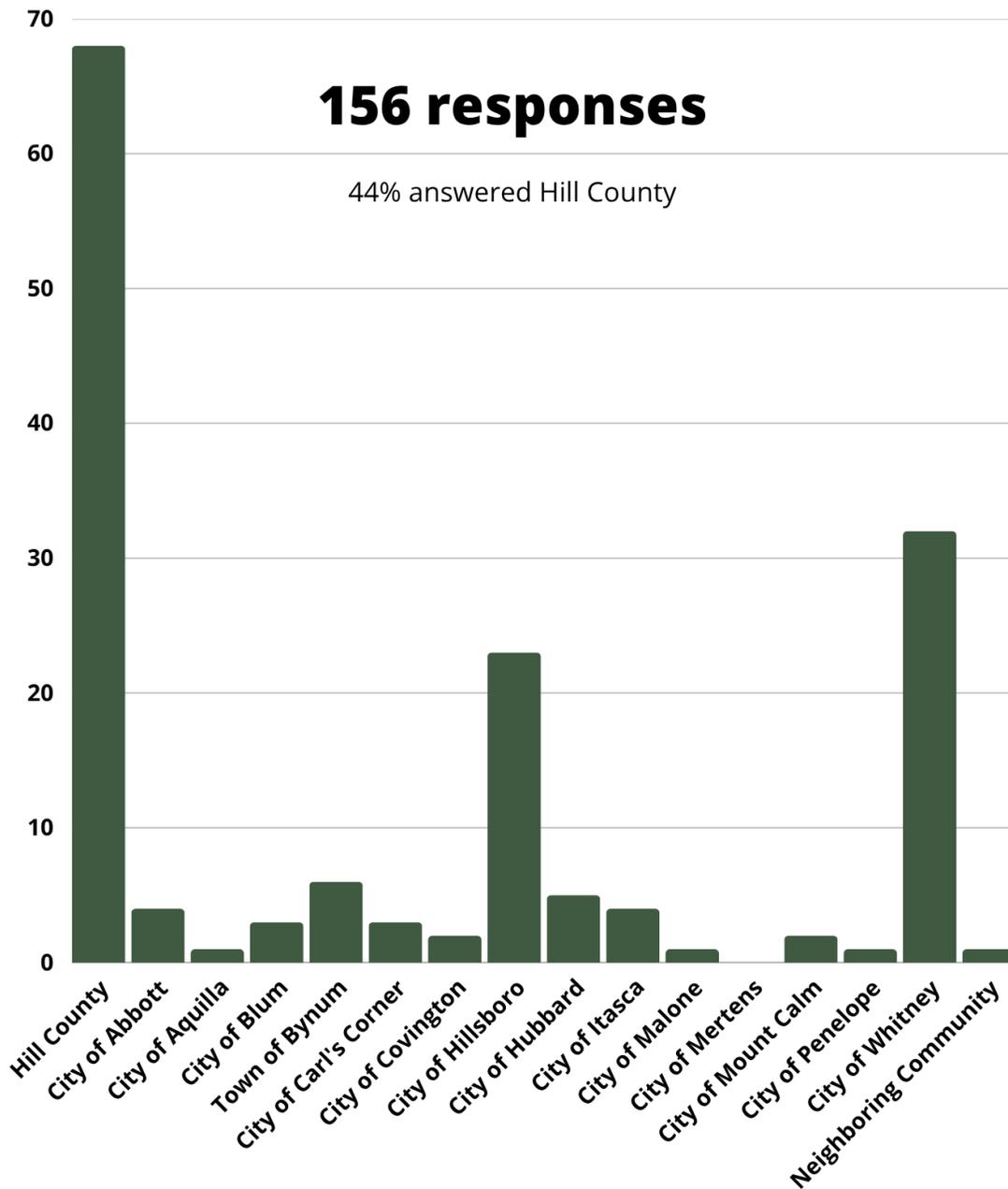
Hill County prepared a public survey that requested public opinion on a wide range of questions relating to natural hazards. The survey was made available via the participating jurisdictions’ websites. This survey link was also distributed at public meetings and stakeholder events throughout the planning process.

A total of 156 surveys were collected, the results of which are presented in Appendix B. The purpose of the survey was twofold: 1) to solicit public input during the planning process, and 2) to help the jurisdictions identify any potential actions or problem areas.

All public survey results were discussed and shared with the Planning Team during the Mitigation Strategy Workshop. These results are also provided below. The survey results provide information regarding the public’s experience with natural hazards, their perceived hazards of concern, recommended mitigation actions, and additional valuable insights. Overall, this survey enhances the mitigation planning process by ensuring the plan properly represents the community, is informed through local knowledge, and by promoting equity.

APPENDIX B: PUBLIC SURVEY RESULTS

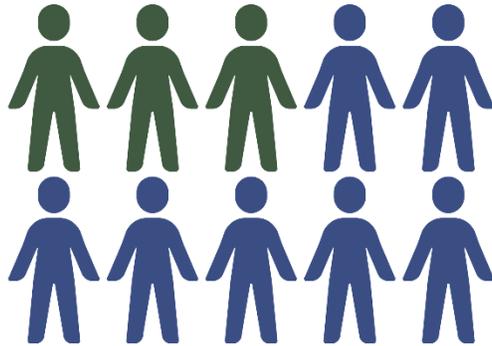
PUBLIC SURVEY RESULTS



Neighboring Community: McLennan County

APPENDIX B: PUBLIC SURVEY RESULTS

Have you ever experienced or been impacted by a disaster?



**31%
Responded
'Yes'**

Personal experiences shared in survey responses included:

"Tornado. Whitney, TX in Spring 1971."

"Wildfire that was from Penelope to Mount Calm, hail and high wind."

"Hubbard Tornado 1973."

"Severe flooding on our roads, occasionally blocking access to our home."

"High winds causing damage to the roof and other structures."

"During "snow-meggedon" when we were out of electricity."

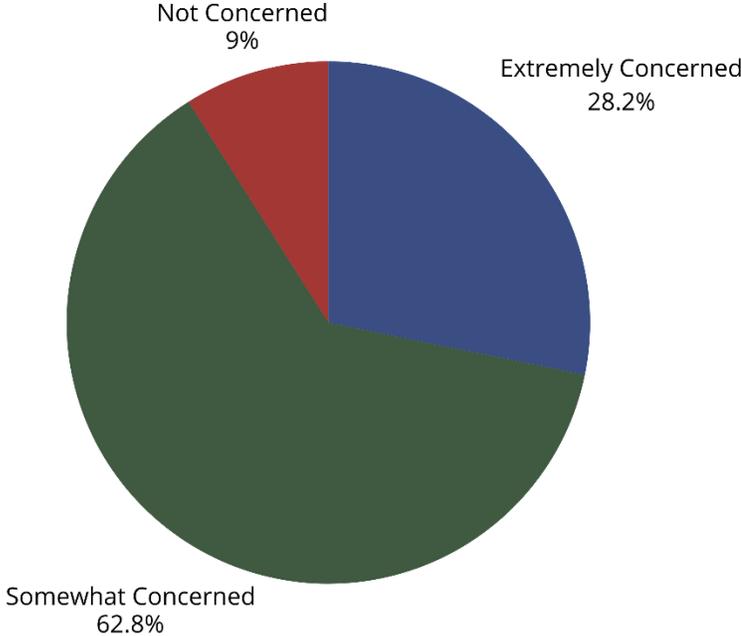
"Our roads flood during rain and I live to where I get stranded if it gets icy. The trees in the neighborhood are so over grown over and around the streets that only 1 small vehicle can get through in some areas."

44% of those who have been impacted by a disaster mentioned tornado and/or high wind in their explanations.



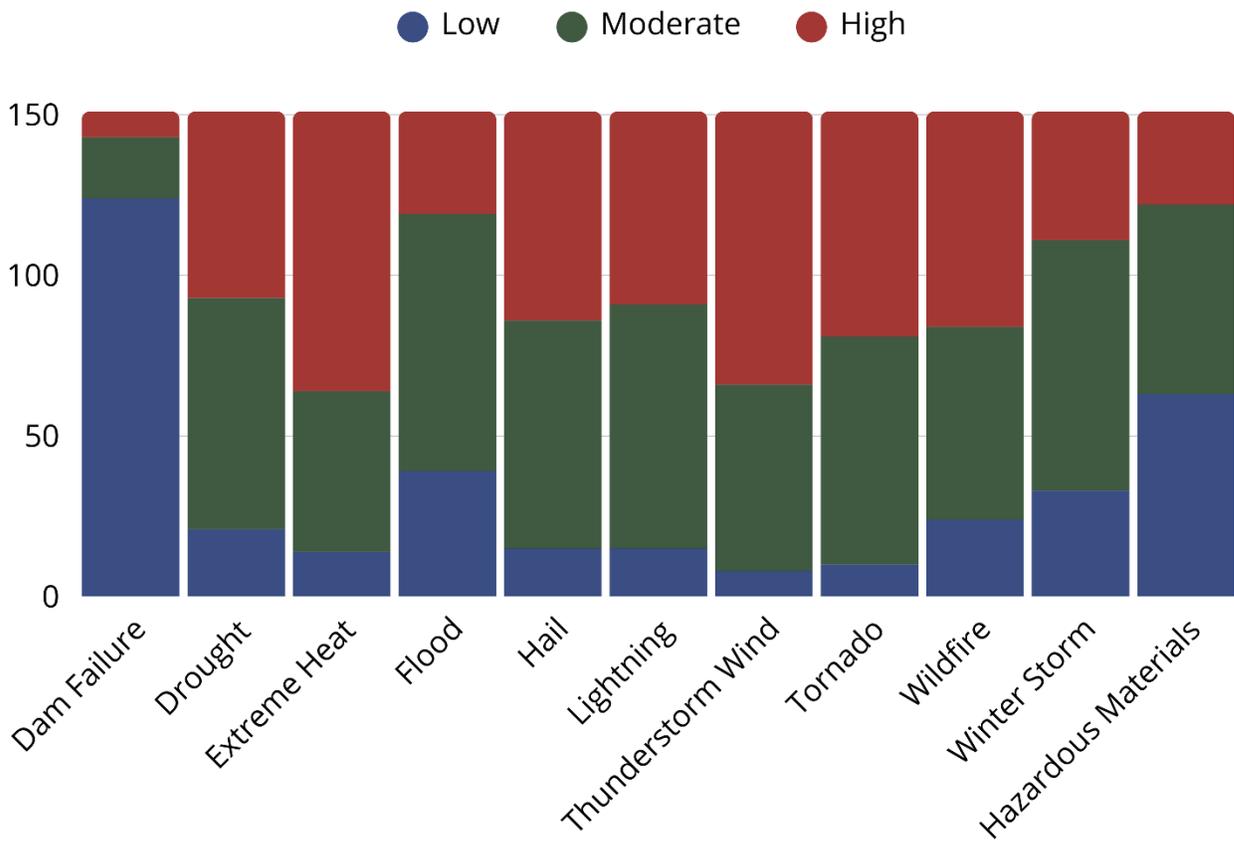
APPENDIX B: PUBLIC SURVEY RESULTS

Concern level for the possibility of their community being impacted by a disaster.



APPENDIX B: PUBLIC SURVEY RESULTS

With the consideration of frequency of occurrence and potential impact severity, please select the one hazard you think is the highest and second highest threat to your neighborhood:



Is there another hazard not listed above that you think is a wide-scale threat to your neighborhood?



Cyber Attack



Water Contamination



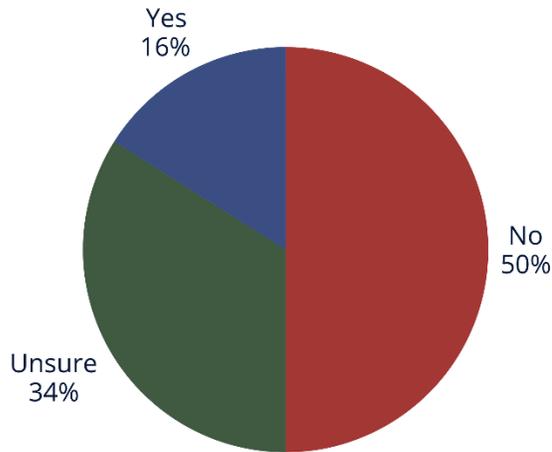
Nuclear Plant Event



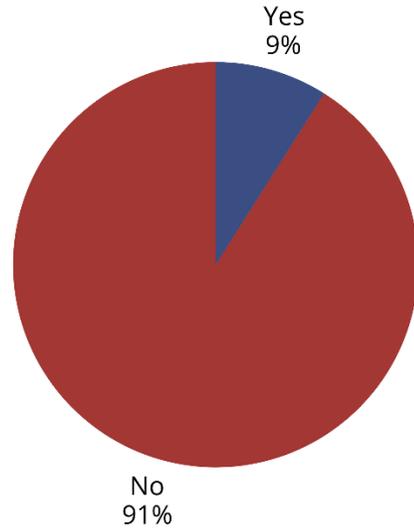
Terrorism

APPENDIX B: PUBLIC SURVEY RESULTS

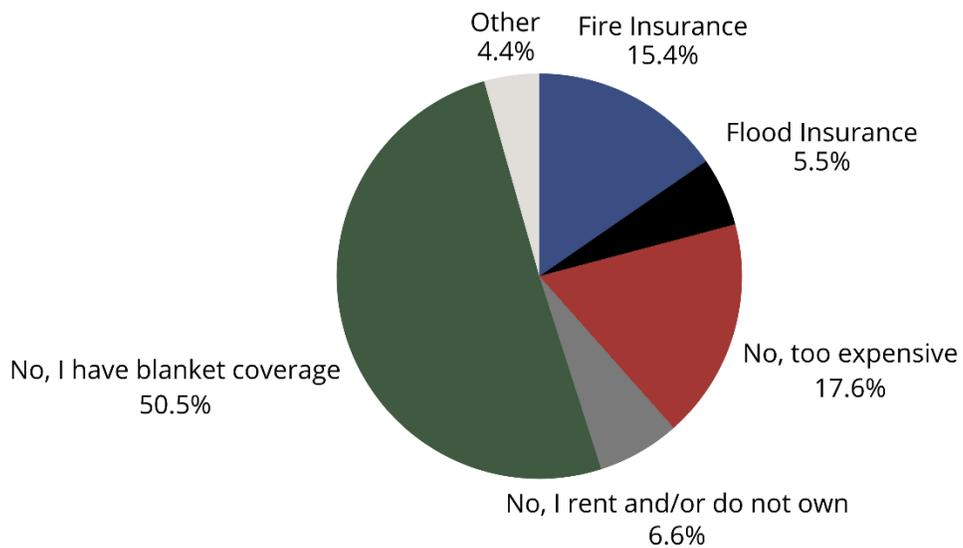
To your knowledge, is your home located in any high hazard risk zones?



Have you had any issues getting homeowners or renters insurance due to risks of hazardous events?

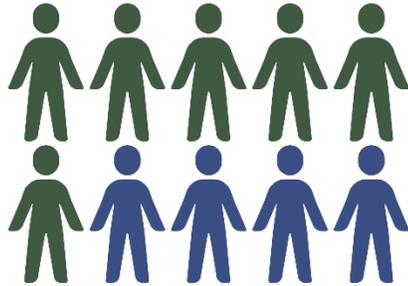


Do you have any hazard specific insurance? If not, why?

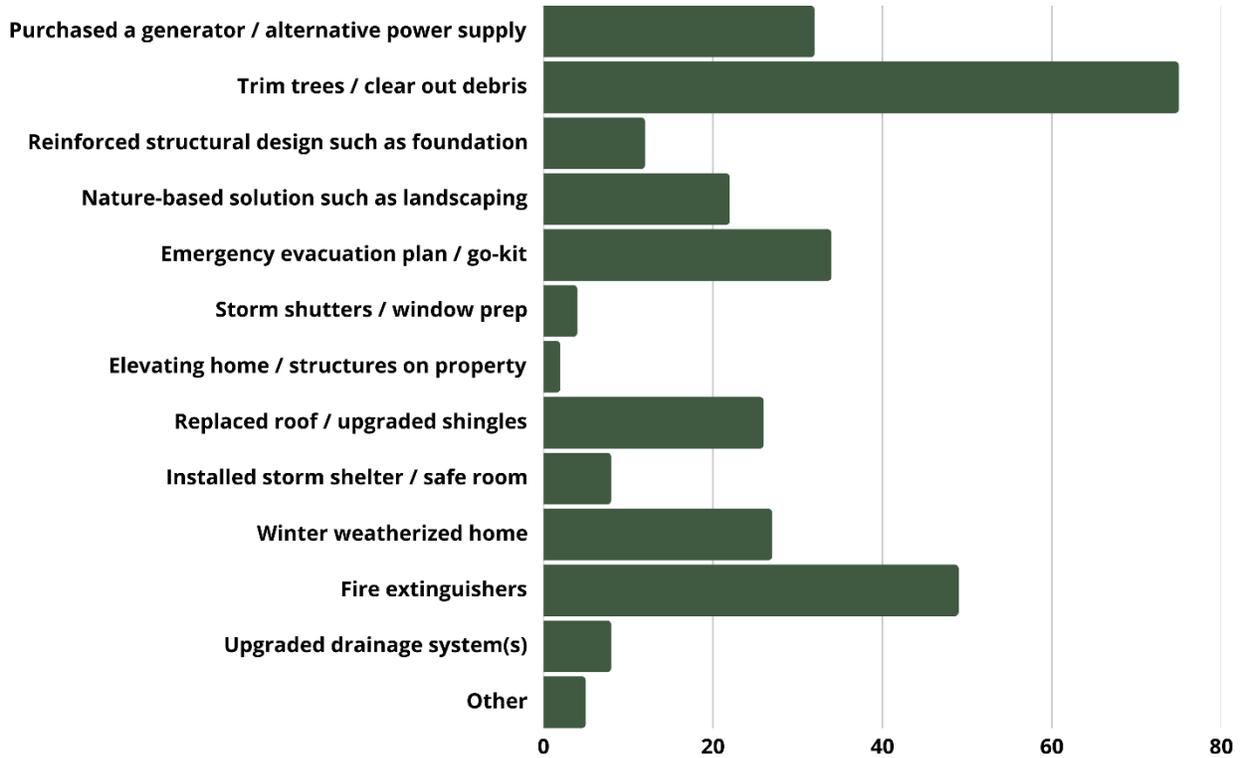


APPENDIX B: PUBLIC SURVEY RESULTS

Have you taken any actions to make your home or neighborhood more resistant to hazards?



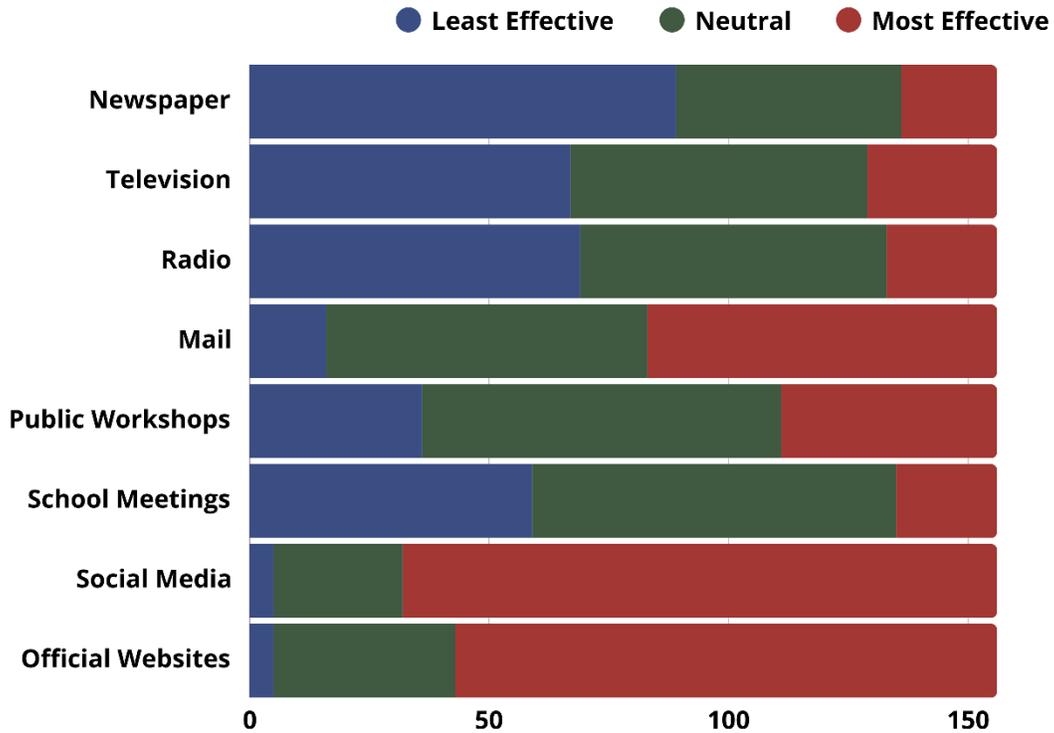
56%
Responded
'Yes'



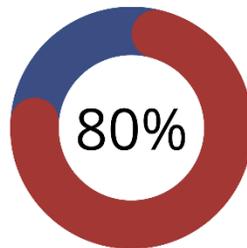
85% of survey responders are
interested in making their homes or
neighborhoods more resistant to
hazards.

APPENDIX B: PUBLIC SURVEY RESULTS

What is the most effective way for you to receive information about how to make your home and neighborhood more resistant to hazards?



Effectiveness of communication methods for receiving information about how to make your home and neighborhood more resistant to hazards



Social Media

Additional communication methods recommended:



Text / Alert



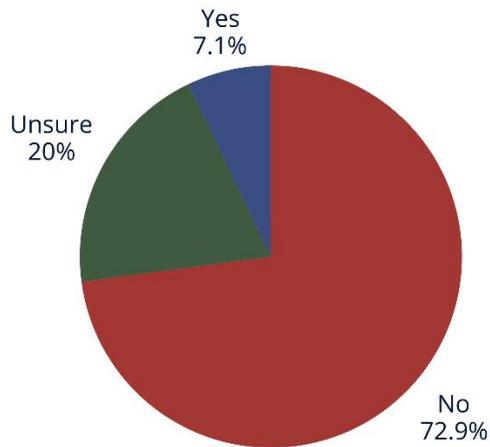
Email



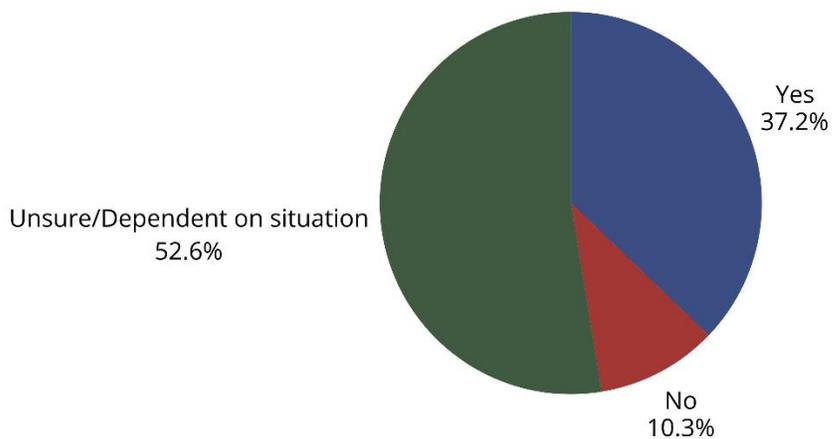
Word of Mouth

APPENDIX B: PUBLIC SURVEY RESULTS

Do you have any special access to functional needs (AFN) within your household that would require early warning or specialized response during disasters?

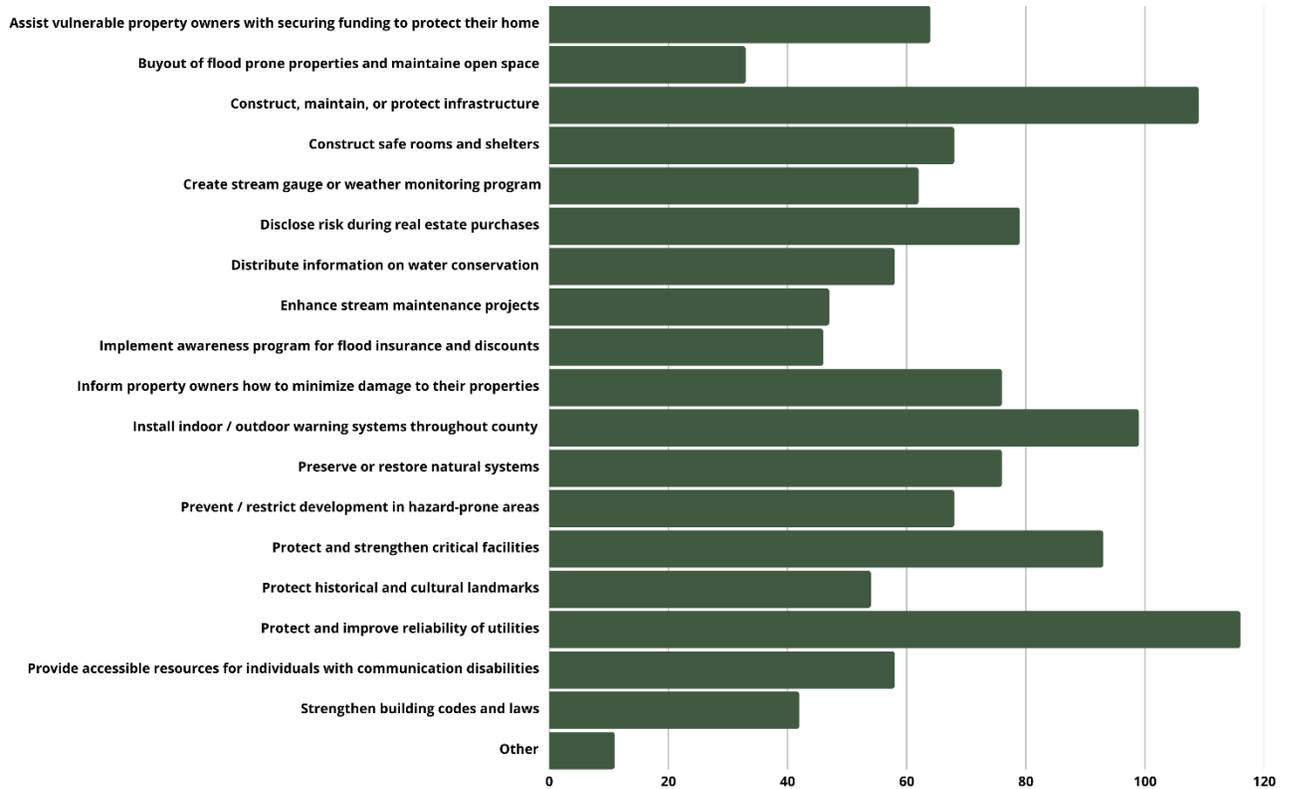


Would you support regulation (restrictions) on land uses within known high hazard areas?



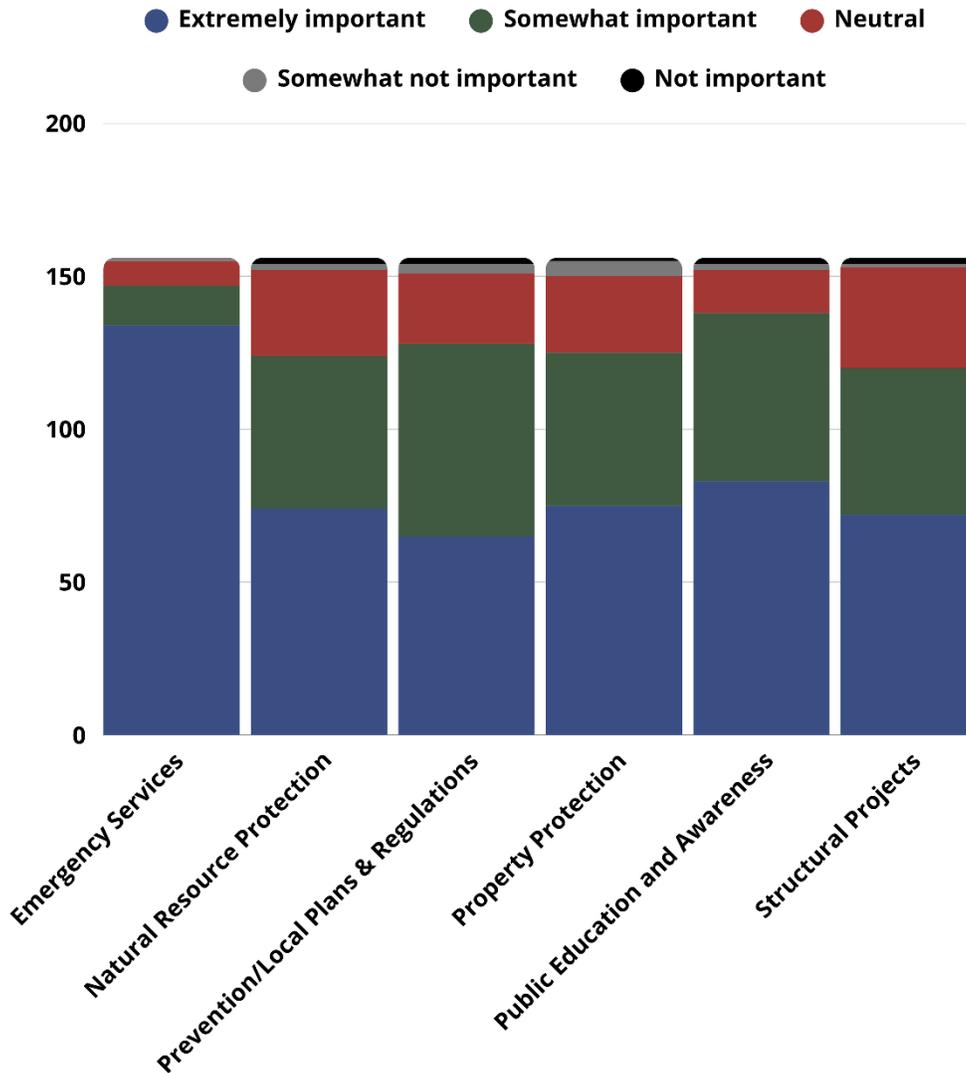
APPENDIX B: PUBLIC SURVEY RESULTS

In your opinion, please select steps your local government should prioritize to reduce or eliminate the risk of future hazard damages in your neighborhood.



APPENDIX B: PUBLIC SURVEY RESULTS

A number of community-wide activities can reduce our risk from hazards. In general, these activities fall into one of the following six broad categories. Please tell us how important you think each one is for your community to consider pursuing.



Emergency Services - Actions that protect people and property during and immediately after a hazard event. Examples include warning systems, evacuation planning, emergency response training, and protection of critical facilities or systems.

Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems. Examples include floodplain protection, habitat preservation, slope stabilization, riparian buffers, and forest management.

APPENDIX B: PUBLIC SURVEY RESULTS

Prevention / Local Plans & Regulations - Administrative or regulatory actions that influence the way land is developed and buildings are built. Examples include planning and zoning, building codes, open space preservation, and floodplain regulations.

Property Protection - Actions that involve the modification of existing buildings to protect them from a hazard or removal from the hazard area. Examples include acquisition, relocation, elevation, structural retrofits, and storm shutters.

Public Education and Awareness - Actions to inform citizens about hazards and techniques they can use to protect themselves and their property. Examples include outreach projects, school education programs, library materials, and demonstration events.

Structural Projects - Actions intended to lessen the impact of a hazard by modifying the natural progression of the hazard. Examples include dams, levees, seawalls detention / retention basins, channel modification, retaining walls, and storm sewers.

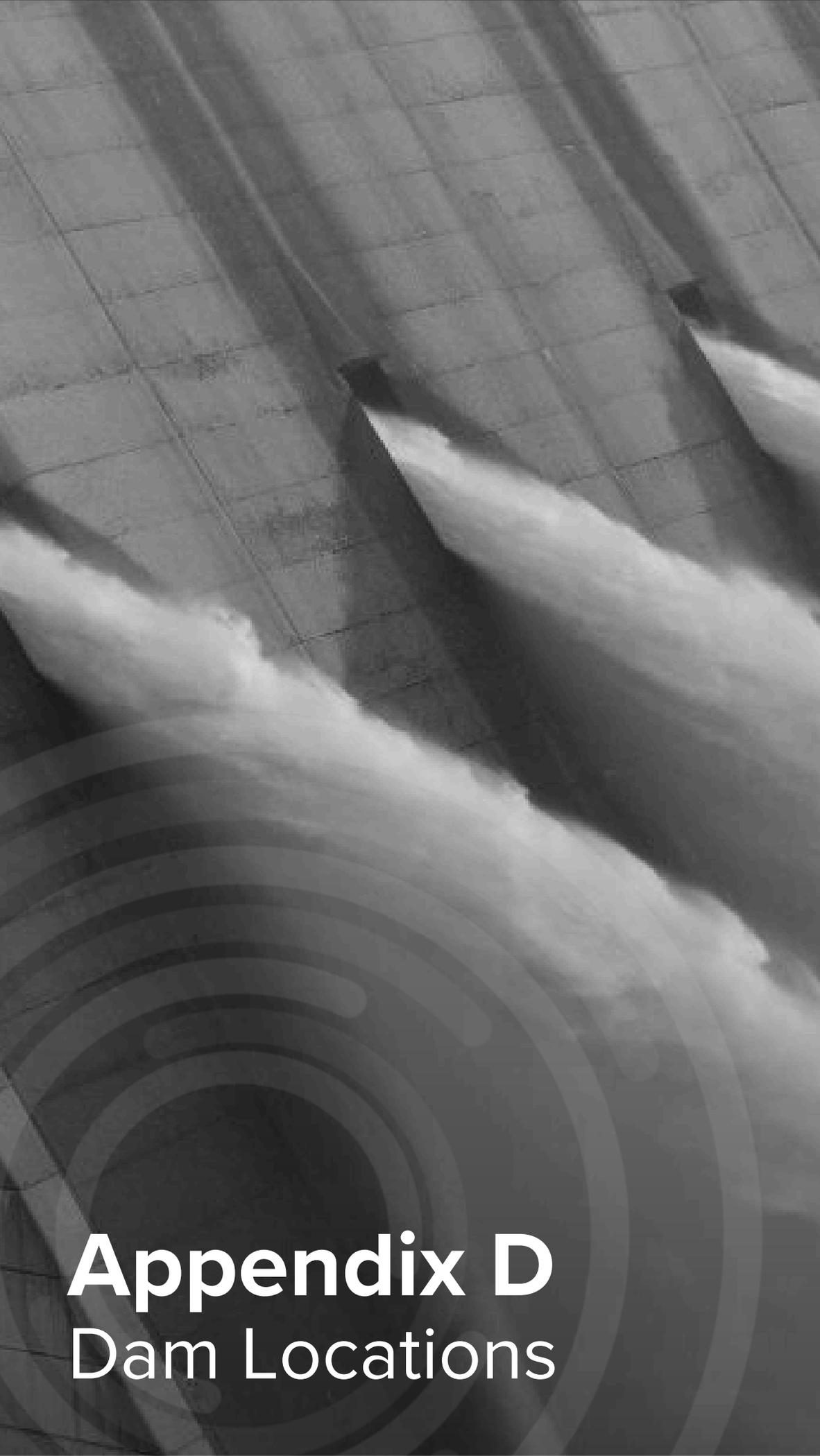


Appendix C

Critical Facilities

APPENDIX C: CRITICAL FACILITIES

Appendix C is For Official Use Only (FOUO) and may be exempt from public release under the Freedom of Information Act (FOIA).



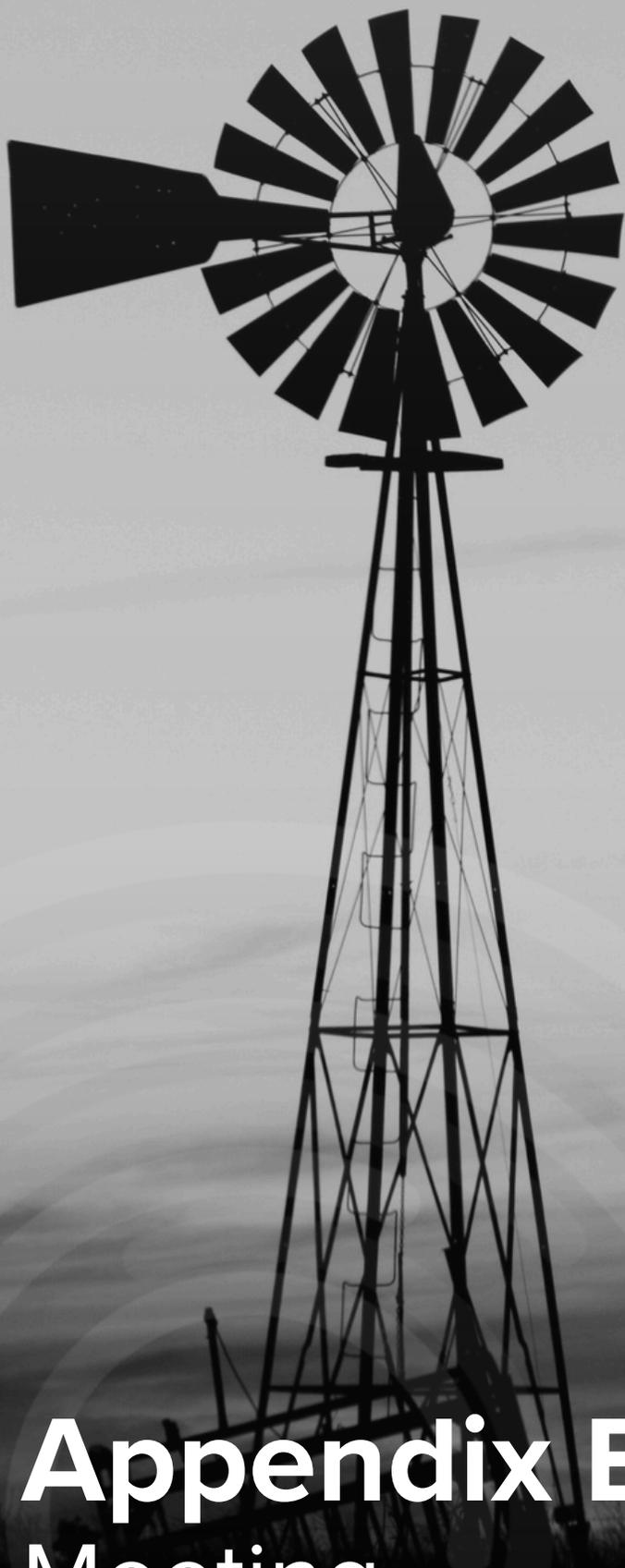
Appendix D

Dam Locations



APPENDIX D: DAM LOCATIONS

Appendix D is For Official Use Only (FOUO) and may be exempt from public release under the Freedom of Information Act (FOIA).



Appendix E

Meeting

Documentation



APPENDIX E: MEETING DOCUMENTATION

Appendix E is For Official Use Only (FOUO) and may be exempt from public release under the Freedom of Information Act (FOIA).



Appendix F

Capability Assessment



APPENDIX F: CAPABILITY ASSESSMENT

Appendix F is For Official Use Only (FOUO) and may be exempt from public release under the Freedom of Information Act (FOIA).



Appendix G

State and Federal Funding Opportunities

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

Overview..... 1

OVERVIEW

Texas utilizes state funds to improve statewide hazard mitigation capabilities and advance their hazard mitigation goals to help identify, understand, and manage various risks associated with natural hazards. State funds also provide funding for state facility and infrastructure upgrades, hazard mapping, mitigation planning, and other mitigation programmatic activities. Table G-1 describes a variety of loan and grant programs offered by state agencies for which mitigation activities may be eligible.

Table G-1. Summary of State Funded Mitigation Programs

AGENCY	FUNDING PROGRAM
Texas A&M Forest Service (TAMFS)	<ul style="list-style-type: none"> • Community Fire Protection Program • Community Wildfire Defense Grant • Fire-Adapted Communities Program (FAC) • Firewise USA Program • Forest Land Enhancement Program • Forest Legacy Program • Mitigation Project Support Fund Prescribed Fire Grants • Resilient Landscapes Program • Rural Fire Assistance Grant • State Fire Assistance for Mitigation (SFAM) - Mechanical Fuels Grants • State Fire Assistance for Mitigation (SFAM) - Vegetative Fuel Break Grant • Texas Longleaf Conservation Assistance Program • Urban Tree Canopy Project (UTC)
Texas Commission on Environmental Quality (TCEQ)	<ul style="list-style-type: none"> • Clean Water Act Section 319 Grants • High Hazard Potential Dam Program (HHPD) • Nonpoint Source Grant Program • U.S.-Mexico Border Water Infrastructure Program
Texas Department of Agriculture (TDA)	<ul style="list-style-type: none"> • Agricultural Management Assistance (AMA) • Agricultural Water Enhancement Program (AWEP) • Community Development Block Grant • Community Development Block Grant for Rural Texas • Conservation Innovation Grants (CIG) • Environmental Quality Incentives Program (EQUIP)
Texas Department of Housing and Community Affairs (TDHCA)	<ul style="list-style-type: none"> • Texas HOME Disaster Relief
Texas Department of State Health Services (TXDSHS)	<ul style="list-style-type: none"> • Hospital Preparedness Program (HPP) Cooperative Agreement • Public Health Emergency Preparedness (PHEP) Cooperative Agreement

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

AGENCY	FUNDING PROGRAM
Texas Department of Transportation (TXDOT)	<ul style="list-style-type: none"> • Bridge Preventative Maintenance Program • Emergency Relief (ER) Program • Highway Bridge Replacement and Rehabilitation Program • Safe Rest Stops Program • Transportation Enhancement Program
Texas Division of Emergency Management (TDEM)	<ul style="list-style-type: none"> • Emergency Management Performance Grant (EMPG) • Fire Management Assistance Grants (FMAG) • Hazard Mitigation Planning Grants Program (HMGP) • Homeland Security Grant Program (HSGP) • Individual Assistance (IA) • National Earthquake Hazard Reduction Program (NEHRP) • Public Assistance (PA) Section 406 Funds
Texas Economic Development & Tourism (EDT)	<ul style="list-style-type: none"> • Economic Development Administration Grants and Investments
Texas General Land Office (TXGLO)	<ul style="list-style-type: none"> • Beach Grants • Beach Maintenance Reimbursement Fund • Coastal Erosion Planning and Response Act (CEPRA) • Coastal and Estuarine Land Conservation Program (CELCP) • Coastal Management Program (CMP) • Community Development Block Grant – Disaster Recovery (CDBG-DR) • Community Development Block Grant – Mitigation (CDBG-MIT) • Gulf of Mexico Energy Security Act (GOMESA) • Hazard Mitigation Grant Program Supplemental – LHMP
Texas Parks and Wildlife Department (TPWD)	<ul style="list-style-type: none"> • Nation Resources Damage Assessment (NRDA) • National Wildlife Wetland Refuge System • North American Wetland Conservation Fund • Partners for Fish and Wildlife • Texas Farm and Ranch Lands Conservation Program (TFRLCP) • Wildlife Habitat Incentive Program (WHIP)
Texas State Soil and Water Conservation Board (TSSWCB)	<ul style="list-style-type: none"> • Clean Water Act Section 319 Grants • Nonpoint Source Grant Program
Texas Water Development Board (TWDB)	<ul style="list-style-type: none"> • Agricultural Water Conservation Grants • Agricultural Water Conservation Loans • Clean Water State Revolving Fund (CWSRF) • Community Assistance Program (CAP) • Drinking Water State Revolving Fund (DWSRF) • Economically Distressed Areas Program • Emergency Community Water Assistance Grants • Flood Infrastructure Fund (FIF) • Flood Mitigation Assistance (FMA) Program • Flood Protection Planning Program

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

AGENCY	FUNDING PROGRAM
	<ul style="list-style-type: none"> ● Groundwater Conservation District Loan Program ● Planning Assistance to States ● Regional Facility Planning Grant Program ● Regional Water Planning Group Grants ● Research and Planning Fund and Fund Development Program ● Risk MAP Program ● Rural Development Grants ● Rural Water Assistance Fund (RWAf) ● Silver Jackets ● Small Flood Control Projects (USACE Section 205) ● State Participation Program – Regional Water and Wastewater Facilities ● State Water Implementation Fund for Texas (SWIFT) ● State Water Resources Research Act Program ● Texas Infrastructure Resiliency Fund (TIRF) ● Texas Water Development Fund (DFund) ● Water Research Grant Program ● WaterSMART - Drought Response Program

In addition to state-funded programs, many local jurisdictions benefit from federal mitigation funding opportunities. FEMA’s Hazard Mitigation Assistance is a primary source for the implementation of mitigation projects throughout the nation. Table G-2 describes additional federal, state, local, and nonprofit mitigation funding sources specifically within the State of Texas.

Table G-2. Federal, State, Local and Non-Profit Mitigation Funding Sources in Texas

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Agricultural Conservation Easement Program (ACEP)	Federal	NRCS		Provides financial and technical assistance to help conserve agricultural lands and wetlands and their related benefits.
Agricultural Management Assistance (AMA)	Federal	USDA, NRCS	TDA	Provides financial and technical assistance to agricultural producers to voluntarily address issues such as water management, water quality, and erosion control by incorporating conservation methods into their farming operations.
Agricultural Water Enhancement Program (AWEP)	Federal	USDA, NRCS	TDA	Voluntary conservation initiative that provides financial and technical assistance to agricultural producers to implement water enhancement activities on agricultural land to conserve surface and ground water and improve water quality.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Agricultural Water Conservation Grants	State	TWDB	TWDB	Funding is available to state agencies and political subdivisions for projects that advance the implementation of conservation or water management strategies identified in state and regional water plans. Applications are accepted annually, with up to \$1.2 million in total funding available each year. Grant categories are subject to change annually.
Agricultural Water Conservation Loans	State	TWDB	TWDB	Agricultural water conservation loans to use either for facility improvements or as loans to individuals. Low-interest, fixed rates. Up to 10-year repayment terms. U.S. Iron and Steel requirements apply to certain projects. Eligible loan applicants include political subdivisions.
AmeriCorps - Corporation for National & Community Service (CNCS)	Federal	AmeriCorps	N/A	Provides funding for volunteers to serve communities, including disaster prevention. AmeriCorps/Vista has assisted local communities with wildfire mitigation projects.
American Recovery and Reinvestment Act (ARRA)	Federal	EPA		Provides significant funding for states to finance high priority water infrastructure projects through a \$2 billion appropriation to the Drinking Water State Revolving Fund (DWSRF) program and a \$4 billion appropriation to the Clean Water State Revolving Fund (CWSRF) program.
American Recovery and Reinvestment Act (ARRA)	Federal	DOT Federal Transit Administration	TDA	The American Recovery and Reinvestment Act (ARRA), commonly referred to as the Recovery Act, is a stimulus package enacted by the 111th U.S. Congress and signed into law by President Barack Obama in February 2009. Designed in response to the Great Recession, the primary goal of the Act was to preserve existing jobs and generate new employment opportunities as quickly as possible. Additional objectives include providing temporary relief to individuals most affected by the recession and investing in infrastructure, education, healthcare, and renewable energy.
Aquatic Ecosystem Restoration	Federal	DOD-USACE		Direct support for carrying out aquatic ecosystem restoration projects that will improve the equality of the environment.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Assistance to Firefighters program - Fire Prevention & Safety (FP&S) Grants	Federal	FEMA, AFG		Fire Prevention & Safety (FP&S) Grants support projects that enhance the safety of the public and firefighters from fire and related hazards.
Beach Grants	Federal	EPA	TXGLO	EPA awards grants under the authority of the BEACH Act to eligible states, territories, and tribes with beaches on oceans and the Great Lakes coasts to develop and implement programs to monitor their beaches and notify the public when it is not safe to swim.
Beach Maintenance Reimbursement Fund	State	GLO	TXGLO	Allocates approximately \$750,000 per year to help communities maintain their beaches. Applications are distributed to eligible participants in early fall and are due within a specified amount of time, no less than 30 days. Contracts are renewable annually.
Bridge Preventative Maintenance Program	State	TXDOT	TXDOT	A planned, cost-effective treatment that preserves, improves, or delays future deterioration of the condition of a bridge. To be eligible, a bridge must have a condition rating of 5 or 6 for at least one of the following: deck, superstructure, substructure, culvert, or channel. Safety and improvements to the physical condition of the State's on-system bridges are TxDOT's main goals in the prioritization of the bridges using BMIP funds. Each FY, the Bridge Division develops and distributes an initial list of eligible bridges in each district for the annual program call.
Carbon Reduction Program (CRP)	Federal	USDOT	TXDOT, TCEQ	Provides funds for projects that are designed to reduce transportation emissions (CO2). This program can fund a wide range of projects designed to reduce carbon dioxide emissions from on-road highway sources.
Center for Integration of Natural Disaster Information	Federal	DOI/USGS, The Center for Integration of Natural Hazards Research	Texas A&M	Technical Assistance: Develops and evaluates technology for information integration and dissemination.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Clean School Bus Program	Federal	EPA	TCEQ	Provides assistance in replacing existing school buses with zero-emission and low-emission models.
Clean Water Act Section 319 Grants	Federal	EPA	TCEQ and TSSWCB	Provides grants for a wide variety of activities related to non-point source pollution runoff mitigation.
Clean Water State Revolving Fund (CWSRF)	Federal	EPA	TWDB	Provides low-cost financing for a wide range of wastewater, stormwater, reuse, and other pollution control projects.
Climate Pollution Reduction Grant	Federal	EPA	TCEQ	Supports the state in creating two climate action plans (i.e., one priority plan and one comprehensive plan) for implementing effective greenhouse gas reduction strategies while ensuring the benefits of these actions are delivered to Texans, especially Low Income or Disadvantaged communities (LIDAC) as defined by US EPA. This grant will give Texas communities the opportunity to collaborate with the state to build projects and programs that provide high-quality jobs, improve health, and keep families safe where they live.
Coastal Erosion Planning and Response Act (CEPRA)	State	GLO	TXGLO	Since its inception in 2000, the Texas General Land Office’s Coastal Erosion Planning and Response Program has secured over \$62 million in state funding, complemented by an additional \$62 million in matching funds. This program has facilitated the completion of more than 200 coastal erosion projects and studies. The application process for non-emergency project funding opens every even-numbered year in February and closes in early June of the same year.
Coastal and Estuarine Land Conservation Program (CELCP)	Federal	NOAA	TXGLO	When the National Oceanic and Atmospheric Administration (NOAA) provides funding for CELCP, the General Land Office (GLO) offers coastal communities the opportunity to submit up to three project applications per year. Federal grant awards for individual projects may not exceed \$3 million.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Coastal Management Program (CMP)	Federal	NOAA	TXGLO	Texas receives approximately \$2 million annually in grants from NOAA and 90 percent of the funds are passed through to local governments and entities to address environmental needs and promote sustainable economic development along the coast. Projects must improve the management of the state’s coastal resources and ensure long-term ecological and economic productivity. Section 306 administrative funds can be used for non- construction, coastal planning and education, and research. Section 306A improvement funds can be utilized for construction and land acquisition projects, preservation, and restoration. CMP funding categories include Coastal Natural Hazards Response, Critical Areas Enhancement, Public Access, Water/Sediment Quantity and Quality Improvements, Waterfront Revitalization and Ecotourism Development, Permit Streamlining/ Assistance, Governmental Coordination and Local Government Planning Assistance.
Community Assistance Program (CAP)	Federal	FEMA, NFIP	TWDB	Product-oriented financial assistance program directly related to the flood loss reduction objectives of the National Flood Insurance Program (NFIP).
Community Development Block Grant (CDBG)	Federal	HUD	TDA	The primary objective is to develop viable communities by providing decent housing and suitable living environments and expanding economic opportunities principally for persons of low- to moderate- income. Eligible applicants are non-entitlement cities under 50,000 in population and non-entitlement counties that have a non-metropolitan population under 200,000 and that are not eligible for direct CDBG funding from HUD may apply for funding through any of the Texas CDBG programs.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Community Development Block Grant for Rural Texas	State	TDA	TDA	TDA administers the Community Development Block Grant for Rural Texas. The primary objective of the CDBG is to develop viable communities by providing decent housing and suitable living environments and expanding economic opportunities principally for persons of low- to moderate-income. Eligible applicants are non-entitlement cities under 50,000 in population and non-entitlement counties that have a non-metropolitan population under 200,000 and that are not eligible for direct CDBG funding from HUD may apply for funding through any of the Texas CDBG programs.
Community Development Block Grant – Disaster Recovery (CDBG-DR)	Federal	HUD	TXGLO	Often following a disaster, the state may receive a CDBG-DR Supplement intended for mitigation and disaster recovery projects in the affected areas. Funding can be used to acquire properties in hazard prone areas. Since CDBG funds lose their federal identify they can also be used to supplement state or local match requirements on other funds such as FEMA HMA grants. Funding also supports public facilities including water and wastewater.
Community Development Block Grant – Mitigation (CDBG-MIT)	Federal	HUD	TXGLO	Eligible grantees can use this assistance in areas impacted by recent disasters to carry out strategic and high-impact activities to mitigate disaster risks and reduce future losses. In February of 2018, Congress appropriated \$12 billion dollars in Community Development Block Grant (CDBG) funds specifically for mitigation activities for qualifying disasters in 2015, 2016, and 2017. HUD was able to allocate an additional \$3.9 billion, bringing the amount available for mitigation to nearly \$16 billion.
Community Fire Protection Program	Federal	USDA	TAMFS	Mitigation is delivered via the USDA Forest Service and Private Forestry Coop Fire Program.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Community Rating System (CRS)	Federal	FEMA		A voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. CRS not only assists communities in reducing flood risks, but also enhances public safety, reduces damage to property and public infrastructure, avoids economic disruption and losses, reduces human suffering, and protects the environment. Technical assistance in designing and implementing some activities is available at no charge. Participating in the CRS provides an incentive to maintain and improve a community's floodplain management program over the years. Implementing some CRS activities can help the project qualify for certain other Federal assistance funds.
Community Wildfire Defense Grant	Federal	USFS	TAMFS	Offers financial assistance to at-risk local communities with planning for and against the risk of catastrophic wildfire. This program is authorized in Public Law 117-58, the Infrastructure Investment and Jobs Act. Two primary objectives: The development and revision of Community Wildfire Protection Plans (CWPP), and the implementation of projects described in a CWPP that is less than ten years old. Prioritizes at-risk communities that are in an area identified as having high or very high wildfire hazard potential, are low-income, and/or have been impacted by a severe disaster with no minimum federal funding limit for projects.
Conservation Contracts	Federal	USDA-FSA		Debt reduction for delinquent and non-delinquent borrowers in exchange for conservation contracts placed on environmentally sensitive real property that secures FSA loans.
Conservation Innovation Grants (CIG)	Federal	USDA, NRCS	TDA	A voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging federal investment in environmental enhancement and protection, in conjunction with agricultural production.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Conservation Technical Assistance (CTA) Program	Federal	USDA-NRCS		Technical assistance for run-off retardation and soil erosion prevention to reduce hazards to life and property.
Decision, Risk, and Management Science Program	Federal	NSF		Funding is provided for research and related educational activities focused on risk, perception, communication, and management, with an emphasis on technological hazards.
Disaster Mitigation Planning and Technical Assistance	Federal	DOC, EDA		Technical and planning assistance grants for capability building and mitigation project activities focusing on creating disaster resistant jobs and workplaces.
Division of Homeland Security Financial Assistance	Federal	US Department of Homeland Security	OOG	Supports a wide variety of funding and financial assistance programs that promote preparedness, resilience, and post-disaster relief.
Drinking Water State Revolving Fund (DWSRF)	Federal	EPA	TWDB	Provides funding for infrastructure improvements to drinking water systems. The program also emphasizes providing funds to small and disadvantaged communities and for programs that encourage pollution prevention as a tool for ensuring safe drinking water.
Economic Development Administration Grants and Investments	Federal	U.S. DOC, EDA	EDT	Provides grants and investments for community construction projects, including mitigation activities.
Economically Distressed Areas Program	State	TWDB	TWDB	Provides financial assistance for projects serving economically distressed areas where water or sewer services do not exist, or systems do not meet minimum state standards. Eligible EDAP applicants include cities, counties, water districts, nonprofit water supply corporations, and all other political subdivisions. The city or county where the project is located must adopt and enforce Model Subdivision Rules for the regulation of subdivisions prior to application for financial assistance. Projects must also be in an economically distressed area where the median household income is not greater than 75 percent of the median state household income.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Economic Injury Disaster Loan	Federal	SBA		The COVID EIDL program ceased accepting applications on December 31, 2021, however, the disaster EIDL program continues to be available to businesses impacted by other publicly declared disasters.
Emergency Community Water Assistance Grants	Federal	USDA	TWDB	\$150,000 to \$500,000 available to rural communities with populations over 10,000 people with a median household income of less than \$65,900. Aids communities that have experienced a decline in quantity or quality of drinking water as a result of an emergency, including drought.
Emergency Management / Mitigation Training	Federal	FEMA		Training in disaster mitigation, preparedness, and planning.
Emergency Management Institute	Federal	FEMA		Education training programs to prepare emergency management professionals to prepare for, respond to, and recover from disasters and emergencies.
Emergency Management Performance Grant (EMPG)	Federal	FEMA	TDEM	Provides a yearly allocation of funding to support state and local emergency management programs. This has included providing funding for local mitigation plans, mitigation-oriented studies, and related activities.
Emergency Relief (ER) Program	Federal	US DOT - FHWA	TXDOT	Provides funding for the repair or reconstruction of roads and bridges on Federal-aid highways that have sustained damage as a direct result of a natural disaster or a catastrophic failure due to an external cause.
Emergency Watershed Protection (EWP)	Federal	USDA, NRCS	TWDB	Provides funding and technical assistance for emergency measures, including floodplain easements in impaired watersheds. Funding is available through Simplified Acquisition Procedures (SAP), typically ranging from \$25,000 to \$100,000. Support is provided through contracts between project sponsors and the Natural Resources Conservation Service (NRCS); grants are not offered under this program. The NRCS covers up to 75 percent of total project costs.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Environmental Justice Government-to-Government Program (EJG2G)	Federal	EPA		Provides funding to support government activities that lead to measurable environmental or public health impacts in communities disproportionately burdened by environmental harms.
Environmental Justice Collaborative Problem Solving Program	Federal	EPA		Provides funding directly to community-based organizations to address environmental injustices.
Environmental Quality Incentives Program (EQUIP)	Federal	USDA, NRCS	TDA	Provides funding and technical assistance to farmers and ranchers to promote agricultural production and environmental quality as compatible goals.
Farm Ownership Loans	Federal	USDA-FSA		Direct loans, guaranteed / insured loans, and technical assistance to farmers so that they may develop, construct, improve, or repair farm homes, farms, and service buildings, and to make other necessary improvements.
Federal Land Transfer / Federal Land to Parks Program	Federal	DOI-NPS		Identifies, assesses, and transfers available federal real property for acquisition for use in state and local parks and recreation, such as open space.
Fire-Adapted Communities Program (FAC)	Federal	FEMA, USFA	TAMFS	Collaborates to identify wildfire risk and take actionable steps to reduce risk of loss by protecting property and enhancing the safety of firefighters and residents.
Fire Management Assistance Grants (FMAG)	Federal	FEMA	TDEM	Provides fire suppression support to states when loss of life and property is imminent. Wildfire mitigation is also eligible under emergency protection if life is in imminent danger.
Fire Prevention and Safety Grant Program	Federal	US Fire Administration		Provides funding for projects that enhance the safety of the public and firefighters from fire and related hazards. The primary goal is to target high-risk populations and reduce injury and prevent death.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Firewise USA Program	Federal	USDA, DOI, NASFF, NFPA	TAMFS	Provides a collaborative framework to help neighbors in a geographic area organize and enhance ignition resistance of their homes and community to reduce wildfire risks at the local level.
Flood Infrastructure Fund (FIF)	State	TWDB	TWDB	Provides financial assistance in the form of loans and grants for flood control, flood mitigation, and drainage projects. The Flood Intended Use Plan (Flood IUP) details the structure of each funding cycle and the SWIFT Advisory Committee serves as the oversight entity.
Flood Mitigation Assistance Program (FMA)	Federal	FEMA	TWDB	Repetitive flood loss property reduction and projects that mitigate losses to NFIP-insured properties.
Floodplain Management Services	Federal	DOD-USACE		Provides technical and planning assistance at the local, regional, or national level needed to support effective floodplain management.
Flood Protection Planning Program	State	TWDB	TWDB	Grant funding available to political subdivisions of the State of Texas for the evaluation of structural and nonstructural solutions to flooding problems. Upstream and/or downstream effects of proposed solutions must be considered in the planning and must be regional in nature by considering the flood protection needs of the entire watershed. Eligible planning activities include, but are not limited to, determining and describing flooding-related problems ; conducting hydrologic and hydraulic studies; identifying potential solutions; estimating the benefits and costs of potential solutions, including structural and nonstructural measures; determining the views and needs of the affected public regarding flooding problems; recommending feasible flood protection solutions; evaluating environmental, social, and cultural factors; and ensuring proposed solutions are consistent with regional or statewide plans as well as relevant laws and regulations.
Forest Land Enhancement Program	Federal	USDA, NRCS	TAMFS	Provides educational, technical, and financial assistance to help landowners implement sustainable forestry management objectives.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Forest Legacy Program	Federal	USFS	TAMFS	Provides funding to protect private forest lands that are environmentally, economically, and socially critical, thereby reducing development in the wildland-urban interface.
Greenhouse Gas Reduction Fund (GGRF)	Federal	EPA		The program is designed to combat the climate crisis by mobilizing financing and private capital for greenhouse gas- and air pollution-reducing projects in communities across the country.
Grid Resilience Program (GRIP)	Federal	DOE		Enhance grid flexibility and improve the resilience of the nation’s power grid against threats of extreme weather and climate change.
Hazard Mitigation Grant Program (HMGP)	Federal	FEMA	TDEM	Post-disaster multi-hazard mitigation funding for federally declared disasters. HMGP Post Fire funds are available for FMAG declarations.
Hazard Mitigation Grant Program Supplemental – Local Hazard Mitigation Plan Program (LHMPP)	Federal	FEMA	TXGLO	The Local Hazard Mitigation Plan Program (LHMPP) assists eligible entities by providing grants to develop or update local hazard mitigation plans, or to provide cost share for hazard mitigation planning activities funded through other federal sources. Grant awards range from \$20,000 to \$100,000.
Hazardous Materials Emergency Preparedness (HMEP) Grant Program	Federal	DOT	TDEM	Funding is available to help facilitate preparedness in transporting hazardous materials. The program recognizes Local Emergency Planning Committees (LEPCs) as applicants to maximize funding impact through regional partnerships.
Healthy Forests Reserve Program (HFRP)	Federal	NRCS		Assist landowners, on a voluntary basis, in restoring, enhancing and protecting forestland resources on private lands through various means, including conservation easements and cost-sharing agreements.
High Hazard Potential Dam Program (HHPD)	Federal	FEMA	TCEQ	Provides assistance for technical, planning, and design activities related to the repair, removal, and/or structural or nonstructural rehabilitation of eligible non-federal high hazard dams classified as high hazard potential by the state/territory dam safety agency, with an approved Emergency Action Plan (EAP) and rated in poor condition, through a pre-disaster or annual cycle.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Highway Bridge Replacement and Rehabilitation Program	Federal	FHWA	TXDOT	Provides funding to enable states to improve the condition of highway bridges through replacement, rehabilitation, and systematic preventive maintenance. Also includes the National Historic Covered Bridge Preservation Program.
Homeland Security Grant Program (HSGP)	Federal	DHS	TDEM	Funding supports homeland security activities identified in state and local strategic plans, including threat and hazard risk identification for natural, technological, and human-caused hazards.
Hospital Preparedness Program (HPP) Cooperative Agreement	Federal	HHS	TXDSHS	The HPP is the primary source of federal funding for health care system preparedness and response. In collaboration with public health, it prepares health-care delivery systems to save lives through the development of health care coalitions (HCCs). Under the direction of the HPP providers, the HCCs develop plans, provide training, and coordinate regional exercises.
Hydrologic Research Grants	Federal	NOAA		Offers up to \$125,000 to conduct joint research and development on pressing surface water hydrology issues common to national, regional, and local operational offices. Eligible applicants include federally recognized agencies of state or local governments, quasi-public institutions such as water supply or power companies, hydrologic consultants and companies involved in using and developing hydrologic forecasts.
Groundwater Conservation District Loan Program	State	TWDB	TWDB	Provides short-term loans to finance the start-up costs of Groundwater Conservation Districts. Funding is available for any Groundwater District or Authority with the ability to regulate water well spacing and/or production. The program is authorized under Texas Water Code Chap. 36, Subchapter. L, and governed by TWDB rules in 31 Tex. Admin. Code Chap. 363, Subchapter. H.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Gulf of Mexico Energy Security Act (GOMESA)	Federal	DOI	TXGLO	GOMESA significantly enhances oil and gas leasing activities and creates revenue sharing provisions for the oil- and gas-producing states of Alabama, Louisiana, Mississippi, Texas, and their coastal political subdivisions (CPSs). The funds are used for coastal conservation, restoration, and hurricane protection. The second phase of GOMESA revenue sharing, which began in Fiscal Year 2017, expands the definition of qualified Outer Continental Shelf revenues to include receipts from Gulf of Mexico leases that are subject to withdrawal or moratoria restrictions. A revenue-sharing cap of \$500 million per year for the four Gulf-producing states, their CPSs and the Land and Water Conservation Fund, effective from fiscal years 2016 through 2055.
Indian Housing Assistance - Housing Improvement Program (HIP)	Federal	DOI-BIA		The Housing Improvement Program (HIP) is a home repair, renovation, replacement and new housing grant program administered by the Bureau of Indian Affairs (BIA) and federally recognized Indian tribes. It is designed to assist American Indian and Alaska Native (AI/AN) individuals and families who lack immediate standard housing resources.
Individual Assistance (IA)	Federal	FEMA	TDEM	Following a disaster, funds can be used to mitigate hazards when repairing individual and family homes.
In-Lieu Fee Program Mitigation Projects	Federal	USACE	Community Applicants	Supports the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental or non-profit natural resources management entity to satisfy compensatory mitigation requirements for Department of the Army permits.
Land Acquisition	Federal	DOI-FWS		Acquires high-quality lands and waters, or easements thereon, for inclusion in the National Wildlife Refuge System.
Landowner Incentive Program	Federal	USFWS	EMNRD	Collaborates with the Forestry Division and private landowners to protect the habitats of at-risk species on private lands. Landowner involvement is voluntary.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Mapping Standards Support	Federal	DOI/USGS		Provides mapping and digital data standards expertise in support the National Flood Insurance Program (NFIP).
Mitigation Banks	Federal	USACE	Community Applicants	Mitigation Banks are Corps-approved sites that sell compensatory mitigation credits for projects that cause unavoidable impacts to waters of the U.S. When a permit requires compensatory mitigation, it specifies the number of credits to be purchased from an approved mitigation bank.
National Dam Safety Program	Federal	FEMA		Provides technical assistance, training, and grants to enhance state dam safety programs.
National Digital Orthophoto Program	Federal	DOI-USGS		Develops topographic quadrangles for use in flood mapping and other hazards.
National Earthquake Hazards Reduction Program (NEHRP)	Federal	FEMA	TDEM	Provides funding to support enhanced earthquake risk assessments in local hazard mitigation plans, as well as other earthquake hazard mitigation and preparedness activities.
National Earthquake Hazard Reduction Program (NEHRP) in Earth Sciences	Federal	NSF		Conducts research on basic and applied earth and building sciences.
National Earthquake Hazard Reduction Program	Federal	DOI-USGS		NEHRP's work encompasses research, development, and implementation activities. Research helps to advance our understanding of why and how earthquakes occur and impact the natural and built environments. The program develops strategies, tools, techniques, and other measures that can reduce the adverse effects of earthquakes and facilitates and promotes implementation of these measures, thereby strengthening earthquake resilience among at-risk communities.
Natural Resources Damage Assessment (NRDA)	Federal	EPA	TPWD	Evaluates the likelihood of adverse ecological effects that are occurring or may occur as a result of exposure to physical (e.g., cleanup) or chemical (e.g., hazardous release) stressors at a site.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
National Flood Insurance Program (NFIP)	Federal	FEMA	TWDB	Provides affordable insurance to property owners and encourages communities to adopt and enforce floodplain management regulations.
National Flood Insurance Program: Technical Mapping Advisory Council	Federal	DOI-USGS		Provides technical guidance and advice to coordinate FEMA's map modernization efforts for the National Flood Insurance Program (NFIP).
National Training and Education (NTE)	Federal	FEMA		Offers educational and training programs through online course catalog, which provides searchable, integrated information on courses provided or managed by FEMA's Center for Domestic Preparedness (CDP), Emergency Management Institute (EMI), and National Training and Education Division (NTED).
National Weather Service (NWS)	Federal	NOAA - NWS		The National Weather Service (NWS) offers storm spotter training as well as weather and flood safety guides. It may also provide funding to support severe weather signage in parks and other public areas.
National Wildlife Wetland Refuge System	Federal	USFWS	TPWD	Provides funding for the acquisition of land for inclusion in the National Federal Wildlife Refuge System.
Nonpoint Source Grant Program	Federal	EPA	TCEQ, TSSWCB	The Clean Water Act (CWA) requires states to develop programs to protect the water quality from the adverse effects of nonpoint source (NPS) water pollution. The Texas Commission on Environmental Quality (TCEQ) and the Texas State Soil and Water Conservation Board (TSSWCB) administer federal grants for activities that prevent or reduce NPS pollution.
Non-Structural Alternatives to Structural Rehabilitation of Damaged Flood Control Works	Federal	DOD-USACT		Provides planning and construction grants for non-structural alternatives to the rehabilitation of flood control works damaged by floods or coastal storms.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
North American Wetland Conservation Fund	Federal	USFWS	TPWD	Provides funding for wetland conservation projects.
NRCS Conservation Programs	Federal	USDA, NRCS	Community Applicants	Provides funding through various programs for the conservation of natural resources.
Office of Disaster Assistance	Federal	SBA		Provides financial assistance through low interest disaster loans to businesses of all sizes, private non-profit organizations, homeowners, and renters to repair or replace real estate, personal property, machinery and equipment, inventory and business assets that have been damaged or destroyed in a declared disaster.
Partners for Fish and Wildlife	Federal	USFWS	TPWD	Provides financial and technical assistance to landowners for wetland restoration projects in “focus areas” of the state.
Planning Assistance to States	Federal	USACE	TWDB	Aids states in planning for development, utilization, and conservation of water and related land resources.
Pollution Prevention Grant: Environmental Justice in Communities	Federal	EPA		Provides technical assistance to businesses aiming to improve human health and the environment in disadvantaged communities.
Pollution Prevention Grant: Environmental Justice Through Safer and More Sustainable Products	Federal	EPA		Provides technical assistance to businesses to increase the supply, demand, and use of safer, more sustainable products.
Post-Disaster Economic Recovery Grants and Assistance	Federal	DOC-EDA		Provides funding to assist with the long-term economic recovery of communities, industries, and firms adversely impacted by disasters.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Pre-Disaster Mitigation Loan Program	Federal	SBA		Provides low-interest loans to small businesses for mitigation projects.
Pre-Disaster Mitigation (PDM)	Federal	FEMA		Congressional funding for local governments, tribes, and states to plan and implement sustainable, cost-effective measures designed to reduce risk to individuals and property from future natural hazards.
Preparedness (Non-Disaster) Grants	Federal	FEMA		Provides financial assistance to state and local governments for preparedness programs. Funding is allocated to enhance the capacity of emergency responders to prevent, respond to, and recover from terrorism incidents involving weapons of mass destruction—chemical, biological, radiological, nuclear, and explosive devices—as well as cyber-attacks.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Prescribed Fire Grants	State	TAMFS	TAMFS	<p>The Texas A&M Forest Service’s Mitigation & Prevention Department annually implements four prescribed fire grants to protect communities and restore ecosystems.</p> <ol style="list-style-type: none"> (1) SFAM Plains Prescribed Fire Grant – Supports prescribed burns to reduce hazardous fuels near Texas communities at high risk for wildfires—specifically those threatened by Southern Plains Wildfire Outbreaks. Treatment areas are located adjacent to identified priority communities. (2) The Community Protection Program Grant – Funds prescribed burns on private lands within 10 miles of a National Forest boundary to reduce high-risk fuels. The goal is to protect nearby communities and forest resources by lowering the risk of catastrophic wildfire across public and private lands. (3) The State Fire Assistance for Mitigation Central & East Texas Grant – Provides funding for prescribed burns on private lands in 43 Central and East Texas counties that have approved Community Wildfire Protection Plans (CWPPs). The goal is to protect high-risk communities and restore ecosystems by reducing hazardous vegetation. Priority is given to sites that are within a CWPP, near Firewise communities or residential areas (as identified by the Texas Wildfire Risk Assessment Portal), and support ecosystems that benefit from prescribed fire. (4) Neches River and Cypress Basin Watershed Restoration Program – Assists landowners with prescribed burns to improve ecological health in the Neches River and Cypress Basin watersheds. The program benefits water quality and quantity, controls invasive species, and enhances wildlife habitat. Priority is given to treatment areas on private land that promote native ecosystem restoration, fall within priority watershed protection zones, and are located near public lands.
Project Modifications for Improvement of the Environment	Federal	DOD-USACE		<p>Provides funds for ecosystem restoration by modifying structures and/or operations of water resources projects constructed by the U.S. Army Corps of Engineers (USACE), or by restoring areas where a USACE project contributed to environmental degradation.</p>

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Protection of Essential Highways, Highway Bridge Approaches, and Public Works	Federal	USACE		Provides technical assistance to ensure bank protection for highways, highway bridges, essential public works, churches, hospitals, schools, and other nonprofit public services endangered by flood-caused erosion.
Public Assistance	Federal	FEMA	DHSEM	Funds are allocated to states and communities to repair damaged infrastructure and public facilities, and to help restore government or government-related services.
Public Assistance (PA) Section 406 Funds	Federal	FEMA	TDEM	Following a disaster, funds can be used to mitigate hazards while repairing damages to public structures or infrastructure. Wildfire mitigation is also eligible under emergency protection if lives are in imminent danger.
Public Health Emergency Preparedness (PHEP) Cooperative Agreement	Federal	CDC	TXDSHS	Aids health departments in building and strengthening their ability to effectively respond to a range of public health threats, including infectious diseases, natural disasters, and biological, chemical, nuclear, and radiological events. Preparedness activities funded by the PHEP Cooperative Agreement specifically target the development of emergency-ready public health departments that are both flexible and adaptable.
Public Housing Capital Fund	Federal	HUD		Funding available towards public housing agencies for modernization needs resulting from natural disasters including elevation, flood proofing, and retrofitting.
Regional Facility Planning Grant Program	State	TWDB	TWDB	Provides funds to political subdivisions in Texas for studies and analyses to evaluate and determine the most feasible alternatives to meet regional water supply and wastewater facility needs, estimate the costs associated with implementing these alternatives, and identify institutional arrangements for providing regional water supply and wastewater services.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Regional Water Planning Group Grants	State	TWDB	TWDB	Developed to guide and support the planning of the State's water resources, this program administers and assists in the development of regional and state water plans. It aims to improve the planning process by providing clear guidance for stakeholders and utilizing the best available data, methodologies, and technical innovations for each funding cycle.
Repetitive Flood Claims Program	Federal	FEMA	DHSEM	Provides funds to assist states and communities reduce flood damages to insured properties that have had one or more claims under the National Flood Insurance Program (NFIP).
Research and Planning Fund and Fund Development Program	State	TWDB	TWDB	Provides funds to eligible applicants for the development or revision of regional water plans. Eligible activities include the development, revision, or improvement of regional water plans including public meetings, hearings, and special studies. Plans must comply with Texas Water Code, §16.053 and Chapter 357, or other special studies approved by the Texas Water Development Board (TWDB) that enhance water planning efforts in the region.
Resilient Landscapes Program	Federal	USDA, USFS	TAMFS	Provides coordination to restore healthy, resilient, fire-adapted ecosystems. Restoration efforts include thinning crowded forests and using prescribed fire on two to three million acres annually, which helps prevent the buildup of flammable vegetation that feeds extreme wildfires.
Risk MAP Program	Federal	FEMA, NFIP	TWDB	Establishes or updates floodplain mapping and multi-hazard risk products.
Rural Development Grants	Federal	USDA-Rural Development	TWDB	Provides grants and loans for the development and enhancement of infrastructure and public safety in rural areas, offering up to \$100,000 or 75 percent of the total project cost, whichever is less.
Rural Fire Assistance Grant	Federal	NIFC	TAMFS	Funds fire mitigation activities in rural communities.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Rural Utilities Service (RUS)	Federal	USDA-Rural Development		Programs designed to provide needed infrastructure or infrastructure improvements to rural communities, including water and wastewater treatment, electric power, and telecommunications services.
Rural Water Assistance Fund (RWAF)	State	TWDB	TWDB	Provides low-cost financing to assist small rural utilities with water and wastewater projects. The Rural Water Assistance Fund (RWAF) offers tax-exempt equivalent interest rate loans and long-term financing options.
Safe Rest Stops Program	State	TXDOT	TXDOT	Texas has 21 major highways that function as long-distance travel corridors. Along these routes, rest areas serve as critical safety features designed to reduce accidents caused by driver fatigue. These facilities provide travelers with an opportunity to pause, rest, and return to the road more alert and refreshed.
Section 108 Loan Guarantee Program	Federal	HUD		Provides loans to public entities for community and economic development projects, including mitigation measures.
Section 502 Loan Guaranteed Loan Program	Federal	USDA-RHS		Provides loans, loan guarantees, and technical assistance to very low- and low-income applicants seeking to purchase, build, or rehabilitate homes in rural areas.
Section 504 Loans for Housing	Federal	USDA-RHS		Provides repair loans, grants, and technical assistance to low-income senior homeowners in rural areas to address home repairs and eliminate health and safety hazards.
Societal Dimensions of Engineering, Science, and Technology Program	Federal	NSF		Provides funding for research and educational activities on topics such as ethics, values, risk assessment, communication, risk management, and risk perception.
Soil Survey	Federal	USDA-NRCS		Maintains soil surveys of counties or other areas to assist with farming, conservation, mitigation or related purposes.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
State Fire Assistance for Mitigation (SFAM) - Mechanical Fuels Grants	State	TAMFS	TAMFS	Provides financial assistance for hazardous fuel reduction on private lands to decrease wildfire risk. The grant targets high-risk communities within 32 counties in Central Texas, as identified by the Texas A&M Forest Service Mitigation and Prevention Department. Priority is given to landowners who reside in one of the 32 high-risk counties, are located within a city or county with an active Community Wildfire Protection Plan (CWPP) or live in a recognized Firewise USA site.
State Fire Assistance for Mitigation (SFAM) - Vegetative Fuel Break Grant	State	TAMFS	TAMFS	Provides financial assistance for the creation of vegetative fuel breaks on private lands in Texas. Vegetative fuel breaks are trees and shrubs systematically planted adjacent to fields, homesteads, or feedlots to reduce or redirect wind. The goal of the grant is to protect high-risk communities by reducing the risk of catastrophic wildfires on private and public lands. Grant recipients will be reimbursed up to \$2,500 for actual costs associated with creating a green, vegetative fuel break, consisting of a minimum of three rows of trees and 400 feet in length. Eligible projects must be located within the Texas High Plains.
Silver Jackets	Federal	USACE	TWDB	Provides funding for flood-related studies, public awareness efforts, risk analysis, flood response plans, and the construction of small flood control projects.
Small Flood Control Projects (USACE Section 205)	Federal	USACE	TWDB	Authorizes the U.S. Army Corps of Engineers (USACE) to conduct feasibility studies and construct small flood control projects

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
State Participation Program – Regional Water and Wastewater Facilities	State	TWDB	TWDB	Provides funding and assumes a temporary ownership interest in regional water, wastewater, or flood control projects when local sponsors are unable to assume debt for an optimally sized facility. The program is intended to encourage the optimum regional development of projects by funding excess capacity for future use, where benefits can be documented and such development is otherwise unaffordable without state participation. The goal is to enable the rightsizing of projects by accounting for future demand.
State Water Implementation Fund for Texas (SWIFT)	State	TWDB	TWDB	The SWIFT program helps communities develop and optimize water supplies at cost-effective rates. It offers low-interest loans, extended repayment terms, deferred loan repayments, and incremental repurchase terms for projects with state ownership aspects.
State Water Resources Research Act Program	Federal	USGS	TWDB	The U.S. Geological Survey (USGS), in cooperation with the National Institutes for Water Resources (NIWR), issues an annual call for proposals that address water challenges and concerns of regional or interstate significance, or that relate to a specific program priority identified by the Secretary of the Interior and the Institutes.
Stream Gauging and Flood Monitoring Network	Federal	DOE-USGS		Operation of a network of over 7,000 stream gauging stations that provide data on river flooding characteristics.
Surface Transportation Program	Federal	USDOT/ FHWA		Provides funding for activities such as safety-related construction and transportation enhancements. These enhancements include a broad range of initiatives, from safety education to environmentally and historically focused activities.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Texas Farm and Ranch Lands Conservation Program (TFRLCP)	State	TPWD	TPWD	<p>Maintains and enhances the ecological and agricultural productivity of lands through Agricultural Conservation Easements. The TFRLCP supports responsible stewardship and conservation of working lands, water, fish and wildlife, and agricultural production through:</p> <ul style="list-style-type: none"> • Generating interest and awareness in easement programs and other options for conserving working lands. • Leveraging available monies to fund as many high-quality projects as possible. • Highlighting the ecological and economic value of working lands and the long-term opportunities for their conservation.
Texas HOME Disaster Relief	Federal	TDHCA	TDHCA	<p>The Texas HOME Disaster Relief Program is a long-term housing initiative designed to help eligible organizations assist income-qualified households affected by disasters. Funds are available for federal or state-declared disasters, as well as other natural or man-made events. It is the Department's practice to maintain a HOME Disaster Relief Fund balance of \$1 million whenever possible. These funds may be used to support affected households located outside communities that receive HOME funds directly from the U.S. Department of Housing and Urban Development (HUD).</p>
Texas Longleaf Conservation Assistance Program	Federal	National Fish and Wildlife Foundation (NFWF)	TAMFS	<p>Provides eligible landowners with financial and technical assistance for establishing, enhancing, and managing longleaf pine. Landowners with property within 11 East Texas counties—including Angelina, Hardin, Jasper, Nacogdoches, Newton, Polk, San Augustine, Sabine, San Jacinto, Trinity, and Tyler—are eligible to apply. Approved participants may receive up to 50 percent payment not to exceed a standard cap rate, for implementing approved conservation practices. Approved conservation practices include prescribed burning, reforestation, site preparation, and forest stand improvement.</p>

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Texas Infrastructure Resiliency Fund (TIRF)	State	TWDB	TWDB	The purpose of this program is to provide loans, grants, and matching funds for flood projects through four separate accounts. It was enacted through Senate Bill 7 to address needs identified following the flood disasters of 2015, 2016, and 2017. Senate Bill 500 appropriated \$685 million to support the program. Each account serves a distinct purpose. The oversight entity is the Texas Infrastructure Resiliency Fund (TIRF) Advisory Board, with the SWIFT Advisory Committee and the Texas Division of Emergency Management (TDEM) Director as non-voting members.
Texas Water Development Fund (DFund)	State	TWDB	TWDB	Provides financing for various types of eligible infrastructure projects, including planning, design, acquisition, and construction of projects for: water supply (such as reservoirs and well fields), conservation, water quality enhancement, flood control, and wastewater. This program enables the Texas Water Development Board (TWDB) to fund multi-purpose projects (e.g., water and wastewater) through a single commitment. Eligible applicants include political subdivisions and nonprofit water supply corporations.
Transfers of Inventory Farm Properties to Federal and State Agencies for Conservation Purposes	Federal	USDA-FSA		Transfers the titles of certain inventory farm properties owned by the FSA to federal and state agencies for conservation purposes, including the restoration of wetlands and floodplain areas to reduce future flood potential.
Transportation Enhancement Program	Federal	FHWA	TXDOT	This program supports non-traditional transportation-related activities that extend beyond standard infrastructure initiatives. Eligible projects must demonstrate thoughtful integration with the surrounding environment, contributing meaningfully to community vitality, environmental quality, and the visual character of transportation corridors. Reimbursement of up to 80 percent of allowable costs is available for qualifying enhancement activities.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
United States Geological Survey (USGS)	Federal	USGS		The U.S. Geological Survey (USGS) issues competitive grants and cooperative agreements to support research in earthquake hazards, the physics of earthquakes, earthquake occurrence, and earthquake safety policy.
Urban Tree Canopy Project (UTC)	Federal	USDA, USFS	TAMFS	The urban tree canopy (UTC) refers to the layer of leaves, branches, and stems of trees that cover the ground when viewed from above. In urban environments, the UTC plays a crucial role in stormwater management by intercepting rainfall that would otherwise run off paved surfaces and enter local waterways through storm drainage systems, carrying pollutants along the way. Additionally, the UTC mitigates the urban heat island effect, reduces heating and cooling costs, lowers air temperatures, improves air quality, increases property values, provides wildlife habitat, and offers aesthetic and community benefits, including an enhanced quality of life.
Urban Waters Small Grants	Federal	EPA		Funding is allocated to improve urban water quality through activities that also support community revitalization and other local priorities, which may include the implementation of green infrastructure.
USDA Conservation Programs	Federal	USDA/FSA		These programs ¹ work to address a large number of farming and ranching related conservation issues including drinking water protection, soil erosion reduction, wildlife habitat preservation, the preservation and restoration of forests and wetlands, and aiding farmers whose farms have been damaged by natural disasters.
U.S.-Mexico Border Water Infrastructure Program	Federal	EPA	TCEQ	Provides grant assistance to U.S. and Mexican communities located within 60 miles of the border for the development and construction of high-priority drinking water and wastewater facilities. The program furthers EPA's mission to protect human health and the environment by providing critical resources for what is often an area's first drinking water and basic sanitation services.

¹ Programs include Conservation Reserve Program, Conservation Reserve Enhancement Program, Emergency Conservation Program, Emergency Forest Restoration Program, Farmable Wetlands Program, Grassland Reserve Program, Source Water Protection Program.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Water Research Grant Program	State	TWDB	TWDB	The Texas Water Development Board (TWDB) funds a variety of water planning and research studies and projects designed to support regional water planning efforts and address region-specific water resource questions.
Water Conservation Field Services Program	Federal	HUD	Texas A&M AgriLife	Encourage beneficiaries of federal water projects to conserve water and assists agricultural and urban water districts in developing and implementing water conservation plans in accordance with the Reclamation Reform Act (RRA) of 1982. Through the WCFSP, cost-shared financial assistance is available for developing water conservation plans, identification of water management improvements through System Optimization Reviews (SORs), design of water management improvements, and promotion of water conservation techniques through demonstration activities. WaterSMART also supports Reclamation’s priorities to increase water reliability and resilience, advance racial and economic equity, and enhance water conservation, ecosystem health, and climate resilience.
Water2025 Challenge Grant Program for Western States	Federal	Bureau of Reclamation	TWDB	Provides up to \$25,000 in funding for projects that enhance water use efficiency and promote improved water management practices.
Watershed Processes and Water Resources	Federal	Bureau of Reclamation	TWDB	Promotes up to \$250,000 for projects that can be completed within 24 months and that reduce conflicts through water conservation, efficiency, and markets.
Watershed Processes and Water Resources – National Research Initiative Standard Research (Part T)	Federal	USDA	TWDB	Provides \$100,000 in funding to support research in two key areas: (1) understanding fundamental watershed processes; and (2) developing technologies and management practices that enhance the efficient use of water—both consumptive and non-consumptive—while protecting or improving water quality for agricultural and forestry production.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
WaterSMART – Drought Response Program	Federal	USDA	TWDB	Provides \$500,000 to support innovative research focused on: (1) understanding the fundamental processes that influence the quality and quantity of water resources across diverse spatial and temporal scales; (2) improving water resource management in agricultural, forested, and rangeland watersheds; and (3) developing appropriate technologies to achieve these objectives.
Wetlands Protection – Development Grants	Federal	EPA		Provides funding to support the development and enhancement of state and tribal wetlands protection programs.
Wetlands Reserve Program	Federal	USDA, NRCS		Provides financial and technical assistance to protect and restore wetlands through the use of easements and restoration agreements.
Wildlife Habitat Incentive Program (WHIP)	Federal	USDA, NRCS	TPWD	A voluntary program for conservation-minded landowners seeking to develop and improve wildlife habitat on agricultural land, nonindustrial private forest lands, and tribal lands.



Adoption Resolutions

