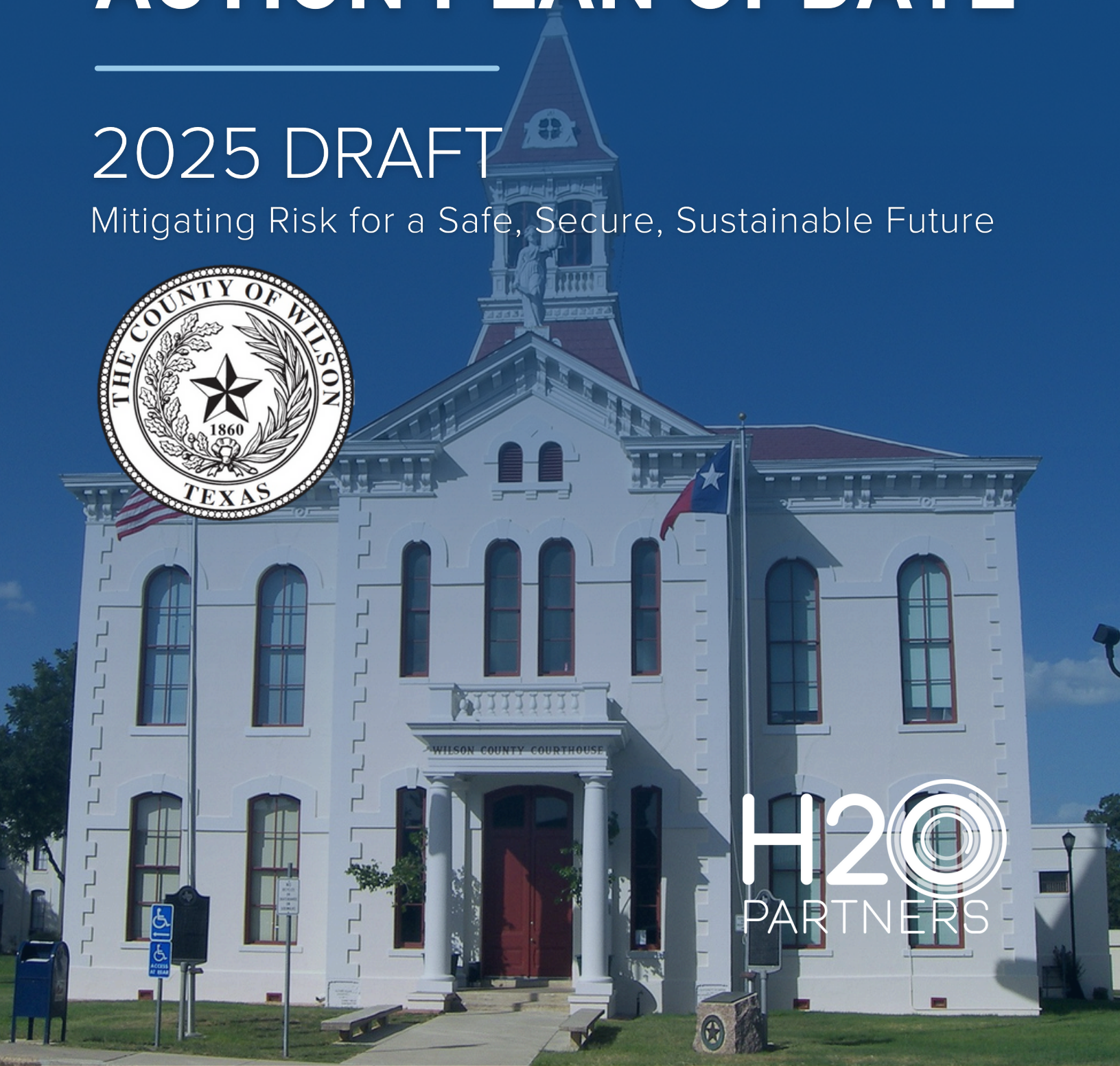
WILSON COUNTY
HAZARD MITIGATION ACTION PLAN UPDATE

2025 DRAFT

Mitigating Risk for a Safe, Secure, Sustainable Future



H2O PARTNERS

For more information, visit our website at:

https://www.co.wilson.tx.us/

Written comments should be forwarded to:

H2O Partners, Inc.
P. O. Box 160130
Austin, Texas 78716
info@h2opartnersusa.com
www.h2opartnersusa.com

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SECTION 1
INTRODUCTION

SECTION 1: INTRODUCTION

BACKGROUND

Wilson County is located in south Texas on the upper coastal plain. The largest city and county seat, Floresville, is approximately 35 miles southeast of downtown San Antonio. Guadalupe County borders the northern portion of the county, Gonzales County is adjacent to the northeast, Karnes County is to the southeast, Atascosa County is adjacent to the southwest and Bexar County is to the northwest.

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, Wilson 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 from many hazards on people and property can be lessened through 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 2020, Wilson County developed their previous Hazard Mitigation Action Plan (HMAP) to be specific to Wilson and Karnes County, the Cities of Falls City, Karnes City, Kenedy, and Runge (Karnes County), the Cities of Floresville, La Vernia, Poth, and Stockdale (Wilson County), as well as Karnes City Independent School District (Karnes County) and La Vernia Independent School District (Wilson County).

FEMA approved the previous Wilson County and Karnes County Multi-jurisdictional HMAP 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 Wilson County to evaluate successful mitigation actions and explore opportunities to avoid future disaster loss.

Wilson County selected H2O Partners, Inc. to write and develop the 2025 HMAP Plan Update, hereinafter titled: “Wilson County Hazard Mitigation Action Plan Update 2025: Maintaining a Safe,

[1] Source: http://www.floodsafety.com/texas/regional-info/san-antonio-flooding/
[2] Source: http://www.fema.gov/hazard-mitigation-planning-resources

Secure, and Sustainable Community" (Plan or Plan Update). This is a multi-jurisdictional plan; the participating jurisdictions include:

- Wilson County
- City of Floresville
- City of La Vernia
- City of Poth
- City of Stockdale
- Floresville ISD *
- La Vernia ISD
- Poth ISD *
- Stockdale ISD *

***Denotes new Plan participant*

Karnes County, along with the Cities and Independent School District within Karnes County, are not participating within this plan update.

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 Wilson County and the participating jurisdictions and Independent School Districts (ISDs). The hazard classification enables the participating jurisdictions and ISDs to prioritize mitigation actions based on hazards which can present the greatest risk to lives and property in the geographic scope.

PURPOSE

The Plan Update was prepared by Wilson County, participating jurisdictions and ISDs, 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 and ISDs within Wilson 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 Wilson 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 and ISDs within Wilson County, and planning participants identified 12 natural hazards and 1 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 and ISDs within Wilson 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;
- 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 and ISDs within Wilson County to take advantage of rapidly developing mitigation grant opportunities as they arise; and
- Ensure that participating jurisdictions and ISDs within Wilson County maintain eligibility for the full range of future Federal disaster relief.

AUTHORITY

The Plan is tailored specifically for participating jurisdictions and ISDs within Wilson 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 2023), and the "Local Mitigation Planning Handbook" (May 2023).

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 Wilson County's population and economy.

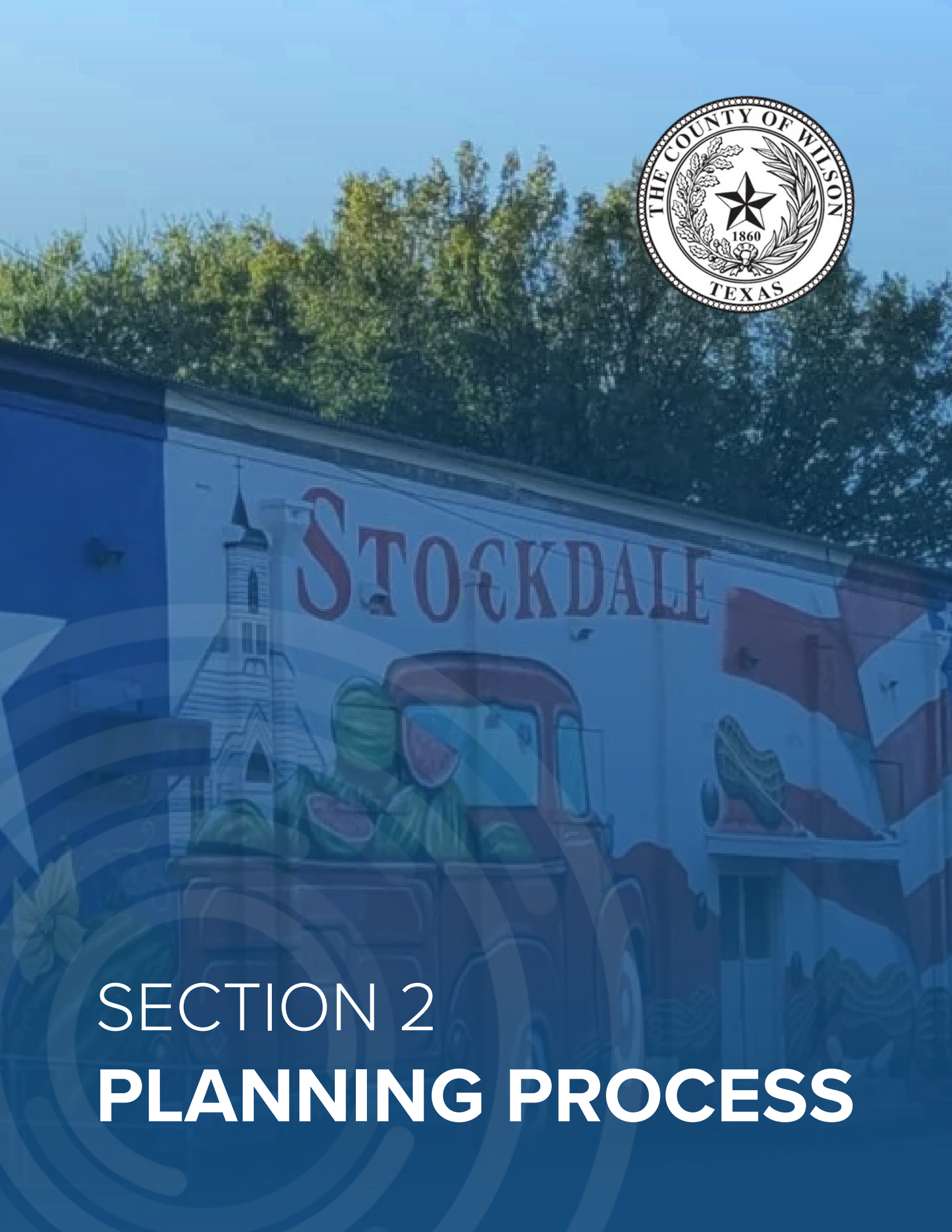
Sections 4 through 17 present a hazard overview and information on individual natural and human-caused hazards in the planning area. For each hazard, the Plan Update presents a description of the hazard, a list of historical hazard events, and the results of the vulnerability and risk assessment process.

Section 18 presents hazard mitigation goals and objectives. Section 19 gives an analysis for the previous actions and Section 20 presents hazard mitigation actions for Wilson County and the participating jurisdictions and ISDs. Section 21 identifies Plan maintenance mechanisms.

The list of planning team members and stakeholders is located in Appendix A. Public survey results are analyzed and presented in Appendix B. Appendix C contains a detailed list of critical facilities for the area. Appendix D contains information regarding Dam locations within Wilson County. Appendix E contains information regarding workshops and meeting documentation.

Capability Assessment results for Wilson County are in Appendix F. Appendix G includes State and Federal Funding Opportunities.[3]

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



SECTION 2
PLANNING PROCESS

SECTION 2: PLANNING PROCESS

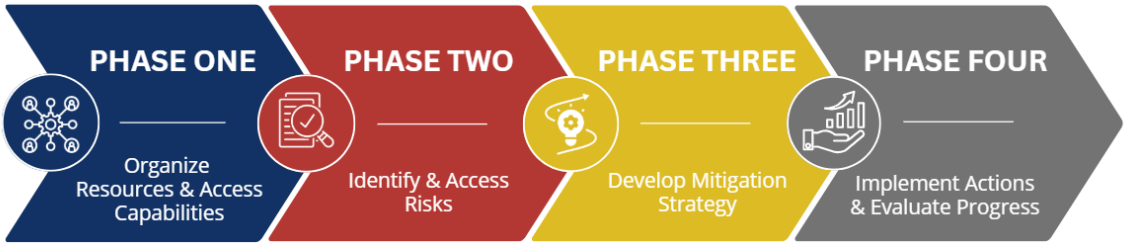
PLAN PREPARATION AND DEVELOPMENT

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

Wilson County hired H2O Partners, Inc. (Consultant Team), to provide technical support and oversee the development of the Wilson County Hazard Mitigation Action Plan Update 2025. The Consultant Team used the FEMA “Local Mitigation Planning Policy Guide” (April 2023), and the “Local Mitigation Planning Handbook” (May 2023) to develop the Plan Update. The overall planning process is shown in Figure 2-1 below.

Figure 2-1. Mitigation Planning Process



Wilson County, the participating jurisdictions, and the Consultant Team met in August 2024 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 each of the participating jurisdictions and Independent School Districts (ISDs) within Wilson County, 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 the participating jurisdictions and ISDs within Wilson County 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
Wilson County – Emergency Management	Emergency Management Coordinator
City of Floresville – Administration	City Manager *
City of La Vernia – Administration	City Administrator *
City of Poth – Government	Mayor *
City of Stockdale – Administration	City Manager *
Floresville Independent School District – Student Services	Assistant Superintendent
La Vernia Independent School District – Administrative Office	Director of District Safety & Security
Poth Independent School District – Administration	Director of Learning & Assessment
Stockdale Independent School District – Administration	Superintendent

Table 2-2. Advisory Planning Team

ORGANIZATION / DEPARTMENT	TITLE
Wilson County – Administration	GIS Technician
Wilson County – Administration	Grant Coordinator
Wilson County – Commissioners Court	Commissioner Pct 1 *
Wilson County – Commissioners Court	Commissioner Pct 2 *
Wilson County – Commissioners Court	Commissioner Pct 3 *
Wilson County – Commissioners Court	Commissioner Pct 4 *
Wilson County – County Judge	County Judge *
Wilson County – County Sheriff	Chief Deputy
Wilson County – County Sheriff	County Sheriff
Wilson County – Emergency Management	Assistant Emergency Management Coordinator
Wilson County – Permitting & Development	Development Director *
City of Floresville – Administration	City Secretary
City of Floresville – Building & Permits	Building Inspector
City of Floresville – Community Development	Director of Community Development *
City of Floresville – Finance	Director
City of Floresville – Fire & EMS	Fire Chief
City of Floresville – Government	Mayor *
City of Floresville – Police	Chief of Police
City of Floresville – Public Works	Director
City of Floresville – Wastewater	Supervisor
City of Floresville – Water	Supervisor
City of La Vernia – Administration	City Secretary
City of La Vernia – Code Enforcement	Code Enforcement
City of La Vernia – Government	Mayor *
City of La Vernia – Municipal Development	Director *
City of La Vernia – Police	Chief of Police

ORGANIZATION / DEPARTMENT	TITLE
City of La Vernia – Public Works	Director
City of Poth – Administration	City Secretary
City of Poth – Police	Chief of Police
City of Poth – Public Works	Public Works
City of Stockdale – Administration	City Secretary
City of Stockdale – Government	Mayor *
Floresville Independent School District – Central Office	Assistant to the Superintendent
Floresville Independent School District – Central Office	Superintendent
Floresville Independent School District – Police	Chief of Police
La Vernia Independent School District – Administrative Office	Executive Secretary to Superintendent & Board
La Vernia Independent School District – Administrative Office	Superintendent
Poth Independent School District – Administration	Chief Financial Officer
Poth Independent School District – Administration	Superintendent
Poth Independent School District – Administration	Superintendent's Secretary

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 by 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 participating jurisdictions and ISDs within Wilson County by organization, title, and stakeholder type. Stakeholder involvement is discussed further below.

Based on results of completed Capability Assessments, participating jurisdictions and ISDs within Wilson County described methods for achieving future hazard mitigation measures by expanding existing capabilities. For example, each jurisdiction and ISD 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 TDEM Training Division Learning Management Site (LMS) (https://tdem.texas.gov/preparedness/training). In addition, each jurisdiction and ISD can identify Planning Team members with the authority to monitor the Plan and identify grant funding opportunities for expanding staff. Other options for improving capabilities for each jurisdiction and ISD include the following:

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

JURISDICTION	OPPORTUNITIES
Wilson County	► 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 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 Floresville	► Integrate risk information from HMAP into future updates to **Capital Improvement Plan**. ► Integrate risk information from HMAP into future updates to **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 **land use and building ordinances** that will require all new developments to conform to the highest mitigation standards.
City of La Vernia	► Integrate risk information from HMAP into future updates to **Capital Improvement Plan**. ► Integrate risk information from HMAP into future updates to **Comprehensive Plan**. ► Integrate risk information from HMAP into future updates to **Community Wildfire Protection Plan**. ► Review current **floodplain ordinances** for opportunities to increase resiliency such as modifying permitting or building codes. ► Review current **land use and building ordinances** that will require all new developments to conform to the highest mitigation standards.
City of Poth	► Integrate risk information from HMAP into future updates to **Capital Improvement Plan**. ► Integrate risk information from HMAP into future updates to **Comprehensive Plan**. ► Develop a **Community Wildfire Protection Plan** based on information in the risk assessment and identified mitigation projects within the HMAP.

JURISDICTION	OPPORTUNITIES
	► Review current **floodplain ordinances** for opportunities 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 Stockdale	► Integrate risk information from HMAP into future updates to **Capital Improvement Plan**. ► 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 **land use and building ordinances** that will require all new developments to conform to the highest mitigation standards.
Floresville ISD	► Develop an **all-hazards outreach program** in coordination with Wilson County, Cities, and other ISDs.
La Vernia ISD	► Integrate risk information from HMAP into future updates to **Capital Improvement Plan**. ► Develop an **all-hazards outreach program** in coordination with Wilson County, Cities, and other ISDs.
Poth ISD	► Develop an **all-hazards outreach program** in coordination with Wilson County, Cities, and other ISDs.
Stockdale ISD	► Integrate risk information from HMAP into future updates to **Capital Improvement Plan**. ► Develop an **all-hazards outreach program** in coordination with Wilson County, Cities, and other ISDs.

Sample hazard mitigation actions developed with similar hazard risk 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 improving interoperability of communications systems between first responder agencies and jurisdictions within Wilson County, hardening or retrofitting critical facilities to hazard-resistant levels, and acquiring flooded structures to remove them out of the SFHA and restrict further structures from development on the site.

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 Wilson County'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 21. Participation of Planning Team members, stakeholders, and the public at each of the workshops is documented in Appendix E. The Cities of Poth and Stockdale and were unable to attend workshops throughout the planning process. The Consultant Team followed up directly with each of these cities to review information discussed and gather documents that were collected during the workshops.

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 community;
- 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 participating jurisdictions and ISDs within Wilson County, agencies, and partners will participate in implementing the Plan Update.

KICKOFF WORKSHOP

The Kickoff Workshop was held on September 19, 2024, at the Wilson County Emergency Operations Center in the City of Floresville. 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 12 natural hazards and 1 human-caused hazard which pose a significant threat to the planning area.

RISK ASSESSMENT

An initial risk assessment for participating jurisdictions and ISDs within Wilson County was completed in October 2024 and results were presented to Planning Team members at the Risk Assessment Workshop held on November 5, 2024, in conjunction with the Mitigation Strategy Workshop at the Wilson County Sheriff's Courtroom in the City of Floresville. 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 is 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 17.

MITIGATION REVIEW AND DEVELOPMENT

Developing the Mitigation Strategy for the Plan involved identifying mitigation goals and new mitigation actions. A Mitigation Workshop was held on November 5, 2024, in conjunction with the Risk Assessment Workshop at the Wilson County Sheriff's Courtroom in the City of Floresville. 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 and extreme heat projects. Additionally, the participating jurisdictions and ISDs 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 20.

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-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 Update was maintained on file by Wilson County, participating jurisdictions and ISDs, 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, National Oceanic and Atmospheric Administration (NOAA), the Texas Water Development Board (TWDB), the Texas Commission on Environmental Quality (TCEQ), the Texas State Data Center, 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 (Sections 5-17) 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. 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. 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 and ISDs within Wilson 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, Wilson County improved the drainage channel on County Road 128 to minimize erosion downstream and upstream. In addition, the City of Floresville developed an emergency response plan to identify vulnerabilities

in the water treatment and delivery systems and address possible water supply disruption or contamination.

For a comprehensive list of actions from the previous 2020 Wilson County and Karnes County Multi-jurisdictional HMAP, please refer to Section 19.

Additionally, policies and ordinances were reviewed by several of the participating jurisdictions. Other plans were reviewed, such as Capital Improvement Plans and Emergency Operations Plans, to identify any additional mitigation actions. 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 Wilson County Hazard Mitigation Action Plan Update 2025.

INCORPORATION OF THE HMAP INTO OTHER PLANNING MECHANISMS

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

Participating jurisdictions and ISDs within Wilson County will be responsible for implementing hazard mitigation actions contained in Section 20. Each hazard mitigation action has been assigned to a specific County, City, or ISD 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 and ISDs within Wilson 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. Wilson County will work closely with area organizations to coordinate 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 and ISDs will review existing plans along with building codes to guide development and ensure that hazard mitigation actions are implemented. Each of the jurisdictions and ISDs will be responsible for coordinating periodic review 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 and ISDs within Wilson County will ensure that future long-term planning objectives will contribute to the goals of the Plan 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, 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 its strategic plan and budgets to ensure that they are consistent with the Plan Update.

Furthermore, Wilson County 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 Review	Various departments and key personnel that participated in the planning process for participating jurisdictions and ISDs within Wilson County 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.
Capital Improvement Plans	Several participating jurisdictions and ISDs within Wilson County have a Capital Improvement Plan (CIP) in place or under development. Prior to any revisions to the CIP, City and ISD 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 Plan	Community Wildfire Protection Plans (CWPPs) include preventative and corrective actions to address a community's risk of damage from wildfire. Information found in Section 15 of this Plan Update discussing the people and property at risk to wildfire will be reviewed and revised when participating jurisdictions update their CWPP or develop new plans.
Comprehensive Plans	Several participating jurisdictions within Wilson 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

Planning Mechanism	Incorporation of Plan
	Plan 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 9 of this Plan Update discussing the people and property at risk to flood will be reviewed and revised when the county and participating cities within Wilson County update their management plans or develops new plans.
Grant Applications	The HMAP will be evaluated by participating jurisdictions and ISDs within Wilson County 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.
Regulatory Plans	Currently, several participating jurisdictions and ISDs within Wilson County have regulatory plans in place, such as Emergency Operations Plans, Land Use Plans, and Evacuation Plans. The Plan Update will be consulted when County, City, and ISD 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, several participating jurisdictions have building codes, zoning ordinances, and land use ordinances in place. Please refer to Appendix F for a complete inventory of each participating jurisdiction's and ISD'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 Wilson County, City of Floresville, City of La Vernia, City of Poth, City of Stockdale, Floresville ISD, and La Vernia ISD 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 and ISDs within Wilson 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 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 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 individual Hazard Mitigation Action tables included in the Plan Update for participating jurisdictions and ISDs within Wilson 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 jurisdictions' and ISDs' comprehensive planning process, budgetary constraints, and community needs. Participating jurisdictions and ISDs within Wilson County 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 Wilson County Hazard Mitigation Action Plan Update 2025 at different stages prior to official Plan 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' and ISDs' websites.

The draft Plan Update was made available to the general public for review and comment on participating jurisdictions' and ISDs' websites. 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 Wilson County and participating jurisdictions' and ISDs' websites upon approval from FEMA, and a copy will be kept at the Wilson County Courthouse.

UNDERSERVED COMMUNITIES / VULNERABLE POPULATIONS

A goal of the Planning Team was building equity into the planning process. Including organizations that aid underserved communities and socially vulnerable populations to participate in the plan 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 during this process, including all public meetings, and surveys. All stakeholders are listed in Table 2-5 below. Some stakeholders have been detailed below along with the agency's mission, including:

- Floresville Food Pantry – Provides comprehensive support services to promote the emotional and physical well-being of those in need as well as educating the community about hunger. It partners with Daily Bread Ministries of San Antonio to provide food assistance to families.
- Wilson County Cares – A non-profit organization with a mission to meet the multi-generational nutritional, physical, emotional, and spiritual needs of Wilson County community.
- Workforce Solutions Alamo– Serves as the governing board for the regional workforce system, a network of service providers and contractors, representing the 13-county Alamo region, that brings people and jobs together.

In addition, public notices were posted on public bulletin boards throughout the planning area, such as in the Cities of Poth and Stockdale, as well as posted on the participating jurisdictions' and ISDs' 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. For each form of engagement, all efforts were made to reach Wilson 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 Wilson County's 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
Alamo Area Council of Governments	Homeland Security and Criminal Justice Coordinator	Regional and Local Agencies
Alamo Workforce Center	Communications	Community Organizations
American Red Cross Central and South Texas Region	Regional Disaster Officer	Non-profit / Community Organizations
Atascosa County	Emergency Management Coordinator / Fire Marshall	Neighboring Jurisdictions
Bexar County	Office of Emergency Management	Neighboring Jurisdictions
Carrizo Comecrudo Nation of Texas Inc	Chairman	Community Organizations
Children's Alliance of South Texas	General Representative	Community Organizations
Community Action	General Representative	Community Organizations
Connally Memorial Medical Center	Chief Operating Officer	Healthcare Agency
Environmental Protection Agency, Region 6	Director of Superfund and Emergency Management	Federal Agency
Evergreen Underground Water Conservation District	Board Member	Utility Provider
Evergreen Underground Water Conservation District	Vice President	Utility Provider
Falls City Independent School District	Superintendent	Academia
Floresville, City of	Councilman - Place 1	Local Government
Floresville, City of	Councilman - Place 2	Local Government
Floresville, City of	Councilman - Place 3	Local Government
Floresville, City of	Councilman - Place 4	Local Government
Floresville, City of	Councilman - Place 5	Local Government
Floresville Electric Light and Power	CEO	Utility Provider
Floresville Food Pantry	General Representative	Community Organizations
Floresville Housing Authority	General Representative	Community Organizations

AGENCY	TITLE	STAKEHOLDER TYPE
Gonzales County	Emergency Management Coordinator	Neighboring Jurisdictions
Guadalupe County	Emergency Management Coordinator	Neighboring Jurisdictions
Guadalupe Valley Electric Cooperative	General Representative	Utility Provider
Jane Yelvington McCallum Public Library	Librarian	Community Organization
Karnes County	Emergency Management Coordinator / Commissioner Precinct #1	Neighboring Jurisdictions
La Vernia Christian Food Pantry	General Representative	Community Organizations
Nixon, City of	Interim City Manager	Neighboring Communities
Nixon Public Library	Librarian	Community Organization
Nixon-Smiley Consolidated Independent School District	Superintendent	Academia
NOAA	Chief of Policy, Planning & Communications	Federal Agency
NWS	Regional Representative	Federal Agency
Poth VFD	Fire Chief	Community Organization
Sam Fore Jr. Public Library	Outreach Librarian	Community Organization
Sarah Bain Chandler Public Library	Librarian	Community Organization
Small Town Medical Solutions	General Representative	Healthcare Agency
Stockdale Chambers of Commerce	General Representative	Community Organization
Stockdale Family Medical Center	Medical Director	Healthcare Agency
Stockdale Marshal’s Office	Fire Marshal	City Department
Stockdale VFD	Fire Chief	Community Organization
Texas A&M AgriLife Extension	District Coordinator	State Agency
Texas A&M Forest Service	Fire Coordinator	State Agency
Texas Commission on Environmental Quality, Region 13	Assistant to Executive Director	State Agency

AGENCY	TITLE	STAKEHOLDER TYPE
Texas Commission on Environmental Quality, Region 13	Executive Director	State Agency
Texas Department of Health Services	Disaster, Response and Recovery Representative	State Agency
Texas Department of Health Services, Region 8	Preparedness and Recovery Program Manager	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 Public Safety	Communications Representative	State Agency
Texas Department of Transportation	District Engineer	State Agency
Texas Department of Transportation	Floresville Engineer	State Agency
Texas Division of Emergency Manager (TDEM), Region 6	DC 18 Coordinator	State Agency
Texas Division of Emergency Manager (TDEM), Region 6	Recovery and Mitigation Section Chief	State Agency
Texas Division of Emergency Manager (TDEM), Region 6	TDEM CLO	State Agency +
Texas Floodplain Management Association, Region 6	Director	State Agency
Texas Parks and Wildlife	Press Officer - Inland Fisheries	State Agency
Texas Parks and Wildlife	Press Officer - Law Enforcement	State Agency
Texas Parks and Wildlife	Press Office Manager / Press Officer - Parks	State Agency
Texas Parks and Wildlife	Press Officer – Wildlife	State Agency
Texas State Representative	House District 31	State Legislature
Texas State Senate	District 21	State Legislature
Texas State Soil & Water Conservation Board	Government Relations Specialist	State Agency
Texas State Soil & Water Conservation Board	San Angelo Regional Office Administrative Assistant	State Agency
Texas Water Development Board	General Representative	State Agency

AGENCY	TITLE	STAKEHOLDER TYPE
Texas Windstorm Insurance Associations	General Representative	State Agency
Three Oaks VFD	Fire Chief	Community Organization
U.S. Army Corps of Engineers	Fort Worth and Galveston District	Federal Agency
U.S. Fish & Wildlife	Southwest Regional Representative	Federal Agency
Wilson County District 1 Fire & Rescue	Fire Chief	Community Organization
Wilson County ESD #2	Fire Chief	Community Organization
Wilson County ESD #3	Administrator	Community Organization
Wilson County ESD #5	Fire Chief	Community Organization +
Wilson County Libraries	Director	Community Organization
Wilson County News	Publisher	Community Organization
Wilson County Non-Kill Animal Shelter Inc	General Representative	Community Organization
Wilson County Senior Wellness Center / Wilson County Cares	Executive Director	Community Organization
Wilson County Veteran Services	Veteran Service Officer	Local Department

Stakeholders and participants from neighboring communities that attended the Planning Team and public meetings played a key role in the planning process. For example, hail was a concern to stakeholders, so Wilson County included an action to retrofit critical facilities to hazard-resistant levels.

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 and ISD within Wilson 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 including Facebook, 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 Meeting #2 was originally scheduled on November 5, 2024; however, Wilson County rescheduled it for November 12, 2024, to accommodate for the Presidential Election on November 5th and to ensure community attendance to participate in the Hazard Mitigation Plan Update.

Public meetings were held on the following dates:

- September 19, 2024, at Wilson County Sheriff's Courtroom in the City of Floresville
- November 12, 2024, Virtually via Zoom

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' and ISDs' websites. A total of 13 surveys were completed online. The survey results are analyzed in Appendix B. Participating jurisdictions and ISDs within Wilson County reviewed the input from the surveys and decided which information to incorporate into the Plan as hazard mitigation actions. For example, results indicate that drought and extreme heat are the hazards of highest concern for the public. Constructing, maintaining, and protecting infrastructure as well as strengthening critical facilities 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 implement a phased project for appropriate places in the county for installation of xeriscaping and tree canopies, along with implementing education and awareness programs to educate citizens of hazards that can threaten the area.

SECTION 3
COUNTY PROFILE

SECTION 3: COUNTY PROFILE

OVERVIEW

Wilson County is on the upper coastal plain of South Texas. The county seat and largest city is Floresville, which is thirty miles southeast of San Antonio.The area that now comprises Wilson County has been the site of human habitation for several millennia. Archeological evidence reveals that hunter-gatherer people of the Coahuiltecan linguistic family occupied the region for several thousand years prior to the arrival of Europeans in the sixteenth century. The area was also in the hunting range of Comanche, Tonkawa, and Lipan-Apache groups. The first Europeans to reach the territory were Spanish explorers, who traveled through the area in the early eighteenth century.

Ranchers from nearby San Antonio began grazing cattle in the region in the first half of the eighteenth century, and temporary settlements for vaqueros and herdsmen began around the middle of the century. County land was also traversed from the northwest to the southeast by La Bahía Road, a major travel route from the Alamo to the Nuestra Señora del Espíritu Santo de Zúñiga Mission at Goliad. Later, this route served as a major road for cattle drives and transportation. Permanent settlement in the area began around 1830. Multiple ranchers established ranches in the area and among the Cibolo Creek. The first American settlers arrived in the region in the late 1840s, settling along the Ecleto and Cibolo creeks. Between 1850 and 1860 planters from across the Southern states and neighboring Texas Counties moved into the area.

Wilson County was established by an act of the legislature on February 13, 1860. It was cut from Bexar and Karnes counties and named for Somervell expedition member and legislator, James C. Wilson. Sutherland Springs was designated the county seat. During this time Wilson County had a population of 1,500. The County seat was moved several times, in 1867 it was moved to Lodi, back to Sutherland Springs in March 1871, and back to Lodi in July 1871. An election was held in November 1873 and the new town of Floresville won the County seat.

After the Civil War the population began to grow rapidly. In 1870 it was 2,556; it reached 7,118 by 1880 and was reported as 10,655 in 1890. The greatest spur to the county's growth came from completion of the San Antonio and Aransas Pass Railway, which reached Floresville in 1886. The railroad not only brought new settlers, but also increased access to markets, which in turn helped to bolster the growth of the economy and encourage more diversified farming. During the 1870s and early 1880s cattle ranching remained the most important segment of the economy.

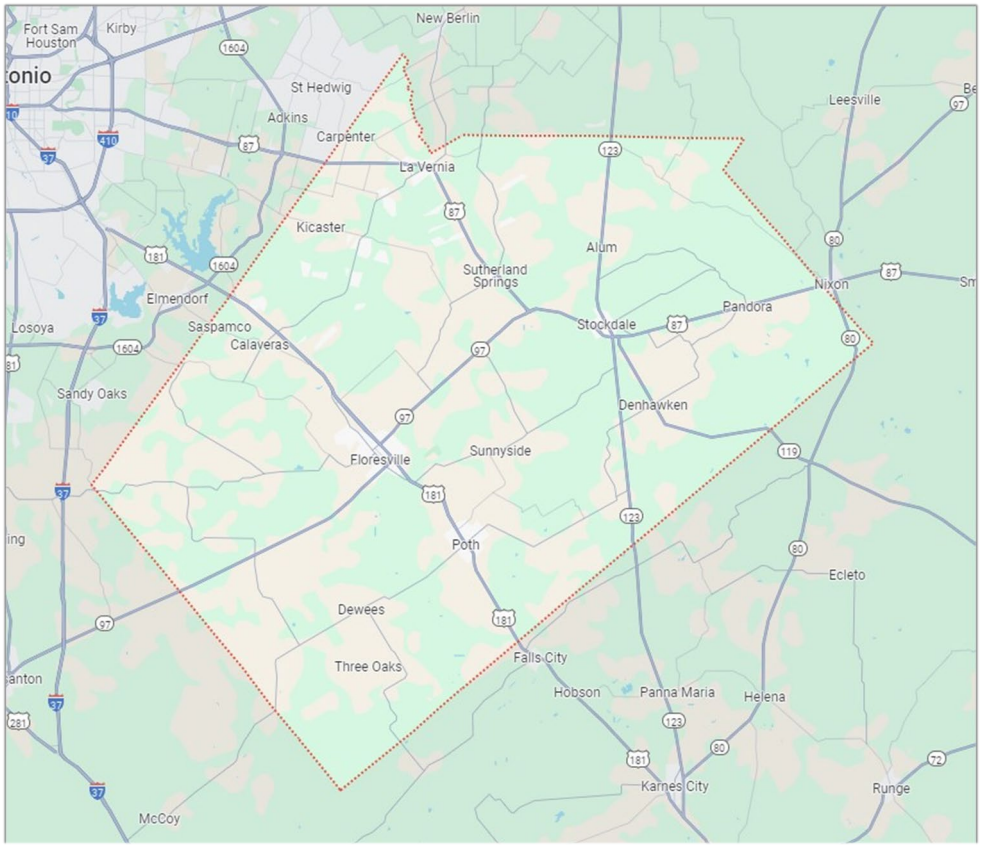
The number of farms grew from 290 in 1870 to 1,785 in 1900 and 2,297 in 1920. In the 1890s cotton emerged as the most important cash crop. The fertile soil of the northern portion of the county produced as much as one bale per acre, and by 1900 Stockdale had five cotton gins in operation. In 1898 the San Antonio and Gulf Railroad (later the Texas and New Orleans) was extended to Stockdale, allowing the cotton to be shipped directly to market.

Manufacturing was also introduced after the turn of the century. Brick and tile clay, found in abundance in the western portion of the county, had been used since early colonization. In 1910 the San Antonio Sewer Pipe Company opened a factory, using the red clay for the manufacture of tile products, on the north bank of the San Antonio River near the Wilson-Bexar county line and founded the town of Saspamco. By the 1950s the plant was among the nation's largest makers of sewer pipe and other clay products. Oil was discovered in 1941, but only one well was in production in 1946.

Between 1890 and 1930 the population of Wilson County grew steadily. In 1890 the number of residents was 10,655, in 1900 it was 13,961, in 1910 it was 17,066, and in 1920 it was 17,289. The population peaked in 1930 at 17,606. It then began a long decline to 17,066 in 1940, 14,641 in 1950, 13,267 in 1960, and 13,041 in 1970.[1]

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

Figure 3-1. Location of Wilson County



[1] Source: https://www.tshaonline.org/handbook/entries/Wilson-county

Figure 3-2 shows the participating jurisdictions and Independent School Districts (ISDs) within Wilson County that are covered in the risk assessment analysis of the Plan Update.

Figure 3-2. Wilson County Planning Area

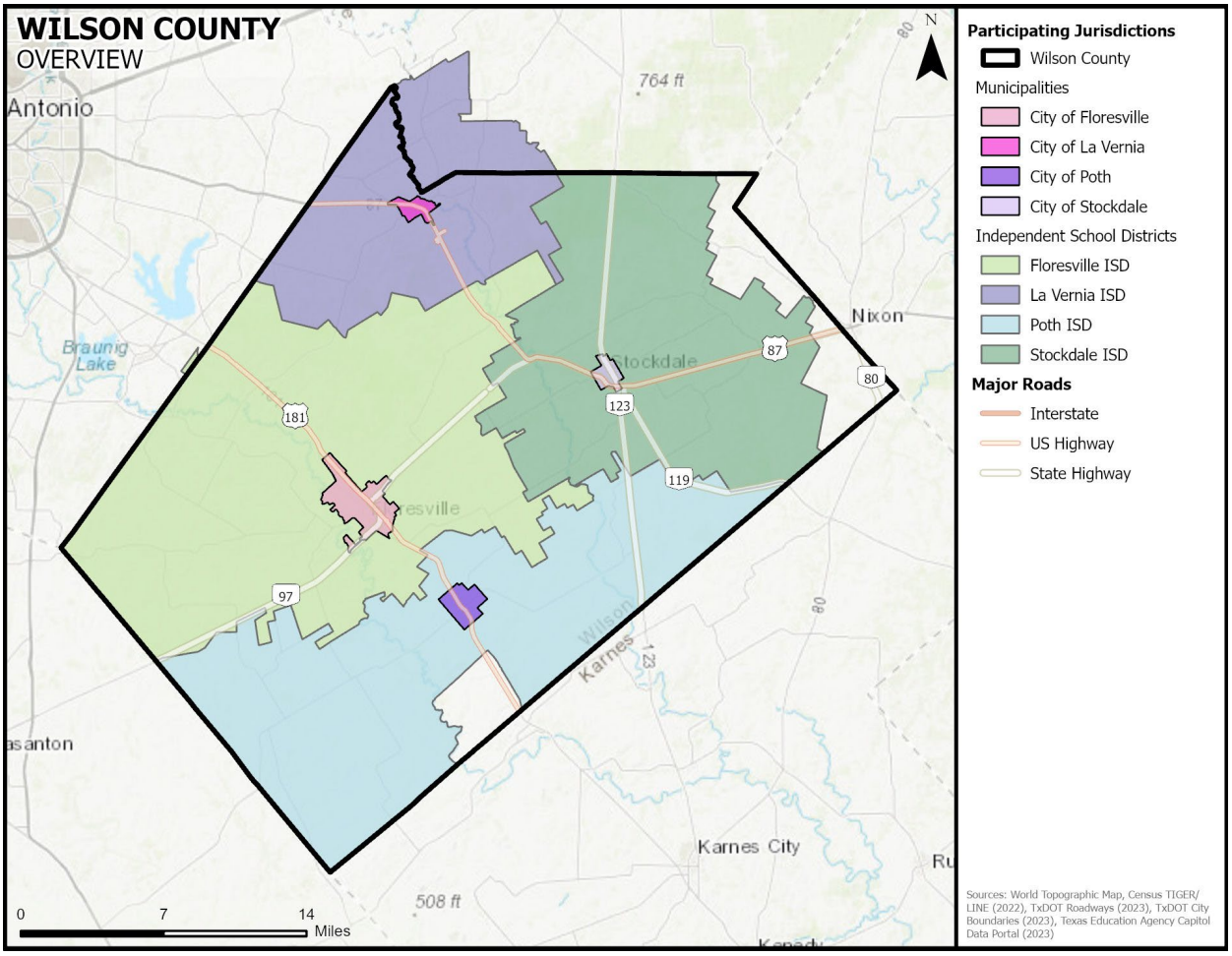


Table 3-1 below lists the jurisdictions and ISDs in Wilson County that participated in the Wilson County Hazard Mitigation Action Plan Update 2025.

Table 3-1. Participating Jurisdictions

PARTICIPATING JURISDICTIONS	
Wilson County	
City of Floresville	Floresville ISD
City of La Vernia	La Vernia ISD
City of Poth	Poth ISD
City of Stockdale	Stockdale ISD

POPULATION AND DEMOGRAPHICS

According to the 2020 Census, Wilson County has an official population of 49,753 residents, a 16 percent increase since the 2010 census. Table 3-2 shows the population distribution in Wilson 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 Jurisdiction

JURISDICTION	TOTAL 2010 POPULATION	TOTAL 2020 POPULATION (Census)	PERCENT CHANGE 2010-2020	TOTAL 2023 POPULATION (ACS Estimates)	PERCENT CHANGE 2010-2023
Wilson County[3]	42,918	49,753	16%	51,501	20%
City of Floresville	6,448	7,203	12%	7,679	19%
City of La Vernia	1,034	1,077	4%	1,126	9%
City of Poth	1,908	1,819	-5%	1,646	-14%
City of Stockdale	1,442	1,413	-2%	1,201	-17%

Table 3-3 summarizes select characteristics of vulnerable or sensitive populations in Wilson 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, 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 Jurisdiction

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Wilson County[4]	8,588	2,810	7,042	5,047	2,976
City of Floresville	1,429	366	1,604	1,052	660
City of La Vernia	283	46	216	110	91

[2] Source: 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] County totals include the entire population within the county lines, including unincorporated areas and non-participating jurisdictions within the County.

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

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
City of Poth	231	213	125	58	122
City of Stockdale	313	84	179	225	119

ISD POPULATION

Figure 3-4 shows the participating Independent School Districts (ISDs) within Wilson County that are covered in the risk assessment analysis of the Plan Update.

The mission of Floresville ISD is "FISD is committed to the development of innovative, life-long learners who possess character traits to achieve personal and professional success." The district is made up of one early childhood center, two elementary schools, one middle school, one high school, and one alternative school. The school district provides services for children from pre-kindergarten (children under the age of five) to 12th grade.

The mission statement of La Vernia ISD is "to collaboratively educate and inspire all students to be life-long learners with unlimited possibilities as contributing members of society." La Vernia ISD is made up of four schools: one elementary school, one intermediate school, one junior high and one high school. The school district provides services for children under the age of five.

The mission statement of Poth ISD is "to unite home, school, and community in the learning process, and develop citizens who are better prepared for the future." The district consists of three schools: one elementary, one middle and one high school. The school district provides services for children under the age of five.

The mission statement of Stockdale ISD is "in partnership with the community is to prepare students to be contributing members of society and function independently in a quality manner, by providing a challenging, caring learning environment." They provide services for children from pre-kindergarten (children under the age of five) to 12th grade. The district has three schools: one elementary, one junior high, and one high school.

Table 3-4 provides the number of people employed, students enrolled, and vulnerable or sensitive populations by each participating ISD, as provided by the ISDs.

Table 3-4. ISD Population

INDEPENDENT SCHOOL DISTRICT	EMPLOYEES	STUDENTS	ESTIMATED VULNERABLE OR SENSITIVE POPULATIONS	
			Children (Under 5)	Staff Works Outdoors
Floresville ISD	587	4,052	300	300
La Vernia ISD	486	3,576	76	70
Poth ISD	150	958	2	27
Stockdale ISD	179	1,863	36	30

POPULATION GROWTH

The official 2020 Wilson County population is 49,753. Overall, Wilson County experienced a population increase of 120% between 1990 and 2020, or 27,103 residents. The Cities of Floresville and La Vernia experienced various degrees of population growth, while the Cities of Poth and Stockdale have experienced a population decline between 2010 and 2020. Table 3-5 provides historical growth rates in Wilson County.

Table 3-5. Population Growth by Jurisdictions 1990-2020[5]

JURISDICTIONS	1990	2000	2010	2020	POP CHANGE 1990-2020	PERCENT OF CHANGE	POP CHANGE 2010-2020	PERCENT OF CHANGE
Wilson County[6]	22,650	32,408	42,918	49,753	27,103	120%	6,835	16%
City of Floresville	5,247	5,868	6,448	7,203	1,956	37%	755	12%
City of La Vernia	639	931	1,034	1,077	438	69%	43	4%
City of Poth	1,642	1,850	1,908	1,819	177	11%	-89	-5%
City of Stockdale	1,268	1,398	1,442	1,413	145	11%	-29	-2%

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 Wilson County. Whether it is 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, 59 percent of the population 16 years and over is employed in the labor force. The per capita income is $41,249 and the median household income countywide is $92,461. Families with incomes below the poverty level in 2023 made up 9.8 percent of all families. Of families that have children under 18 years old, 12 percent are below the poverty level.

Tables 3-6 and 3-7 show the various occupations and industries within Wilson County, according to the 2023 estimates by the American Community Survey.

[5] U.S. Census Bureau

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

Table 3-6. Occupations of Employed Population in Wilson County[7]

OCCUPATION	ESTIMATE	PERCENT
Civilian employed population 16 years and over	23,864	
Management, business, science, and arts occupations	8,735	36.60%
Sales and office occupations	5,750	24.10%
Production, transportation, and material moving occupations	3,288	13.80%
Service occupations	3,268	13.70%
Natural resources, construction, and maintenance occupations	2,823	11.80%

Table 3-7. Industries of Employed Population in Wilson County[8]

INDUSTRY	ESTIMATE	PERCENT
Civilian employed population 16 years and over	23,864	
Educational services, and health care, and social assistance	5,217	21.9%
Retail trade	2,750	11.5%
Construction	2,467	10.3%
Professional, scientific, and management, and administrative and waste management services	2,459	10.3%
Public administration	1,873	7.8%
Manufacturing	1,799	7.5%
Transportation and warehousing, and utilities	1,767	7.4%
Arts, entertainment, and recreation, and accommodation and food services	1,352	5.7%
Finance and insurance, and real estate and rental and leasing	1,194	5.0%
Other services, except public administration	1,041	4.4%
Agriculture, forestry, fishing and hunting, and mining	1,025	4.3%
Wholesale trade	663	2.7%
Information	287	1.2%

[7] 2023 American Community Survey 5-Year Estimates Data Profiles.
[8] 2023 American Community Survey 5-Year Estimates Data Profiles.

NATURAL, CULTURAL, AND HISTORIC RESOURCES

Wilson County covers 807 square miles, of which 804 square miles is land, with an elevation of 300 to 600 feet above sea level and southeast of San Antonio. The terrain is nearly flat to gently undulating, surfaced by deep loamy soils with clayey subsoils that support grasses, mesquite, blackjack, post oak, live oak, thorny shrubs, and cacti. Between 31 and 40 percent of the land in the county is considered prime farmland. The western portion of the county is drained by the San Antonio River, the eastern portion by Cibolo and Ecleto creeks. The climate is subtropical subhumid, with mild winters and warm summers. Temperatures in January range from an average low of 40° F to an average high of 65° F and in July range from 74°F to 96° F. The growing season averages 280 days per year, with the last freeze in February and the first freeze in early December. Crops include peanuts, hay, sorghum, oats, wheat, corn, watermelons, peaches, and pecans.

Wilson County offers a variery of outdoor activites. The Floresville River Park is 33 acres on the San Antonio River and is perfect for gatherings and sports. In addition there are six parks, hiking trails, an event center, and a swimming pool in the City of Floresville. The City also hosts various outdoor events and festivals throughout the year. The City of Stockdale has multiple parks, a pond, and a nature park. The Cities of La Vernia, Poth, and Stockdale have festivals throughout the year. The Cities of La Vernia and Stockdale have muesuems that highlights the history of the area.

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 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 January 2025, there are seven federally endangered, threatened, or candidate species in Wilson County, listed in Table 3-8. Additionally, three species are listed as being resolved taxon (plains spotted skunk, Sprague's pulpit, and Golden orb).

Table 3-8. Endangered Species in Wilson County[9]

TYPE of SPECIES	COMMON NAME	SCIENTIFIC NAME	SPECIES STATUS
Birds	Whooping crane	Grus americana	Endangered
Clams	False spike	Fusconaia mitchelli	Endangered
Clams	Guadalupe Orb	Cyclonaias necki	Endangered

[9] Source: https://ecos.fws.gov/ecp/report/species-listings-by-current-range-county?fips=48493

TYPE of SPECIES	COMMON NAME	SCIENTIFIC NAME	SPECIES STATUS
Flowering Plants	Black lace cactus	Echinocereus reichenbachii var. albertii	Endangered
Mammals	Tricolored bat	Perimyotis subflavus	Proposed Endangered
Birds	Rufa red knot	Calidris canutus rufa	Threatened
Insects	Monarch butterfly	Danaus plexippus	Proposed Threatened

Wilson County has a rich history that is preserved through its designated historic buildings and sites. Throughout the county there are five properties that are designated by 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 3-9. Historic Properties on the National Register[10]

PROPERTY NAME	LOCATION	ADDRESS
Floresville Chronicle-Journal Building	City of Floresville	1000 C Street
Ranch de los Cabras	City of Floresville	Address Restricted
Wilson County Courthouse and Jail	City of Floresville	Public Square
Mueller Bridge	City of La Vernia	CR 337 over Cibolo Circle
Whitehall	City of Sutherland Springs	North of Sutherland Springs on SR 539

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.

A review of building permits can also give a picture of the built environment and the number of buildings being constructed in the county and each jurisdiction. Table 3-10 lists the number of residential buildings and total units authorized through a permit from each jurisdiction, where data was available, between 2019 and 2023. The data includes total buildings and total units permitted. Permits are reported annually in September, and the data from 2019 through 2023 demonstrates growth. During this period, more multifamily residential building permits were issued than single-family housing permits. Housing type can also be an indication of an individual's ability to recover from a disaster.

[10] National Register of Historic Places

Table 3-10. Building Permits, by Jurisdiction, 2019-2023[11]

JURISDICTION	2019		2020		2021		2022		2023	
	Total Buildings	Total Units	Total Buildings	Total Units	Total Buildings	Total Units	Total Buildings	Total Units	Total Buildings	Total Units
City of Floresville	14	14	113	113	110	110	32	32	143	143
City of La Vernia	0	0	23	23	30	30	64	65	20	25
City of Poth	2	2	3	3	8	8	9	9	2	2
City of Stockdale	4	4	2	2	1	1	1	1	2	2
Wilson County[12]	0	0	0	0	0	0	0	0	0	0
Planning Area Total	**20**	**20**	**141**	**141**	**149**	**149**	**106**	**107**	**167**	**172**

Certain types of housing found in the Wilson County planning area are more vulnerable than typical site-built, newly constructed residential structures. This includes mobile or manufactured homes, of which 4,770 (25 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 19 percent (approximately 3,560 structures) of housing stock in the planning area. Table 3-11 includes housing inventory data for the participating jurisdictions per the 2023 American Community Survey five-year estimates.

Table 3-11. Housing Inventory and Vulnerable Structures, By Jurisdiction[13]

JURISDICTION	TOTAL HOUSING UNITS	BUILT PRIOR TO 1980	MOBILE HOME
Wilson County[14]	19,259	3,560	4,770
City of Floresville	3,192	1,022	463
City of La Vernia	527	195	51
City of Poth	643	285	131
City of Stockdale	459	218	110
Floresville ISD	-	4	2

[11] U.S. Census Bureau, Building Permit Survey, 1992-2023, https://www.census.gov/construction/bps/

[12] County totals include all total building permits within the county lines, including unincorporated areas and non-participating jurisdictions within the County.

[13] The Housing Inventory and Vulnerable Structures are based off the 2023 American Community Survey 5-Year Estimates Data Profiles. The participating ISDs do not have housing units, however they did provide buildings built prior to 1980 and mobile buildings.

[14] County totals include all housing units within the county lines, including unincorporated areas and non-participating jurisdictions within the County.

JURISDICTION	TOTAL HOUSING UNITS	BUILT PRIOR TO 1980	MOBILE HOME
La Vernia ISD	-	4	10
Poth ISD	-	6	0
Stockdale ISD	-	3	3

CHANGES IN VULNERABILITY

The Wilson County planning area experienced an overall population increase of 16 percent between 2010 and 2020. The American Community Survey estimates the 2023 total housing units for the planning area to be 19,259. The total building permits issued between 2019 and 2023 represent approximately 3 percent of the total housing units available in the planning area. The overall population increase, combined with the increase in housing units, indicates a slight 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 3-12). Changes in vulnerability for participating ISDs are considered to similarly align with the jurisdiction in which they are located unless specifically noted otherwise.

Table 3-12. Changes in Vulnerability, by Jurisdiction

JURISDICTION	POPULATION TREND	HOUSING TREND	OVERALL VULNERABILITY CHANGES
Wilson County	Increasing	Stagnant	Slight Increase
City of Floresville	Increasing	Increasing	Slight Increase
City of La Vernia	Increasing	Increasing	Slight Increase
City of Poth	Decreasing	Increasing	Slight Increase
City of Stockdale	Decreasing	Stagnant	No Change

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 areas for profiled dams. For the two dams profiled in Section 5, there is no known 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 Wilson 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. This section includes an analysis of the projected population change and economic impacts.

Population projections from 2010 to 2050 are listed in Table 3-13, provided by the Office of the State Demographer, Texas State Data Center, and the Institute for Demographic and Socioeconomic Research. Population projections are based on a 0.5 scenario growth rate, which is 50 percent of the population growth rate from 2000-2010. This information is only available at the county level; however, the population projection shows an increase in population density for the county, which would mean overall growth for the county.

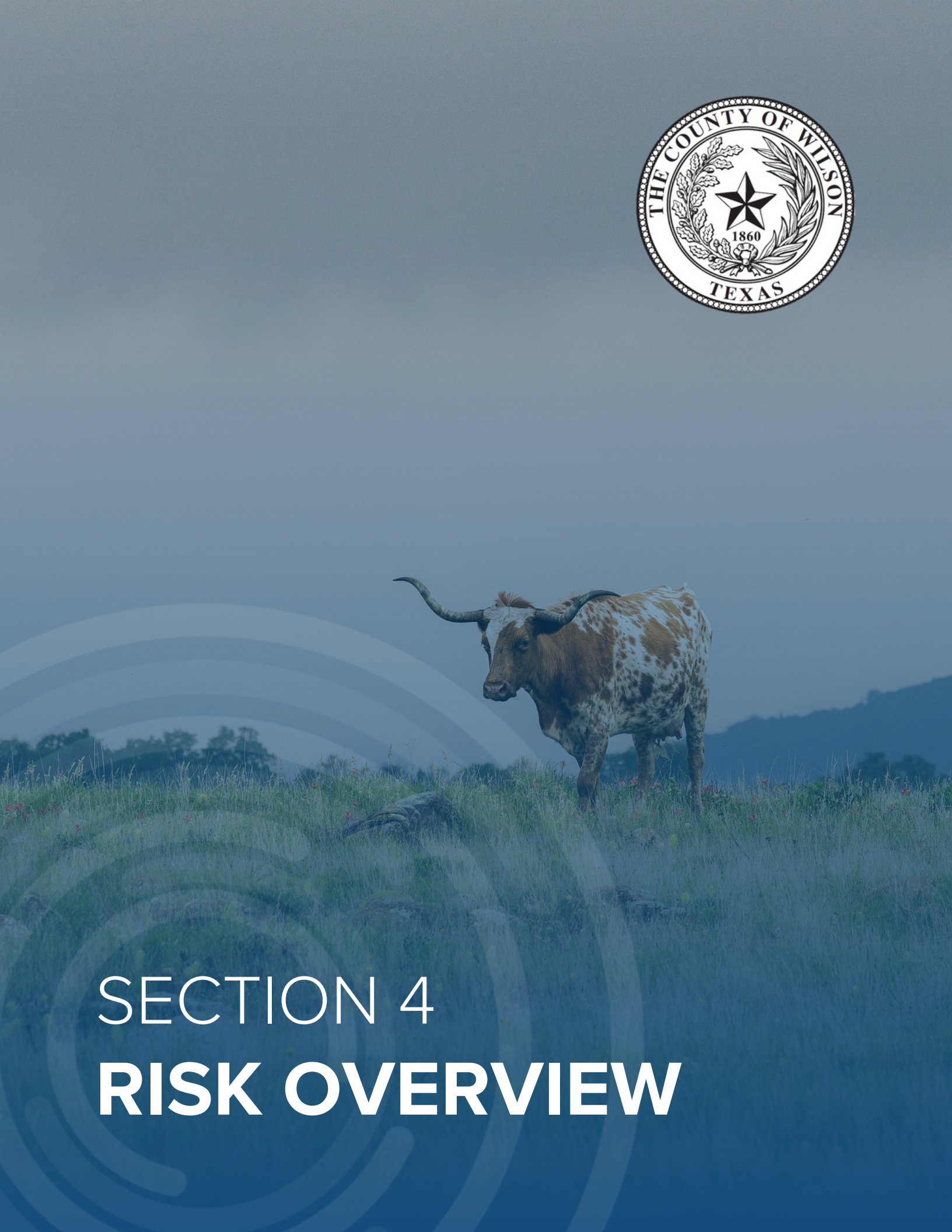
Table 3-13. Wilson County Population Projections[15]

LAND AREA (square miles)	2010		2020		2030		2040		2050	
	POPULATION									
	Total Number	Density (Land Area, sq. mi.)	Total Number	Density (Land Area, sq. mi.)	Total Number	Density (Land Area, sq. mi.)	Total Number	Density (Land Area, sq. mi.)	Total Number	Density (Land Area, sq. mi.)
803.73	42,918	53.39	49,753	61.90	52,712	65.58	55,297	68.80	57,252	71.23

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 an environment for citizens and consider the general desire of the community to conserve, preserve, and protect the natural environment of their jurisdiction. These plans guide staff, decision-makers, and citizens in making decisions that affect the community with an understanding of the long-term effects.

The Cities of Floresville, La Vernia, and Poth have comprehensive plans. These plans provide the blueprint to assist with community development while highlighting strategic goals and improvement in the community. The City of Floresville also has a Master Parks Plan which will allow the community to offer more recreational locations for residents and visitors. Refer to the Capability Assessment in Appendix F for a complete list of the plans, ordinances, and other resources for all participating jurisdictions.

[15] 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

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 17, 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 Wilson County identified 12 natural hazards and 1 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 three main categories of natural hazards: atmospheric, 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, hurricane / tropical storm, lightning, thunderstorm wind, tornado, and winter storm (Table 4-1).

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 flood and drought.

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. The risks presented by natural hazards may be increased or decreased due to human activity. 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, wildfire and earthquake are considered “other” since these hazards are not considered atmospheric, hydrologic, 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.

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.
Hurricane / Tropical Storm	A hurricane is an intense tropical weather system of strong thunderstorms with a well-defined surface circulation and maximum sustained winds of 74 mph or higher.
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	A thunderstorm occurs when an observer hears thunder. Radar observers use the intensity of the radar echo to distinguish between rain showers and thunderstorms. Lightning detection networks routinely track cloud-to-ground flashes, and therefore thunderstorms.
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.

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	
Earthquake	An earthquake is the sudden, rapid, shaking of the earth, caused by the breaking and shifting of subterranean rock as it releases strain that has accumulated over a long time. Initial mild shaking may strengthen and become extremely violent within seconds.
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.
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 none is expected in the future.
Expansive Soils	The planning area has no historical expansive soil 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 none is expected in the future.

DISASTER DECLARATION HISTORY

One method of understanding hazards that pose a risk to Wilson 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 list state and federal disaster declarations received by Wilson County. Many of the disaster events were regional or statewide.

Between 1953 and 2024, Wilson County received 17 federal disaster declarations. The largest share (4) was related to hurricanes, followed by declarations for severe storm (3), fire (3), severe ice storm (2), biological (2), flood (2), and drought (1).

In addition to the 17 federally declared disaster there have been 35 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 available to producers suffering losses in those counties and in counties that are contiguous to a designated county.[1] Of the 35 USDA designations for Wilson County, many listed multiple factors as having caused the disaster area designation. The leading cause was drought, which was included in 31 designations. Other factors listed include excessive heat (17 designations), high wind (15), fire / wildfire (14), insects (14), excessive rain (1), and winter storm (1).

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

Table 4-3. Disaster Declaration History of Wilson County, 1953-2024

YEAR	DECLARATION TITLE	HAZARD	DECLARATION TYPE	DISASTER No.
1993	Extreme Fire Hazard	Drought	EM	3113
1998	Tropical Storm Charley	Severe Storm	DR	1239
1998	Texas Flooding	Flood	DR	1257
1999	Extreme Fire Hazards	Fire	EM	3142
2002	Severe Storms and Flooding	Flood	DR	1425
2005	Hurricane Katrina Evacuation	Hurricane	EM	3216
2005	Hurricane Rita	Hurricane	EM	3261
2005	Hurricane Rita	Hurricane	DR	1606
2006	Extreme Wildfire Threat	Fire	DR	1624
2008	Wildfires	Fire	EM	3284
2010	Tropical Storm Alex	Hurricane	EM	3313
2015	Severe Storms, Tornadoes, Straight-Line Winds, and Flooding	Severe Storm	DR	4223
2015	Severe Storms, Tornadoes, Straight-Line Winds, and Flooding	Severe Storm	DR	4245
2020	Covid-19	Biological	EM	3458
2020	Covid-19 Pandemic	Biological	DR	4485
2021	Severe Winter Storm	Severe Ice Storm	EM	3554
2021	Severe Winter Storm	Severe Ice Storm	DR	4586

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.[2]

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 historic 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[3][4]

HAZARDS	EXPECTED TRENDS
Extreme Temperatures	► 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. ► Nearly double the number of 100°F days by 2036 compared to 2001-2020. ► Higher frequency of 100°F days in urban areas. ► The number of nighttime temperatures below 32°F are expected to decrease. ► The number of frost days per year are expected to decrease. ► The coolest days of the summer are expected to continue becoming warmer. ► The number of heatwaves per year and number of days per year classified as heatwaves are expected to increase.
Precipitation	► Precipitation has increased by 10 percent or more in eastern Texas, but little trend is present in western Texas. ► Precipitation trends to 2036 are likely to be dominated by natural variability. ► Extreme precipitation is expected to increase in intensity on average statewide by 6-10 percent compared to the 1950-1999 averages and 2-3 percent relative to the 2001-2020 averages. ► This translates to an increase in the frequency of extreme rain of 30-50 percent relative to the climatological expected frequency in 1950-1999 and 10-15 percent relative to 2001-2020.

[2] 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/

[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

[4] University of Texas at Austin, February 2023, Austin Future Climate, Climate Change Predictions for the City of Austin 2022, Technical Report.

HAZARDS	EXPECTED TRENDS
	► Annual precipitation is projected to increase while the number of extreme precipitation (>2") will remain relatively consistent.
Drought	► Increasing temperatures, rainfall variability, and other factors will decrease water availability, but impact changes will vary strongly across applications. ► Impact trends to be highly sector-specific, with the impacts possibly smaller for agriculture than for surface water supply.
Flood	► No long-term river flooding trend has been identified in the observations, nor is such a trend projected at this point, except perhaps for the most extreme floods and areas with normally high rainfall. ► Urban flooding is projected to increase, both as a simple matter of urban population increase and because of the projected increase of precipitation intensity, which drives flooding in fast-response drainages like those usually found in urban areas. ► 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	► As the climate warms, the likelihood of winter weather decreases. ► Both extreme cold and snowfall either become less frequent or are expected to do so. ► Widespread snowfall events in Texas, such as the one that took place in February 2021, are extremely rare. ► Fewer cold spells are projected to occur per year, but the length of cold spells will be longer when they do occur.
Thunderstorms (Wind, Hail, Lightning)	► Historical trend data is unreliable. ► Indirect evidence supports an increase in the number of days capable of producing severe thunderstorms and an increase in the frequency of very large hail in early springtime. Still, these possible trends are too uncertain to quantify.
Wildfire	► Weather and climate drivers of wildfire risk are projected to increase the risk of wildfires throughout the state, primarily due to increased drying rates and fuel load.

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 Wilson 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 Wilson 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 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.
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 Wilson 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 Wilson County was reviewed based on recent development changes that occurred throughout the planning area. The population of Wilson County has grown by 16 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 2024 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 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	Limited	High
Wildfire	Highly Likely	Minor	High
Flood	Highly Likely	Substantial	Moderate
Hail	Highly Likely	Major	Moderate
Lightning	Highly Likely	Limited	Moderate
Thunderstorm Wind	Highly Likely	Major	Moderate
Dam Failure	Unlikely	Limited	Low
Earthquake	Occasional	Limited	Low
Hurricane / Tropical Storm	Likely	Limited	Low

HAZARD	FREQUENCY OF OCCURRING	POTENTIAL SEVERITY	RANKING
Tornado	Likely	Limited	Low
Winter Storm	Likely	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, high wind, flood, extreme heat, and tornado. Other hazards were analyzed using databases containing more comprehensive historical data specific to Texas, such as the Texas Forest Service (TFS) for wildfires. Historical dam incidents, including failures, were researched through the Association of State Dam Safety Officials database which provides historical dam incidents.

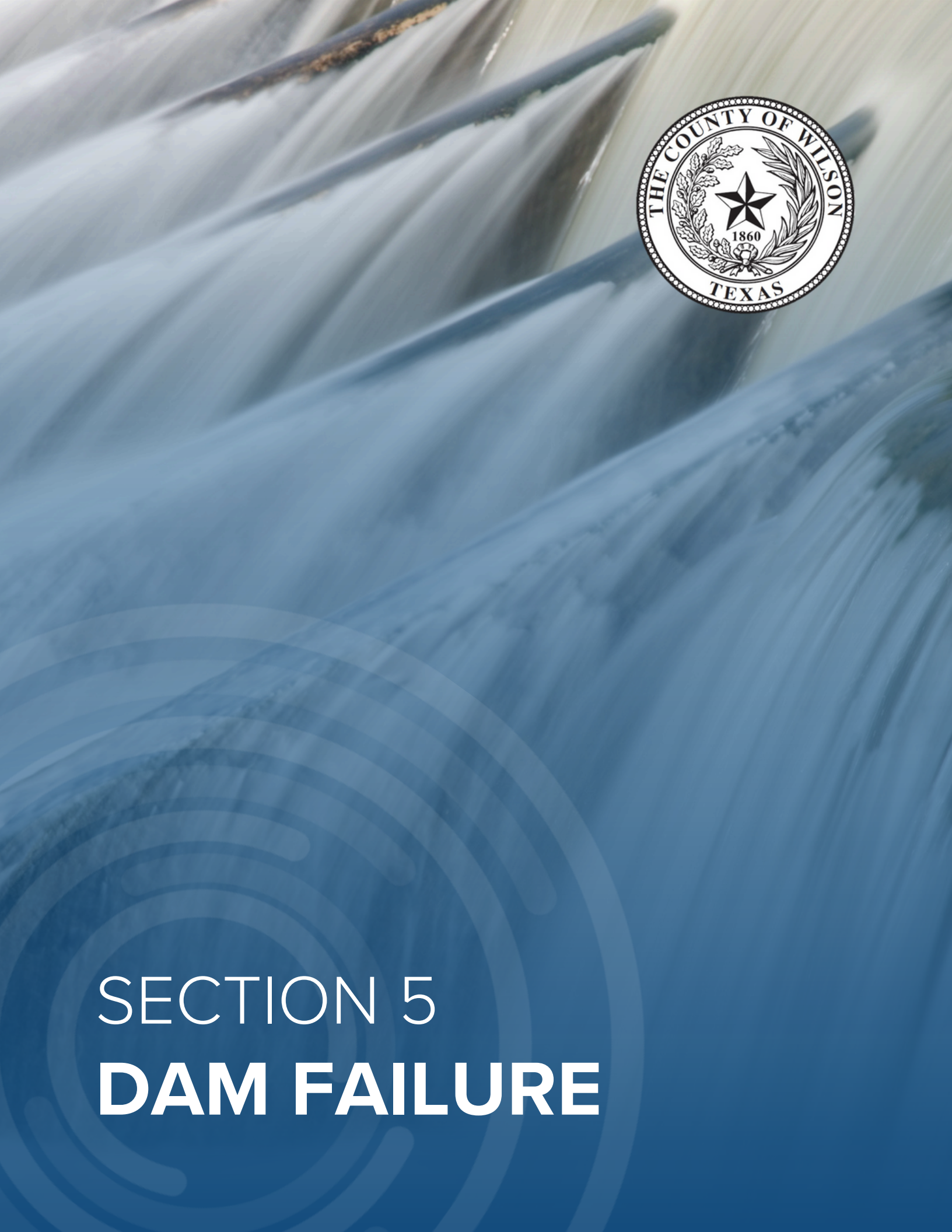
The NCEI Storm Events Database Is a rich centralized repository of nationwide weather-related hazard events. Among other things, it is the source used by NOAA to populate its monthly storm data publication. The database contains recorded weather events of significance based on a range of potential criteria including intensity, duration, damages, injuries, or other otherwise notable 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.

While the NCEI is considered as 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 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

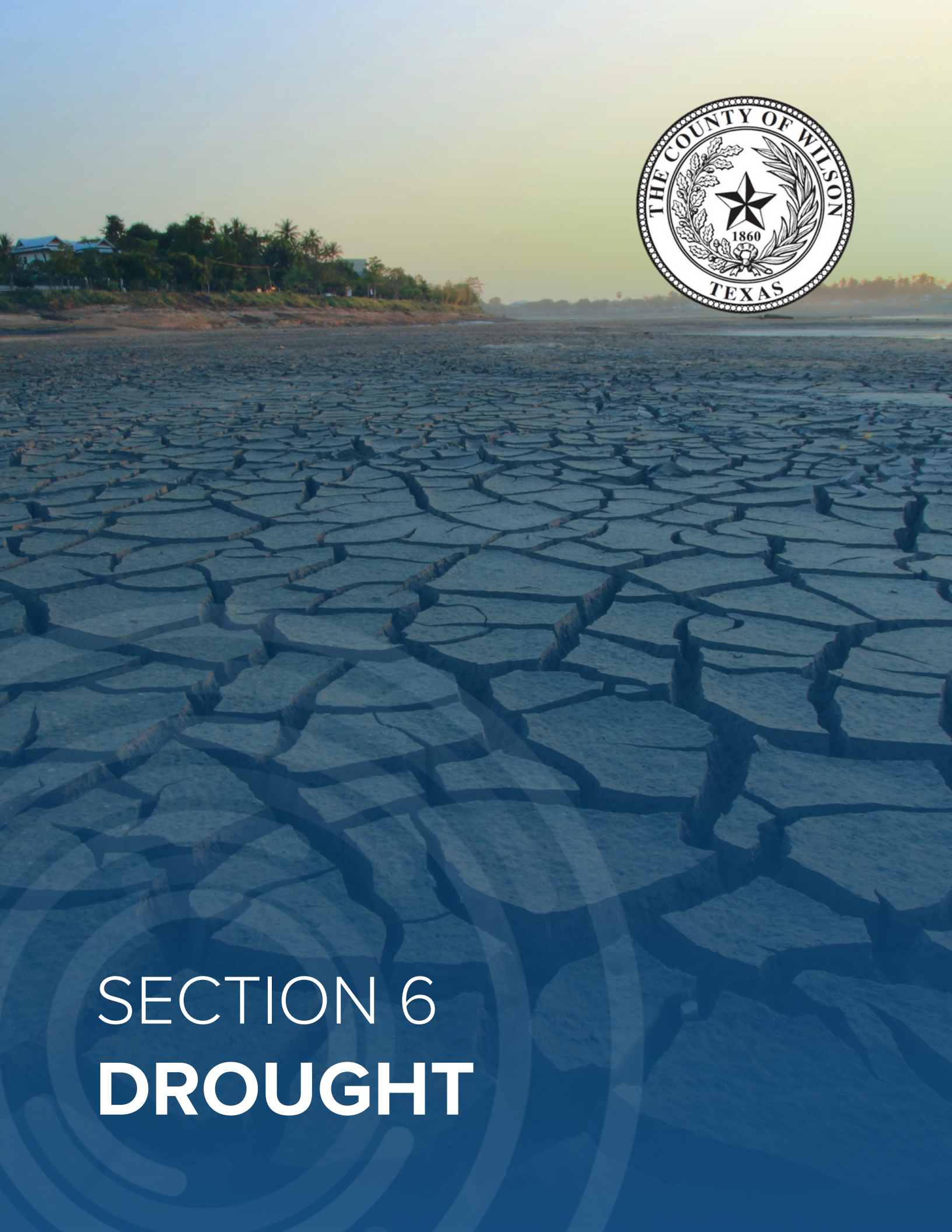
Event data is often reported at the county level only. This is primarily due to the nature of most natural hazards impacting areas larger than a single municipality. Winter storms or extreme heat, for example, impact large regions and are not confined to a single location. NWS regional coordinators typically 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 level will benefit significantly from increased, detailed event reporting.



SECTION 5
DAM FAILURE

SECTION 5: DAM FAILURE

Portions of the Wilson County Hazard Mitigation Plan are considered confidential and not for release to the public. The information in this section is covered under Privacy Act of 1974 (5 U.S.C. Section 552a).



SECTION 6
DROUGHT

SECTION 6: DROUGHT

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 Definitions[1]

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 Wilson County planning area, including all participating jurisdictions and ISDs, and are considered a normal condition. However, they can vary greatly in their intensity and duration. The U.S. Drought Monitor, produced through a

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

partnership between the National Drought Mitigation Center 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 severe to extreme 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 Wilson County planning area, including all participating jurisdictions and ISDs.

Figure 6-1. U.S. Drought Monitor, December 2024

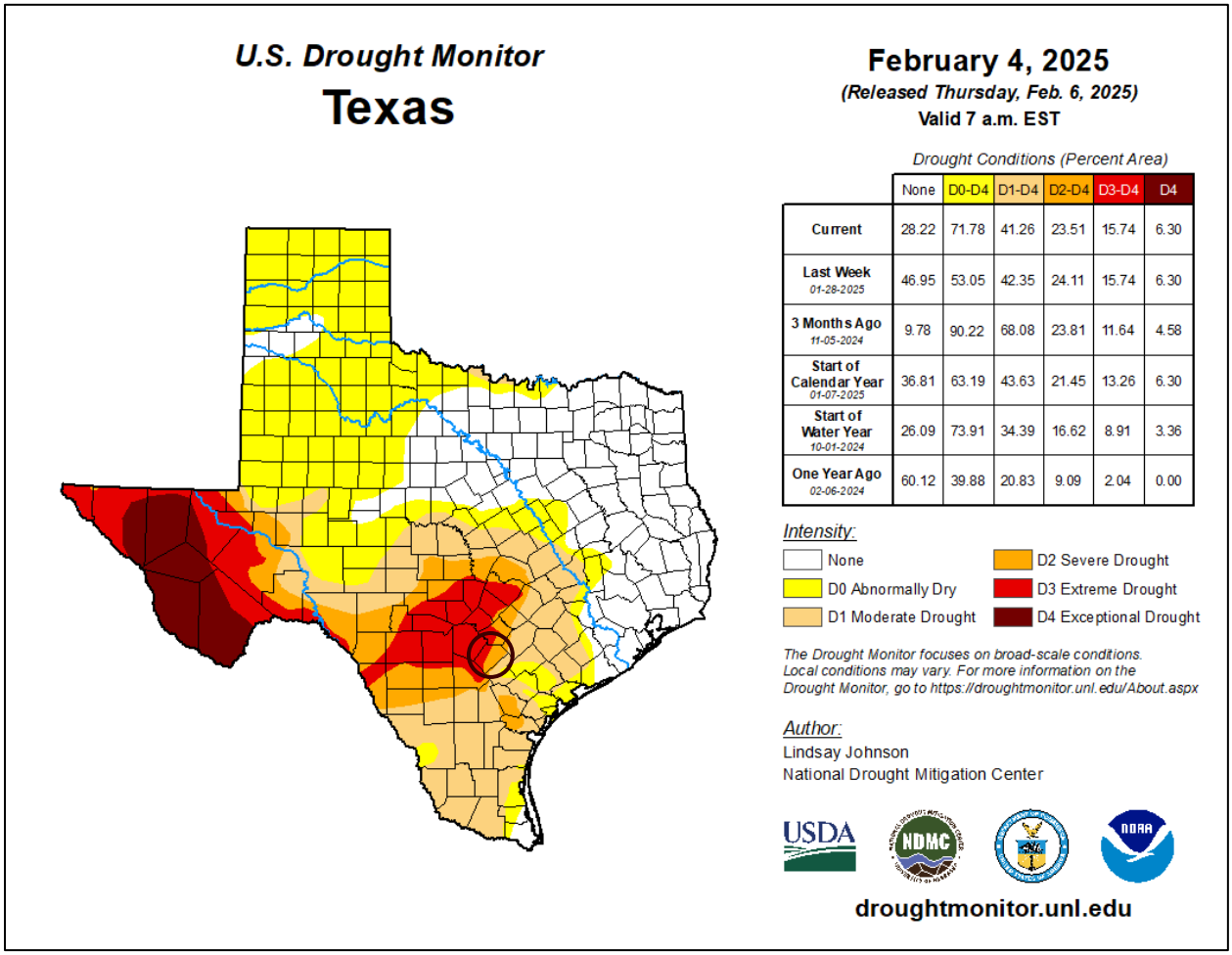
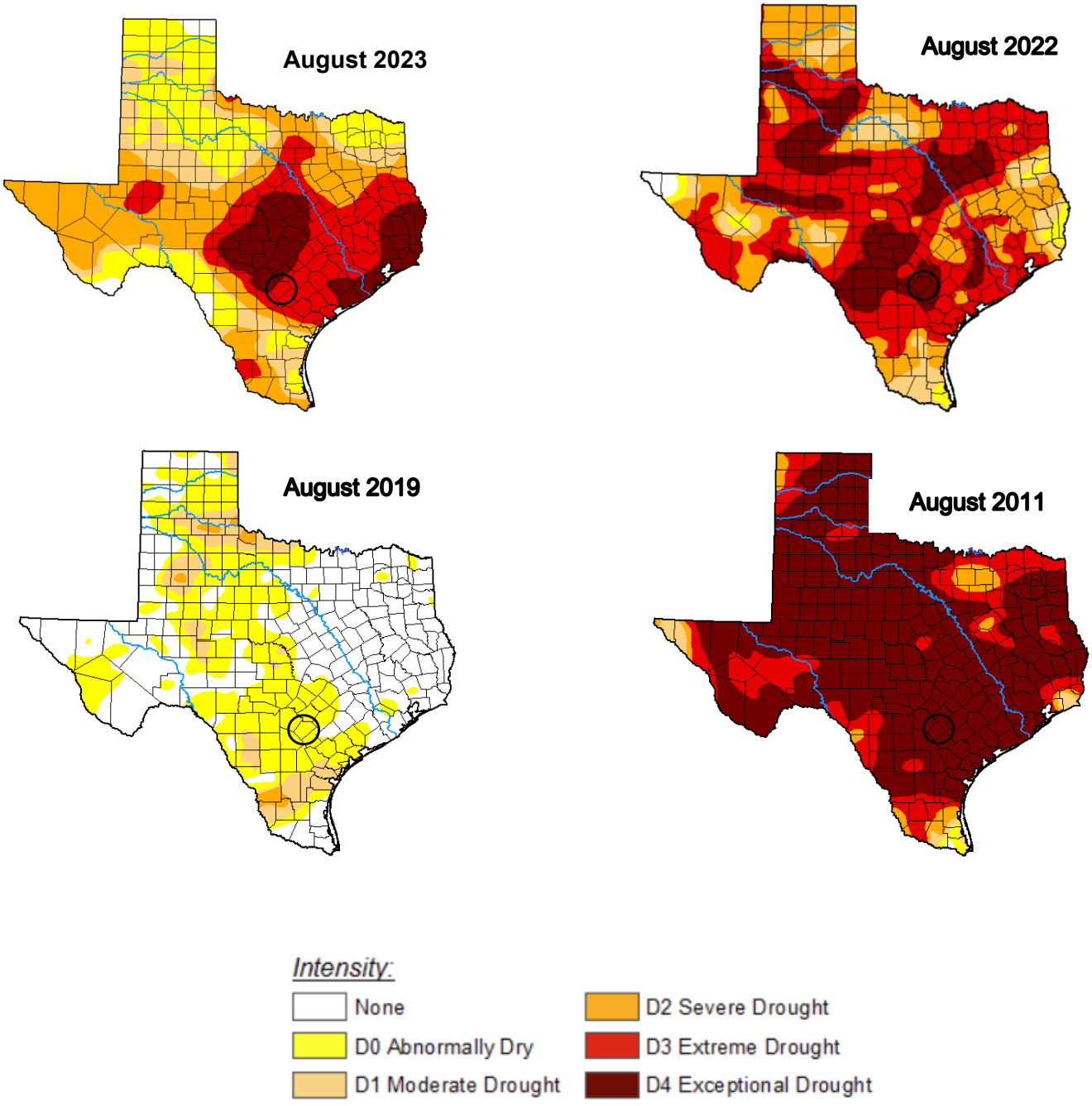


Figure 6-2. U.S. Drought Monitor, August 2011, August 2019, August 2022, August 2023



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.

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 Descriptions[2]

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

[2] Source: National Drought Mitigation Center

SECTION 6: DROUGHT

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 Wilson 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.

HISTORICAL OCCURRENCES

The Wilson County planning area may experience an extreme drought in any given year. According to the U.S. Drought Monitor, between January 2000 and June 2024, the Wilson County planning area spent 867 weeks (67%) in some level of drought as defined as Abnormally Dry (D0) or worse conditions. The longest drought during this period lasted for just over 4.5 years. Wilson County has received 31 USDA disaster designations for drought from 2012 through 2024.

Figure 6-3. Wilson County Drought Intensity, 2000-2024[3]

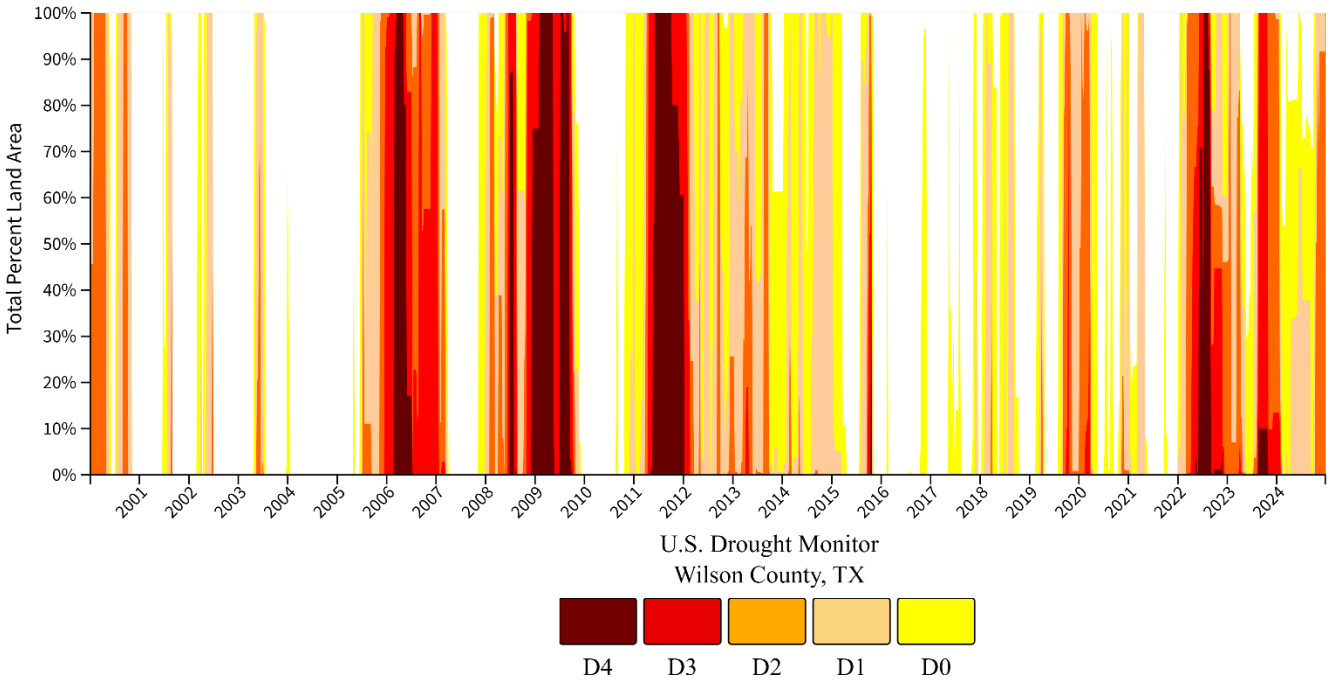


Table 6-4 lists historical events that have occurred in Wilson County as reported in the National Centers for Environmental Information Storm Events Database (NCEI). A total of 54 drought impacts were reported in the NCEI over 21 unique drought periods in Wilson County from January of 2000 through June of 2024. Historical drought impacts reported in the NCEI database for the

[3] U.S. Drought Monitor

Wilson County planning area, including all participating jurisdictions and ISDs, over the 24.5-year reporting period has resulted in no reported property or 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. Historical drought data for all participating jurisdictions, including all participating ISDs, are provided on a county-wide basis per the NCEI database. A summary of historical drought events is provided in Table 6-4.

Table 6-4. Historical Drought Events Summary, January 2000 – June 2024

JURISDICTION	DROUGHT IMPACTS	INJURIES	DEATHS	PROPERTY DAMAGE	CROP DAMAGE
Wilson County	54	0	0	$0	$0

Based on the historical drought events for the Wilson County planning area, including all participating jurisdictions and ISDs, 20 drought impacts were reported over 4 unique drought periods since the 2020 Plan.

SIGNIFICANT EVENTS

March 2011 – September 2015

According to the U.S. Drought Monitor (USDM), the Wilson County planning area spent 239 consecutive weeks in some level of drought between March of 2011 and September of 2015. This is the longest reported drought period for the planning area. Several impacts were also reported to the NCEI during this period.

According to the NCEI, a weak La Nina event and below average rainfall contributed to exceptional (D4) drought conditions beginning in May of 2011. Fire danger in South Central Texas remained moderate to high and burn bans were in effect for a majority of counties. The Texas A&M agricultural program report indicated the agricultural situation was rapidly deteriorating. Forage availability remained below average. Many stock tanks remained extremely low and some were in danger of drying up. At the end of the month the seven-day stream flow average remained in the below or much below normal range for basins across South Central Texas and the Rio Grande Plains. By September of 2011, many communities across South Central Texas continued with some level of water restrictions. These conditions remained steady, with only slight improvements, through January of 2012, as reported by the NCEI.

According to the USDM the planning area remained at some level between abnormally dry (D0) and severe (D2) consecutively until September of 2015. The year 2011 is one of the hottest and dryest summers on record for the Southern Plains. The prolonged heat and drought had drastic and long-lasting impacts on the region's agriculture and farming communities.

March 2022 – November 2022

Consecutive drought impacts were reported to the NCEI database for this 9-month period. A period of less than normal precipitation created long lasting drought conditions. In March of 2022, Wilson County was in severe (D2) drought. In April of 2022 these conditions elevated to extreme (D3) levels. Many counties in the South Central Texas region had burn bans in effect. During the summer months, low precipitation and extreme heat exacerbated drought conditions and Wilson

County reached exceptional (D4) drought levels. Area reservoirs continued to fall farther below normal conservation pool levels and all the rivers in the region were below normal. Beneficial rain improved conditions throughout the end of the year and had positive impacts on the Wilson County planning area, lessening the severity of drought, by November of 2022.

PROBABILITY OF FUTURE EVENTS

Based on available records of historic events, there have been 54 reported drought impacts in the NCEI over 21 unique drought periods (ranging from one month to over four years) within a 24.5-year reporting period, which provides a probability of approximately one event every year. This frequency supports a "Highly Likely" probability of future events for the Wilson County planning area, including all participating jurisdictions and ISDs.

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 highly sector-specific, with the impacts possibly smaller for agriculture than for surface water supply.[4]

It is projected that future changes to Wilson County will include increased temperatures, which according to the U.S. Climate Explorer, the planning area may experience a 5°F increase in average extreme heat temperatures. Historically, extreme temperatures averaged 100°F in Wilson County, but between 2035 and 2064 the average will be 105°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 24.5 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 Wilson 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.

[4] 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 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.

Table 6-5. Critical Facilities Vulnerable to Drought Events

CRITICAL FACILITIES	POTENTIAL IMPACTS
Emergency Response Services (EOC, Fire, Police, EMS, Hospitals)	► 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	► 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.
Commercial Suppliers (food, gas, etc.)	► Operations dependent on water supply may be adversely impacted.
Utility Services and Infrastructure (electric, water, wastewater, communications)	► 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. During summer drought, or hot and dry conditions, elderly persons, small children, infants, those with disabilities, or who do not have adequate cooling units in their homes may become more vulnerable to injury and/or death. 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 Wilson County planning area is estimated at 17 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 14 percent of the total population. An estimated 10 percent of the planning

area population live below the poverty level and 6 percent of the populations speak English 'less than very well' (Table 6-6).

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

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Wilson County	8,588	2,810	7,042	5,047	2,976
City of Floresville	1,429	366	1,604	1,052	660
City of La Vernia	283	46	216	110	91
City of Poth	231	213	125	58	122
City of Stockdale	313	84	179	225	119

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 Wilson 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.

Wilson County has a prominent agricultural sector and features 2,503 farms over 393,148 acres of land including grains, cotton, poultry and eggs, and cattle. Wilson County's annual market value of agricultural products sold is over $146,627,000. An estimated 91 percent of sales are from livestock products and 9 percent of sales are from crops. Most of these sales come from cattle and calves.[5] 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 and lower quality in beef. Prolonged drought periods could have devastating impacts on the agricultural industry across the planning area.

Impacts of past droughts experienced in the Wilson County planning area, including all participating jurisdictions and ISDs, have not resulted in injuries, fatalities, property, or crop damages supporting a "Limited" severity of impact meaning injuries and illnesses are treatable with first aid, the shutdown of critical facilities and services for 24 hours or less, and less than 10 percent of property destroyed or with major damage.

[5] Census of Agriculture. Wilson County, Texas County Profile. 2022.

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 6-7 lists the drought impacts to Wilson County from January 2005 to June 2024 based on reports received by the Drought Impact Reporter.

Table 6-7. Drought Impacts, 2005-2024

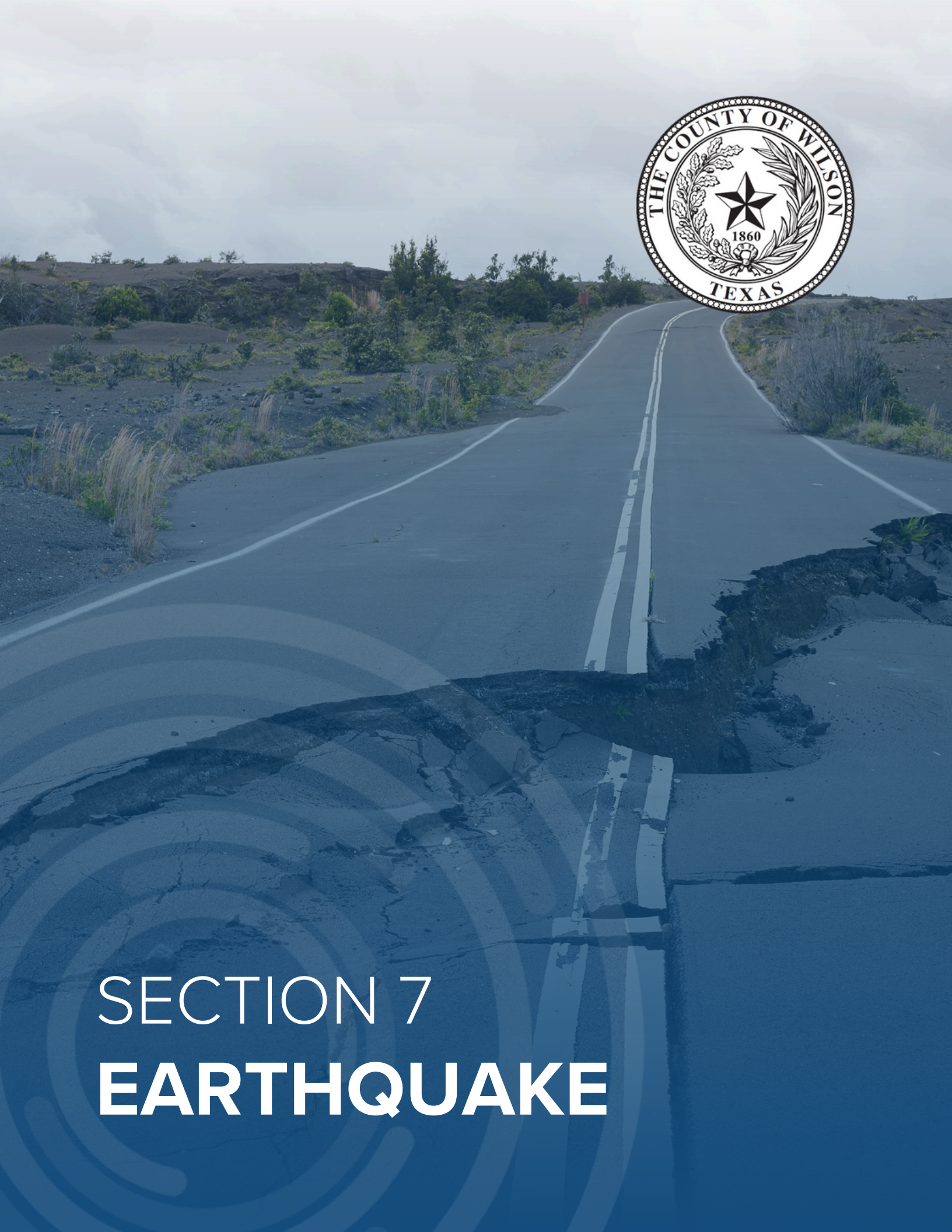
DROUGHT IMPACTS	
Agriculture	77
Business & Industry	1
Energy	0
Fire	22
Plants & Wildlife	64
Relief, Response & Restrictions	14
Society & Public Health	3
Tourism & Recreation	2
Water Supply & Quality	14

Drought has the potential to impact people in the Wilson 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 Wilson 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.
- 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 seven federally endangered, threatened or candidate species in Wilson 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
EARTHQUAKE

SECTION 7: EARTHQUAKE

HAZARD DESCRIPTION

An earthquake is the sudden movement of the Earth's surface caused by the release of stress accumulated within or along the edge of the Earth's tectonic plates, volcanic eruption, or by a manmade explosion. The majority of earthquakes occur along faults; however, earthquakes can occur within plate interiors. Over geologic time, plates move and plate boundaries change, pushing weakened boundary regions to the interior part of the plates. These areas of weakness within the continents can cause earthquakes in response to stresses that originate at the edges of the plate or in the deeper crust.

Earthquake locations are described by the focal depth and geographic position of the epicenter. The focal depth of an earthquake is the depth from the Earth's surface to the region where an earthquake's energy originates (the focus or hypocenter). The epicenter is the point on the Earth's surface directly above the hypocenter. Earthquakes usually occur without warning, with their effects impacting great distances away from the epicenter.

According to the U.S. Geological Society (USGS) Earthquake Hazards Program, an earthquake hazard is anything associated with an earthquake that may influence an individual's normal activities. Table 7-1 describes definition of examples.

Table 7-1. Definitions of Earthquake Hazards[1]

HAZARD	DESCRIPTION
Surface Faulting	Displacement that reaches the earth's surface during slip along a fault. Commonly occurs with shallow earthquakes, those with an epicenter less than 20 kilometers.
Ground Motion (shaking)	The movement of the earth's surface from earthquakes or explosions. Ground motion or shaking is produced by waves that are generated by sudden slip on a fault or sudden pressure at the explosive source and travel through the earth and along its surface.
Landslide	A movement of surface material down a slope.

[1] Source: USGS, 2012

HAZARD	DESCRIPTION
Liquefaction	A process by which water-saturated sediment temporarily loses strength and acts as a fluid, like when you wiggle your toes in the wet sand near the water at the beach. This effect can be caused by earthquake shaking.
Tectonic Deformation	A change in the original shape of a material due to stress and strain.
Tsunami	A sea wave of local or distant origin that results from large-scale seafloor displacements associated with large earthquakes, major submarine slides, or exploding volcanic islands.
Seiche	The sloshing of a closed body of water from earthquake shaking.

LOCATION

Earthquake hazard areas are mapped by the USGS's National Seismic Hazard Model (NSHM). Figure 7-1 shows the most recent 2023 iteration of this USGS model. The NSHM defines the potential for earthquake ground shaking for various probability levels across the United States. The 2023 NSHM is an update to the previous 2018 version, and compiles data and findings from a number of sources including earthquake catalogs, geodetic- and geologic-based fault and deformation models, and ground motion models (GMMs), among others.[2] The map shows the percent chance that a given area will experience a category VI (or stronger) earthquake in 100 years, as defined by the Modified Mercalli Intensity (MMI) Scale (Table 7-3). The likelihood of a significant earthquake event is signified by the color-coding on the map. Densely populated areas are also highlighted on the map (purple and black dotting) to indicate areas of elevated vulnerability in relation to higher seismic risk. The Wilson County planning area, including all participating jurisdictions and ISDs, as identified in Figure 7-1, is located in a low hazard area, with a less than five percent chance of experiencing a strong earthquake every 100 years.

[2] A comprehensive overview of the modelling process can be found at the USGS website, https://www.usgs.gov/programs/earthquake-hazards/science/2023-50-state-long-term-national-seismic-hazard-model-0#overview

Figure 7-1. U.S. Map of Peak Ground Acceleration[3]

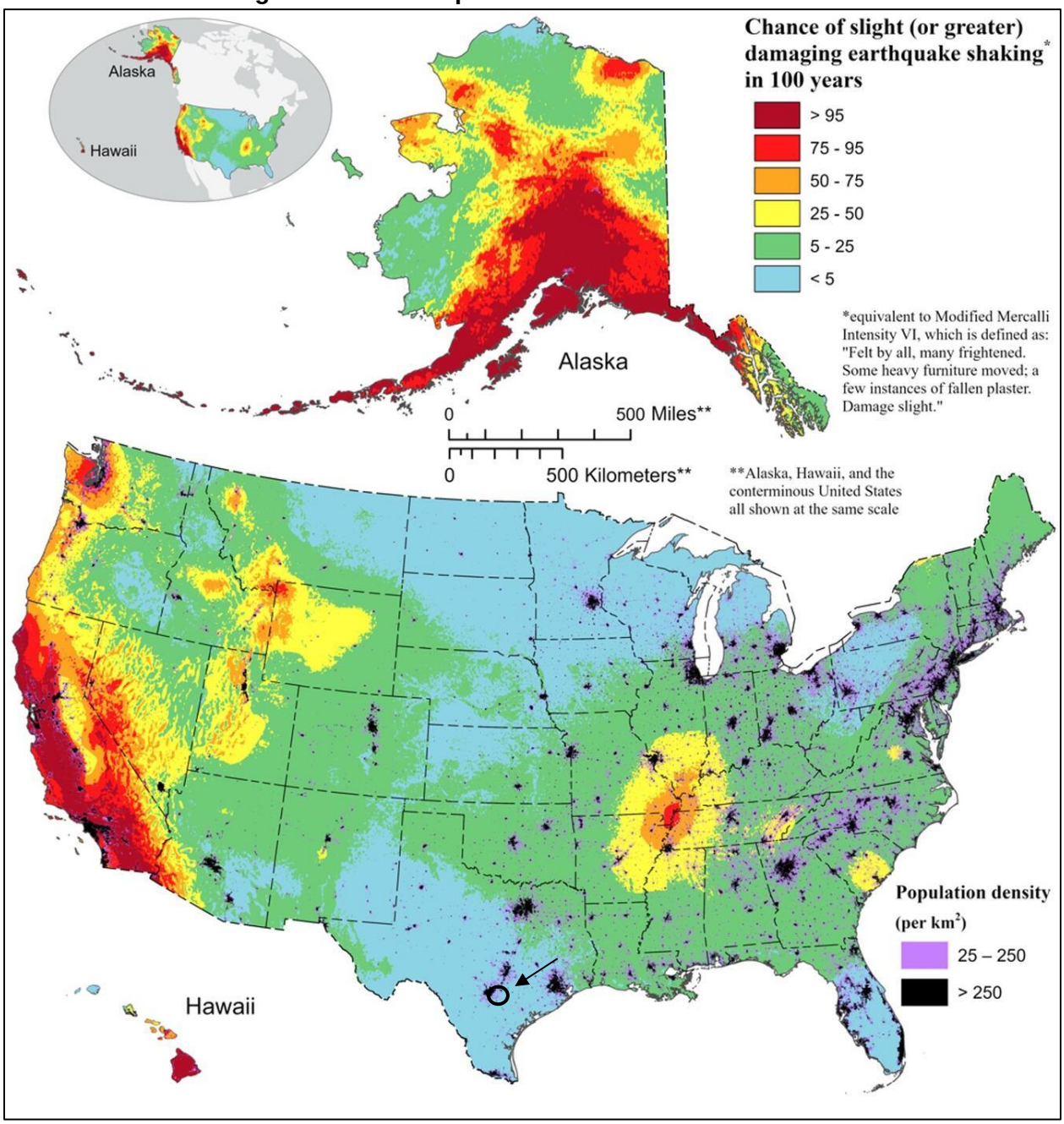
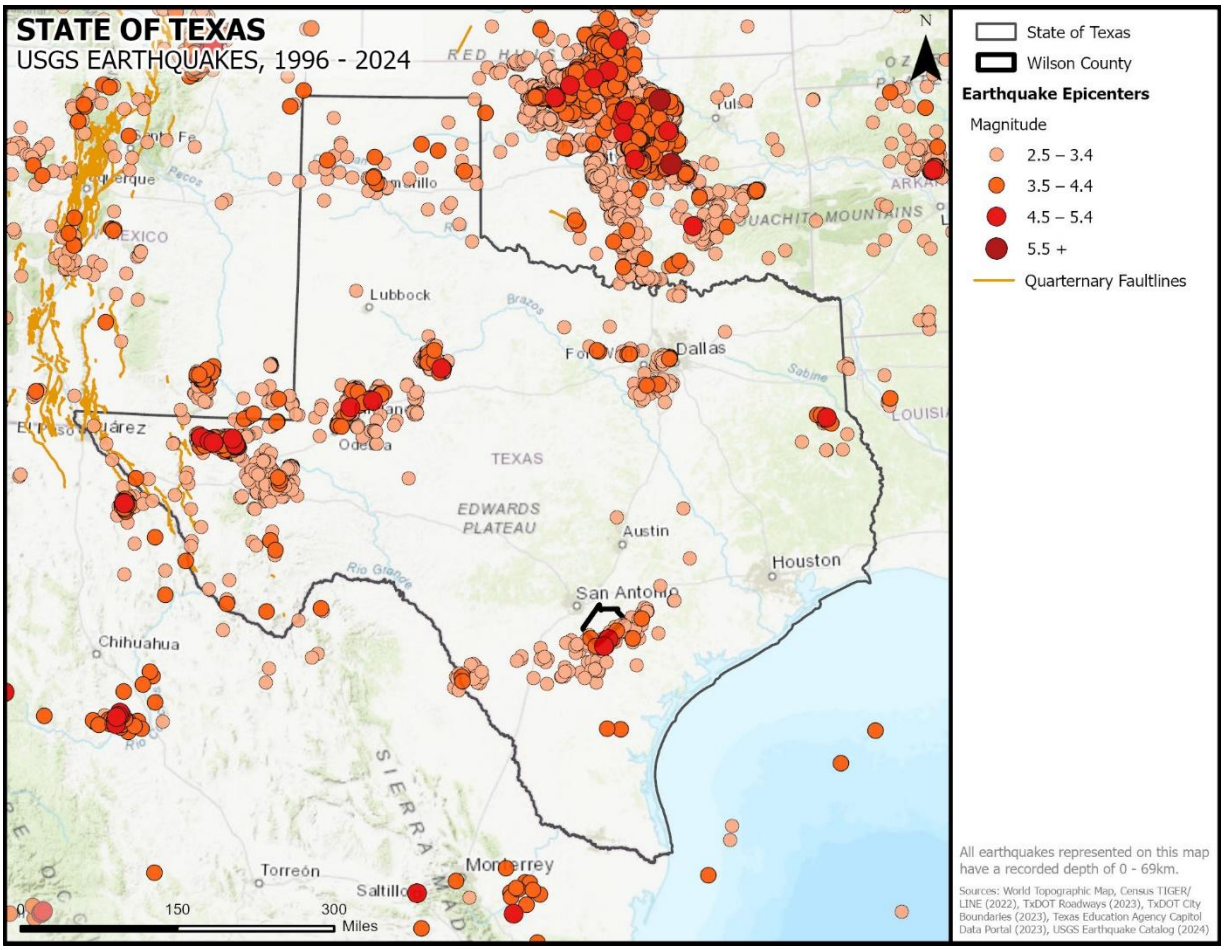


Figure 7-2 maps historic earthquake epicenters across Texas between 1996 and 2024.

[3] The Wilson County planning area is indicated by the black circle.

Figure 7-2. Historic Earthquake Epicenters in Texas, 1996-2024[4]



EXTENT

Earthquakes are measured in terms of magnitude and intensity. The prevalent magnitude measurement in use today is based on the Moment Magnitude Scale (MMS). MMS measures the movement of rock along the fault. It accurately measures larger earthquakes, which can last for minutes, affect a much larger area, and cause more damage. Magnitudes are based on a logarithmic scale (base 10), meaning that for each whole number you go up on the magnitude scale, the amplitude of the ground motion recorded by a seismograph goes up ten times. Using this scale, a magnitude 5 earthquake would result in ten times the level of ground shaking as a magnitude 4 earthquake (and about 32 times as much energy would be released).[5] The USGS reports earthquake magnitudes above 4.0 as “moment magnitude,” often described in the press as "Richter” magnitude. Table 7-2 shows the magnitude levels for the current Richter / Moment Magnitude scale.

[4] Wilson County is indicated by the black polygon.

[5] (n.d.). How Do We Measure Earthquake Magnitude? Michigan Tech. https://www.mtu.edu/geo/community/seismology/learn/earthquake-measure/#:~:text=The%20moment%20magnitude%20scale%20is,the%20earthquake%20at%20multiple%20stations.

Table 7-2. Richter / Moment Magnitude Scale[6]

MAGNITUDE	CATEGORY	DESCRIPTION OF EFFECTS	EVENTS PER YEAR
< 3.0	Micro	Usually not felt, but can be recorded by seismograph	+100,000
3.0 – 3.9	Minor	Often felt, but causes no damage	12,000 - 100,000
4.0 – 4.9	Light	Felt by all, minor breakage of objects	2,000 - 12,000
5.0 – 5.9	Moderate	Some damage to weak structures	200 – 2,000
6.0 – 6.9	Strong	Moderate damage in populated areas	20 – 200
7.0 – 7.9	Major	Serious damage over large areas with loss of life expected	3 – 20
> 7.9	Great	Severe destruction and loss of life over large areas	Less than 3

Earthquake intensity measurement is an on-the-ground description. The measurement qualitatively explains the severity of earthquake shaking and its effects on people and their environment. Intensity measurements will differ depending on each location's proximity to the epicenter or point on the surface of the earth directly above the focus where the earthquake started. The intensity scale consists of a series of certain key responses such as people awakening, movement of furniture, damage to chimneys, and total destruction. There can be multiple intensity measurements associated with an earthquake as opposed to one magnitude measurement.[7] The Modified Mercalli Intensity value assigned to a specific site after an earthquake has a more meaningful measure of severity to the nonscientist than the magnitude because intensity refers to the effects actually experienced at a specific location. The scale provides the intensity of the earthquake in values ranging from I to X. Table 7-3 describes the typical effects and intensities associated with earthquakes of various magnitudes. The intensity and effects depend on multiple factors (earthquake depth, epicenter location, site geology, population density, to name a few) and can vary widely.

[6] (n.d.). Earthquakes. Britannica. https://www.britannica.com/science/earthquake-geology

[7] Wood, H. O., and Neumann, Frank (1931). Modified Mercalli Intensity Scale of 1931: Seismological Society of America Bulletin, v. 21, no. 4, p. 277-283.

Table 7-3. Magnitude and Modified Mercalli Intensity (MMI) Scale[8]

INTENSITY	CATEGORY	DESCRIPTION OF EFFECTS	CORRESPONDING RICHTER MAGNITUDE
I	Not Felt	Not felt except by a very few under especially favorable conditions	< 2.0
I	Not Felt	Felt only by a few persons at rest, especially on upper floors of buildings.	2.0 – 2.9
II – III	Weak	Felt quite noticeably by persons indoors, with shaking of indoor objects. Rarely causes damages.	3.0 – 3.9
IV – V	Light to Moderate	Noticeable shaking of indoor objects and rattling noises. Felt by most people in the affected area. Generally, no to minimal damage	4.0 – 4.9
VI – VII	Strong to Very Strong	Significant damages to poorly constructed buildings. Limited to moderate damages to well-built structures.	5.0 – 5.9
VIII – IX	Severe to Violent	Damage slight in specially designed structures; considerable damage in ordinary buildings with partial collapse. Damage great in poorly built structures.	6.0 – 6.9
VIII +	Severe to Extreme	Damage considerable in specially designed structures. Damage substantial to most buildings, with partial or complete collapse. Felt across great distances with major damage mostly limited to 250 km from Epicenter.	7.0 – 7.9
VIII – IX	Severe to Violent	Major damage to buildings, structures likely to be destroyed; will cause moderate to heavy damage to sturdy or earthquake-resistant buildings; damaging in large areas; felt in extremely large regions.	8.0 – 8.9
VIII +	Severe to Extreme	At or near total destruction. Severe damage or collapse to all buildings; heavy damage and shaking extends to distant locations and permanent changes in ground topography.	9.0+

[8] Source: USGS

Taking into consideration the possible extent of an earthquake for the area, by reviewing Tables 7-2 and 7-3 in conjunction with no significant previous occurrences, as depicted in Figure 7-2, the Wilson County planning area experiences on average less than 3.0 magnitude or Levels II-III (weak impact) on the Modified Mercalli Intensity scale. This is the greatest extent the entire planning area, including all participating jurisdictions and ISDs, can anticipate in the future, based on historic records.

HISTORICAL OCCURRENCES

According to USGS, and the National Geophysical Data Center (NGDC), there are no “significant” earthquakes on record for the State of Texas and the entire Wilson County planning area from 2150 B.C. to present. A significant earthquake, as defined by NGDC, is one that has caused at least moderate damage (approximately $1 million or more), has resulted in 10 or more deaths, has registered as a magnitude 7.5 or greater, has registered as Modified Mercalli Intensity (MMI) Scale X or greater, or generated a tsunami. None of these criteria have been met by any seismic activity known to have impacted the planning area.

The USGS also has a database that tracks all earthquakes with a magnitude 2.5 or greater across the United States. According to the database between January 1996 and June 2024, there were 7 minor earthquakes reported within the planning area (Table 7-4). Of these, the strongest recorded was a magnitude 3 earthquake, considered a Level II-III (weak). During that same period, a total of 235 earthquakes occurred within a 50-mile radius of the planning area and 246 earthquakes occurred within a 100-mile radius. Many of these occurred south of the Wilson County planning area, in the neighboring Kames County. The maximum magnitude recorded for earthquakes within both the 50-mile and 100-mile radius was magnitude 4.8, considered a Level IV-V (light to moderate) earthquake.

While it is possible for the planning area to feel stronger earthquakes that occur inside county boundaries, or within the 100-mile area around the planning area, at this time, there are no known damages associated with these events for the Wilson County planning area. Table 7-4 lists information for earthquakes that have occurred within the Wilson County planning area; Table 7-5 summarizes historical earthquake events that have occurred inside or near the planning area.

Figure 7-3. Historic Earthquake Events in and near Wilson County, 1996 – 2024

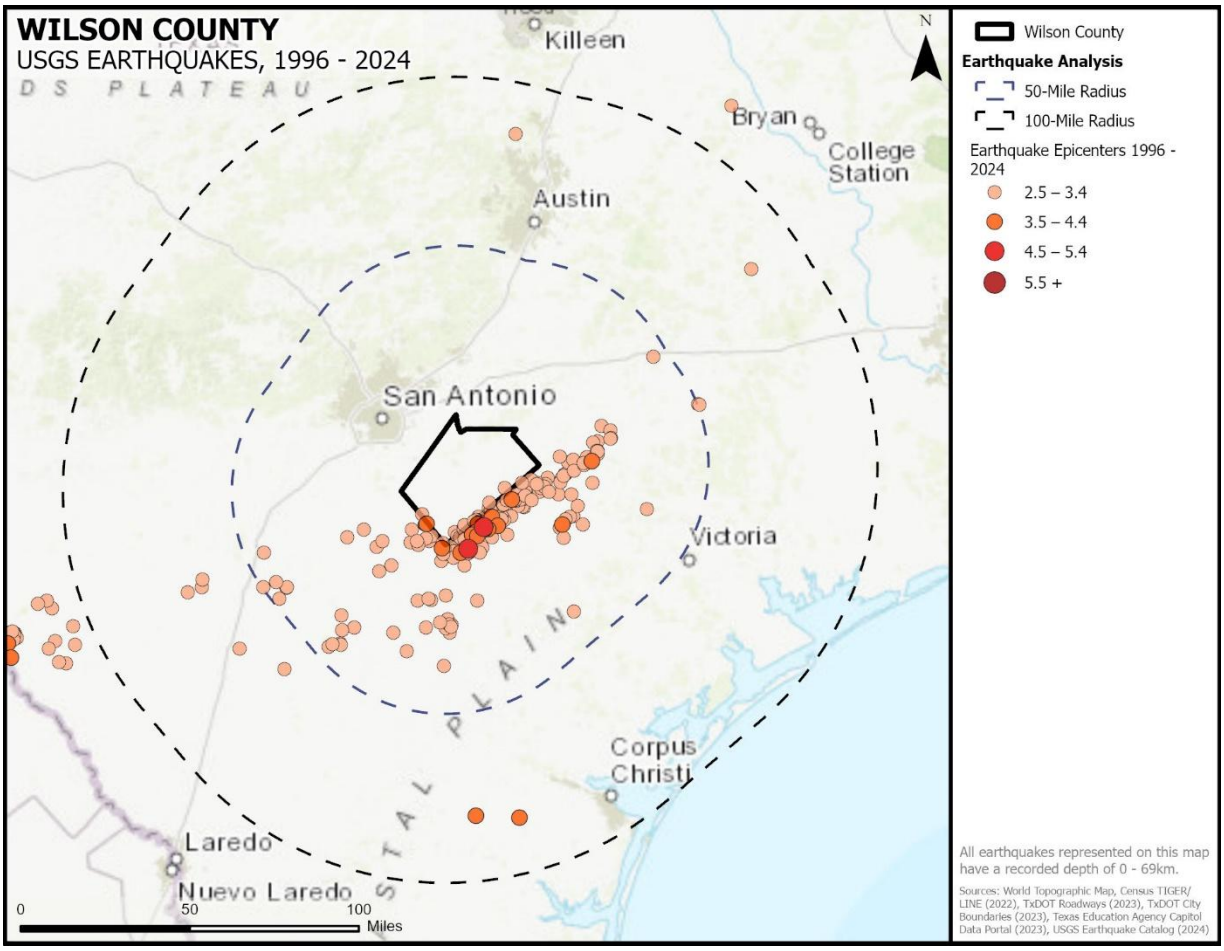


Table 7-4. Historic Earthquakes in Wilson County, January 1996 – June 2024[9]

JURISDICTION	Date	EXTENT	INJURIES & FATALITIES	PROPERTY DAMAGE
Wilson County	11/30/2023	2.7	0	$0
Wilson County	11/21/2023	2.7	0	$0
Wilson County	09/05/2020	2.6	0	$0
Wilson County	08/22/2020	2.6	0	$0
Wilson County	08/18/2020	2.5	0	$0
Wilson County	05/10/2019	3	0	$0
Wilson County	01/30/2015	2.5	0	$0

[9] USGS, only earthquakes to occur inside the Wilson County planning area are listed.

Table 7-5. Historical Earthquake Event Summary, January 1996 – June 2024[10]

JURISDICTION	NUMBER OF EVENTS	MAXIMUM EXTENT	INJURIES & FATALITIES	PROPERTY DAMAGE
Wilson County	7	3	0	$0
50-Mile Radius	235	4.8	0	$0
100-Mile Radius	246	4.8	0	$0

PROBABILITY OF FUTURE EVENTS

Earthquake Hazard Maps show the distribution of earthquake shaking levels that have a certain probability of occurring over a given period. According to the USGS, the entire Wilson County planning area has less than a five percent chance of a slightly damaging (or greater) earthquake within 100 years. Based on historical records, the probability of an earthquake affecting the planning area, including all participating jurisdictions and ISDs, is "Occasional," meaning that an event is probable in the next five years, however damages are likely to remain negligible.

CLIMATE CHANGE CONSIDERATIONS

Damaging earthquakes are rare within the State of Texas, including the Wilson County planning area. Changing conditions of weather patterns and climate change has not been established as having a direct impact on earthquake intensity or frequency.

According to the USGS, statistically there is an approximately equal distribution of earthquakes in all cold weather, hot weather, rainy weather, etc. Very large low-pressure changes associated with major storm systems, like typhoons and hurricanes, are known to trigger episodes of fault slip or slow earthquakes in the Earth's crust and may also play a role in triggering some damaging earthquakes. However, the numbers are small and are not statistically significant.[11]

The Wilson County planning area is located outside of any known earthquake hazard areas and is not located on or near any active fault lines. Climate change is assumed to have no impact on the probability or intensity of potential earthquakes in the planning area.

VULNERABILITY AND IMPACT

Little warning is usually associated with earthquakes and can impact areas a great distance away from the epicenter. The amount of damage depends on the density of population and buildings, and infrastructure construction in the affected area. Some places may be more vulnerable than others based on soil type, building age, and building codes in the Wilson County planning area.

The Wilson 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 earthquake events. For a comprehensive list by participating jurisdiction, please see Appendix C.

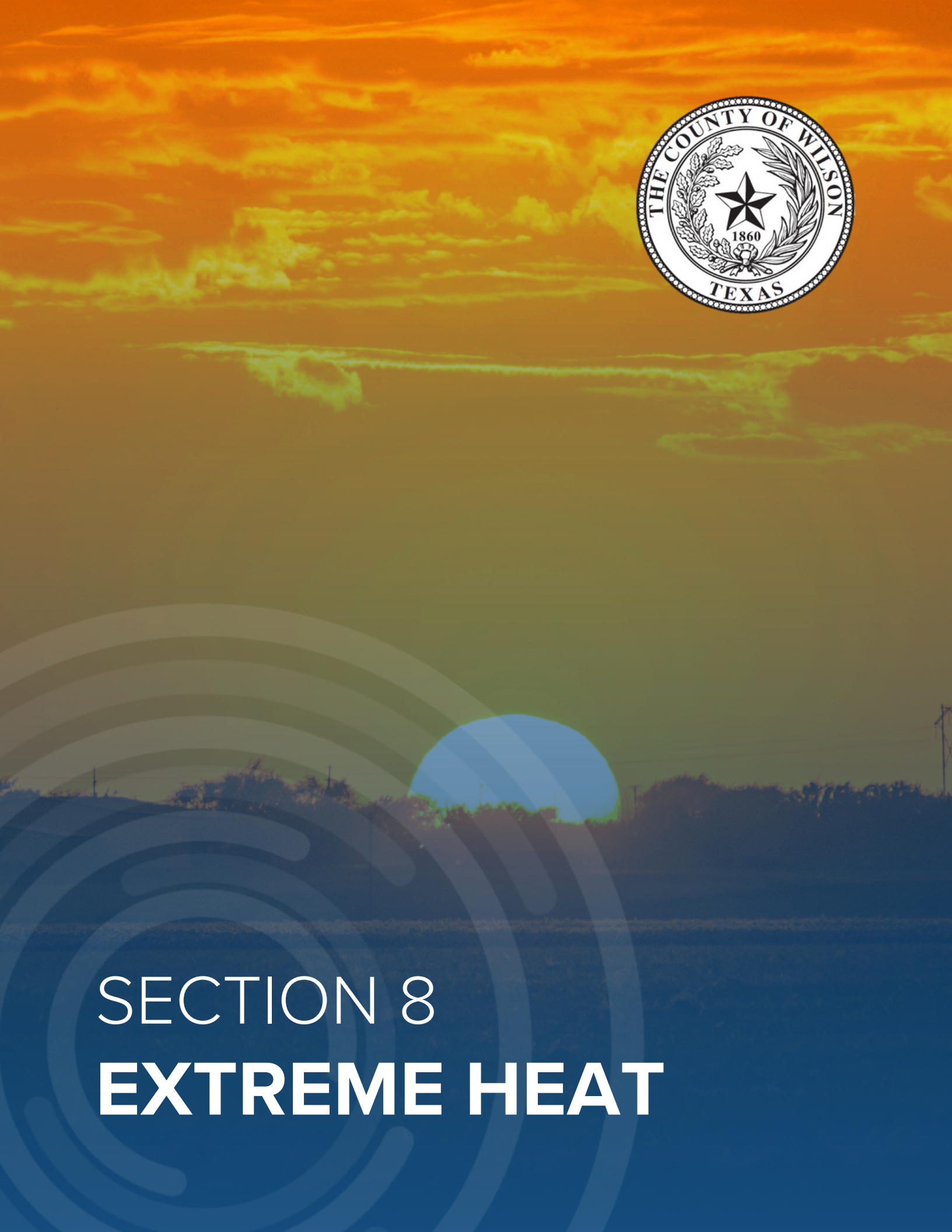
[10] Source: USGS

[11] (n.d.). *Natural Hazards*. United Stated Geological Survey. https://www.usgs.gov/faqs/there-earthquake-weather

Table 7-6. Critical Facilities Vulnerable to an Earthquake

CRITICAL FACILITIES	POTENTIAL IMPACTS
Emergency Response Services (EOC, Fire, Police, EMS), Hospitals and Medical Centers	► Emergency operations and services may be significantly impacted due to power outages, damaged facilities, fires and/or loss of communications. Impact can impede emergency response vehicle access to areas. ► Power outages could disrupt communications, delaying emergency response times. ► 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	► Power outages could disrupt critical care. ► Backup power sources could be damaged. ► Evacuations may be necessary due to extended power outages or other associated damages to facilities. ► Economic disruption due to power outages negatively impact airport services as well as area businesses reliant on airport operations.
Commercial Supplier (food, fuel, etc.)	► 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)	► Emergency operations and critical services may be significantly impacted due to power outages, damaged facilities, and/or loss of communications. Impact can impede emergency service vehicle access to areas. ► Power outages could disrupt communications, delaying emergency response times further straining the capacity and resources of emergency service personnel.

With no significant historical events recorded, neither annualized loss-estimates nor a breakdown of potential dollar losses of critical facilities and infrastructure from earthquakes are available. The potential severity of impact from an earthquake for the entire Wilson County planning area, including all participating jurisdictions and ISDs, is classified as “Limited”, meaning that less than 10 percent of infrastructure would be damaged with critical facilities being shut down for less than 24 hours.



SECTION 8
EXTREME HEAT

SECTION 8: EXTREME HEAT

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 Wilson 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

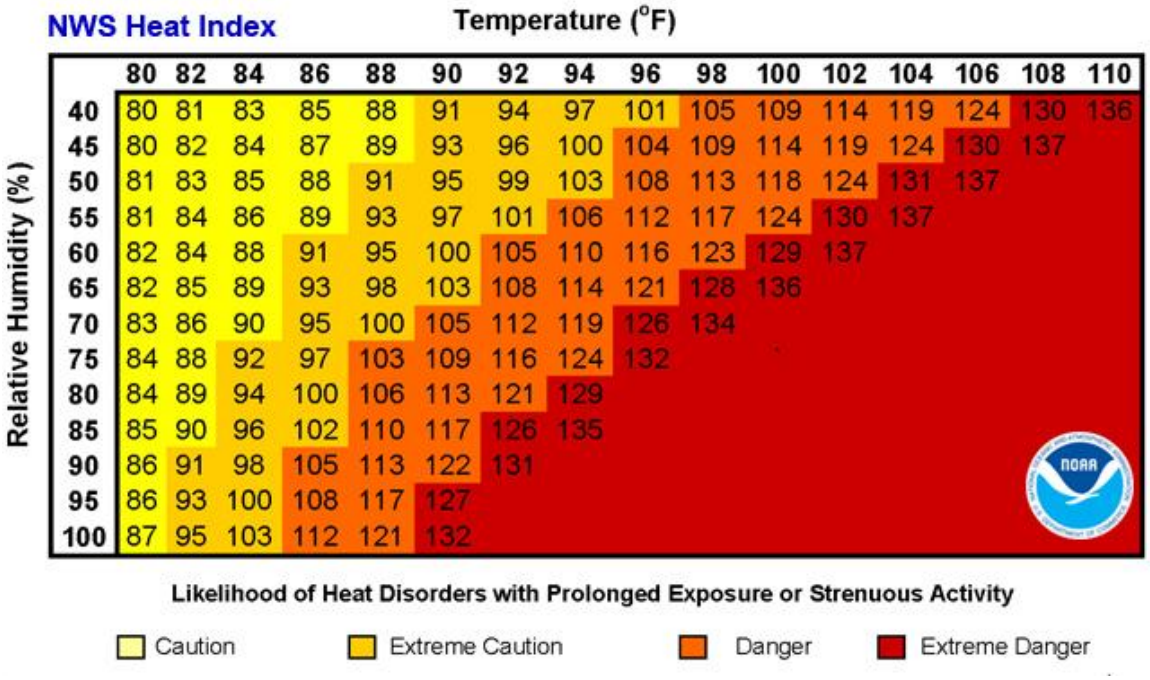
Extreme heat events can occur anywhere throughout the Wilson County planning area, including all participating jurisdictions and ISDs, as there is no specific geographic scope to the extreme heat hazard.

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 8-1. This index measures how hot it feels outside when humidity is combined with high temperatures.

SECTION 8: EXTREME HEAT

Figure 8-1. Extent Scale for Extreme Heat[1]



The index in Figure 8-1 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 8-1.

Table 8-1. 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.

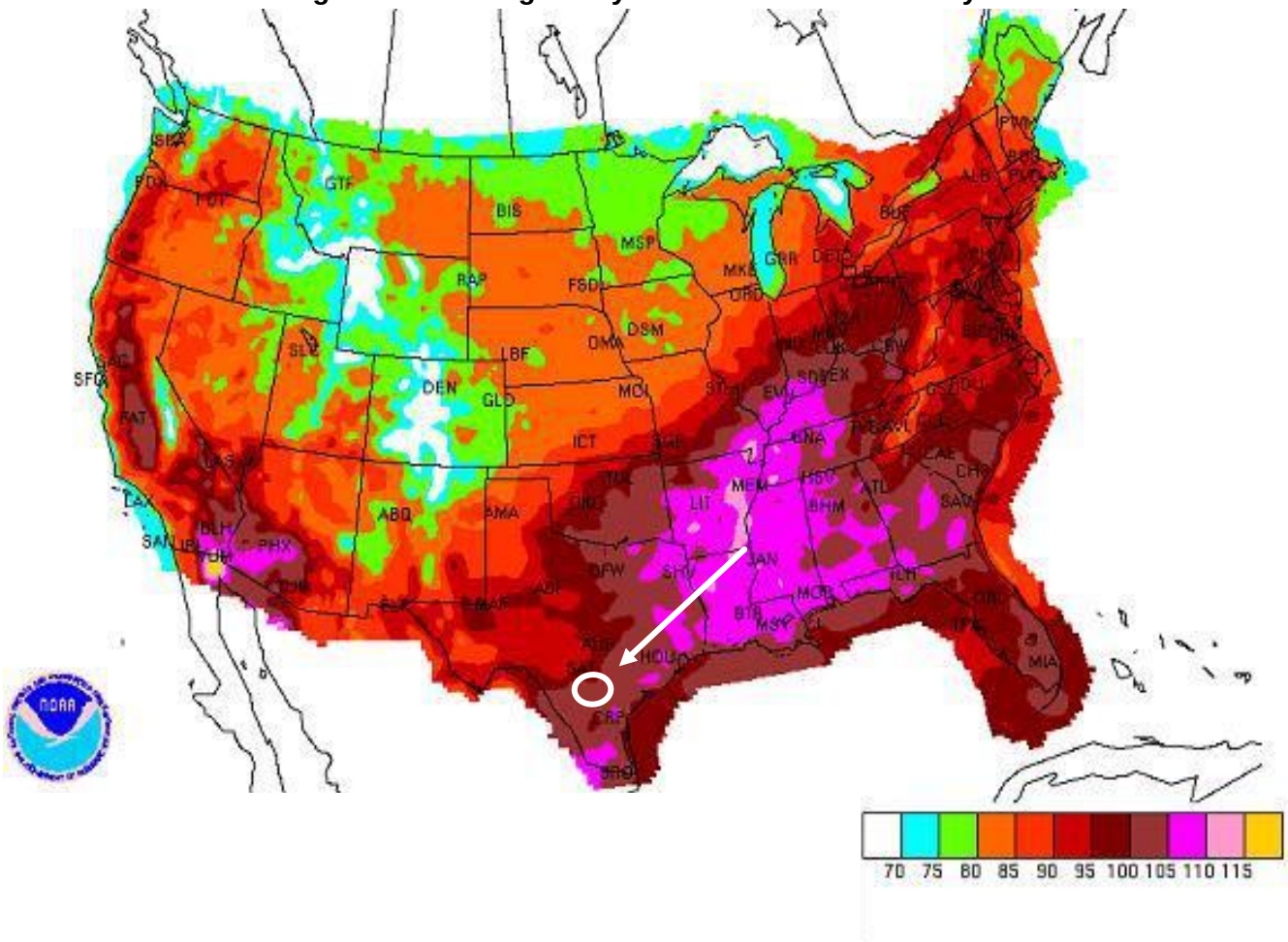
[1] Source: NOAA

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 subtropical subhumid climate, the Wilson 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 8-2 displays the daily maximum heat index as derived from NOAA based on data compiled from 1838 to 2015. The white circle shows the Wilson County planning area. The planning area is represented in a brown color across the County. The brown color indicates an average daily heat index of 100°F to 105°F. Therefore, Wilson County could experience dangerous heat from 100°F to 105°F and should mitigate to the extent of “Extreme Caution” and “Danger,” which can include sunstroke, muscle cramps, heat exhaustion and potential heat stroke. This is the average maximum temperature the planning area, including all participating jurisdictions and ISDs, can anticipate based on historical events.

Figure 8-2. Average Daily Maximum Heat Index Days[2]



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 Wilson County, there have been three extreme heat events on record for the planning area (Table 8-2). Historical extreme heat information, as provided by the NCEI, shows extreme heat 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.

[2] NRDC and the white circle indicates the Wilson County planning area.

Historical data for all participating jurisdictions, including all participating ISDs, are provided on a county-wide basis per the NCEI database from January of 1996 through June of 2024. No damages, injuries, or fatalities were reported to the NCEI for the planning area.

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 the recording period. Due to the limited number of reported events, average high temperatures have been analyzed in order to determine the probability of future events.

Table 8-2. Historical Extreme Heat Events, January of 1996 – June 2024[3]

JURISDICTION	DATE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Wilson County	6/15/2023	0	0	$0	$0
Wilson County	7/11/2023	0	0	$0	$0
Wilson County	8/4/2023	0	0	$0	$0
TOTALS		**3**	**0**	**$0**	**$0**

Table 8-3. Historical Extreme Heat Events Summary, January 1996 – June 2024

JURISDICTION	NUMBER OF EVENTS	DEATH	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Wilson County	3	0	0	$0	$0

Based on the list of historical extreme heat events for the Wilson County planning area, all three events were reported in the NCEI since the 2020 Plan.

SIGNIFICANT EVENTS

August 4, 2023

Excessive heat was observed nearly every day in August of 2023 across South Central Texas. The heat wave started on the 1st across the region when temperatures reached 105°F to 107°F. The heat continued off and on through the end of the month and temperatures reached as high as 112°F. All of the local climate sites set or tied numerous daily record high temperatures and record high low temperatures. Austin Bergstrom tied the monthly record high of 110°F on the 27th and set or tied the daily record on 19 other days. Del Rio set a new monthly record high of 111°F on the 10th in addition to 16 other daily records. San Antonio had 14 daily record highs. Del Rio also tied the monthly record high low temperature of 84°F twice on the 10th and 15th and set or tied the daily record on 17 other days. San Antonio tied the monthly record high low of 82°F on the 21st and had seven other daily records.

PROBABILITY OF FUTURE EVENTS

According to historical records, the Wilson County planning area, including all participating jurisdictions and ISDs, has experienced three events in a 28.5-year reporting period. Although no events were reported before 2023, historical records in combination with an analysis of maximum

[3] NOAA, NCEI Storm Events Database

average temperatures provides a probability of at least one event every year. This frequency supports a “Highly Likely” probability of future events.

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.[4]

In addition, it is projected that future changes to Wilson County will include increased temperatures, which according to the U.S. Climate Explorer, the planning area may experience a 5°F increase in the average extreme heat temperatures. Historically, extreme temperatures averaged 100°F in Wilson County, but between 2035 and 2064 the average will be 105°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 Wilson 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.

The population over 65 in the Wilson County planning area is estimated at 17 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 14 percent of the total population. An estimated 10 percent of the planning area population live below the poverty level and 6 percent of the populations speak English ‘less than very well’ (Table 8-4).

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

[4] 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

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 participating ISDs also have a combined total of 427 staff that work outdoors and may be exposed to extreme heat conditions (Table 8-5).

Table 8-4. Populations at Greater Risk by Participating Jurisdiction

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Wilson County	8,588	2,810	7,042	5,047	2,976
City of Floresville	1,429	366	1,604	1,052	660
City of La Vernia	283	46	216	110	91
City of Poth	231	213	125	58	122
City of Stockdale	313	84	179	225	119

Table 8-5. Populations at Greater Risk for Special Districts

PARTICIPANT	YOUTH UNDER 5	EMPLOYEES OPERATING OUTDOORS
Floresville ISD	300	300
La Vernia ISD	76	70
Poth ISD	2	27
Stockdale ISD	36	30

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. It is possible that critical facilities and infrastructure could be shut down for 24 hours if cooling units are running constantly, leading to a temporary power outage (Table 8-5). Less than ten percent of residential and commercial property could be damaged if extreme heat events lead to structure fires. Based on historical records, annualized property and crop losses for the Wilson County planning area are negligible. The number of historical injuries and fatalities also indicates a “Limited” level of impact.

The Wilson 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 Wilson County planning area. For a comprehensive list by participating jurisdiction, please see Appendix C.

Table 8-5. Critical Facilities Vulnerable to Extreme Heat Events

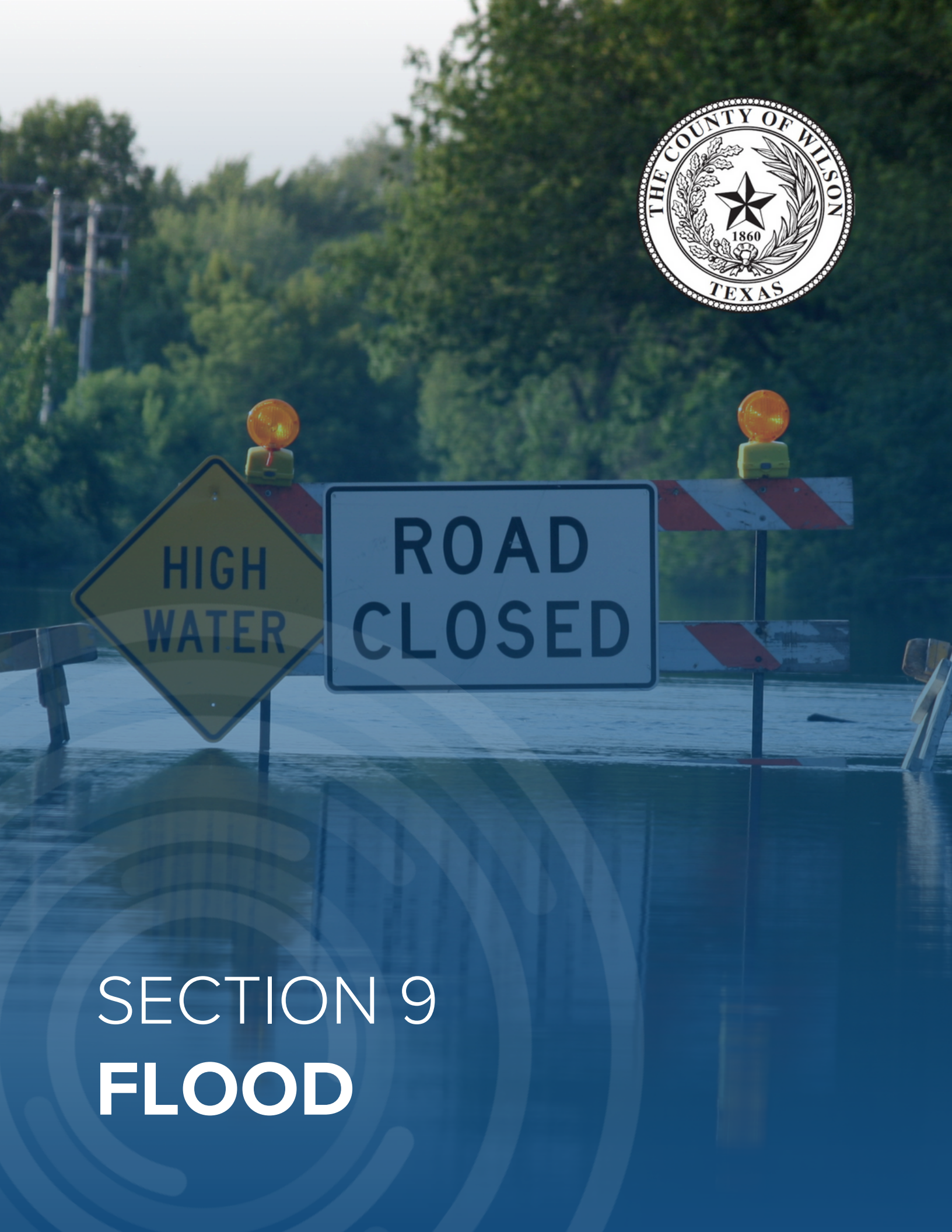
CRITICAL FACILITIES	POTENTIAL IMPACTS
Emergency Response Services (EOC, Fire, Police, EMS, Hospitals)	► Emergency operations, services and response times may be significantly impacted due to power outages, and/or loss of communications. ► Exposure to heat can cause heat illnesses in first responders, 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	► 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.)	► 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)	► 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 (17 percent of total population), children under 5 (6 percent of total population), and those with a disability (14 percent of total population) can face serious or life-threatening health problems from exposure to extreme 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 9
FLOOD

SECTION 9: FLOOD

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 Wilson 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 Wilson 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 9: FLOOD

The FIS for Wilson County is dated July 19, 2023. This compiles all previous flood information including data collected on numerous waterways. This study indicates that flooding in the City of Floresville primarily comes from Lodi Branch and the San Antonio River. Some floods have also occurred on Pajarito Creek. Undersized bridges, low-water crossings, and other constrictions contribute to flood problems. In the City of La Vernia, Cibolo Creek and Dry Hollow Creek represent the primary flood hazards. Backwater from these streams contributes to flooding on their tributaries within the city. In the City of Poth, Poth Creek and East Branch Poth Creek are of greatest concern. This is primarily due to short duration, high intensity rainstorms, and flat topography combined with unimproved channels. Finally, the City of Stockdale area is subject to flooding from Stockdale Creek, North Branch to Stockdale Creek, and South Tributary to Stockdale Creek. Short duration high intensity storms coupled with relatively flat topography contribute to these flooding conditions.

The current effective Digital Flood Insurance Rate Map or DFIRM data provided by FEMA for Wilson County shows the following flood hazard areas:

- Zone A: Areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown. Mandatory flood insurance requirements and floodplain management standards apply.
- Zone AE: Areas subject to inundation by 1-percent-annual-chance shallow flooding. It is the base floodplain where BFEs are provided. AE zones are now used on new format FIRMs instead of A1-30 zones.
- Zone AO: Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average flood depths derived from detailed hydraulic analyses are shown in this zone.
- Zone X: Moderate risk areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent-annual-chance flood by a levee. No BFEs or base flood depths are shown within these zones.

Locations of flood zones in Wilson County based on the Digital Flood Insurance Rate Map (DFIRM) from FEMA are illustrated in Figures 9-1 through 9-9. In addition, it was noted by Floresville ISD that areas of concern include the Floresville Early Childhood Center's back facility, parking lot, and student playground, which are prone to flooding.

Figure 9-1. Estimated Flood Zones in Wilson County

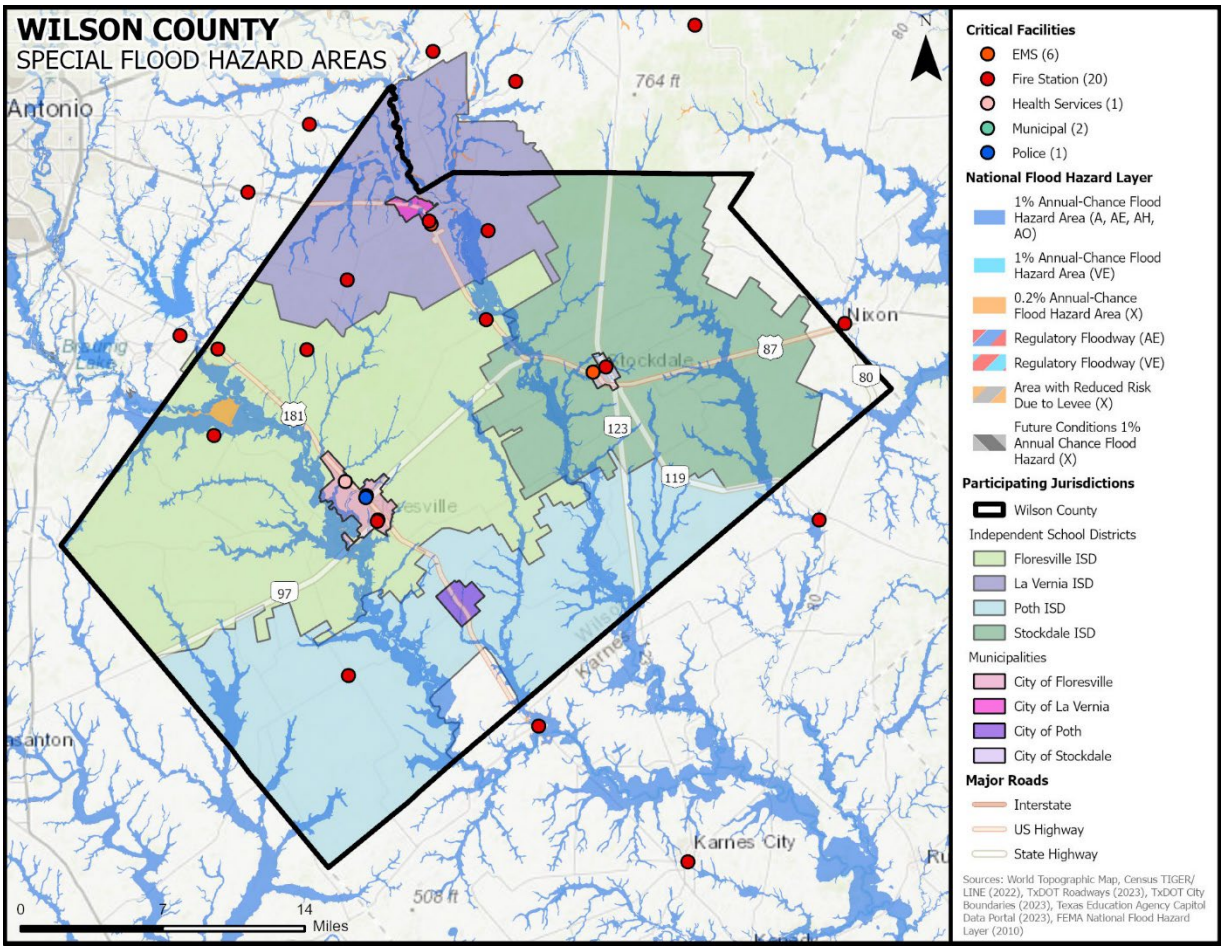


Figure 9-2. Estimated Flood Zones in the City of Floresville

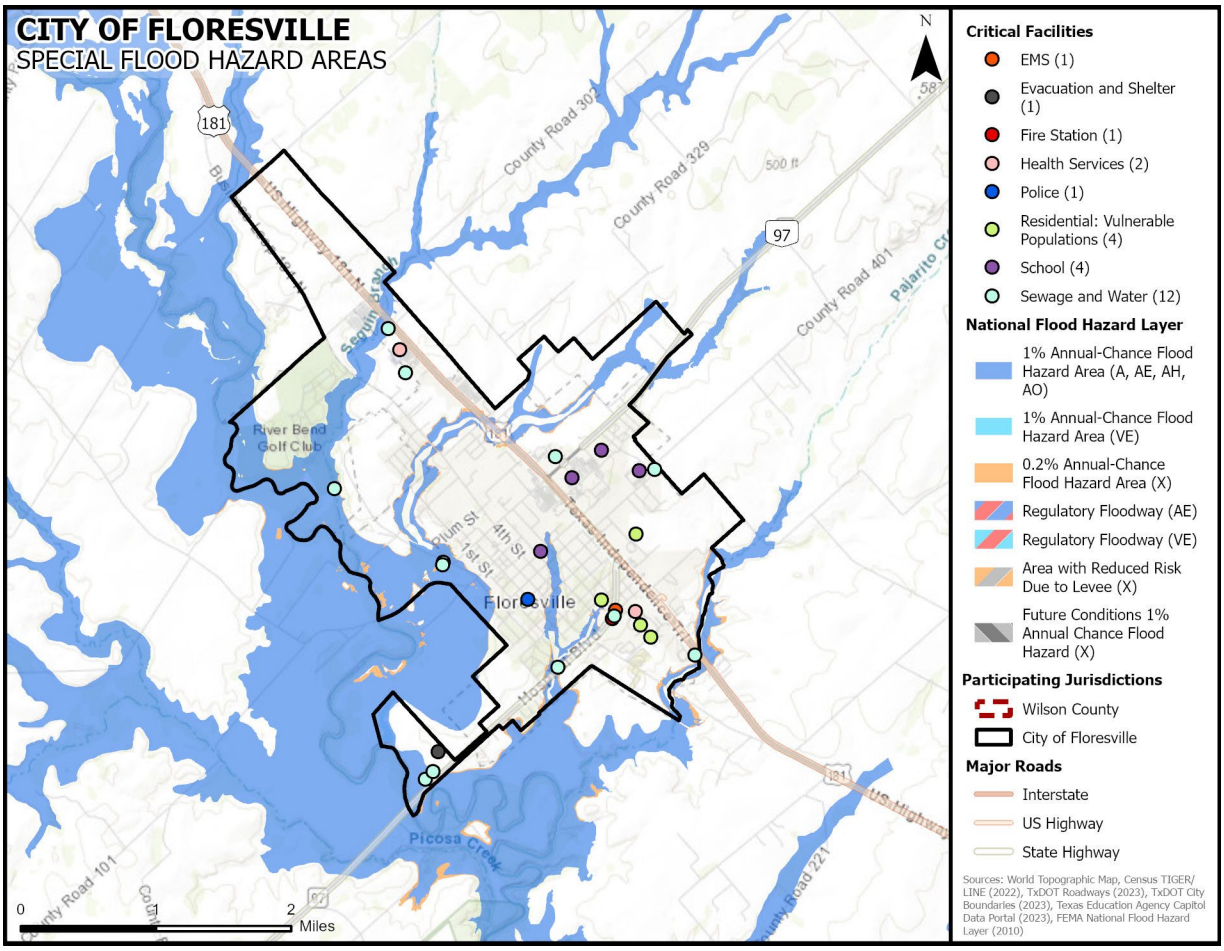


Figure 9-3. Estimated Flood Zones in the City of La Vernia

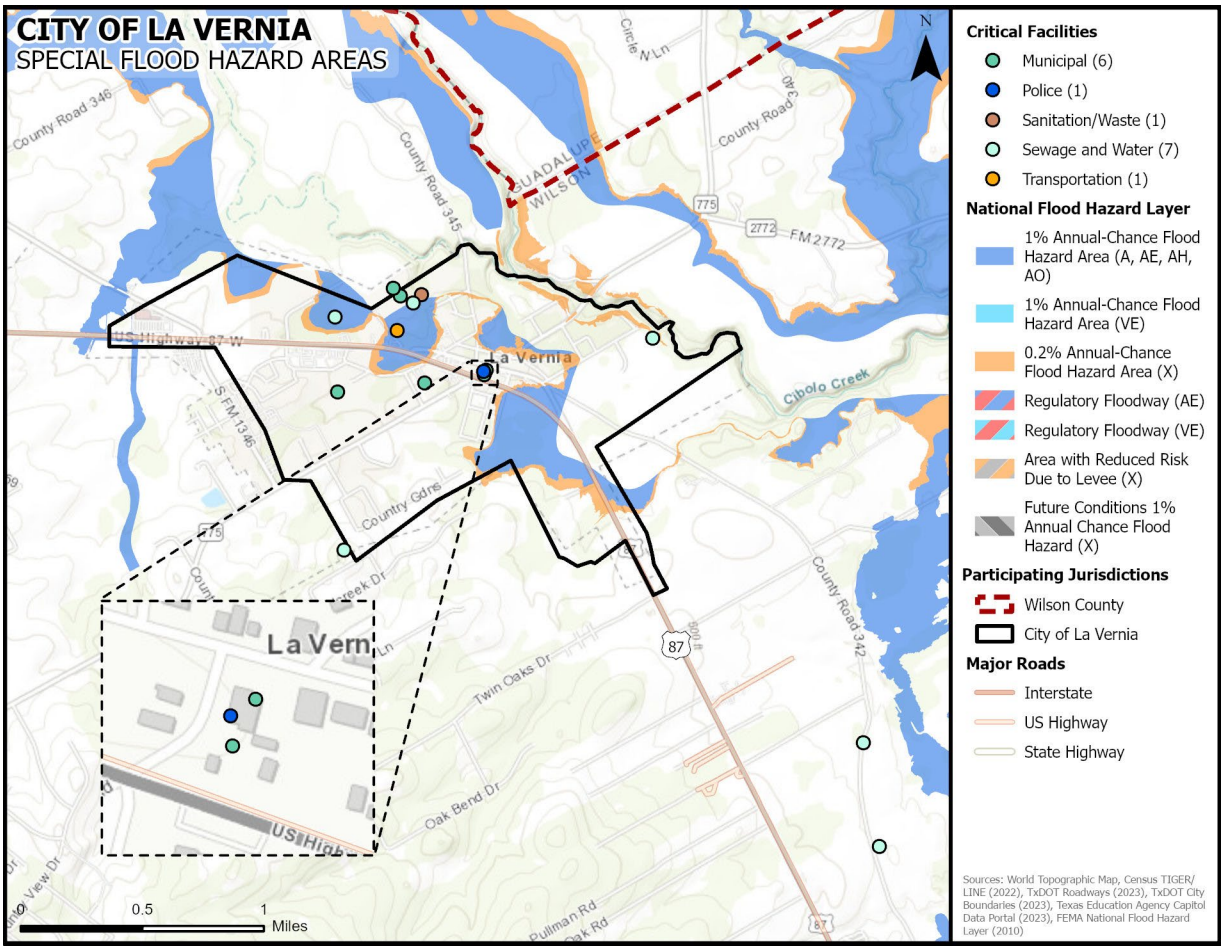


Figure 9-4. Estimated Flood Zones in the City of Poth

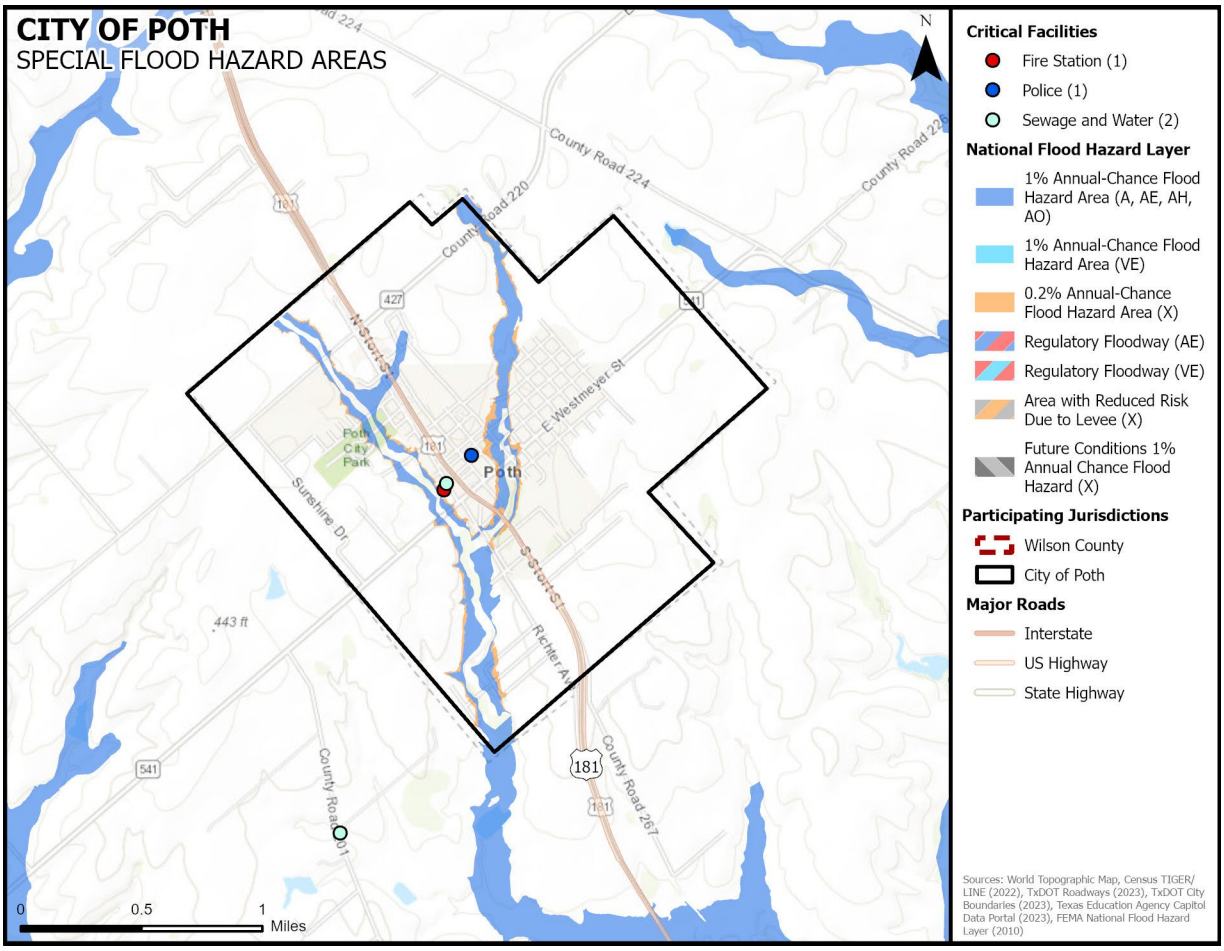


Figure 9-5. Estimated Flood Zones in the City of Stockdale

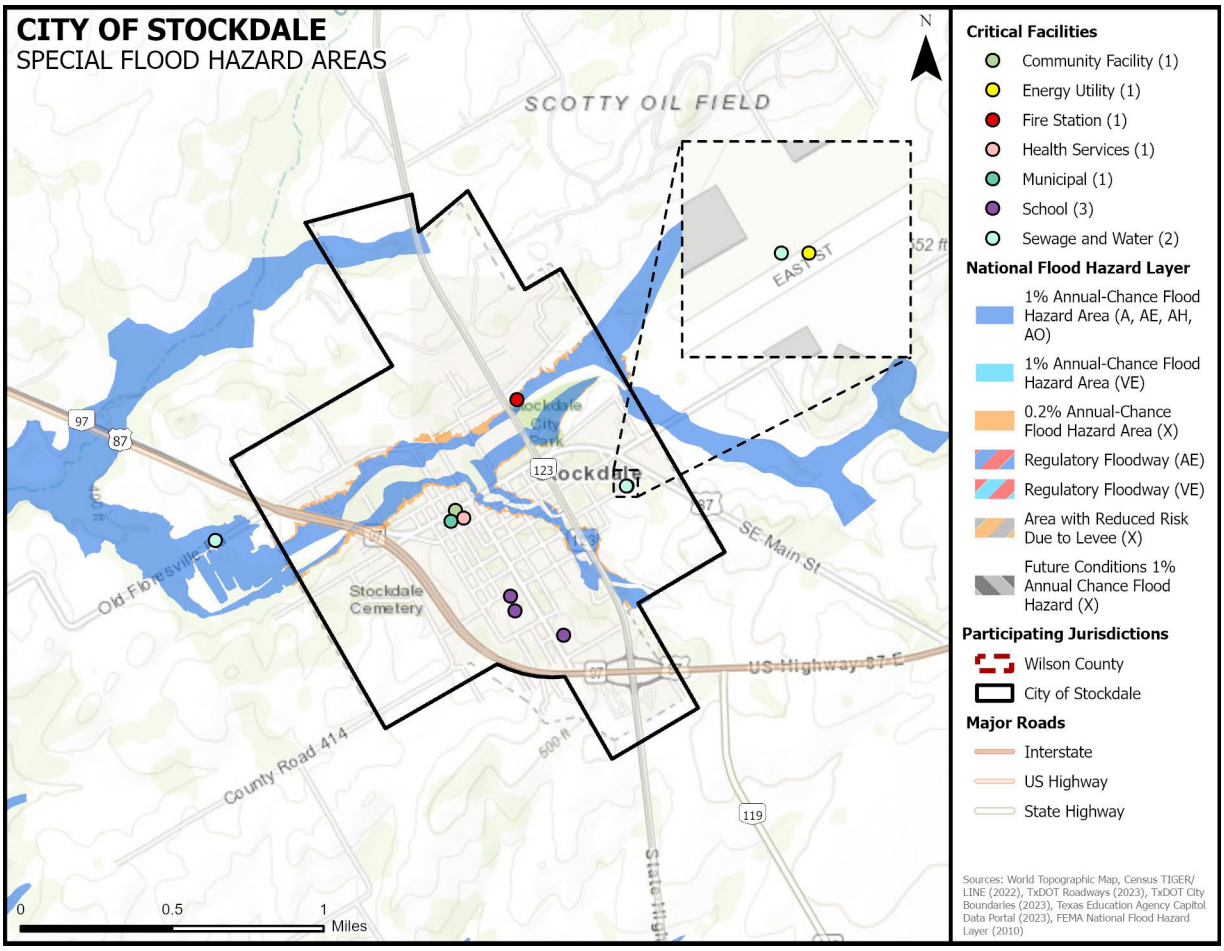


Figure 9-6. Estimated Flood Zones in Floresville ISD

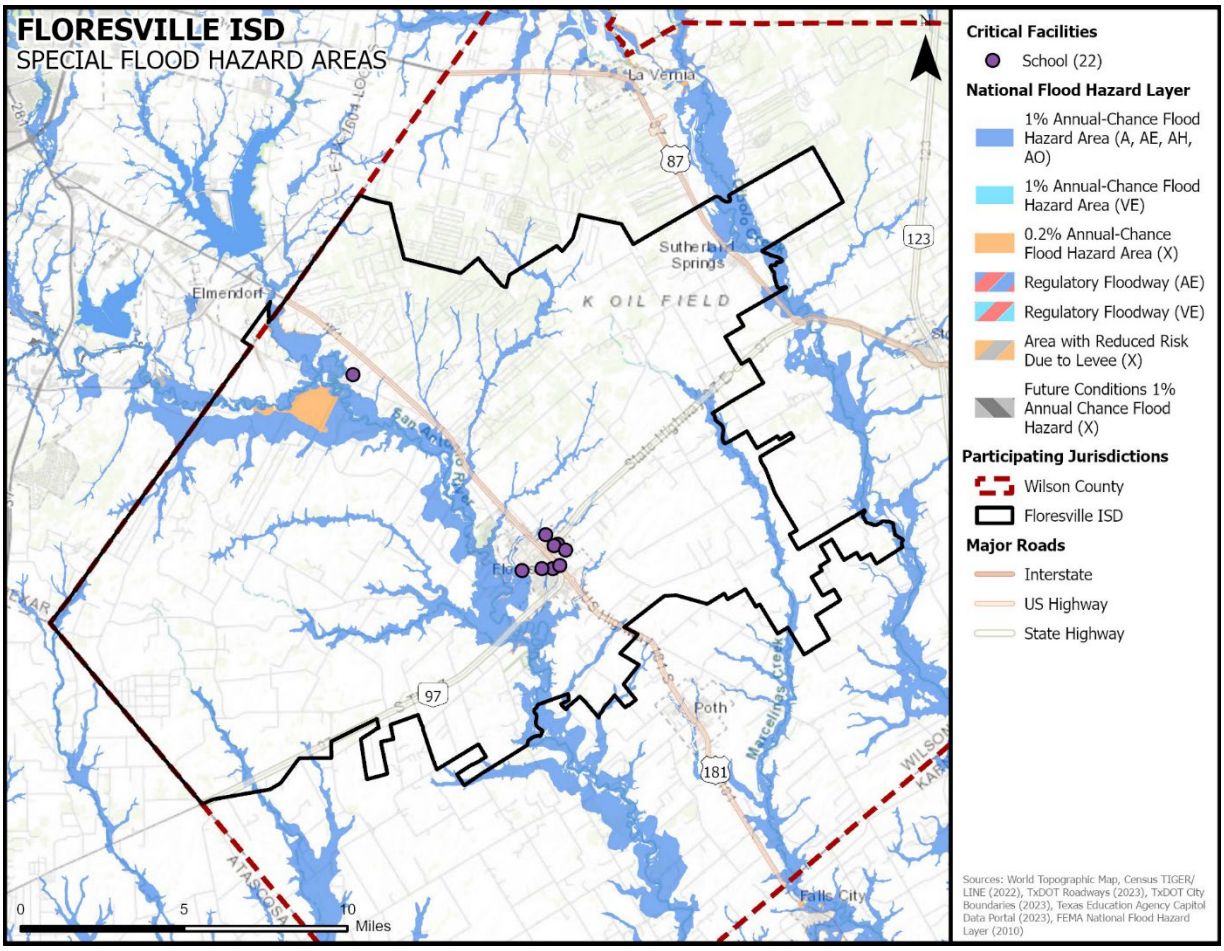


Figure 9-7. Estimated Flood Zones in La Vernia ISD

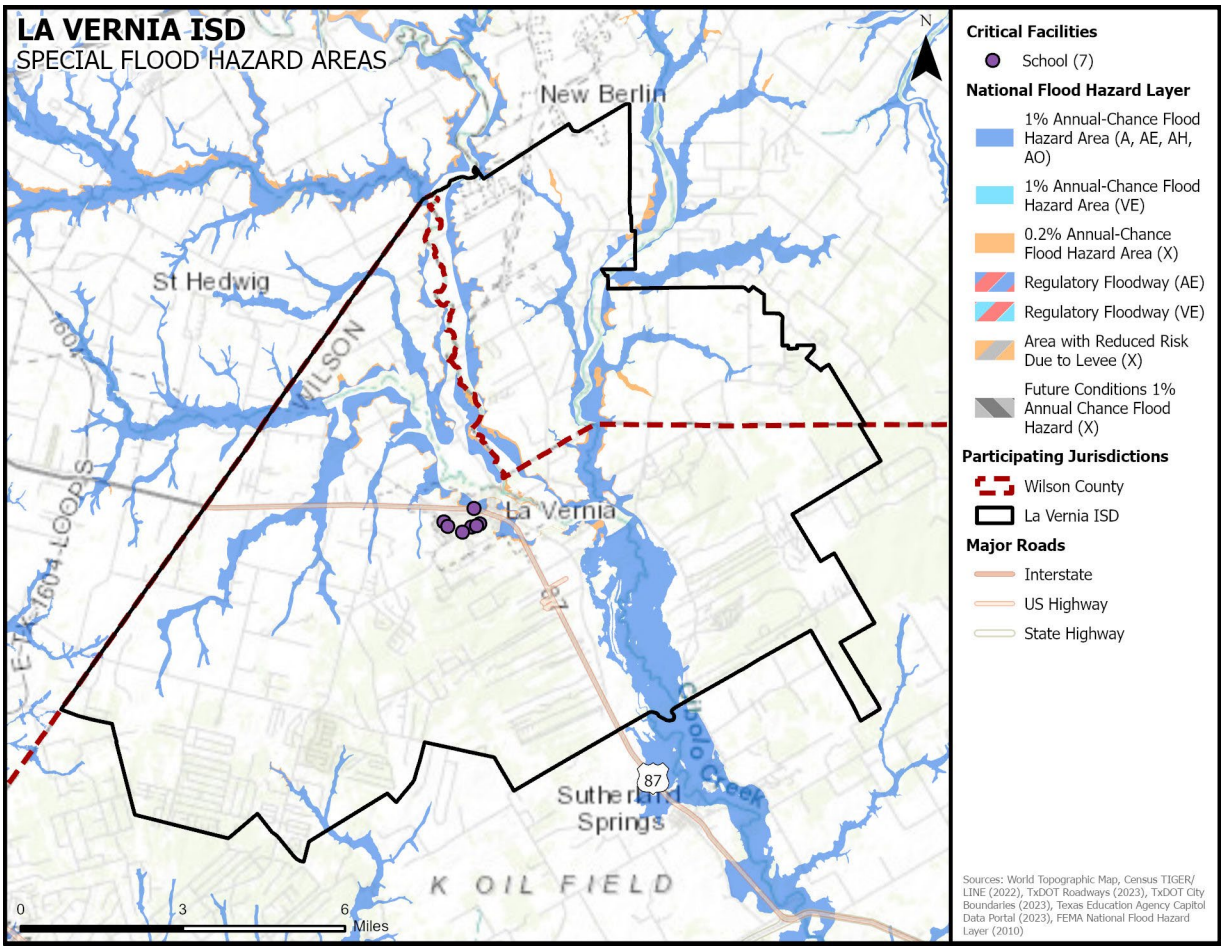


Figure 9-8. Estimated Flood Zones in Poth ISD

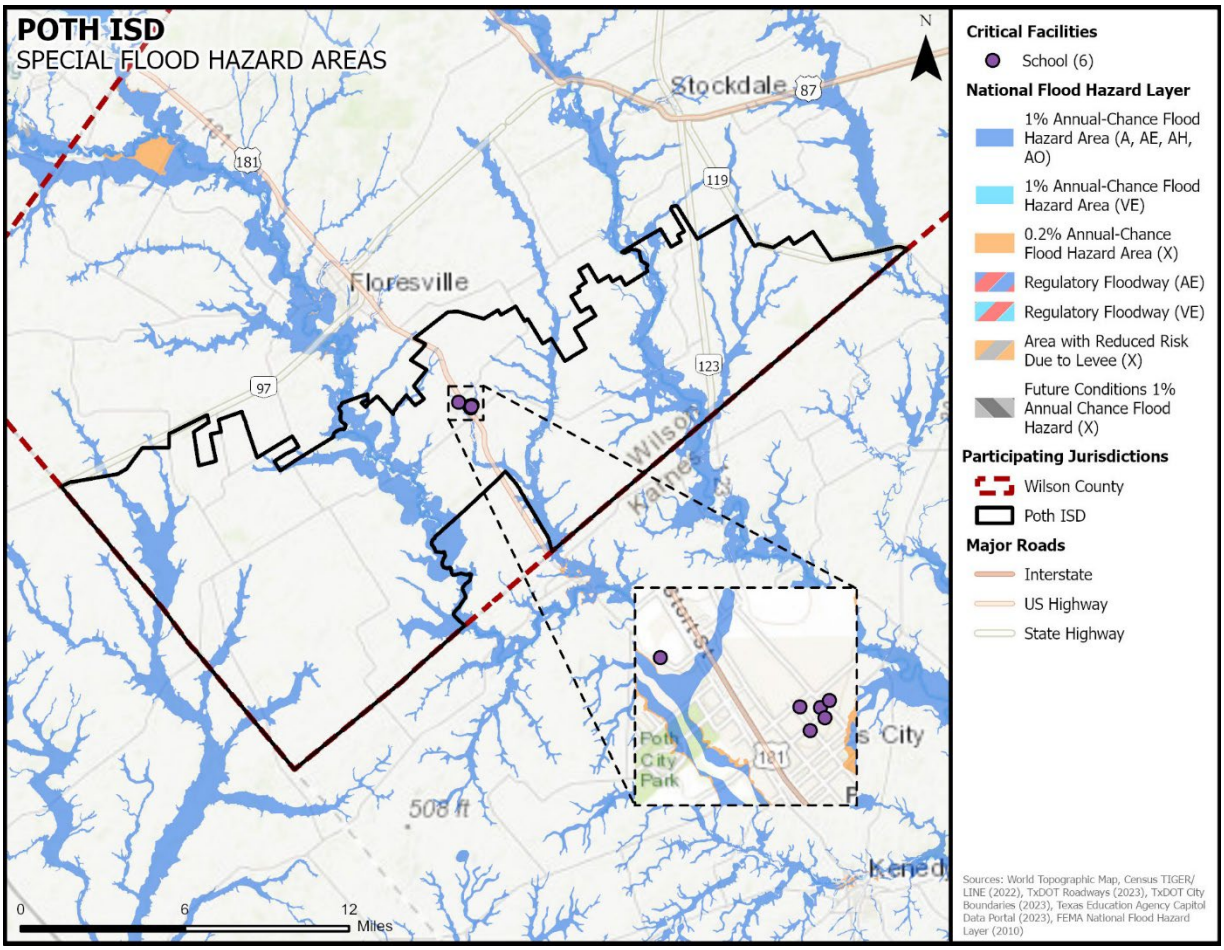
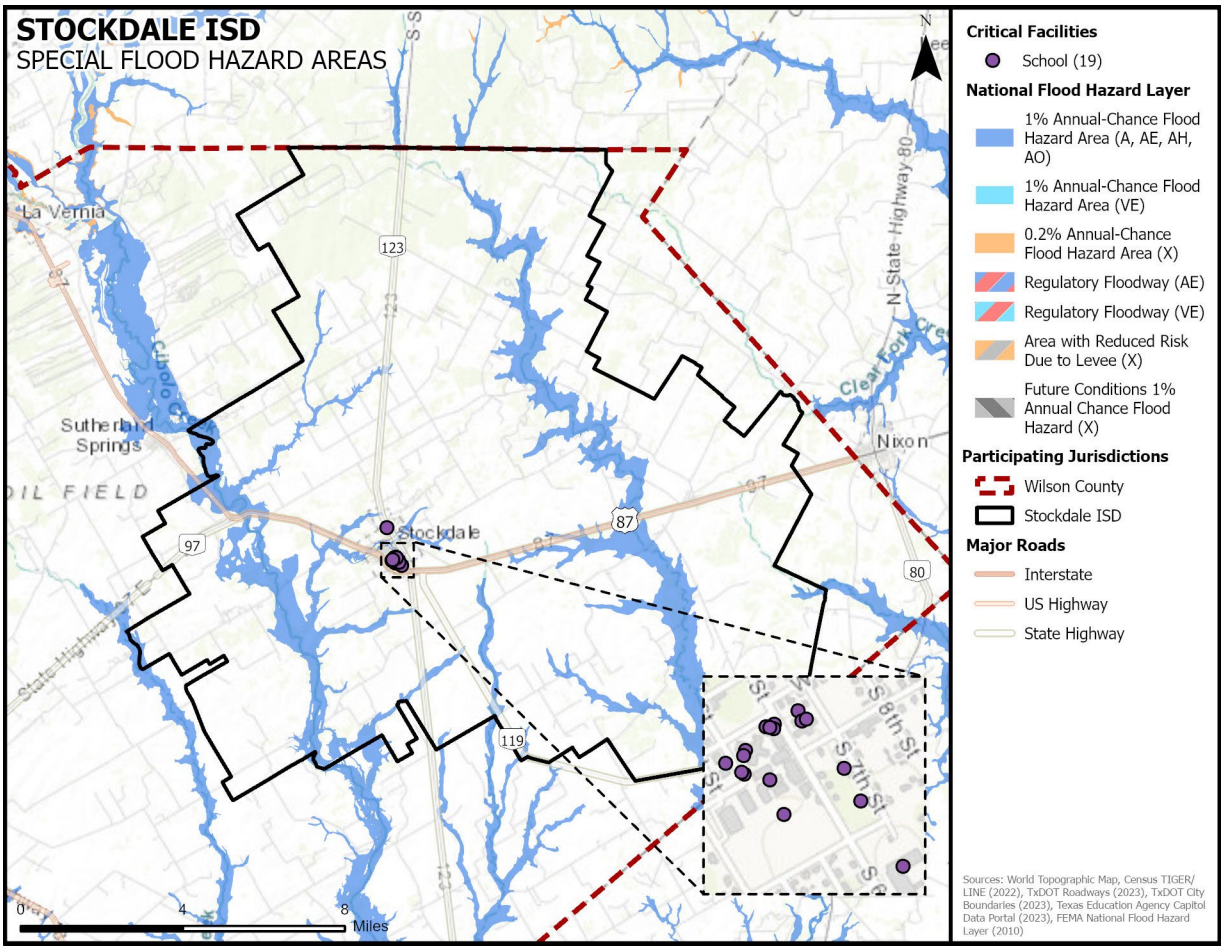


Figure 9-9. Estimated Flood Zones in Stockdale ISD



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. The extent of flood damages can be expected to be more damaging in the areas that will convey a base flood. 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 9-1 provides a description of FEMA flood zones and the flood impact in terms of severity or potential harm. Flood Zones A, AE, AO, and X are the hazard areas mapped in the region. Figures 9-1 through 9-9 should be read in conjunction with the extent for flooding in Tables 9-1 and 9-2 to determine the intensity of a potential flood event.

Table 9-1. 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.

Structures built in the SFHA are subject to damage by rising waters and floating debris. Moving flood water exerts pressure on everything in its path and causes erosion of soil and solid objects. If not elevated above Base Flood Elevation, utility systems, such as heating, ventilation, air conditioning, fuel, electrical systems, sewage maintenance systems and water systems, may also be damaged.

The intensity and magnitude of a flood event is also determined by the depth of flood water. Table 9-2 describes the stream gauge data provided by the United States Geological Survey (USGS). Peak flood data at the locations available in the planning area indicate a peak flood depth range of 0 to 18 feet above average peak flows.

Table 9-2. Extent for Wilson County[1]

JURISDICTION[2]	PEAK FLOOD EVENT
City of Floresville	The San Antonio River near the City of Floresville in Wilson County reached an overflow elevation of 45 feet in August of 2007. The average peak flow for the San Antonio River is 27 feet at this site. This indicates a maximum flood depth of 18 feet above the average peak flow at this site.
Wilson County	Cibolo Creek at Sutherland Springs in Wilson County reached an overflow elevation of 39 feet in October of 2009. The average peak flow for Cibolo Creek is 21 feet at this site. This indicates a maximum flood depth of 18 feet above the average peak flow at this site.

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 3 inches of rain within a 2-hour period, resulting in flash flooding.

The data described in Tables 9-1 and 9-2, together with Figures 9-1 through 9-9, and historical occurrences for the area, provides an estimated potential magnitude and severity for the Wilson County planning area, including all participating jurisdictions and ISDs.

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 9-3 identifies historical flood events that resulted in damages, injuries, or fatalities within the Wilson County planning area. Table 9-4 provides the historical flood event summary by jurisdiction. Historical

[1] Severity estimated by averaging floods at certain stage level over the history of flood events. Severity and peak events are based on USGS data.
[2] Severity is provided where peak data was available for streams, creeks and rivers throughout the planning area.

SECTION 9: FLOOD

Data is provided by the Storm Prediction Center (NOAA), National Centers for Environmental Information (NCEI) database for Wilson County. There have been 72 recorded flood events in Wilson County.

Historical flood data for ISDs does not have events reported separately and apart from the reported county and city events. At this time, participating ISDs did not report any separate losses as a result of a flood.

Table 9-3. Historical Flood Events, January 1996 – June 2024[3]

JURISDICTION	DATE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Wilson County	6/6/1997	0	0	$9,900	$0
Wilson County	6/21/1997	0	0	$5,900	$0
Wilson County	8/22/1998	0	0	$38,600	$28,900
Wilson County	9/11/1998	0	0	$5,800	$9,700
Wilson County	10/17/1998	0	150	$95,974,400	$96,000
Wilson County	10/18/1998	0	100	$67,182,100	$192,000
Wilson County	6/25/1999	0	0	$37,900	$37,900
Wilson County	6/10/2000	0	0	$18,300	$0
Wilson County	11/3/2000	0	0	$9,100	$0
Wilson County	11/5/2000	0	0	$9,100	$0
Wilson County	11/23/2000	0	0	$9,100	$0
Wilson County	8/30/2001	0	0	$3,547,000	$88,700
Wilson County	9/2/2001	0	0	$141,300	$0
Wilson County	9/5/2001	0	2	$264,900	$88,300
Wilson County	9/5/2001	0	0	$88,300	$0
Wilson County	9/8/2002	0	5	$139,200	$0
Wilson County	10/8/2002	0	0	$52,100	$0
Wilson County	10/24/2002	0	0	$52,100	$0
Wilson County	7/15/2003	0	0	$17,200	$0
Wilson County	9/5/2003	0	0	$17,000	$0

[3] Table only includes historical flood events that resulted in damages, injuries, or fatalities between January of 1996 and June of 2024 in the NCEI database. Values are in 2024 dollars.

JURISDICTION	DATE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Wilson County	5/13/2004	0	0	$166,500	$0
City of Floresville	7/20/2007	0	0	$755,700	$0
City of Poth	8/16/2007	0	0	$302,900	$0
Wilson County	6/9/2010	0	0	$72,300	$0
Wilson County	4/17/2015	0	0	$40,000	$0
City of Poth	9/10/2020	0	0	$1,209,500	$0
Total Losses		**0**	**257**	**$170,166,200**	**$541,500**

Table 9-4. Summary of Historical Flood Events, January 1996 – June 2024[4]

JURISDICTION	NUMBER OF EVENTS	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Wilson County	51	0	257	$167,898,100	$541,500
City of Floresville	9	0	0	$755,700	$0
City of La Vernia	3	0	0	$0	$0
City of Poth	6	0	0	$1,512,400	$0
City of Stockdale	3	0	0	$0	$0
Floresville ISD	0	-	-	-	-
La Vernia ISD	0	-	-	-	-
Poth ISD	0	-	-	-	-
Stockdale ISD	0	-	-	-	-
Total Losses	**72**	**0**	**257**	**$170,707,700**	

Based on the list of historical flood events for the Wilson County planning area, including all participating jurisdictions and ISDs, two events have occurred since the 2020 Plan.

SIGNIFICANT EVENTS

Flood and Flash Flood on October 17-18, 1998 – Wilson County

Known as the Great October Flood, this event was caused by a slow-moving cold front interacting with deep atmospheric moisture from two stationary hurricanes (Madeline near the tip of Baja

[4] Participating jurisdictions with no reported events show a "-" in table columns where damages, deaths or injuries would be otherwise reported.

Mexico, and Lester, anchored just off Acapulco, Mexico) and Gulf inflows. Record-breaking rainfall on October 17–18, 1998, led to severe flooding across the South Central Texas region.

All rivers, creeks and streams along and east of the San Antonio to Austin line remained at or above flood stage from October 17th through October 18th, with a majority continuing to flood for several days later. This event broke rainfall records across South Central Texas, producing 18 floods of record in South Central Texas streams. October became the wettest of any month in climate records for San Antonio since 1885. October 17, 1998, became the wettest day and wettest 24-hour period in San Antonio climatic records, nearly doubling both previous records. Rivers across the area reached or exceeded record stage heights, resulting in widespread flooding in the flood plains of streams, creeks and rivers. The heaviest rainfall amounts ranged from 15–22 inches in neighboring counties.

The flooding caused damage to livestock, agriculture, and infrastructure across the South Central Texas region. Thousands of livestock were killed. Nearly 3,000 homes were destroyed, while an additional 8,000 sustained damage. Among these, nearly 1,000 mobile homes were destroyed, and approximately 3,000 others were damaged. According to NCEI records, a total of $163,444,500 (2024 dollars) in damages were reported in property and crop losses between October 17 and 18, 1998. In addition, 250 injuries were reported for this event.

Flash Flood on August 30, 2001 – Wilson County
Wilson County Emergency Management Officials reported that severe flash flooding had cut SH 123 which runs from south of Seguin into the City of Stockdale. Water was reported to be six inches over the 500-year flood-plain mark along SH 123, and the road remained closed for several hours. Over 100 homes in Stockdale were flooded, causing an estimated $2 million in damage. Many indicated that it was the worst flooding experianced to date. In total, $3,635,700 (2024 dollars) in property and crop damages were reported for Wilson County during this event.

Flash Flood on September 10, 2020 – City of Poth
A cold front moved into a warm, moist airmass over South Central Texas generating thunderstorms. Some of these storms produced heavy rain that led to flash flooding which closed CR 220 west of the City of Poth. The Emergency Manager also reported that there was damage to the road. A total of $1,209,500 (2024 dollars) in property damages were reported for this event.

PROBABILITY OF FUTURE EVENTS

Based on 72 recorded historical occurrences within a 28.5-year reporting period within the Wilson 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.[5]

According to the Climate Risk and Resilience Portal (ClimRR), the historical annual total precipitation for Wilson County is 35.75 inches and the current ClimRR climate change projections estimate the annual minimum precipitation at mid-century to be 37.32 inches, which represents an increase from current averages. End of century projections are higher with a new annual minimum precipitation at 39.78 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. Wilson County promotes development outside of the floodplain. In terms of structure and 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. However, due to reported injuries, the impact of flooding in Wilson County is considered "Substantial" with multiple injuries or deaths possible, depending on the size and extent of the event.

Table 9-5 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 9-5. 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	Wilson County: 1 Fire Station City of Stockdale: 1 Fire Station	► 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.

[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.

CRITICAL FACILITY TYPES	CRITICAL FACILITIES AT RISK	POTENTIAL IMPACTS
		► 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, Governmental Facilities	City of Floresville: 1 Residential (Vulnerable Populations), 1 School Facility City of La Vernia: 1 Transportation Facility Floresville ISD: 3 School Facilities	► 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. ► 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.)	N/A	► 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)	City of Floresville: 6 Sewage and Water Facilities City of La Vernia: 4 Sewage and Water Facilities City of Poth: 1 Sewage and Water Facility	► 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.

CRITICAL FACILITY TYPES	CRITICAL FACILITIES AT RISK	POTENTIAL IMPACTS
	City of Stockdale: 1 Sewage and Water Facility	► 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 9-6 below. Considering 72 flood events over a 28.5-year period, frequency is approximately two to three events every year.

Table 9-6. Average Annualized Losses by Jurisdiction, January 1996 – June 2024

JURISDICTION	TOTAL PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
Wilson County	$168,439,600	$5,910,200
City of Floresville	$755,700	$26,500
City of La Vernia	$0	$0
City of Poth	$1,512,400	$53,100
City of Stockdale	$0	$0
Floresville ISD	$0	$0
La Vernia ISD	$0	$0
Poth ISD	$0	$0
Stockdale ISD	$0	$0
TOTALS	**$170,707,700**	**$5,989,800**

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 Wilson County planning area is estimated at 17 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 14 percent of the total population. An estimated 10 percent of the planning area population live below the poverty level and 6 percent of the populations speak English ‘less

than very well'. The ISDs also have several employees that work outdoors such as maintenance, security, and others that may be subject to severe weather conditions (Table 9-8).

Table 9-7. Populations at Greater Risk by Jurisdiction[6]

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Wilson County	8,588	2,810	7,042	5,047	2,976
City of Floresville	1,429	366	1,604	1,052	660
City of La Vernia	283	46	216	110	91
City of Poth	231	213	125	58	122
City of Stockdale	313	84	179	225	119

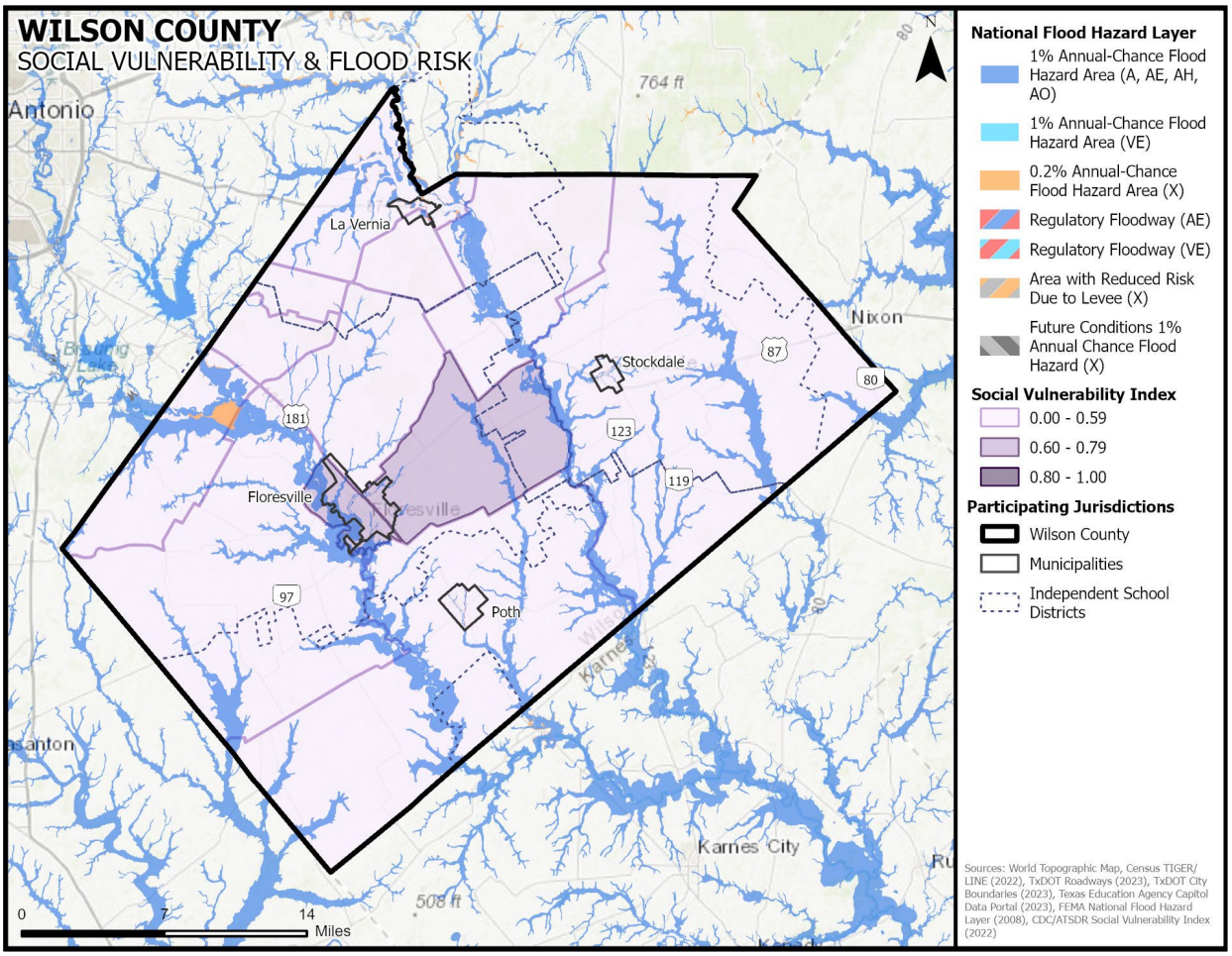
Table 9-8. Populations at Greater Risk by Participating ISD

PARTICIPANT	YOUTH UNDER 5	EMPLOYEES OPERATING OUTDOORS
Floresville ISD	300	300
La Vernia ISD	76	70
Poth ISD	2	27
Stockdale ISD	36	30

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 9-10 identifies areas of social vulnerability using the CDC's SVI and where these areas overlap with the Wilson County flood hazard areas.

[6] U.S. Census Bureau Five-Year estimates

Figure 9-10. Wilson 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 Wilson 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.

- 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.

- 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 water borne 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. Wilson County and the Cities of Floresville, La Vernia, Poth, and Stockdale participate in the NFIP and are in good standing. It is noted that ISDs are not eligible participants in the NFIP.

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 Wilson County participate in the CRS. Wilson County and the Cities of Floresville, La Vernia, Poth, and Stockdale may evaluate their capacity for CRS participation in the next planning cycle.

Wilson County and all participating jurisdictions currently have in place minimum NFIP standards for new construction and substantial improvements of structures. All jurisdictions are considering adopting additional higher regulatory NFIP standards to limit floodplain development.

The flood hazard areas throughout Wilson 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 Wilson County and the Cities of Floresville, La Vernia, Poth, and Stockdale to continue to promote public health, safety, and general welfare by minimizing public and private losses due to flood conditions in specific areas. All 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, Wilson County and the Cities of Floresville, La Vernia, Poth, and Stockdale 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 20.

Flooding was identified as a significant 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.

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:

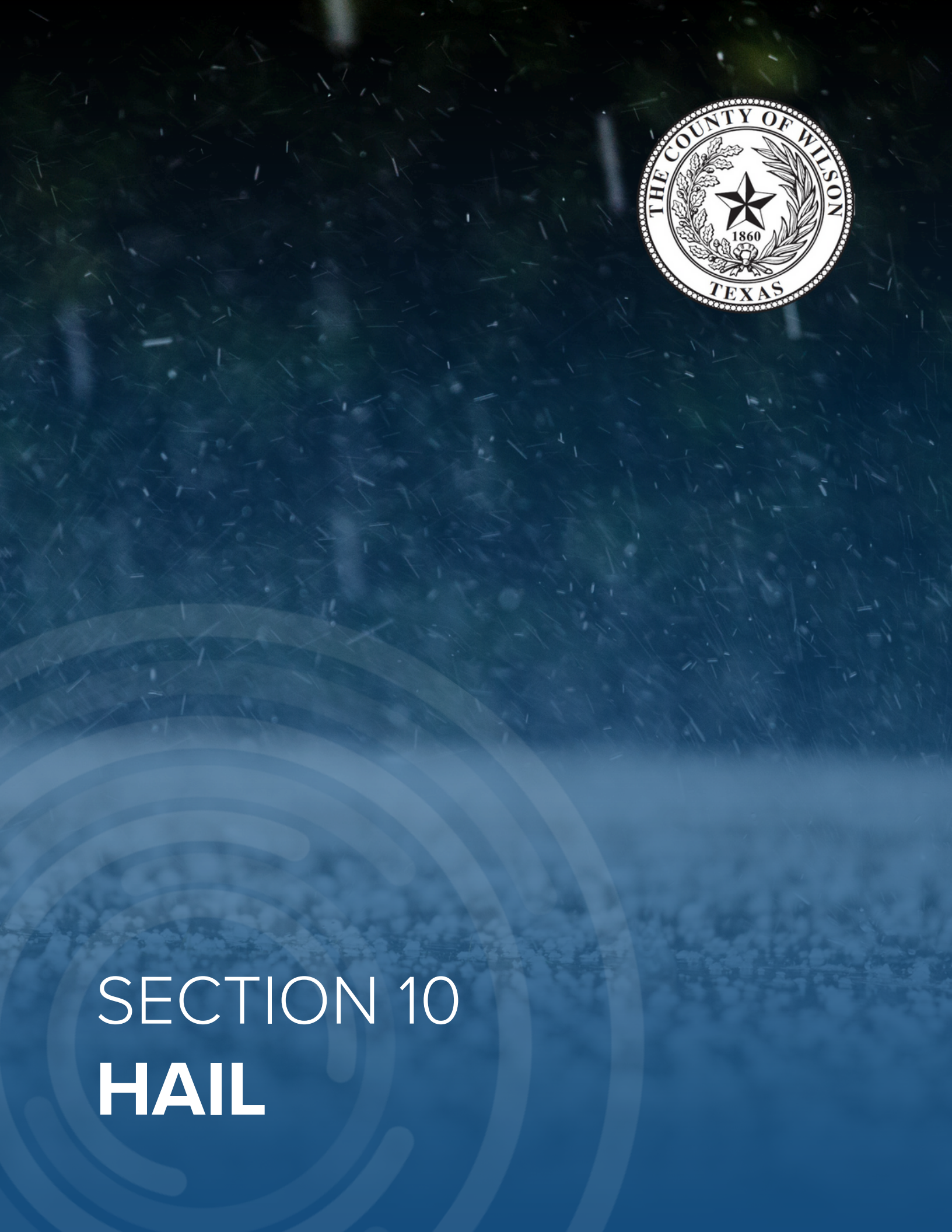
- Any insurable building for which 2 or more claims of more than $1,000 each, paid by the National Flood Insurance Program (NFIP) within any 9-year period, since 1978;
- May or may not be currently insured under the NFIP.

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.[7] There are currently no repetitive loss or severe repetitive loss properties for Wilson County, the City of Floresville, the City of La Vernia, the City of Poth, or the City of Stockdale.

[7] Source: Texas Water Development Board.



SECTION 10
HAIL

SECTION 10: HAIL

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. As a result, they are not confined to any specific geographic location and can vary greatly in size, location, intensity, and duration. Therefore, the entire Wilson County planning area, including all

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

participating jurisdictions and ISDs, is equally at risk to the hazard of hail. Refer to Figure 10-1 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 10-1.

Table 10-1. Hail Intensity and Magnitude[2]

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 10-1 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 Wilson County planning area may experience

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

hailstorms ranging from an H0 (pea size) to an H10 (baseball size). The largest size hail to be reported was 4 inches in diameter, or an H10, which is considered a super hailstorm that can cause extensive infrastructure damage and fatal injuries. An event of this magnitude occurred on May 20, 2001, in the City of Stockdale and resulted in $620,200 in reported damages (2024 dollars). 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 10-1 demonstrates that the planning area is vulnerable to hail events overall. Historical events with reported damages, injuries, or fatalities are shown in Table 10-2. A total of 68 reported historical hail events impacted the Wilson County planning area between January 1996 and June 2024; these events were reported to NCEI and NOAA databases and may not represent all hail events to have occurred during the past 28.5 years. Only those events for the Wilson County planning area with latitude and longitude available were plotted (Figure 10-1).

Historical hail event data for the participating ISDs are provided within the Wilson County events or the participating jurisdictions in which the ISD resides. In the NCEI database, these entities do not have events reported separate and apart from the reported county and jurisdiction events. No participating ISDs reported any additional hail events or damages that were not captured in the NCEI data.

Figure 10-1. Spatial Historical Hail Events, January 1996 – June 2024

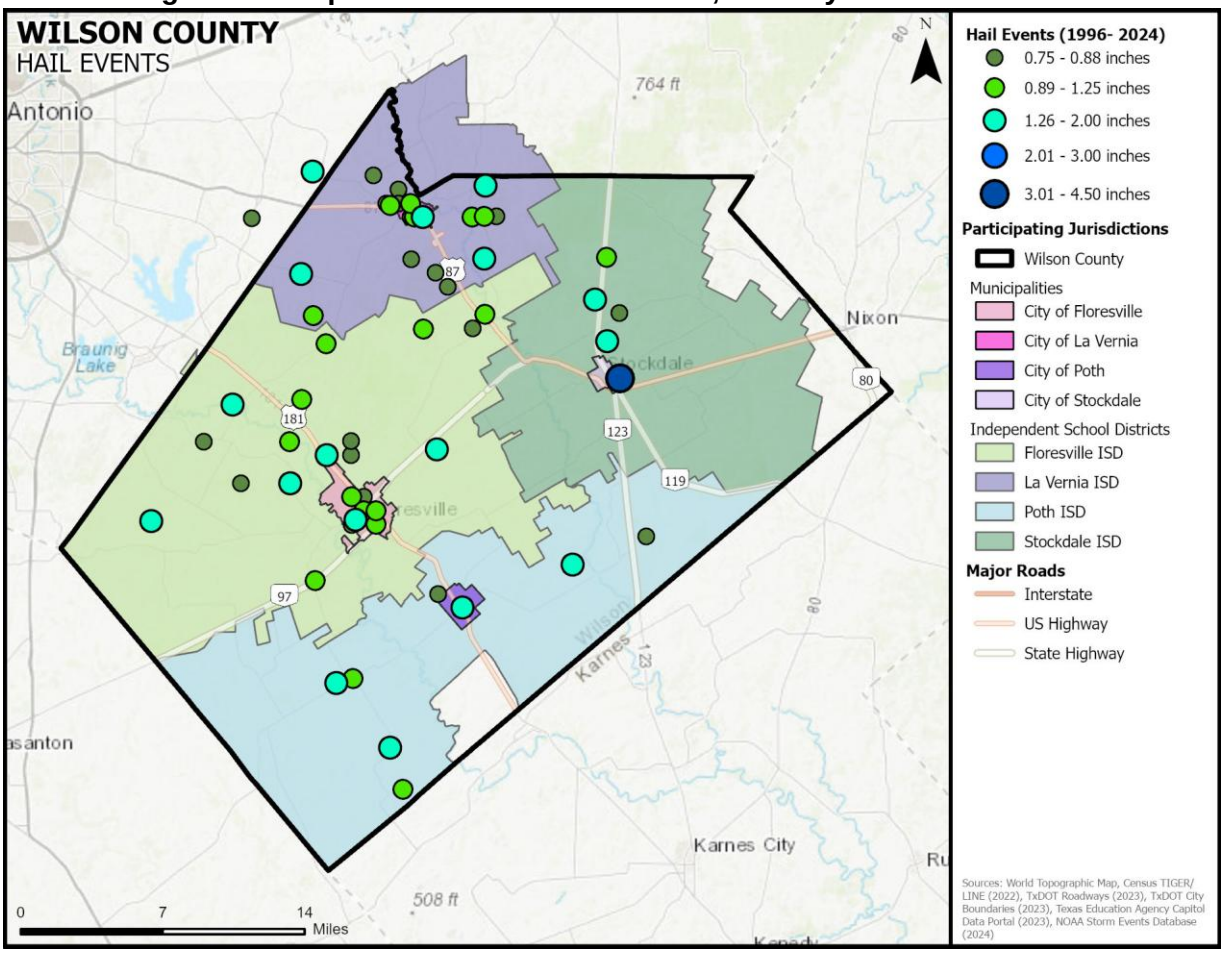


Table 10-2. Damaging Historical Hail Events, January 1996 – June 2024[3]

JURISDICTION	DATE	MAGNITUDE (inches)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
City of Stockdale	5/20/2001	4	0	0	$265,800	$354,400
City of Floresville	5/20/2001	1.75	0	0	$88,600	$88,600
Wilson County	5/20/2001	1.75	0	0	$35,500	$35,500
Wilson County	12/23/2002	2	0	10	$522,100	$0
City of Floresville	12/30/2002	1.75	0	0	$52,300	$0
TOTALS		**(Max Extent)**	**0**	**10**	**$964,300**	**$478,500**

[3] Only recorded events with damages are listed. Monetary damages have been inflated to their 2024 value.

Table 10-3. Historical Hail Events Summary, January 1996 – June 2024[4]

JURISDICTION	NUMBER of EVENTS	MAX MAGNITUDE (Inches)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Wilson County	26	2	0	10	$557,600	$35,500
City of Floresville	16	1.75	0	0	$140,900	$88,600
City of La Vernia	17	1.75	0	0	$0	$0
City of Poth	6	1.75	0	0	$0	$0
City of Stockdale	3	4	0	0	$265,800	$354,400
Floresville ISD	0	-	-	-	-	-
La Vernia ISD	0	-	-	-	-	-
Stockdale ISD	0	-	-	-	-	-
Poth ISD	0	-	-	-	-	-
TOTAL LOSSES	**68**	**(Max Extent)**	**0**	**10**	**$1,442,800**	

Based on the list of historical hail events for the Wilson County planning area (listed above), 14 events have occurred since the 2020 Plan according to reports in the NCEI database.

SIGNIFICANT EVENTS

May 20, 2001 – City of Stockdale, City of Floresville, and Wilson County

In the evening, thunderstorms produced damaging hail over much of the Wilson County planning area. In the City of Floresville, large hail damaged houses, dented car bodies, and destroyed windshields and windows; similar impacts were also reported across the county. The most severe hail damage was reported in the City of Stockdale which received hail as large as 4 inches in diameter. This very large hail damaged homes and vehicles as well as destroying corn, hay, and other crops in the Stockdale area. Across several event reports, the total damages to property and crops in the planning area was estimated at $868,400 (2024 dollars).

December 23, 2002 – Wilson County

In the northern half of Wilson County, a large hailstorm produced widespread damage to vehicles and the roofs, walls, and windows of buildings. Near the City of Stockdale, large hail killed birds which had roosted in trees. During the storm, hail accumulation was up to six inches deep on city streets. Damage to city-owned properties in the City of Stockdale alone was estimated at approximately $100,000. Large hail broke multiple windows at a nursing home, resulting in 10 minor injuries. In total, hail damages were estimated at $522,100 (2024 dollars) across Wilson County.

[4] Participating jurisdictions with no reported events show a "-" in table columns where damages, deaths or injuries would be otherwise reported.

PROBABILITY OF FUTURE EVENTS

Based on available records of historic events, 68 events in a 28.5-year reporting period for Wilson County provides an average annual occurrence of two to three events per year. This frequency supports a “Highly Likely” probability of future events for the Wilson County planning area.

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 on the future conditions of hailstorms. As ocean temperatures rise due to climate change, more moisture is evaporating into the atmosphere. The 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

Much of the damage inflicted by hail is to crops. Even relatively small hail can shred plants to ribbons in a matter of minutes. Vehicles, roofs of buildings and homes, and landscaping are most 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 Wilson County planning area features mobile or manufactured home parks throughout the planning area. These parks are typically more vulnerable to hail events than typical site-built structures. In addition, manufactured homes are located sporadically throughout the planning area. The U.S. Census data indicates a total of 4,770 (25 percent of total housing stock) manufactured homes located in the Wilson County planning area. In addition, 19 percent (approximately 3,560 structures) of the housing structures in the Wilson 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 wind events.

Table 10-4. Structures at Greater Risk by Participating Jurisdiction

JURISDICTION	BUILT PRIOR TO 1980	MOBILE HOME
Wilson County	3,560	4,770
City of Floresville	1,022	463

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

JURISDICTION	BUILT PRIOR TO 1980	MOBILE HOME
City of La Vernia	195	51
City of Poth	285	131
City of Stockdale	218	110
Floresville ISD	4	2
La Vernia ISD	4	10
Poth ISD	6	0
Stockdale ISD	3	3

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 travel, afford a long-term stay away from home, and to rebuild or repair their homes. An estimated 10 percent of the planning area population live below the poverty level (Table 10-5). 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 10-5. Populations at Greater Risk by Jurisdiction[6]

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Wilson County	8,588	2,810	7,042	5,047	2,976
City of Floresville	1,429	366	1,604	1,052	660
City of La Vernia	283	46	216	110	91
City of Poth	231	213	125	58	122
City of Stockdale	313	84	179	225	119

Participating ISDs also have employees who work outdoors a substantial portion of the day, increasing their exposure and vulnerability to hail events (Table 10-6).

[6] US Census Bureau 2023 data for Wilson County

Table 10-6. Populations at Greater Risk by Participating Special District

PARTICIPANT	EMPLOYEES OPERATING OUTDOORS
Floresville ISD	300
La Vernia ISD	70
Poth ISD	27
Stockdale ISD	30

The Wilson County Planning Team identified the following critical facilities (Table 10-7) 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 10-7. Critical Facilities Vulnerable to Hail

CRITICAL FACILITY TYPE	POTENTIAL IMPACTS
Emergency Response Services (EOC, Fire, Police, EMS), Hospitals and Medical Centers	► 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	► 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.)	► 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,	► 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.

CRITICAL FACILITY TYPE	POTENTIAL IMPACTS
wastewater, communications)	► 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; 10 injuries due to hail has been previously reported in the planning area. Overall, the total loss estimate of property and crops in the planning area is $1,442,800 (2024 dollars) with an average annualized loss of $50,600. Based on historic monetary damages, the impact of hail on the Wilson County planning area would be considered Limited in 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, due to the significant number of injuries caused by hail, the severity of impact is considered "Major," meaning a potential for multiple injuries resulting in permanent disability.

Table 10-8. Estimated Annualized Losses by Jurisdiction

JURISDICTION	TOTAL PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
Wilson County	$593,100	$20,800
City of Floresville	$229,500	$8,100
City of La Vernia	$0	$0
City of Poth	$0	$0
City of Stockdale	$620,200	$21,800
Floresville ISD	$0	$0
La Vernia ISD	$0	$0
Stockdale ISD	$0	$0
Poth ISD	$0	$0
TOTALS	**$1,442,800**	**$50,600**

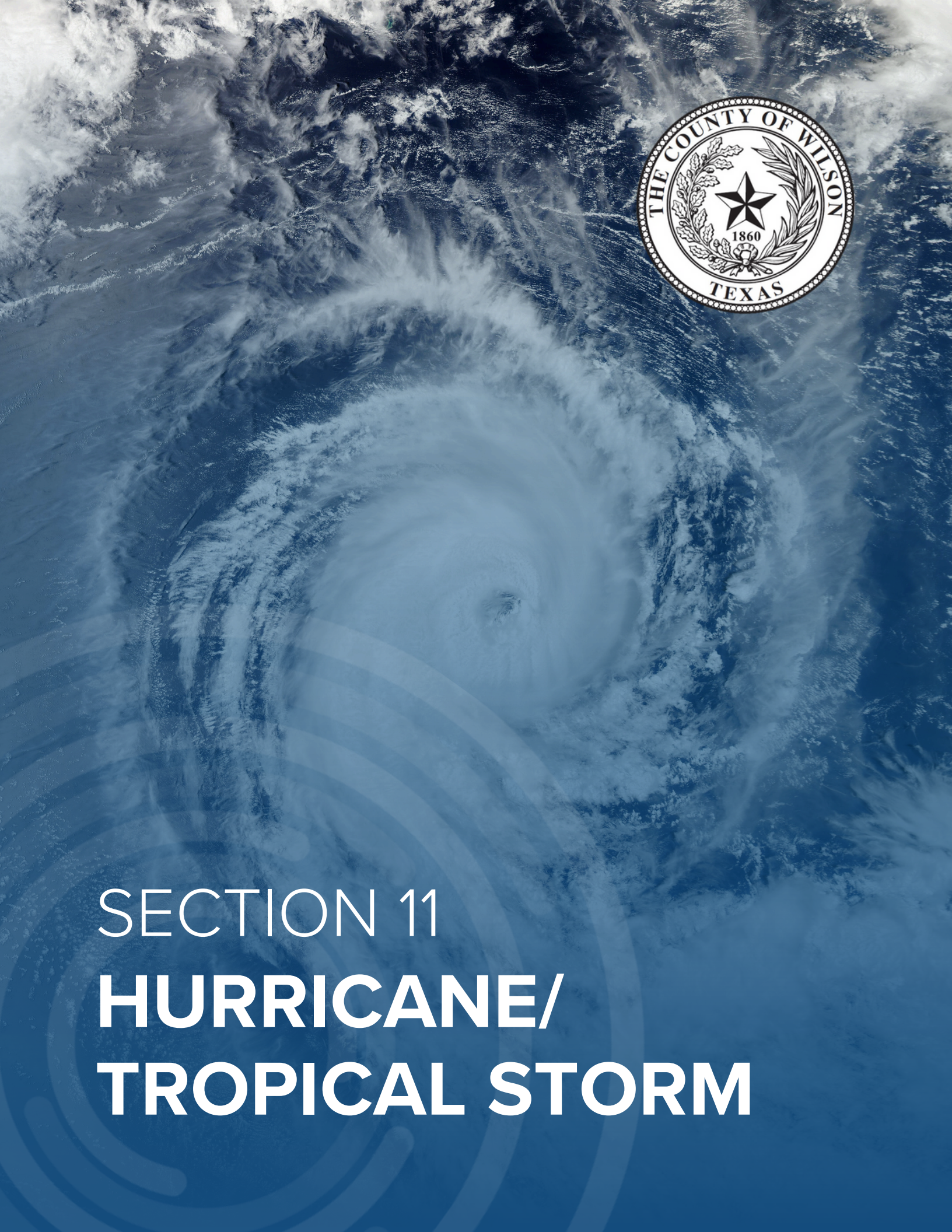
ASSESSMENT OF IMPACTS

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 five historic sites listed on the National Register of Historic Places in Wilson 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 11

HURRICANE/ TROPICAL STORM

SECTION 11: HURRICANE / TROPICAL STORM

HAZARD DESCRIPTION

According to the National Oceanic and Atmospheric Administration (NOAA), a hurricane is an intense tropical weather system of strong thunderstorms with well-defined surface circulation and maximum sustained winds of 74 mph or higher. In the Northern Hemisphere, circulation of winds near the Earth's surface is counterclockwise.

Hurricanes often begin as tropical depressions that intensify into tropical storms when maximum sustained winds increase to between 35–64 knots (39–73 mph). At these wind speeds, the storm becomes more organized and circular in shape and begins to resemble a hurricane. Tropical storms can be equally problematic without ever becoming a hurricane. Tropical storms resulting in high winds and heavy rainfall can be dangerous to people and property, as Tropical Storm Frances was for southeast Texas in September 1998. Once sustained winds reach or exceed 74 mph, the storm becomes a hurricane. The intensity of a landfalling hurricane is expressed in categories relating wind speeds to potential damage. Tropical storm-force winds are strong enough to be dangerous to those caught in them. For this reason, emergency managers plan to have evacuations completed and personnel sheltered before winds of tropical storm-force arrive, which precedes the arrival of hurricane-force winds.

LOCATION

The location of the Wilson County planning area is approximately 100 miles from the coast, making the planning area vulnerable to threats directly and indirectly related to a hurricane event, such as high-force winds and flooding. While Wilson County is not located along the Gulf Coast, due to the regional nature of hurricanes and tropical storms, the County is exposed and susceptible to the impacts of hurricane and tropical storm events. Hurricanes and tropical storms can impact Wilson County from June to November, the official Atlantic U.S. hurricane season. The Wilson County planning area, including all participating jurisdictions and ISDs, is in a low to moderate risk area for hurricane wind speeds up to 200 miles per hour (mph).

EXTENT

As a hurricane develops, the barometric pressure (measured in millibars or inches) at its center falls and winds increase. If the atmospheric and oceanic conditions are favorable, it can intensify into a tropical depression. When maximum sustained winds reach or exceed 39 miles per hour, the system is designated a tropical storm, given a name, and closely monitored by the National Hurricane Center in Miami, Florida. When sustained winds reach or exceed 74 miles per hour, the storm is deemed a hurricane.

Hurricanes are categorized according to the strength and intensity of their winds using the Saffir-Simpson Hurricane Scale (Table 11-1). A Category 1 storm has the lowest wind speeds, while a Category 5 hurricane has the highest. However, a lower category storm can inflict greater damage than higher category storms depending on where they strike, the amount of storm surge, other weather they interact with, and how slow they move.

Table 11-1. Extent Scale for Hurricanes[1]

CATEGORY	MAXIMUM SUSTAINED WIND SPEED (mph)	MINIMUM SURFACE PRESSURE (millibars)	STORM SURGE (feet)
1	74 – 95	Greater than 980	3 – 5
2	96 – 110	979 – 965	6 – 8
3	111 – 130	964 – 945	9 – 12
4	131 – 155	944 – 920	13 – 18
5	155+	Less than 920	19+

Based on the historical storm tracks for hurricanes and tropical storms, as well as the location of Wilson County, the average estimated extent to be mitigated for is a Category 1 storm.

HISTORICAL OCCURRENCES

Historical systems that have tracked across the County or in close proximity to the planning area between January 1996 and June 2024, bringing excessive precipitation and potentially damaging wind to Wilson County are listed in Table 11-2 below.

According to the historical hurricane tracks from NOAA's National Hurricane Center, there have been 9 storms that are known to have come within 60 miles of the Wilson County planning area from January 1996 through June 2024.

[1] Source: National Hurricane Center, https://www.nhc.noaa.gov/HAW2/english/basics/saffir_simpson.shtml

Table 11-2. Historical Hurricane/Tropical Storm Events, January 1996 – June 2024[2]

DATE	STORM NAME	CATEGORY (max)
8/21/1998 – 8/24/1998	Charley	Tropical Storm
9/8/1998 – 9/13/1998	Frances	Tropical Storm
9/5/2002 – 9/11/2002	Fay	Tropical Storm
7/7/2003 – 7/17/2003	Claudette	Category 1
8/15/2007 – 8/19/2007	Erin	Tropical Storm
9/4/2010 – 9/10/2010	Hermine	Tropical Storm
6/16/2015 – 6/21/2015	Bill	Tropical Storm
8/16/2017 – 9/2/2017	Harvey	Category 4
9/17/2020 – 9/25/2020	Beta	Tropical Storm

Table 11-3 lists the storms that have impacted the Wilson County planning area from January 1996 through June 2024 as reported in the NCEI. Not all events are recorded in the NCEI, so damages and events are often unreported or underreported. Historical hurricane data for Wilson County is provided on a countywide basis per the NCEI and NOAA databases.

Historical hurricane event data for the participating ISDs are provided within the Wilson County events. In the NCEI database, these entities do not have events reported separate and apart from the reported county and jurisdiction events. No participating ISD reported any additional hurricane or tropical storm events or damages that were not captured in the NCEI data.

Table 11-3. Historical Hurricane Events, January 1996 – June 2024

JURISDICTION	DATE	TROPICAL SYSTEM	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Wilson County*	8/22/1998	Tropical Storm Charley	0	0	$38,600	$29,000
Wilson County*	9/8/2002	Tropical Storm Fay	0	0	$139,400	$0
Wilson County*	7/15/2003	Hurricane Claudette	0	0	$17,200	$0
Wilson County	7/15/2003	Hurricane Claudette	0	0	$85,600	$85,600
Wilson County*	8/16/2007	Tropical Storm Erin	0	0	$302,900	$0
Wilson County	8/26/2017	Hurricane Harvey	0	0	$0	$0
Total Losses			**0**	**0**	**$583,700**	**$114,600**

*These events were reported under flooding in the NCEI database; an analysis was performed to cross reference applicable hurricane and tropical storm events to create the most comprehensive dataset possible.

[2] Source: NOAA Historical Hurricane Tracks, https://coast.noaa.gov/hurricanes/#map=4/32/-80

Based on the list of historical hurricane events for the Wilson County planning area, no events have occurred since the 2020 Plan.

SIGNIFICANT EVENTS

There have been four declared disasters and emergency declarations between January 1996 and May 2024 which included Wilson County (Table 11-4) related to hurricane or tropical storm events. It is noted that these storms all tracked well outside of the planning area, including the sixty mile radius evaluated for this analysis (Table 11-2). Large, slow moving storm systems can impact communities across several hundred miles with excessive precipitation, severe thunderstorms and tornadoes. Declared disaster areas include all communities adversely impacted by direct and indirect impacts of tropical cyclones, including those communities designated to accommodate evacuations.

Table 11-4. Disaster Declarations for Hurricane/Tropical Storm, January 1996 – June 2024

YEAR	DECLARATION TITLE	DECLARATION TYPE	DISASTER NO.
2005	Hurricane Katrina Evacuation	EM	3216
2005	Hurricane Rita	EM	3261
2005	Hurricane Rita	DR	1606
2010	Tropical Storm Alex	EM	3313

July 15, 2003 – Hurricane Claudette

Hurricane Claudette, which had been downgraded to Tropical Storm Claudette by the time it entered Wilson County, produced damaging winds and flash flooding within the planning area. Wilson County Emergency Management personnel reported widespread downed trees and tree limbs, as well as damage to one barn and numerous power poles; one power pole killed a cow in the City of Poth when it was knocked down. Approximately 1,000 residents in Wilson County lost power due for several hours during the storm. Damages were estimated at $188,400 (2024 dollars).

August 16, 2007 – Tropical Storm Erin

As Tropical Storm Erin moved inland, it tracked over Wilson County during the afternoon of August 16th. The storm produced extremely heavy rainfall, with rain totals across the County ranging from four to eight inches. Multiple roads across the northwest region of Wilson County were closed due to flash flooding, including FM 1303, FM 536, and FM 2579. Property damage was estimated at $302,900 (2024 dollars).

PROBABILITY OF FUTURE EVENTS

Based on historical occurrences of significant hurricane events, the probability of future events is “Likely”, with an event probable in the next three years for the Wilson County planning area, including all participating jurisdictions and ISDs.

CLIMATE CHANGE CONSIDERATIONS

Hurricane and tropical storm events have the potential to pose a significant risk to people and property. Such events can create dangerous situations for public health and safety officials and cause catastrophic damages. The impact of climate change could produce larger, more severe hurricane events, exacerbating the current hurricane impacts. The economic and financial impacts of hurricanes and tropical storms will depend entirely on the scale of the events, what is damaged, and how quickly repairs to critical components of the economy can be implemented.

The current climate assessment report for Texas indicates an expected increase in the intensity of very strong hurricanes, despite an expected lack of increase, or even a decrease, in hurricane frequency overall. Different research studies have produced some conflicting results. While some recent research has pointed to an apparent trend for U.S. tropical cyclones to move more slowly at landfall, much like Hurricane Harvey, other research suggests that Texas may be spared from such a slowdown. At this point, the enhanced risk is difficult to quantify, but substantial scientific progress on this topic is likely as climate models become better able to simulate the observed spatial distribution, frequency, and intensity of hurricanes.[3]

VULNERABILITY AND IMPACT

Hurricane and tropical storm events can cause major damage to large areas; hence, all existing buildings, facilities, and populations are equally exposed and vulnerable to this hazard and could potentially be impacted. The Wilson County planning area features multiple mobile or manufactured home parks throughout the planning area. These mobile home parks are typically more vulnerable to hurricane events than typical site-built structures. The U.S. Census data indicates a total of 4,770 (25 percent of total housing stock) manufactured homes located in the Wilson County planning area (Table 11-5). In addition, 19 percent (3,560 structures) of the single family residential (SFR) structures in Wilson County 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 events.

Table 11-5. Structures at Greater Risk[4]

JURISDICTION	BUILT PRIOR TO 1980	MOBILE HOME
Wilson County	3,560	4,770
City of Floresville	1,022	463
City of La Vernia	195	51
City of Poth	285	131
City of Stockdale	218	110
Floresville ISD	4	2

[3] 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.
[4] US Census Bureau American Community Survey Five-Year Estimates 2019-2023 data for Wilson County.

JURISDICTION	BUILT PRIOR TO 1980	MOBILE HOME
La Vernia ISD	4	10
Poth ISD	6	0
Stockdale ISD	3	3

Wilson County 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 hurricane and tropical storm events. For a comprehensive list by participating jurisdiction, please see Appendix C.

Table 11-6. Critical Facilities Vulnerable to Hurricane and Tropical Storm Events

CRITICAL FACILITIES	POTENTIAL IMPACTS
Emergency Response Services (EOC, Fire, Police, EMS), Hospitals and Medical Centers	► 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.
Academic Institutions, Animal Shelter, Evacuation Centers & Shelters, Governmental Facilities, Residential/ Assisted Living Facilities	► 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 damages to facilities.
Commercial Supplier (Food, fuel, etc.)	► 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.

CRITICAL FACILITIES	POTENTIAL IMPACTS
Utility Services and Infrastructure (electric, water, wastewater, communications)	► 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.

Over the past 28.5 years, hurricane and tropical storm events have resulted in $698,300 (2024 dollars) in reported damages to property and crops in Wilson County, with an average annualized loss of $24,500. With relatively limited reported damages and no reported injuries or fatalities, the potential severity of impact from a hurricane event for the Wilson County planning area, including all participating jurisdictions and ISDs, is considered to be “Limited”, meaning injuries and illnesses are treatable with first aid, shutdown of critical facilities and services for 24-hours or less, and less than 10 percent of property destroyed or with major damage.

Table 11-7. Estimated Annualized Losses by Jurisdiction

JURISDICTION	TOTAL PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
Wilson County	$698,300	$24,500

ASSESSMENT OF IMPACTS

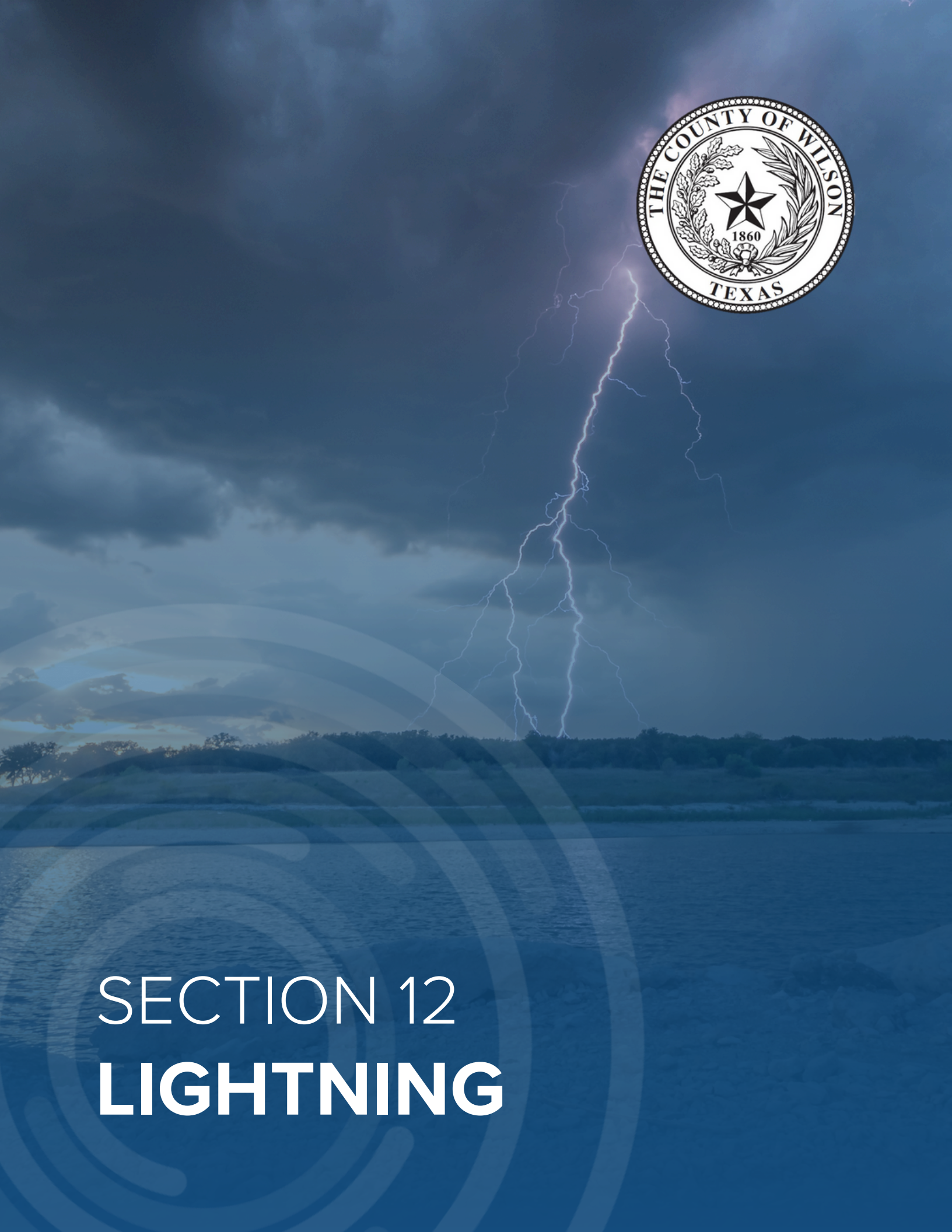
Hurricane and tropical storm events have the potential to pose a significant risk to people and can create dangerous and difficult situations for public health and safety officials. The impact of climate change could produce larger, more severe hurricane events, exacerbating the current hurricane impacts. Impacts to the planning area can include:

- 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.
- Driving conditions in the planning area may be dangerous during a hurricane event, especially over elevated bridges, elevating the risk of injury and accidents during evacuations if not timed properly.
- Emergency evacuations may be necessary prior to a hurricane landfall, requiring emergency responders, evacuation routing, and temporary shelters.

- 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.
- During hurricane landfall, first responders may be prevented from responding to calls as the winds may reach a speed at which their vehicles and equipment are unsafe to operate.
- Hurricane 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.
- School closures for participating ISDs may be required during and after hurricane events due to dangerous conditions, power outages, or damages to facilities. ISD facilities may also be repurposed for shelter facilities following a large-scale event.
- Extended power outages can also be deadly for individuals reliant on electricity to live independently in their homes.
- Extreme hurricane events may rupture gas lines and down trees and power lines, increasing the risk of structure fires during and after a storm event.
- Extreme hurricane events may lead to prolonged evacuations during search and rescue, and immediate recovery efforts requiring additional emergency personnel and resources to prevent entry, protect residents, and protect property.
- First responders are exposed to downed power lines, unstable and unusual debris, hazardous materials, and generally unsafe conditions.
- Emergency operations and services may be significantly impacted due to damaged facilities and/or loss of communications.
- Critical staff may be unable to report for duty, limiting response capabilities.
- County and City departments may be damaged, delaying response and recovery efforts for the entire community.
- Private sector entities that the County, Cities, ISDs, and 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 the hurricane may be negatively impacted while roads are cleared and utilities are being restored, further slowing economic recovery.
- Older structures built to less stringent building codes may suffer greater damage as they are typically more vulnerable to hurricane damage. In Wilson County, 19 percent of homes were built before 1980, and five sites in the County are on the National Register of Historic Places, which may pre-date modern building codes.
- Vegetation in urban parks may become flattened or oversaturated from high winds and heavy rains.
- Large scale hurricanes can have significant economic impact on the affected area, as it must now fund expenses such as infrastructure repair and restoration, temporary services and facilities, overtime pay for responders, as well as normal day-to-day operating expenses.

- Businesses that are more reliant on utility infrastructure than others may suffer greater damage without a backup power source.
- As the Wilson County planning area continues to increase in population, the number of people and housing developments exposed to the hazard increases. Continued public education on the planning area's risks to hurricane and tropical storm events will continue to be key to the Planning Team's overall mitigation strategy.

The economic and financial impacts of hurricane events on the area 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 any hurricane event.



SECTION 12
LIGHTNING

SECTION 12: LIGHTNING

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 Wilson 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 Wilson County planning area, including participating jurisdictions and ISDs, is uniformly exposed to the threat of lightning.

EXTENT

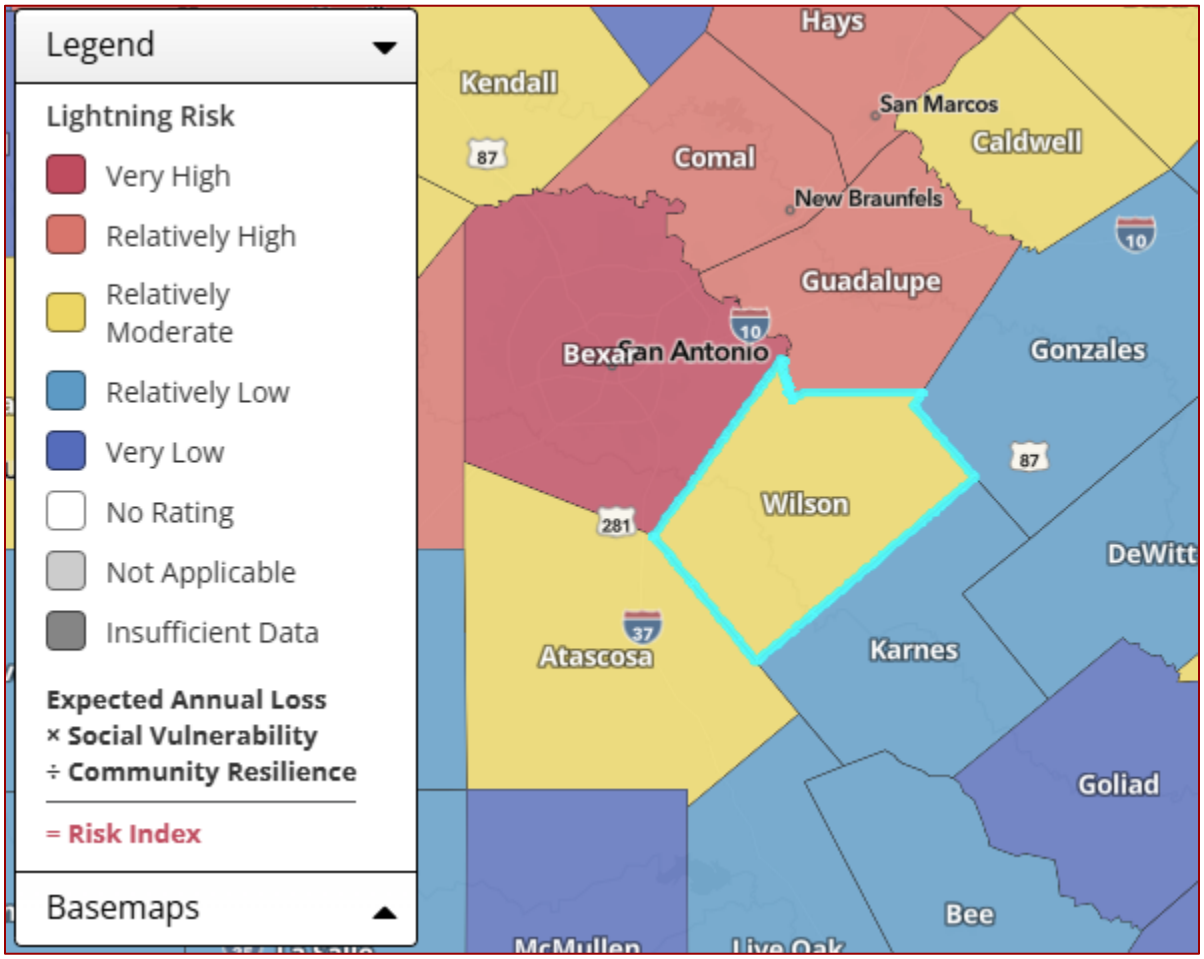
According to the 2023 Annual Lightning Report by Vaisala, the State of Texas ranks tenth in the U.S. for lightning strike density with an average of 157.7 flashes per square mile.[1] Vaisala's U.S. National Lightning Detection Network lightning flash density map shows an average of 162.7 lightning events per square mile per year for the Wilson County planning area. This rate equates

[1] Source: https://www.xweather.com/annual-lightning-report

to approximately 130,800 flashes per year for the entire planning area, or three to four 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. Wilson County is located in an area where the extent is classified as relatively moderate (Figure 12-1).

Figure 12-1. Wilson County Lightning Risk, National Risk Index, January 2025[2]



HISTORICAL OCCURRENCES

The NCEI database indicates only one recorded lightning event in the Wilson County planning area. It is highly likely multiple lightning occurrences have gone unreported before and during the reporting 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.

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

SECTION 12: LIGHTNING

Historical lightning event data for the participating ISDs are provided within the Wilson County events or the participating jurisdictions in which the ISD resides. In the NCEI database, these entities do not have events reported separate and apart from the reported county and jurisdiction events. No participating ISD reported any additional lightning events or damages that were not captured in the NCEI data.

Table 12-1. Historical Lightning Events, January 1996 – June 2024[3]

JURISDICTION	DATE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Wilson County	9/2/2016	0	0	$130,400	$0
TOTALS		**0**	**0**	**$130,400**	

Table 12-2. Historical Lightning Events Summary, January 1996 – June 2024[4]

JURISDICTION	NUMBER OF EVENTS	DEATHS	INJURIES	PROPERTY DAMAGES	CROP DAMAGES
Wilson County	1	0	0	$130,400	$0
City of Floresville	0	-	-	-	-
City of La Vernia	0	-	-	-	-
City of Poth	0	-	-	-	-
City of Stockdale	0	-	-	-	-
Floresville ISD	0	-	-	-	-
La Vernia ISD	0	-	-	-	-
Stockdale ISD	0	-	-	-	-
Poth ISD	0	-	-	-	-
TOTALS	**1**	**0**	**0**	**$130,400**	**$0**

Based on the list of historical lightning events for the Wilson County planning area, including participating all jurisdictions and ISDs, there have been no reported events since the 2020 Plan.

SIGNIFICANT EVENT

September 2, 2016 – Wilson County

A thunderstorm produced a lightning strike that ignited a tank battery fire in Falls City near the Atascosa-Wilson County line. Four of twelve salt water batteries were destroyed and five site personnel had to shelter-in-place as crews battled the fire. No injuries were reported, but the fire resulted in $130,400 (2024 dollars) in property damage.

[3] Values are in 2024 dollars. Database was searched for events between January 1996 and June 2024.

[4] Participating jurisdictions with no reported events show a "-" in table columns where damages, deaths or injuries would be otherwise reported.

PROBABILITY OF FUTURE EVENTS

Based on historical records and input from the planning team the probability of occurrence for future lightning events in the Wilson County planning area, including all participating jurisdictions and ISDs, 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 2023 Annual Lightning Report by Vaisala, the Wilson County planning area experiences approximately 162.7 lightning flashes per square mile per year (approximately 130,800 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 CO_2 increases and the land surface warms, stronger updrafts are more likely to produce lightning. In a climate with double the amount of CO_2, 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 Wilson 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 Wilson 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 Wilson 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 12: LIGHTNING

The entire general building stock and all infrastructure of the Wilson 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 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 10 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 12-3 lists these vulnerable populations and several others for Wilson County and the participating jurisdictions.

Table 12-3. Populations at Greater Risk by Jurisdiction[6]

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Wilson County	8,588	2,810	7,042	5,047	2,976
City of Floresville	1,429	366	1,604	1,052	660
City of La Vernia	283	46	216	110	91
City of Poth	231	213	125	58	122
City of Stockdale	313	84	179	225	119

Participating ISDs also have employees who work outdoors a substantial portion of the day, increasing their exposure and vulnerability to lightning events (Table 12-4).

Table 12-4. Populations at Greater Risk by Participating ISD

PARTICIPANT	EMPLOYEES OPERATING OUTDOORS
Floresville ISD	300
La Vernia ISD	70
Stockdale ISD	30
Poth ISD	27

The Wilson County Planning Team identified the following critical facilities (Table 12-5) as assets that are considered the most important to the planning area and are susceptible to a range of

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

impacts caused by lightning events. For a comprehensive list by participating jurisdiction or ISD, please see Appendix C.

Table 12-5. Critical Facilities Vulnerable to Lightning Events

CRITICAL FACILITIES	POTENTIAL IMPACTS
Emergency Response Services (EOC, Fire, Police, EMS), Hospitals and Medical Centers	► 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	► 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.)	► 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)	► 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.

CRITICAL FACILITIES	POTENTIAL IMPACTS
	► 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 Wilson County planning area due to lightning events. This, along with relatively limited historical losses and damages as a result of lightning events, indicate a "Limited" impact, with minimal quality of life lost, critical facilities and services shut down for 24 hours or less, and less than 10 percent of property destroyed. Overall, the total loss estimate for the planning area (in 2024 dollars) is $130,400 with an average annualized loss of $4,600 (Table 12-6).

Table 12-6. Potential Annualized Losses by Jurisdiction[7]

JURISDICTION	TOTAL PROPERTY & CROP LOSS	ANNUAL LOSS ESTIMATE
Wilson County	$130,400	$4,600
City of Floresville	$0	$0
City of La Vernia	$0	$0
City of Poth	$0	$0
City of Stockdale	$0	$0
Floresville ISD	$0	$0
La Vernia ISD	$0	$0
Stockdale ISD	$0	$0
Poth ISD	$0	$0
PLANNING AREA	**$130,400**	**$4,600**

ASSESSMENT OF IMPACTS

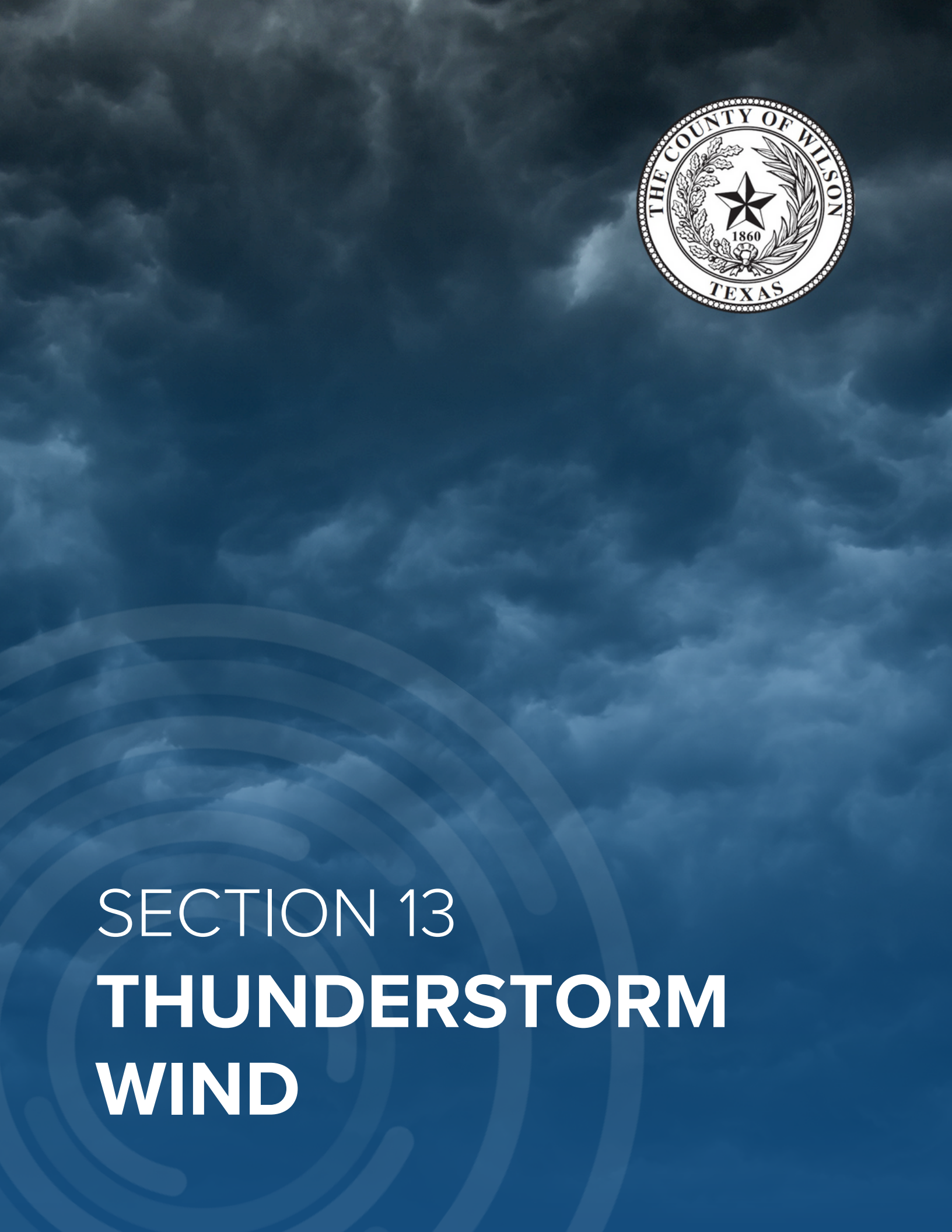
Lightning events have the potential to pose a significant risk to people and can create dangerous and difficult situations for public health and safety officials. Additional impacts to the planning area can include:

- The Wilson 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.

[7] Damage values are in 2024 dollars.

- 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. 19 percent of homes in Wilson County were built before 1980. Similarly, historic buildings may lack fire mitigation materials or measures due to their historic status. Five historic sites in the 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 13

THUNDERSTORM WIND

SECTION 13: THUNDERSTORM WIND

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. Therefore, a thunderstorm wind event could occur at any location within the Wilson County planning area. These storms develop randomly and are not confined to any geographic area within the planning area. It is assumed that the entire Wilson County planning area, including all participating jurisdictions and ISDs, 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 13-1 describes the different intensities of wind in terms of speed and effects, from calm to violent and destructive.

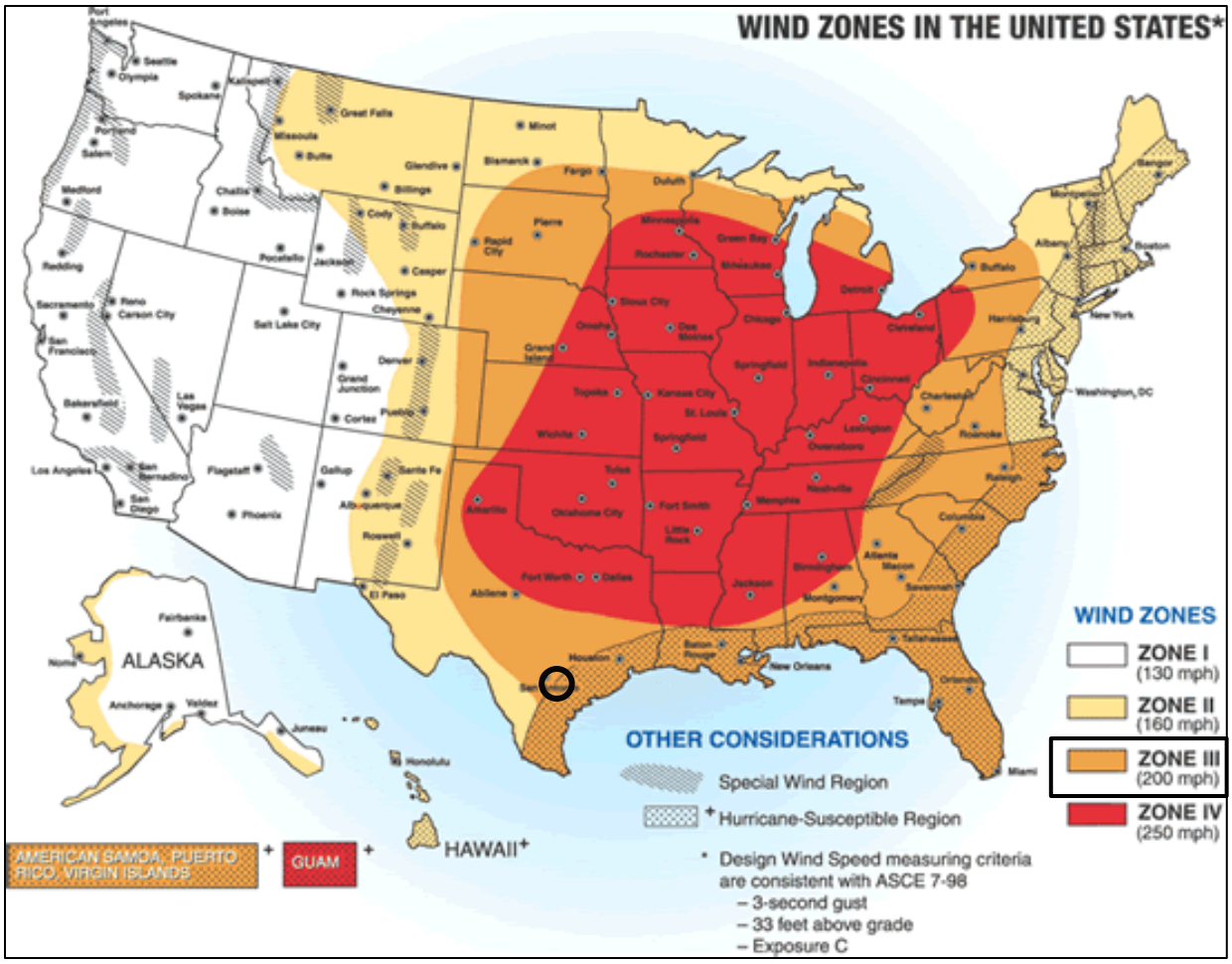
Table 13-1. Beaufort Wind Scale[1]

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 13-1 displays the wind zones as derived from NOAA.

[1] Source: World Meteorological Organization

Figure 13-1. Wind Zones in the United States[2]



On average, the planning area experiences one to two thunderstorm wind events every year. The Wilson County planning area is located within Wind Zone III, meaning the planning area can experience maximum wind speeds up to 200 mph. The Wilson 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. This is the worst to be anticipated for the entire planning area based on historic events.

Based on a search of past events between January 1991 through June 2024, the greatest magnitude wind event that Wilson County planning area experienced was 80 knots, or 92 mph, during an event occurring on April 24, 2004.

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. 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

[2] The Wilson County planning area is indicated by the black circle.

noted. It is likely that a high number of occurrences have gone unreported over the past 33.5 years. Tables 13-2, 13-3, and 13-4 depict historical occurrences of thunderstorm wind events for the Wilson County planning area according to the NCEI database.

Since 1991, 47 thunderstorm wind events are known to have occurred in the Wilson County planning area. Table 13-3 presents information on known historical events impacting the Wilson County planning area, resulting in damages, injuries, or fatalities. The most damaging reported event within the planning area occurred on March 19, 2002, with an estimated $352,200 in property damages and an additional $176,100 in crop damage (2024 dollars).

Historical thunderstorm wind event data for the participating ISDs are provided within the Wilson County events or the participating jurisdictions in which the ISD resides. In the NCEI database, these entities do not have events reported separate and apart from the reported county and jurisdiction events. No participating ISD reported any additional thunderstorm wind events or damages that were not captured in the NCEI data.

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 2024 dollars.

Table 13-2. Historical Thunderstorm Wind Speeds, January 1991 – June 2024

MAXIMUM WIND SPEED RECORDED (knots)	NUMBER OF REPORTED EVENTS
0-30	0
31-40	1
41-50	8
51-60	12
61-70	9
71-80	1
81-90	0
91-100+	0
Unknown	16

Table 13-3. Damaging Historical Thunderstorm Wind Events, January 1991 – June 2024[3]

JURISDICTION	DATE	MAGNITUDE (knots)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Wilson County	2/19/1991	-	0	8	$0	$0

[3] Only recorded events with fatalities, injuries or damages are listed. Magnitude is listed where available. Damage values are in 2024 dollars.

SECTION 13: THUNDERSTORM WIND

JURISDICTION	DATE	MAGNITUDE (knots)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Wilson County	10/13/1993	-	0	0	$108,100	$0
City of Floresville	5/18/1995	-	0	0	$41,400	$206,900
City of Poth	5/18/1995	-	0	0	$41,400	$206,900
City of Floresville	6/2/1996	-	0	0	$160,800	$0
City of La Vernia	5/15/1997	-	0	0	$9,900	$0
City of La Vernia	5/27/1997	-	0	0	$5,900	$0
City of Poth	2/21/1998	-	0	0	$58,400	$0
Wilson County	7/23/2000	-	0	0	$145,800	$0
City of La Vernia	11/5/2000	-	0	0	$144,700	$0
City of Floresville	11/12/2000	-	0	0	$90,500	$0
Wilson County	4/23/2001	-	0	0	$44,500	$0
Wilson County	3/19/2002	-	0	0	$352,200	$176,100
City of Floresville	4/24/2004	60	0	0	$167,500	$0
City of Stockdale	4/24/2004	80	0	0	$50,300	$0
City of Stockdale	3/13/2007	60	0	0	$153,300	$0
City of Floresville	4/24/2007	70	0	0	$76,200	$0
Wilson County	6/10/2008	55	0	0	$14,400	$0
City of Poth	8/5/2008	70	0	0	$71,900	$0
City of Floresville	7/20/2009	39	0	0	$29,300	$0
City of Floresville	6/2/2010	52	0	0	$14,500	$0
City of Floresville	9/2/2010	43	0	0	$144,200	$0
City of Floresville	9/2/2010	43	0	0	$72,100	$0
Wilson County	4/17/2015	60	0	0	$20,000	$0
Wilson County	5/30/2017	70	0	0	$12,900	$0
City of Floresville	5/30/2017	65	0	0	$1,300	$0
City of La Vernia	1/10/2020	65	0	0	$18,400	$0
TOTALS		**(MAX EXTENT)**	**0**	**8**	**$2,049,900**	**$589,900**

Table 13-4. Summary of Historical Events by Jurisdiction, January 1991 – June 2024[4]

JURISDICTION	NUMBER OF EVENTS	MAGNITUDE (knots)	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Wilson County	20	70	0	8	$697,900	$176,100
City of Floresville	13	70	0	0	$797,800	$206,900
City of La Vernia	8	65	0	0	$178,900	$0
City of Poth	4	70	0	0	$171,700	$206,900
City of Stockdale	2	80	0	0	$203,600	$0
Floresville ISD	0	-	-	-	-	-
La Vernia ISD	0	-	-	-	-	-
Stockdale ISD	0	-	-	-	-	-
Poth ISD	0	-	-	-	-	-
TOTALS	**47**	**(MAX EXTENT)**	**0**	**8**	**$2,639,800**	

Based on the list of historical thunderstorm wind events for the Wilson County planning area, one event has occurred since the 2020 Plan.

SIGNIFICANT EVENTS

February 19, 1991 – Wilson County

Severe thunderstorms, with windspeeds estimated near 100 mph, struck Wilson County just after midnight. The most significant wind damage occurred within an eight-mile radius between the City of Floresville and City of Poth. Damages included trees being downed and uprooted, three mobile homes being heavily damaged or destroyed, and significant damage to a primary school and the Wilson County Courthouse. Other impacts included widespread damage to homes, hay barns, chicken coops, and hundreds of outbuildings. An estimate of monetary damages was not available in the NCEI database for this event; however, eight injuries were reported. Most of these were described as minor, however one man was significantly injured when his mobile home was destroyed.

April 24, 2004 – Cities of Floresville and Stockdale

Severe thunderstorm winds, with windspeeds estimated up to approximately 90 mph, caused significant damage in the cities of Floresville and Stockdale. In the City of Stockdale, a wooden barn near U.S. 123 was blown off its foundation from the strong winds and widespread tree and roof damage was reported in the City of Floresville. Between both cities, total damages were estimated at $217,800 (2024 dollars).

[4] Participating jurisdictions with no reported events show a "-" in table columns where damages, deaths or injuries would be otherwise reported.

September 2, 2010 – City of Floresville
A weak cold front moved into Central Texas and combined with deep moisture from the Gulf of Mexico, creating severe thunderstorms over Wilson County. Strong winds up to 50 mph caused several impacts, including damages to the roof and sign of a car dealership, numerous power lines being downed, and a downed tree falling onto an automobile. Damages were estimated at $216,300 (2024 dollars).

January 10, 2020 – City of La Vernia
A strong Pacific cold front moved into a warm, moist airmass and generated thunderstorms in South Central Texas. In Wilson County, these thunderstorms produced windspeeds up to 75 mph. Strong wind gusts led to four damaged houses, a tipped over carport, broken fences, and widespread roof damage in the City of La Vernia. Damages were estimated at $18,400 (2024 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 47 events in a 33.5-year reporting period, which provides an estimated annual frequency approximately one to two events every year. Even though the intensity of thunderstorm wind events is not always damaging for the Wilson 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 Wilson County planning area, including participating jurisdictions and ISDs.

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 Wilson 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 recepticles, brick facades, and vehicles, unless reinforced, are vulnerable to thunderstorm wind events. More severe damage involves windborne debris; in some

[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.

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 reported as having been torn off of buildings. The portable buildings typically used at schools and 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 4,770 manufactured homes are located in the Wilson County planning area (25 percent of total housing stock). In addition, 19 percent (approximately 3,560 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 13-5. Structures at Greater Risk by Participating Jurisdiction

JURISDICTION	BUILT PRIOR TO 1980	MOBILE HOME
Wilson County	3,560	4,770
City of Floresville	1,022	463
City of La Vernia	195	51
City of Poth	285	131
City of Stockdale	218	110
Floresville ISD	4	2
La Vernia ISD	4	10
Poth ISD	6	0
Stockdale ISD	3	3

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 10 percent of the planning area population live below the poverty level (Table 13-6). 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 vulnerability due to language barriers that limit their access to important information such as weather-related warnings and instructions regarding safety measures.

Table 13-6. Populations at Greater Risk by Jurisdiction[6]

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Wilson County	8,588	2,810	7,042	5,047	2,976
City of Floresville	1,429	366	1,604	1,052	660
City of La Vernia	283	46	216	110	91
City of Poth	231	213	125	58	122
City of Stockdale	313	84	179	225	119

Participating ISDs also have employees who work outdoors a substantial portion of the day, increasing their exposure and vulnerability to thunderstorm wind events (Table 13-7).

Table 13-7. Populations at Greater Risk by Participating ISD

PARTICIPANT	EMPLOYEES OPERATING OUTDOORS
Floresville ISD	300
La Vernia ISD	70
Stockdale ISD	30
Poth ISD	27

The Wilson County Planning Team identified the following critical facilities (Table 13-8) 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 Wilson County.

Table 13-8. Critical Facilities Vulnerable to Thunderstorm Wind Event

CRITICAL FACILITY TYPE	POTENTIAL IMPACTS
Emergency Response Services (EOC, Fire, Police, EMS), Hospitals and Medical Centers	► 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.
Airport, Academic Institutions, Animal Shelter, Evacuation Centers & Shelters, Governmental Facilities, Residential/ Assisted Living Facilities	► 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.
Commercial Supplier (food, fuel, etc.)	► 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)	► 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.

CRITICAL FACILITY TYPE	POTENTIAL IMPACTS
	► 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. Overall, in the past 33.5 years there has been an estimated total of $2,639,800 in damages (2024 dollars) in the Wilson County planning area due to thunderstorm wind events. The estimated average annual loss from thunderstorm wind events is $78,800. There have also been eight reported injuries due to thunderstorm wind. Based on historic monetary damages, the impact of thunderstorm wind on the Wilson 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, due to the significant number of injuries caused by thunderstorm wind, the severity of impact is considered "Major," meaning a potential for multiple injuries resulting in permanent disability.

Table 13-9. Estimated Annualized Losses by Participating Jurisdiction

JURISDICTION	TOTAL PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
Wilson County	$874,000	$26,100
City of Floresville	$1,004,700	$30,000
City of La Vernia	$178,900	$5,300
City of Poth	$378,600	$11,300
City of Stockdale	$203,600	$6,100
Floresville ISD	$0	$0
La Vernia ISD	$0	$0
Stockdale ISD	$0	$0
Poth ISD	$0	$0
TOTALS	**$2,639,800**	**$78,800**

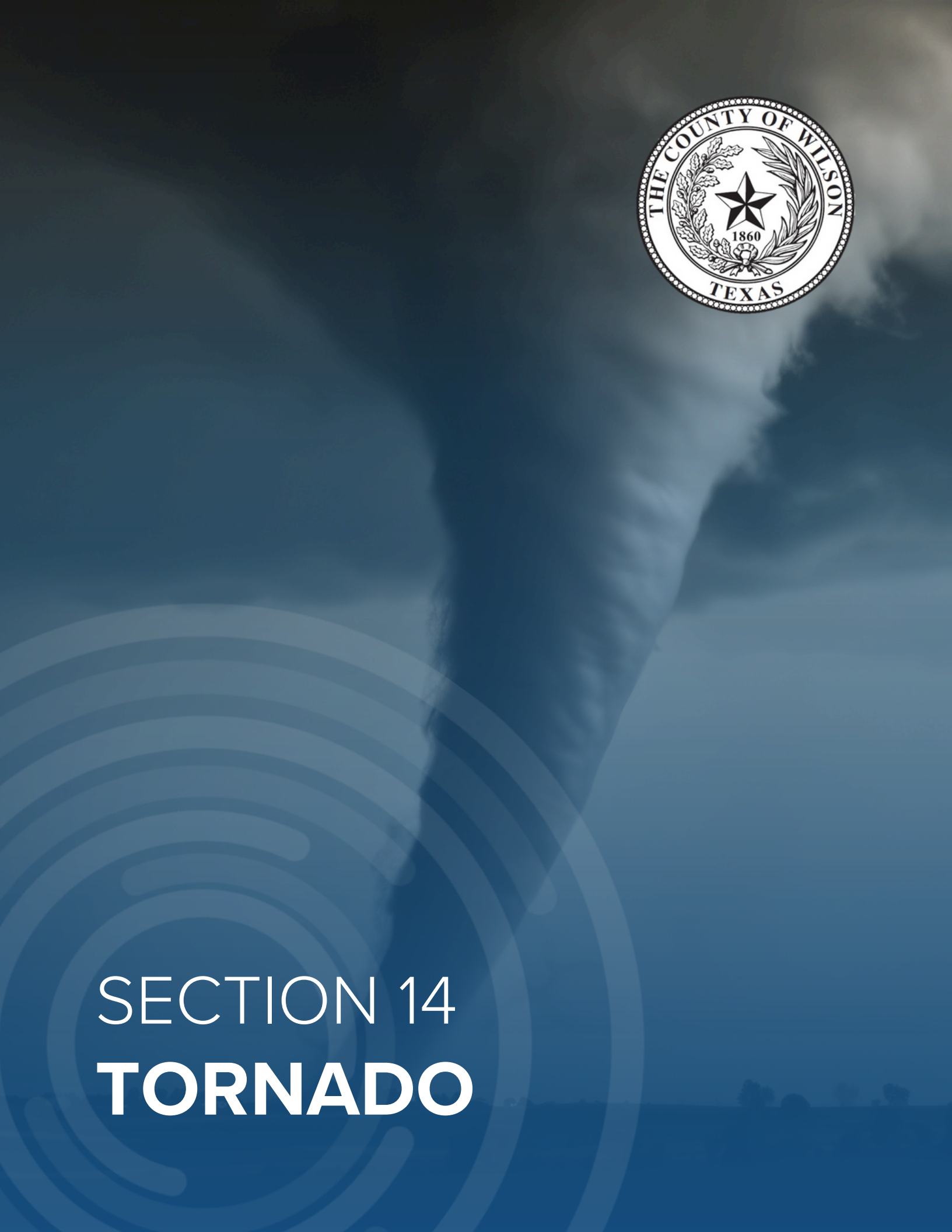
ASSESSMENT OF IMPACTS

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 (19 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. Five historical sites are listed on the National Register of Historic Places for Wilson County.

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 14
TORNADO

SECTION 14: TORNADO

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**.**

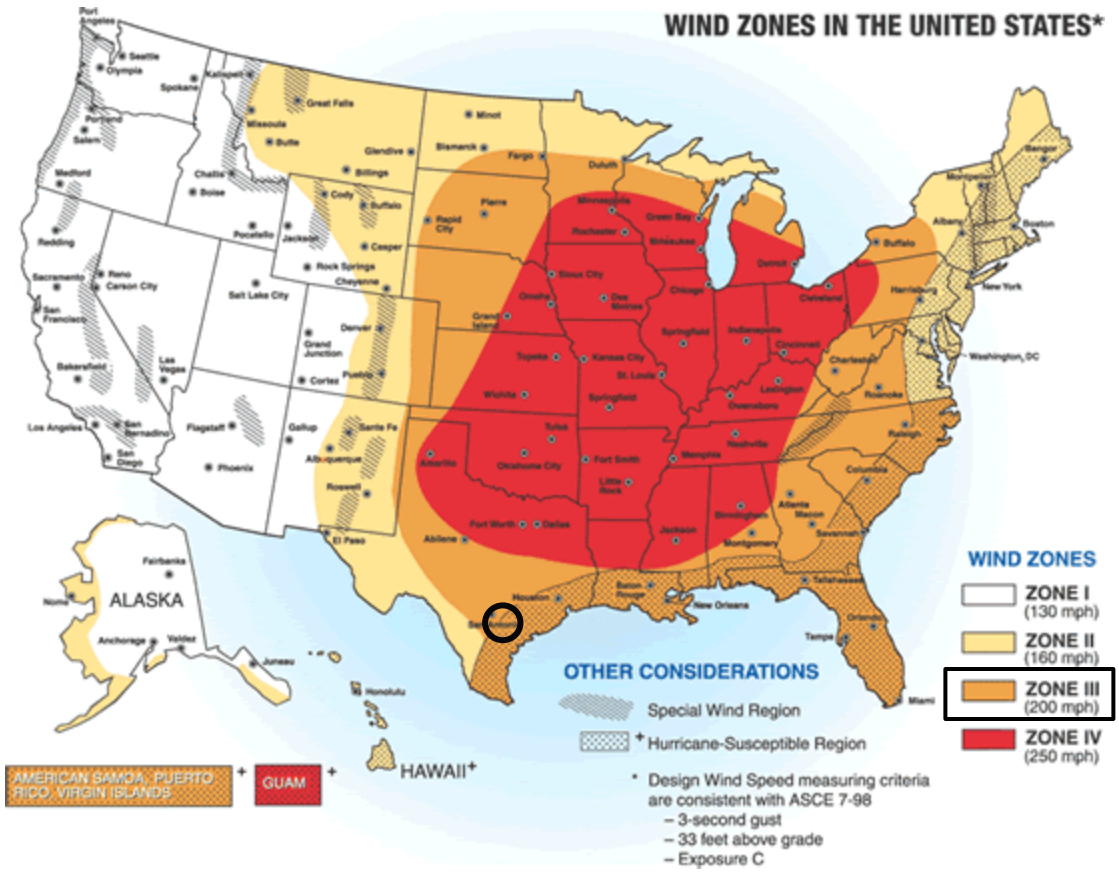
Table 14-1. Variations among Tornadoes

WEAK TORNADOES	STRONG TORNADOES	VIOLENT TORNADOES
► 69% of all tornadoes ► Less than 5% of tornado deaths ► Lifetime 1-10+ minutes ► Winds less than 110 mph	► 29% of all tornadoes ► Nearly 30% of all tornado deaths ► May last 20 minutes or longer ► Winds 110–205 mph	► 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 Wilson County planning area, including all participating jurisdictions and ISDs, is uniformly exposed to tornado activity. The Wilson County planning area is primarily located within Wind Zone III. This means the planning area can experience maximum wind speeds up to 200 mph.

Figure 14-1. FEMA Wind Zones in the United States[1]



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 14-2 includes both scales for reference when analyzing historical tornadoes since tornado events prior to 2007 will follow the original Fujita Scale.

[1] The Wilson County planning area is indicated by the circle.

Table 14-2. The Fujita and Enhanced Fujita Tornado Scale[2]

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

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 EF2, a strong tornado. Based on the planning area's location in Wind Zone III, the planning area has the potential to experience anywhere from an EF0 to an EF4 depending on the wind speed. Previous tornado events in the Wilson County planning area (converted from the Fujita Scale) have been between EF0 and EF2 (Figure 14-2).

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 14-2 identifies the locations of previous occurrences in the Wilson County planning area from 1996 through June 2024. A total of 13 events have been recorded by NOAA's Storm Prediction Center and the NCEI Storm Events databases for the Wilson County planning area. The strongest event reported in the planning area was an EF2 tornado which occurred on October 30, 2015.

Historical tornado event data for the participating ISDs are provided within the Wilson County events or the participating jurisdictions in which the ISD resides. In the NCEI database, these entities do not have events reported separate and apart from the reported county and jurisdiction events. No participating ISD reported any additional tornado events or damages that were not captured in the NCEI data.

Figure 14-2. Spatial Historical Tornado Events, January 1996 – June 2024[3]

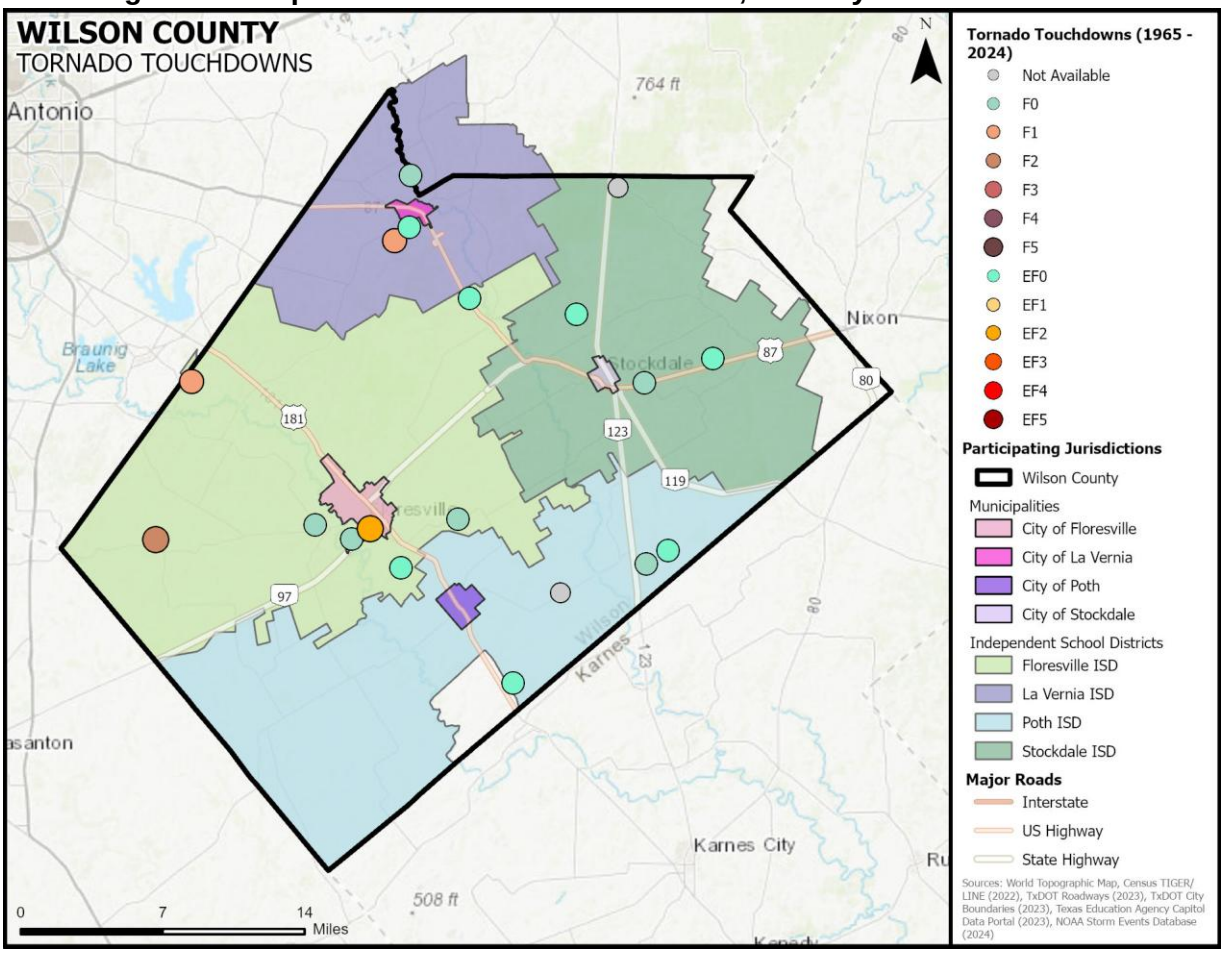


Table 14-3. Damaging Historical Tornado Events, January 1996 – June 2024[4]

JURISDICTION	DATE	MAGNITUDE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
City of La Vernia	5/19/2000	F1	0	0	$146,900	$0
City of Floresville	5/20/2001	F0	0	0	$26,600	$0
Wilson County	6/3/2003	F1	0	0	$5,200	$0
City of Poth	7/24/2008	EF0	0	0	$14,400	$0
City of La Vernia	5/25/2013	EF0	0	0	$33,800	$0
City of Floresville	10/30/2015	EF2	0	0	$1,985,400	$0
Wilson County	7/26/2020	EF0	0	0	$60,800	$0

[3] Source: NOAA Storm Prediction Center
[4] Only recorded events with fatalities, injuries or damages are listed. Magnitude is listed when available. Damage values are in 2024 dollars.

JURISDICTION	DATE	MAGNITUDE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Wilson County	10/26/2023	EF0	0	0	$0	$5,200
TOTALS		**(MAX EXTENT)**	**0**	**0**	**$2,273,100**	**$5,200**

Table 14-4. Summary of Historical Tornado Events, January 1996 – June 2024[5]

JURISDICTION	NUMBER OF EVENTS	MAX MAGNITUDE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Wilson County	5	F1	0	0	$66,000	$5,200
City of Floresville	2	EF2	0	0	$2,012,000	$0
City of La Vernia	3	F1	0	0	$180,700	$0
City of Poth	2	EF0	0	0	$14,400	$0
City of Stockdale	1	F0	0	0	$0	$0
Floresville ISD	0	-	-	-	-	-
La Vernia ISD	0	-	-	-	-	-
Stockdale ISD	0	-	-	-	-	-
Poth ISD	0	-	-	-	-	-
TOTALS	**13**	**(MAX EXTENT)**	**0**	**0**	**$2,278,300**	

Based on the list of historical tornado events for the Wilson County planning area, there have been two recorded events since the 2020 Plan.

SIGNIFICANT EVENTS

May 19, 2000 – City of La Vernia

In the evening, a small F1 tornado struck a semi-rural area just southwest of the City of La Vernia. The tornado remained on the ground for half a mile, with an estimated diameter of 100 yards. Several trees were damaged, uprooted, or completely destroyed by the strong winds and approximately 12 homes were damaged. Total damages were estimated at $146,900 (2024 dollars).

October 30, 2015 – City of Floresville

An EF2 tornado touched down near Hickory Circle, roughly 0.5 miles south of the City of Floresville. The tornado produced tree and roof damage across several city streets as it moved north. As it approached Highway 181, the tornado grew in strength and the damage intensified. In this area, substantial roof damage was observed to homes and businesses, metal signs and power poles were downed or destroyed, and multiple campers and recreational vehicles were

[5] Participating jurisdictions with no reported events show a "-" in table columns where damages, deaths or injuries would be otherwise reported.

destroyed, including one 5th wheel camper which was thrown on top of a local hotel. The tornado peaked over Floresville High School, where a large two-story classroom building partially collapsed and other impacts such as broken windows occurred. The estimated damages for the City of Floresville were $1,985,400 (2024 dollars), though reports noted this figure does not include insured losses or the damages to Floresville High School.

July 26, 2020 – Wilson County
A band of storms brought over South Central Texas by Hurricane Hanna led to the formation of an EF0 tornado that touched down just south of the City of La Vernia in the early morning. The tornado touched down along Highway 87 and tracked northwest for approximately 3.27 miles before dissipating. Damages observed along the tornado's path included downed trees, damaged outbuildings, and damaged power poles and lines. Total damages were estimated at $60,800 (2024 dollars).

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 13 historical events over a 28.5-year reporting period, the Wilson County planning area can anticipate a tornado touchdown every two to three years. This frequency supports a "Likely" probability of future events for the Wilson County planning area, including participating jurisdictions and ISDs.

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 Wilson County planning area are 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.

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[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 14: TORNADO

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 Wilson County planning area features mobile or manufactured home parks throughout the planning area. These parks 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 4,770 (25 percent of total housing stock) manufactured homes located in the Wilson County planning area. In addition, 19 percent (approximately 3,560 structures) of the housing structures in the Wilson 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 14-5).

Table 14-5. Structures at Greater Risk by Participating Jurisdiction

JURISDICTION	BUILT PRIOR TO 1980	MOBILE HOME
Wilson County	3,560	4,770
City of Floresville	1,022	463
City of La Vernia	195	51
City of Poth	285	131
City of Stockdale	218	110
Floresville ISD	4	2
La Vernia ISD	4	10
Poth ISD	6	0
Stockdale ISD	3	3

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 Wilson County planning area is estimated at 17 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 14 percent of the total population. An estimated 10 percent of the planning area population live below the poverty level and 6 percent of the populations speak English 'less than very well' (Table 14-6).

Table 14-6. Populations at Greater Risk by Participating Jurisdiction[8]

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Wilson County	8,588	2,810	7,042	5,047	2,976
City of Floresville	1,429	366	1,604	1,052	660
City of La Vernia	283	46	216	110	91
City of Poth	231	213	125	58	122
City of Stockdale	313	84	179	225	119

Participating ISDs also have employees who work outdoors a substantial portion of the day, increasing their exposure and vulnerability to tornado events (Table 14-7).

Table 14-7. Populations at Greater Risk by Participating ISD

PARTICIPANT	EMPLOYEES OPERATING OUTDOORS
Floresville ISD	300
La Vernia ISD	70
Poth ISD	27
Stockdale ISD	30

The Wilson 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 14-8). 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] U.S. Census Bureau 2023 data for Wilson County

Table 14-8. Critical Facilities Vulnerable to Tornado Event

CRITICAL FACILITIES	POTENTIAL IMPACTS
Emergency Response Services (EOC, Fire, Police, EMS), Hospitals and Medical Centers	► 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.
Airport, Academic Institutions, Animal Shelter, Evacuation Centers & Shelters, Governmental Facilities, Residential/ Assisted Living Facilities	► 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 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.)	► 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.
Utility Services and Infrastructure (electric, water, wastewater, communications)	► 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.

CRITICAL FACILITIES	POTENTIAL IMPACTS
	► 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.

Tornadoes are known to cause injuries and fatalities, though neither has occurred historically in the Wilson County planning area. The total loss estimate due to tornado events in Wilson County is $2,278,300 (2024 dollars), having an approximate average annual loss estimate of $79,900. Based on historical damages, the impact of a tornado event on the Wilson County planning area, including all participating jurisdictions and ISDs, is considered “Limited” severity of impact, meaning injuries are treatable with first aid, complete shutdown of facilities for 24 hours or less, and less than 10 percent of property destroyed or with major damage.

Table 14-9. Estimated Average Annual Losses by Jurisdiction

JURISDICTION	TOTAL PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
Wilson County	$71,200	$2,500
City of Floresville	$2,012,000	$70,600
City of La Vernia	$180,700	$6,300
City of Poth	$14,400	$500
City of Stockdale	$0	$0
Floresville ISD	$0	$0
La Vernia ISD	$0	$0
Stockdale ISD	$0	$0
Poth ISD	$0	$0
TOTALS	**$2,278,300**	**$79,900**

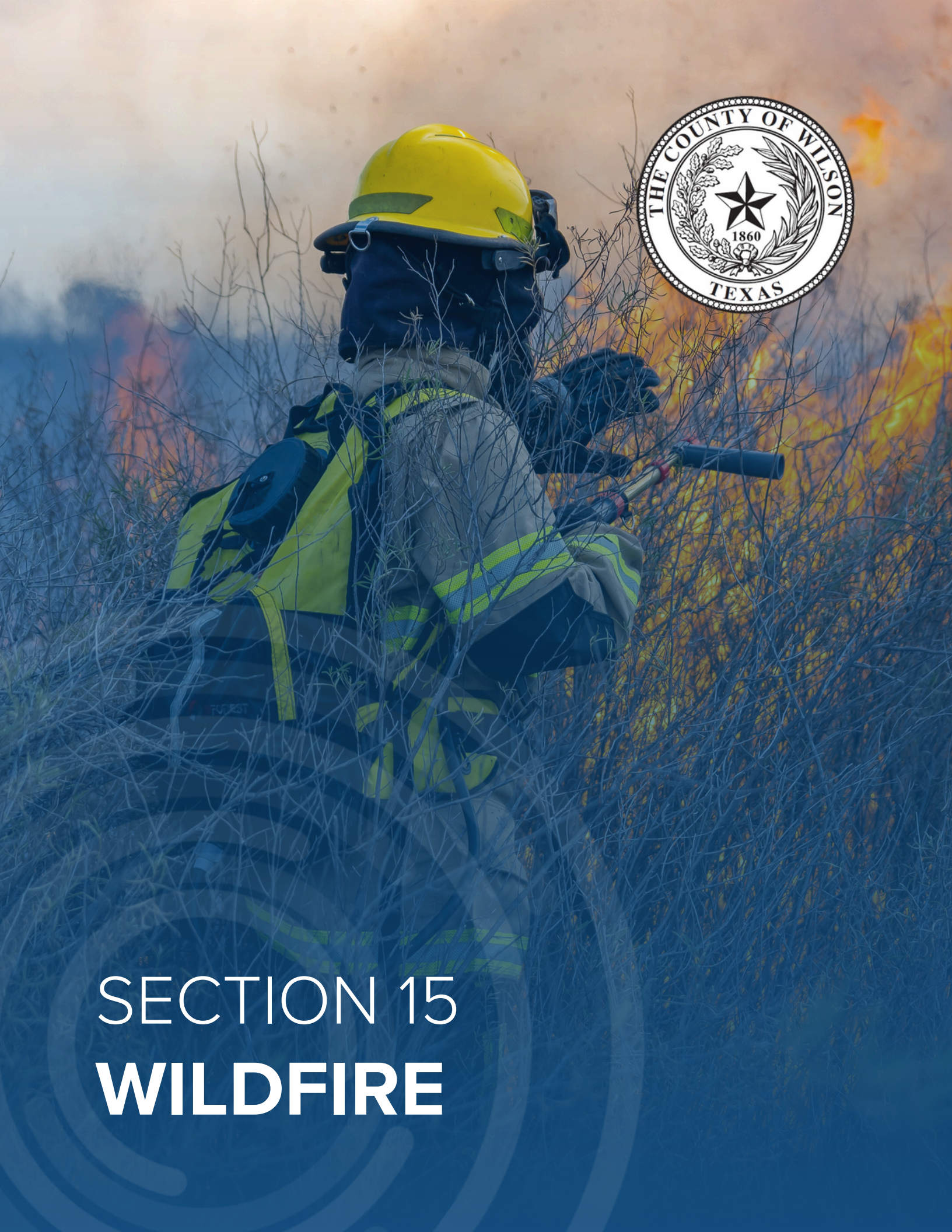
ASSESSMENT OF IMPACTS

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 (25 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.
- 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 seven 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. The Wilson County planning area has five sites listed on the National Register of Historic Places.

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 15
WILDFIRE

SECTION 15: WILDFIRE

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. The Wilson County planning area has an estimated 90 percent of the total planning area population that live within the WUI.[2]

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 south 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).[3]

The Wilson 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

[1] Source: FEMA: https://hazards.fema.gov/nri/wildfire
[2] Source: Texas A&M Forest Service, Texas Wildfire Risk Assessment Summary Report, Wilson County: https://texaswildfirerisk.com/
[3] 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/

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.[4] 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, burning debris, or arson.

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 face devastating consequences due to human activities, drought conditions, lightning, or wind event, 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 intensity scales for communities throughout the Wilson 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 Wildland Urban Interface (WUI) (Figures 15-1 through 15-9). It is estimated that 90 percent of the total population in the Wilson County planning area live within the WUI. However, the entire planning area is at some risk for wildfires.

[4] NOAA Weather Forecasting: https://scijinks.gov/wildfires/

Figure 15-1. Wildland Urban Interface Map – Wilson County

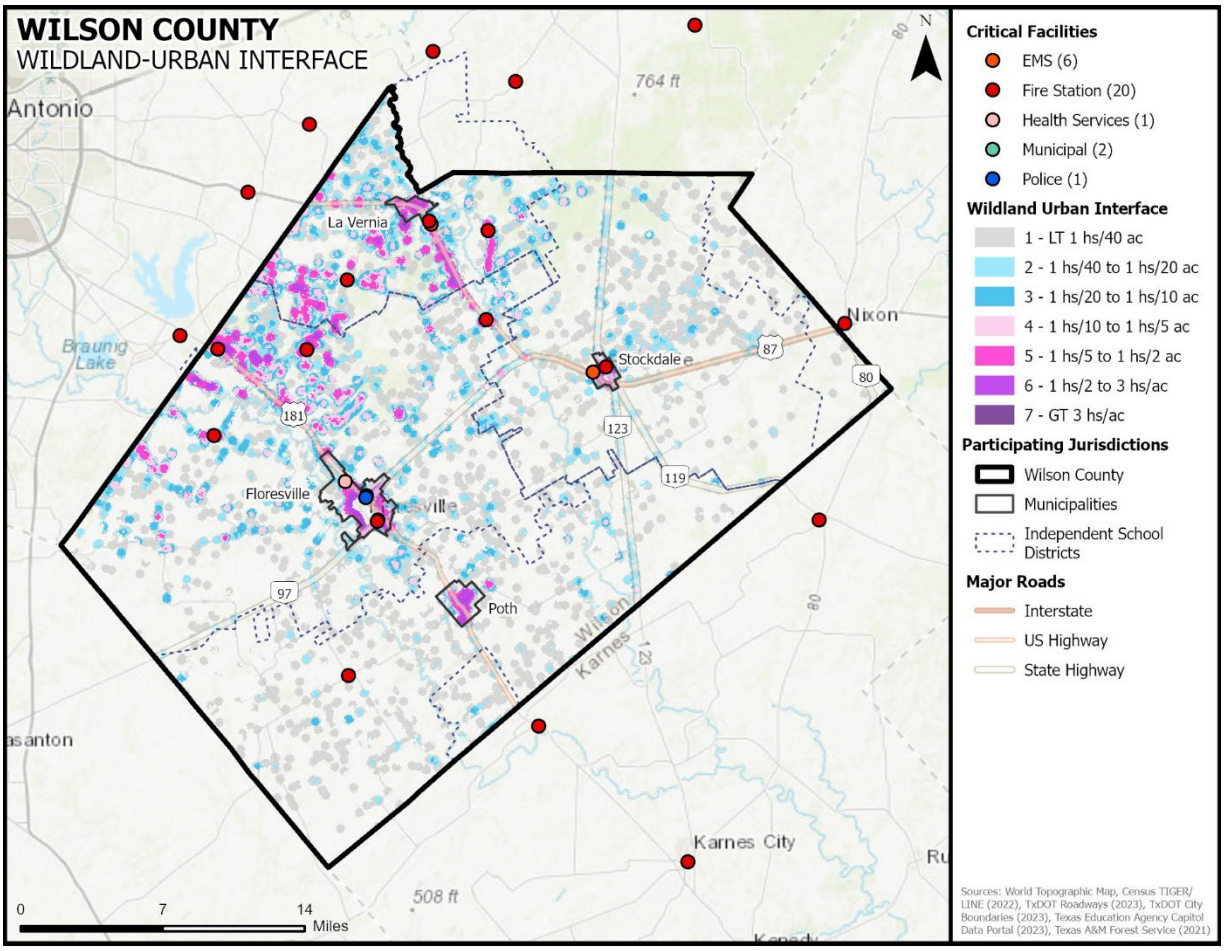
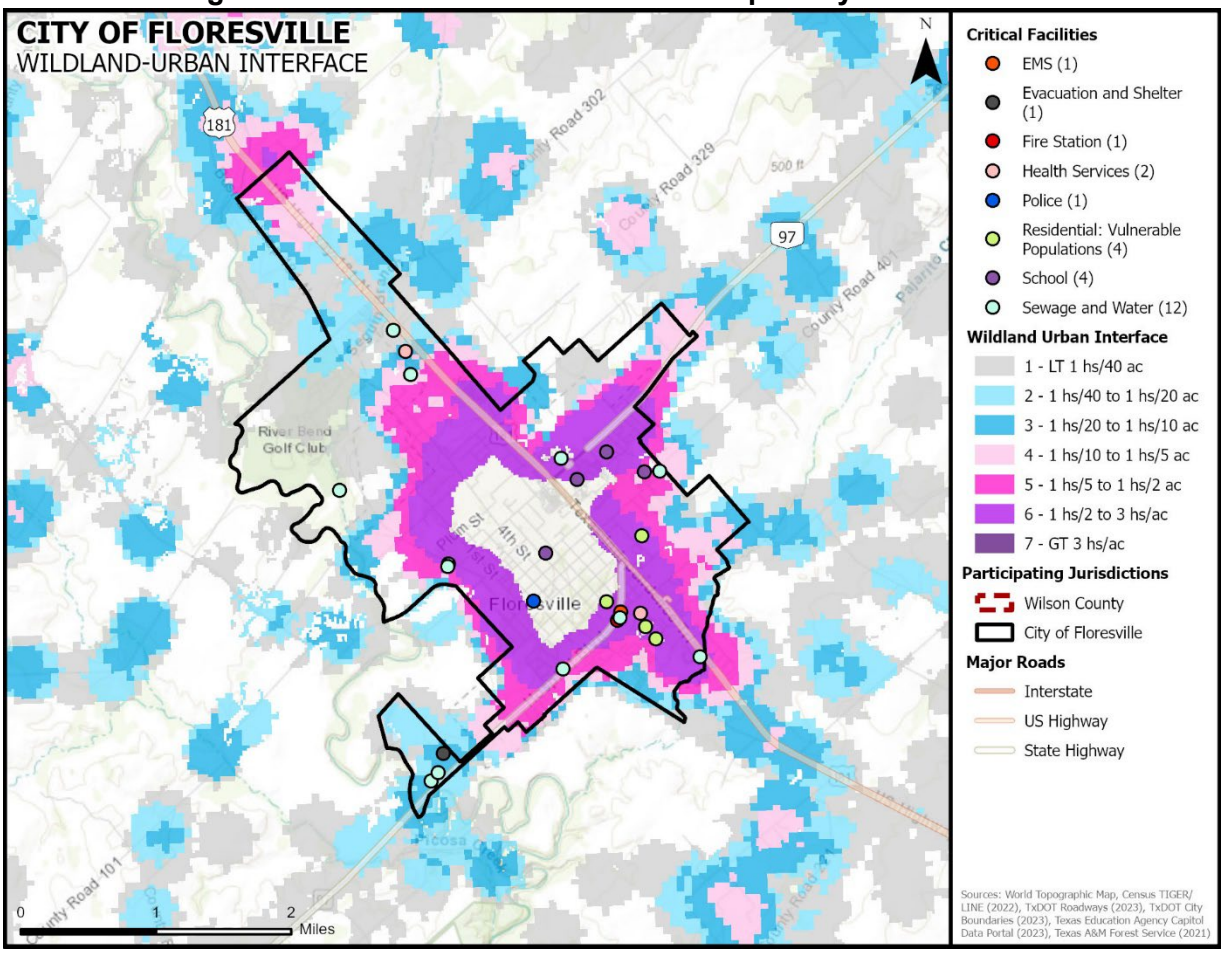
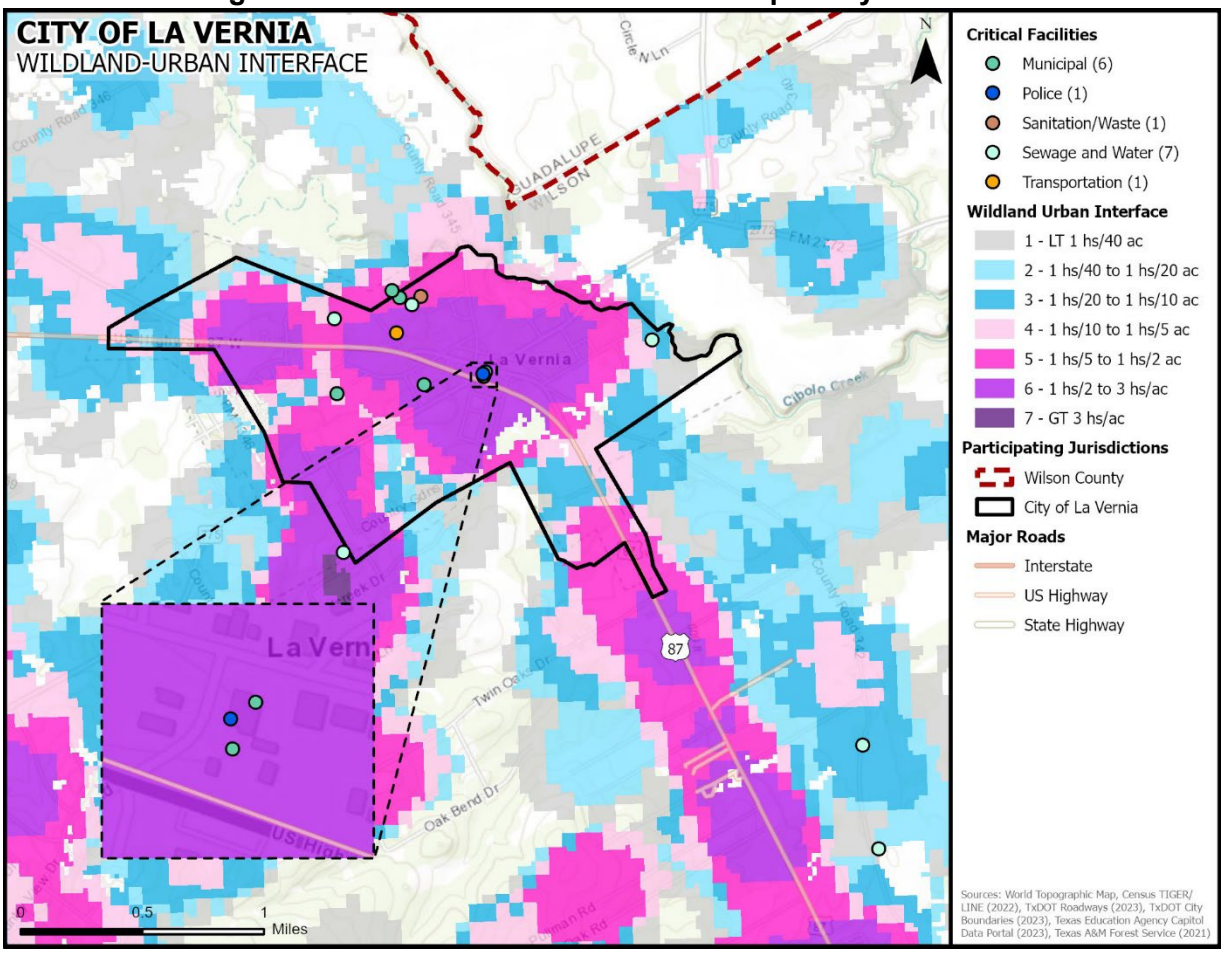


Figure 15-2. Wildland Urban Interface Map – City of Floresville



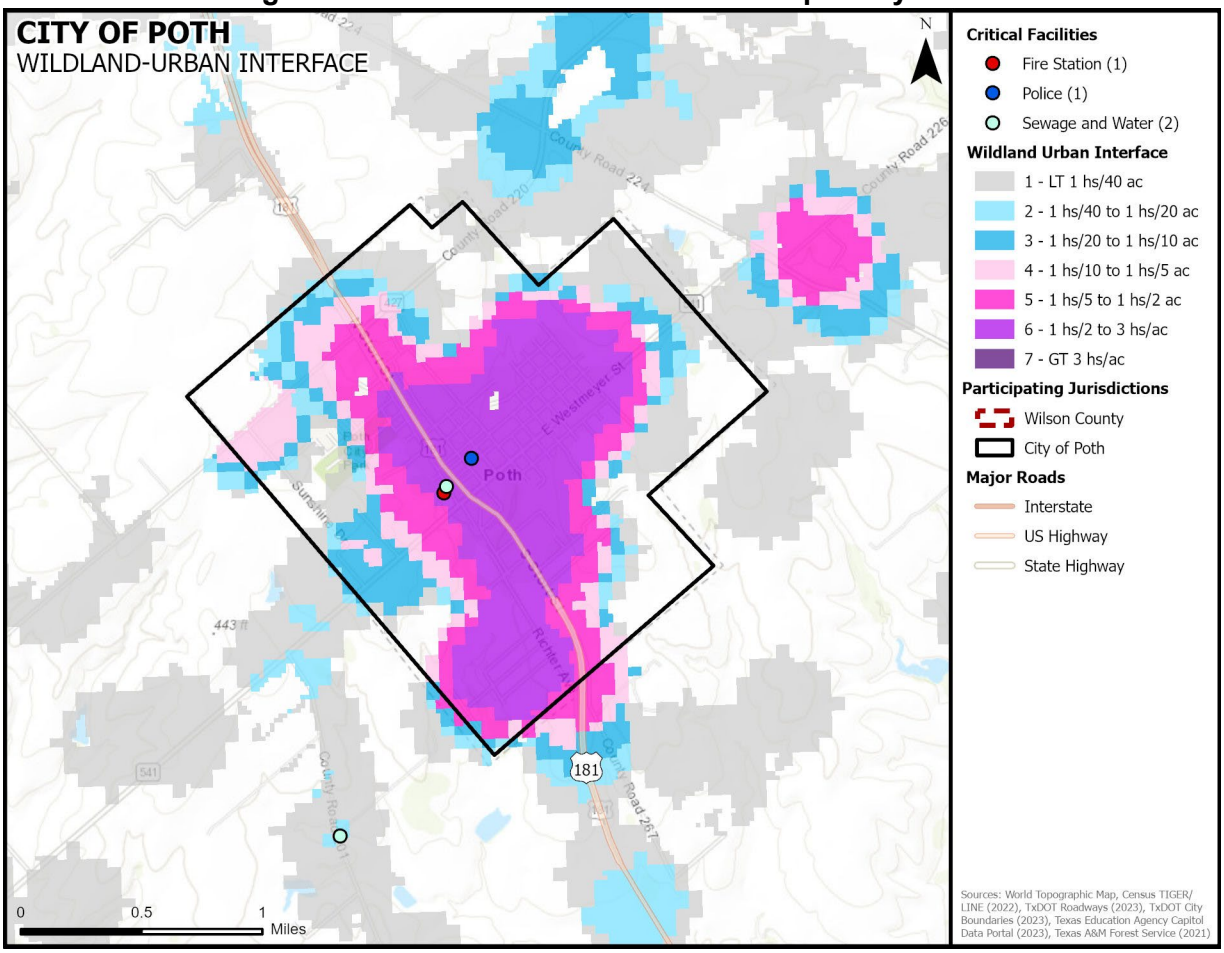
It is estimated that 66 percent of the total population in the City of Floresville live within the WUI. However, the entire City is at some risk for wildfires.

Figure 15-3. Wildland Urban Interface Map – City of La Vernia



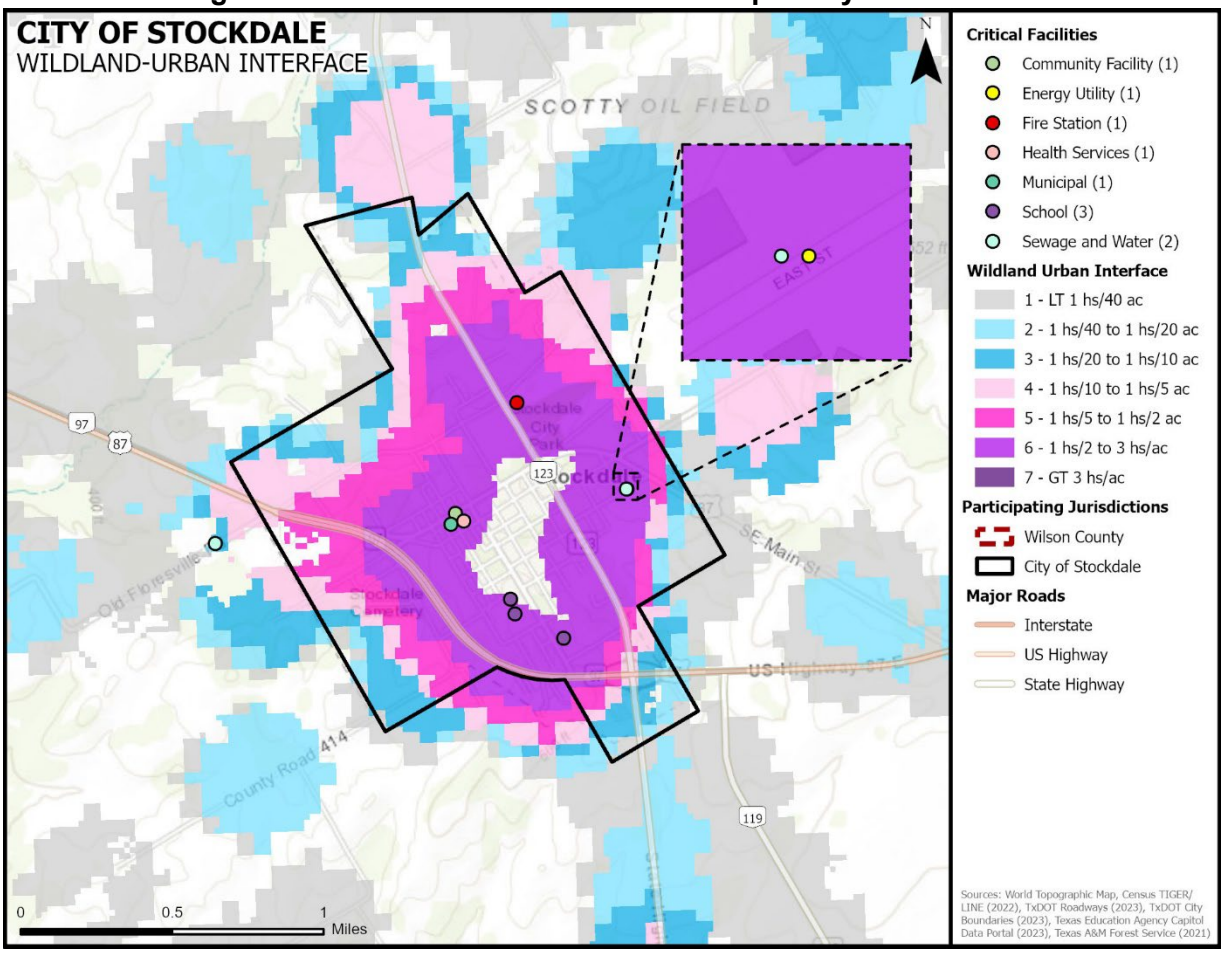
It is estimated that 99 percent of the total population in the City of La Vernia live within the WUI. However, the entire City is at some risk for wildfires.

Figure 15-4. Wildland Urban Interface Map – City of Poth



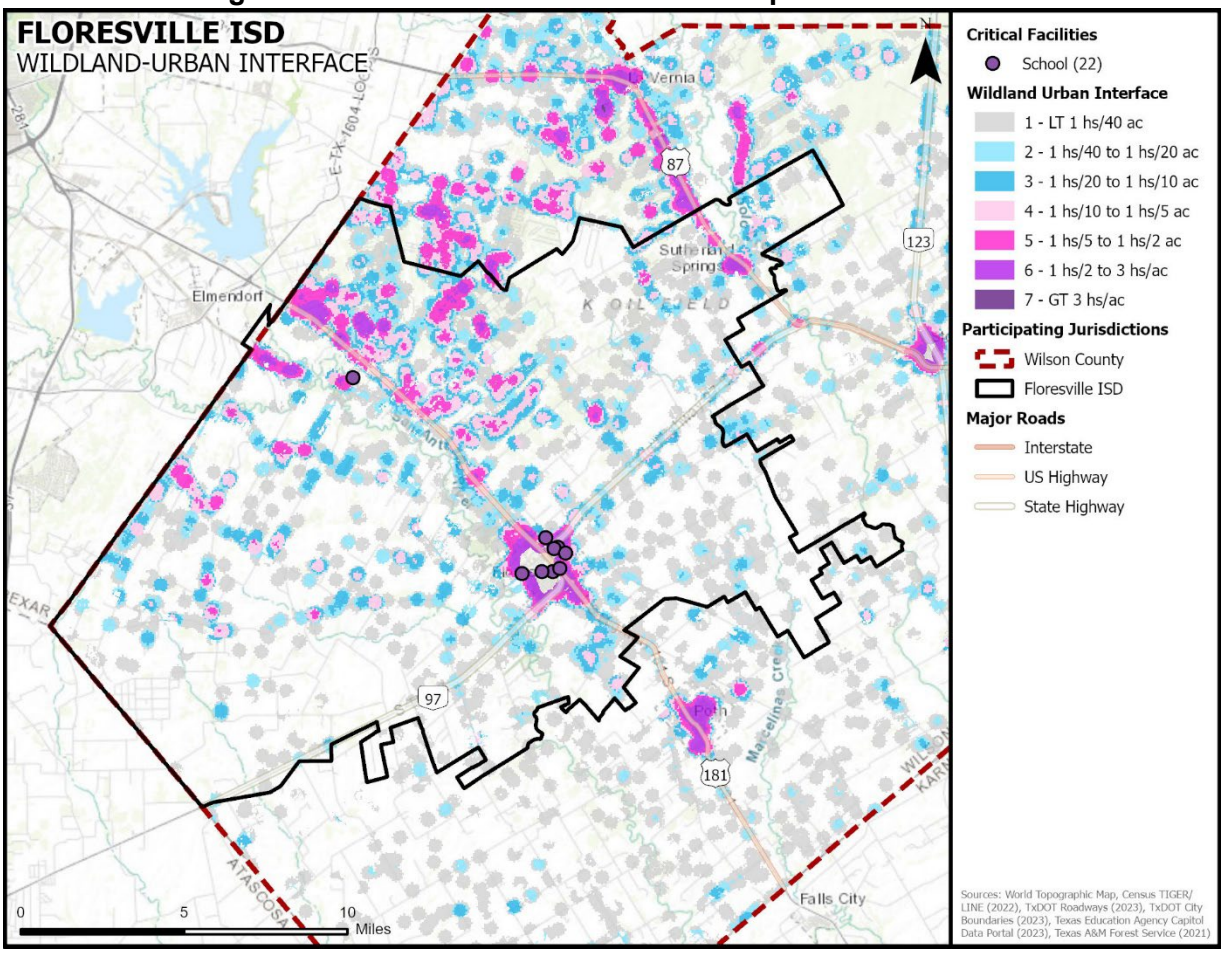
It is estimated that 100 percent of the population in the City of Poth live within the WUI and are at some risk for wildfires.

Figure 15-5. Wildland Urban Interface Map – City of Stockdale



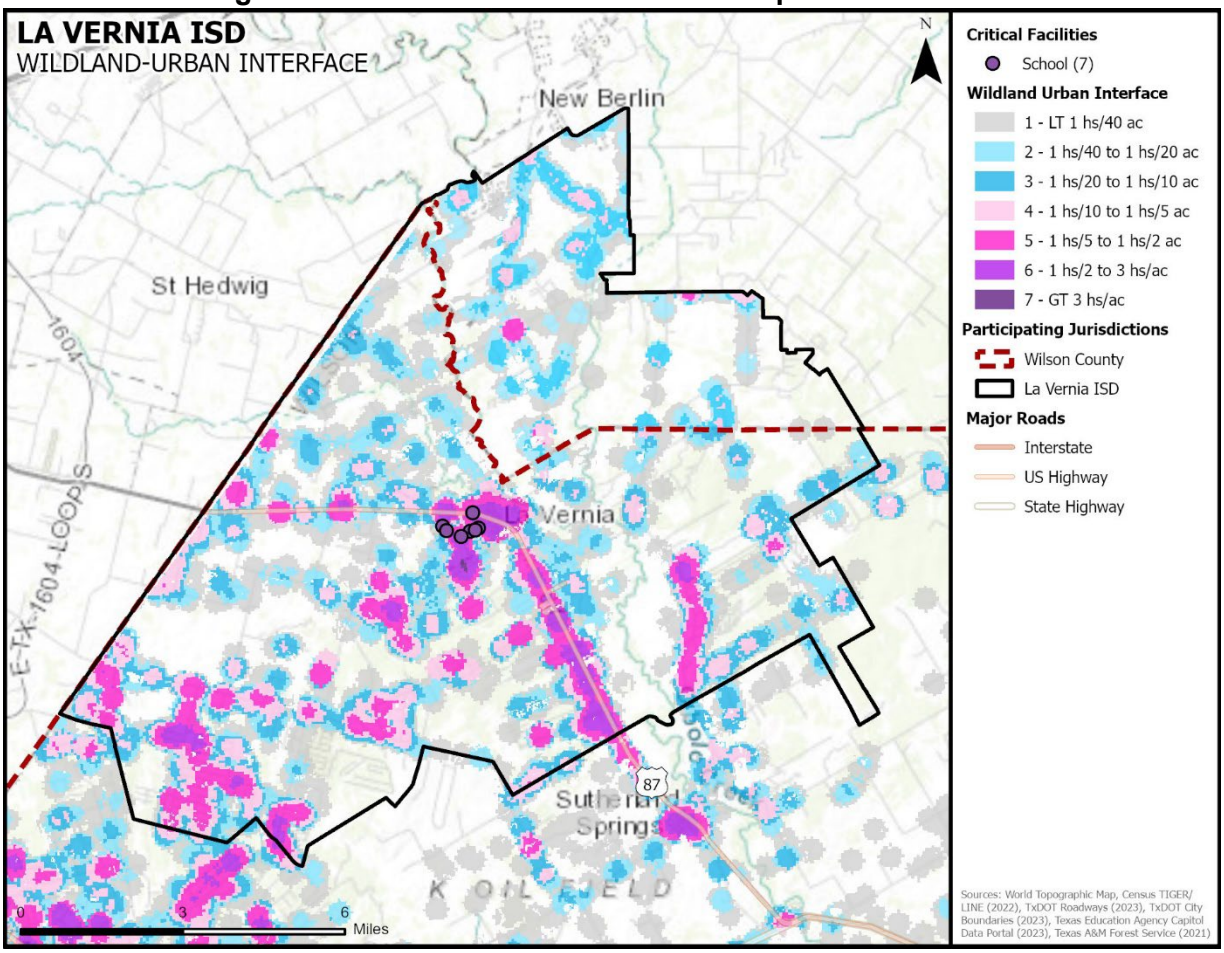
It is estimated that 88 percent of the total population in the City of Stockdale live within the WUI. However, the entire City is at some risk for wildfires.

Figure 15-6. Wildland Urban Interface Map – Floresville ISD



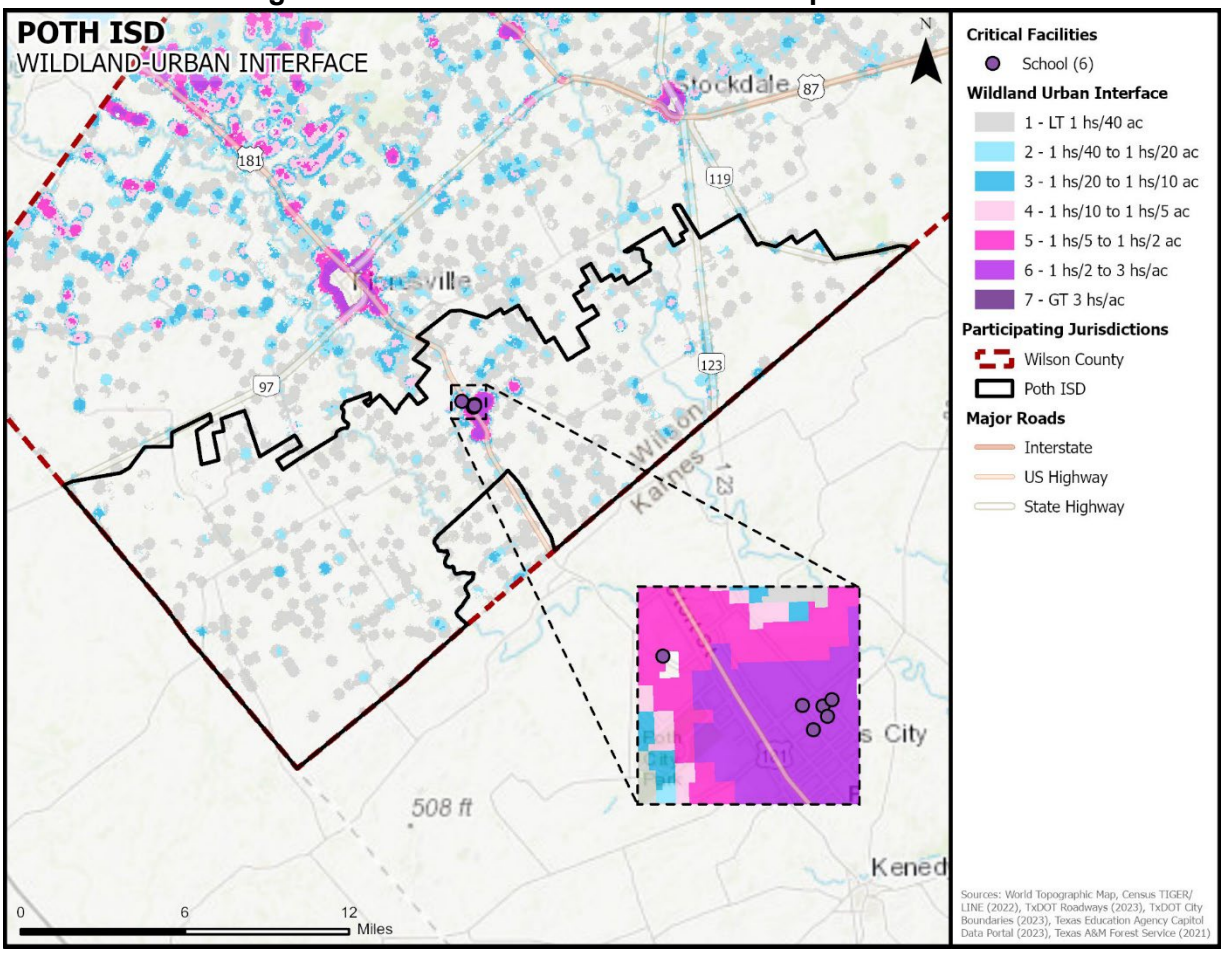
Floresville ISD has 16 facilities within the WUI, however all ISD facilities are at some risk for wildfires.

Figure 15-7. Wildland Urban Interface Map – La Vernia ISD



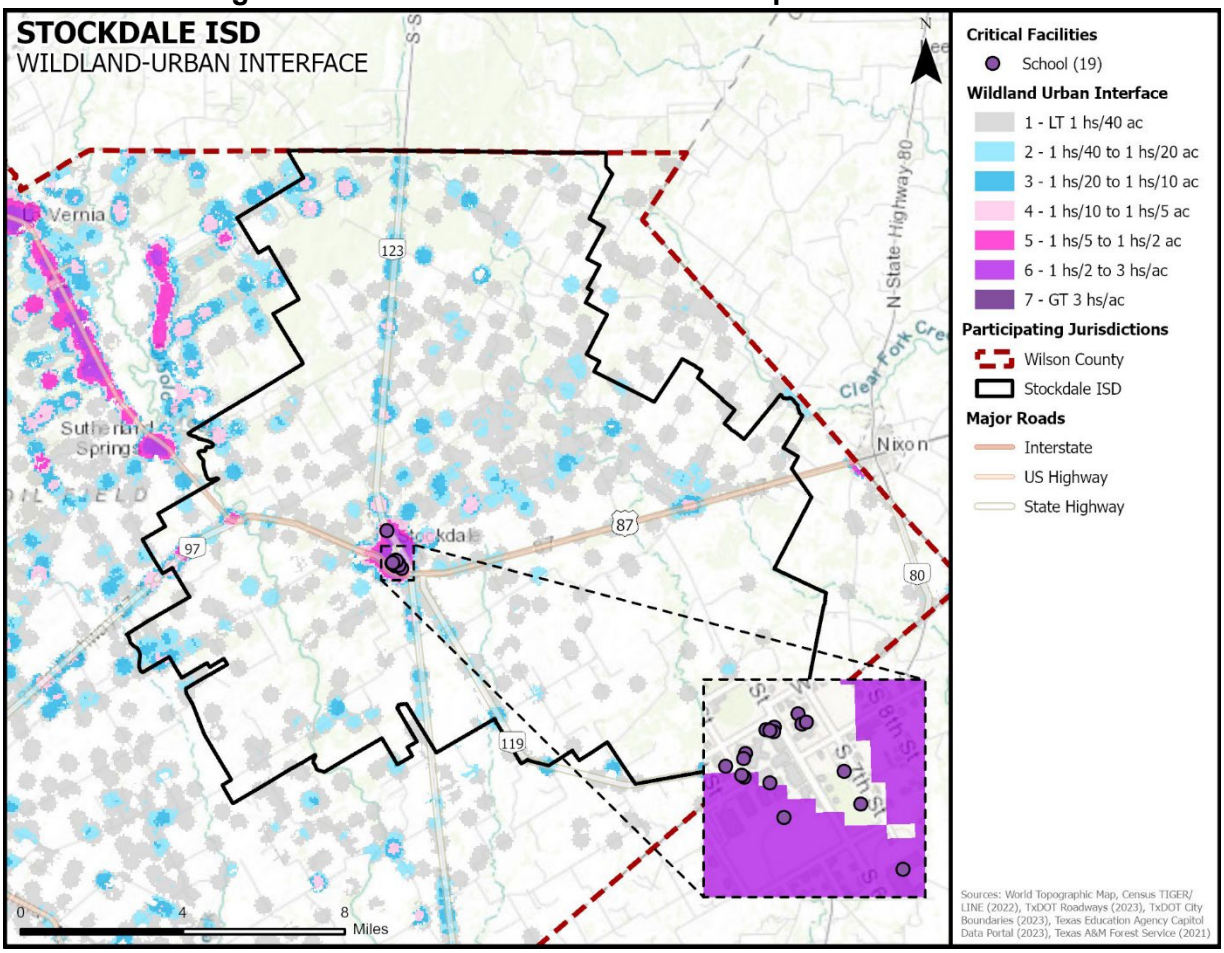
La Vernia ISD has 7 facilities within the WUI, however all ISD facilities are at some risk for wildfires.

Figure 15-8. Wildland Urban Interface Map – Poth ISD



Poth ISD has 6 facilities within the WUI, however all ISD facilities are at some risk for wildfires.

Figure 15-9. Wildland Urban Interface Map – Stockdale ISD



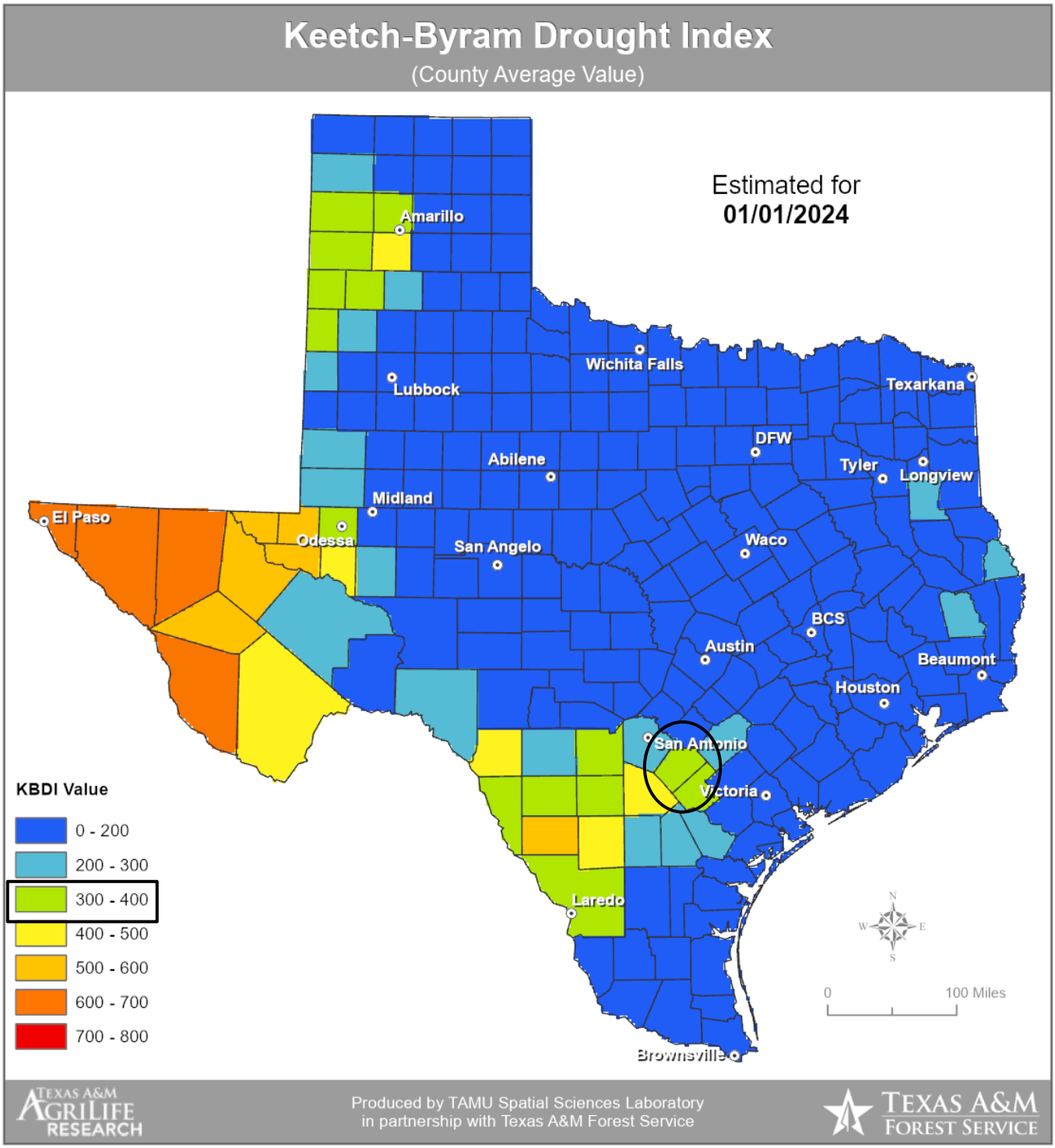
Stockdale ISD has 11 facilities within the WUI, however all ISD facilities are at some risk for wildfires.

EXTENT

Risk for a wildfire event is measured in terms of magnitude and intensity using the Keetch Byram Drought Index (KBDI), a mathematical system for relating current and recent weather conditions to potential or expected fire behavior. The KBDI determines forest fire potential based on a daily water balance, derived by balancing a drought factor with precipitation and soil moisture (assumed to have a maximum storage capacity of eight inches), and is expressed in hundredths of an inch of soil moisture depletion.

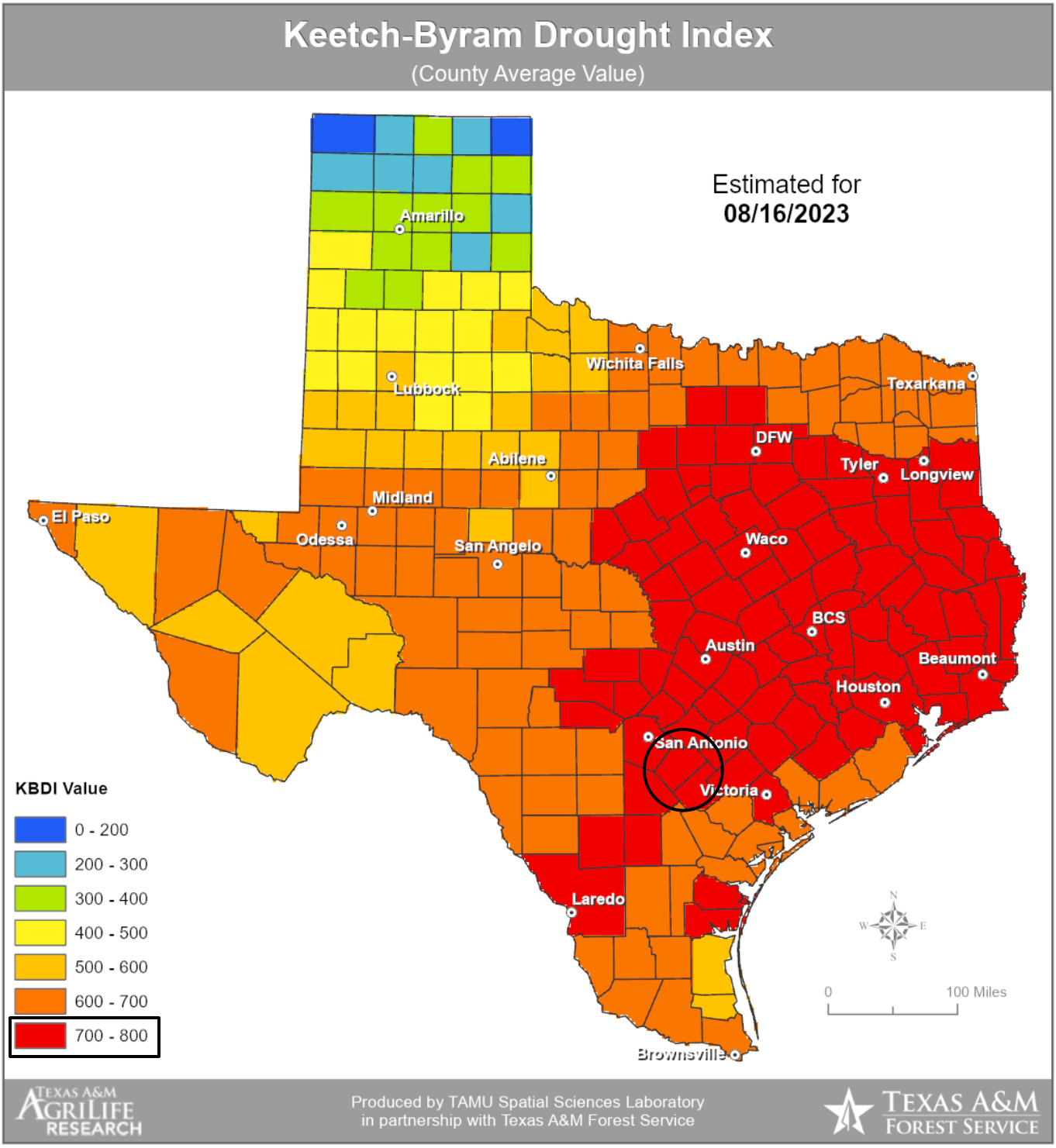
Each color in Figure 15-10 and 15-11 represents the drought index at that location, by date. The drought index ranges from 0 to 800. A drought index of 0 represents no moisture depletion, and a drought index of 800 represents absolutely dry conditions.

Figure 15-10. Keetch-Byram Drought Index (KBDI) for the State of Texas, 1/01/2024[5]



[5] Wilson County planning area is located within the black circle.

Figure 15-11. Keetch-Byram Drought Index (KBDI) for the State of Texas, 08/16/2023



Fire behavior can be categorized at four distinct levels on the KBDI:

- **0 -200:** Soil and fuel moisture are high. Most fuels will not readily ignite or burn. However, with sufficient sunlight and wind, cured grasses and some light surface fuels will burn in spots and patches.
- **200 -400:** Fires more readily burn and will carry across an area with no gaps. Heavier fuels will not readily ignite and burn. Expect smoldering and the resulting smoke to carry into and possibly through the night.
- **400 -600:** Fires intensity begins to significantly increase. Fires will readily burn in all directions exposing mineral soils in some locations. Larger fuels may burn or smolder for several days creating possible smoke and control problems.
- **600 -800:** Fires will burn down to mineral soil. Stumps will burn to the end of underground roots and spotting will be a major problem. Fires will burn through the night and heavier fuels will actively burn and contribute to fire intensity.

The KBDI is a good measure of the readiness of fuels for a wildfire event. It should be referenced as the area experiences changes in precipitation and soil moisture, while caution should be exercised in dryer, hotter conditions.

The range of intensity for the Wilson County planning area, in a wildfire event, is within 110 to 740. The average extent to be mitigated for the planning area is a KBDI of 420. Based on historical occurrences and readily available fuel, the planning area can anticipate a KBDI range from 0 to 800. At the high end of this range fires will burn to mineral soil. Stumps will burn to the end of underground roots and spotting will be a major problem. Fires will burn through the night and heavier fuels will actively burn and contribute to fire intensity.

The Texas Forest Service's Fire Intensity Scale identifies areas where significant fuel hazards and associated dangerous fire behavior potential exist based on weighted average of four percentile weather categories. The Wilson County planning area has a potential for a full range of wildfire intensities. Figure 15-12 through 15-20 identifies the wildfire intensity for the planning area.

Figure 15-12. Fire Intensity Scale Map – Wilson County

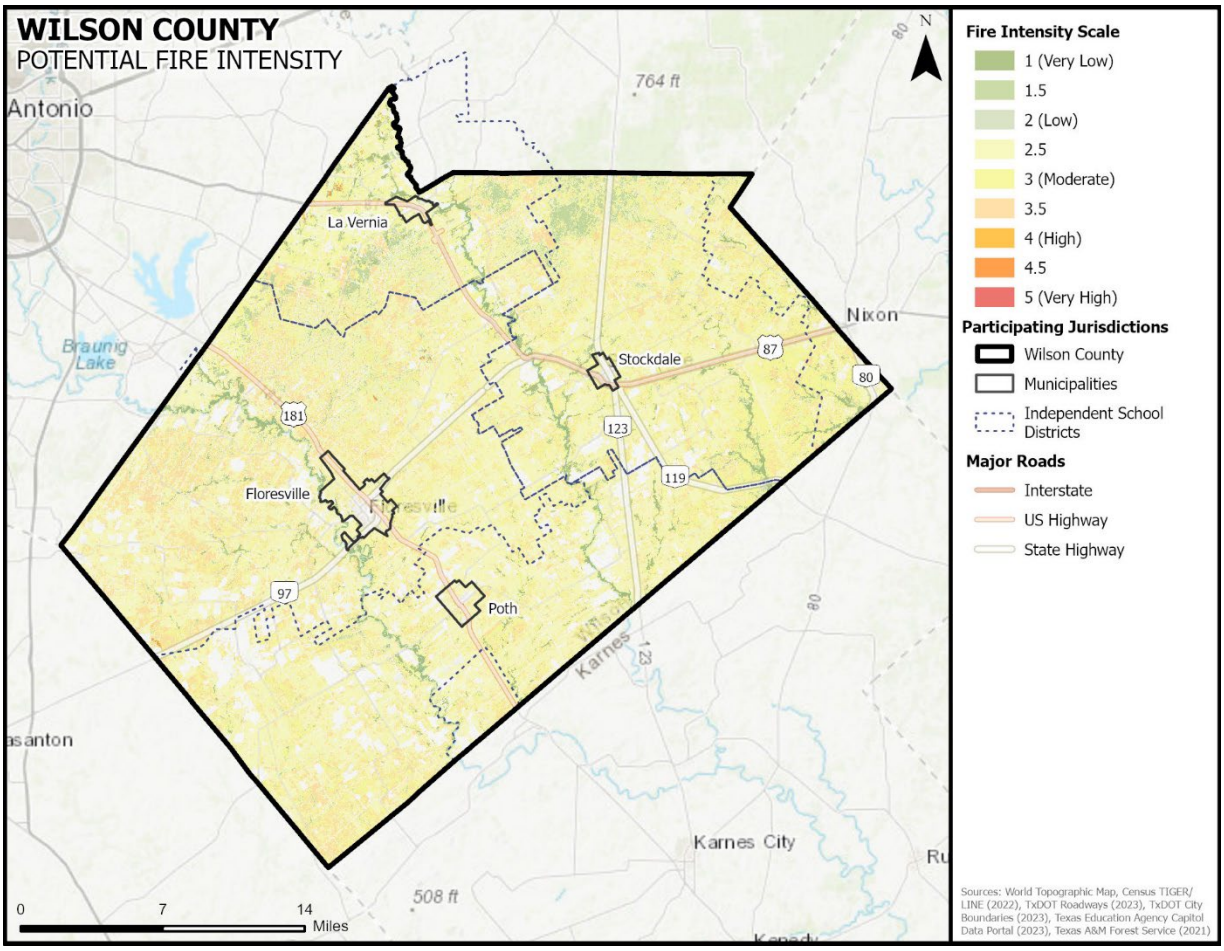


Figure 15-13. Fire Intensity Scale Map – City of Floresville

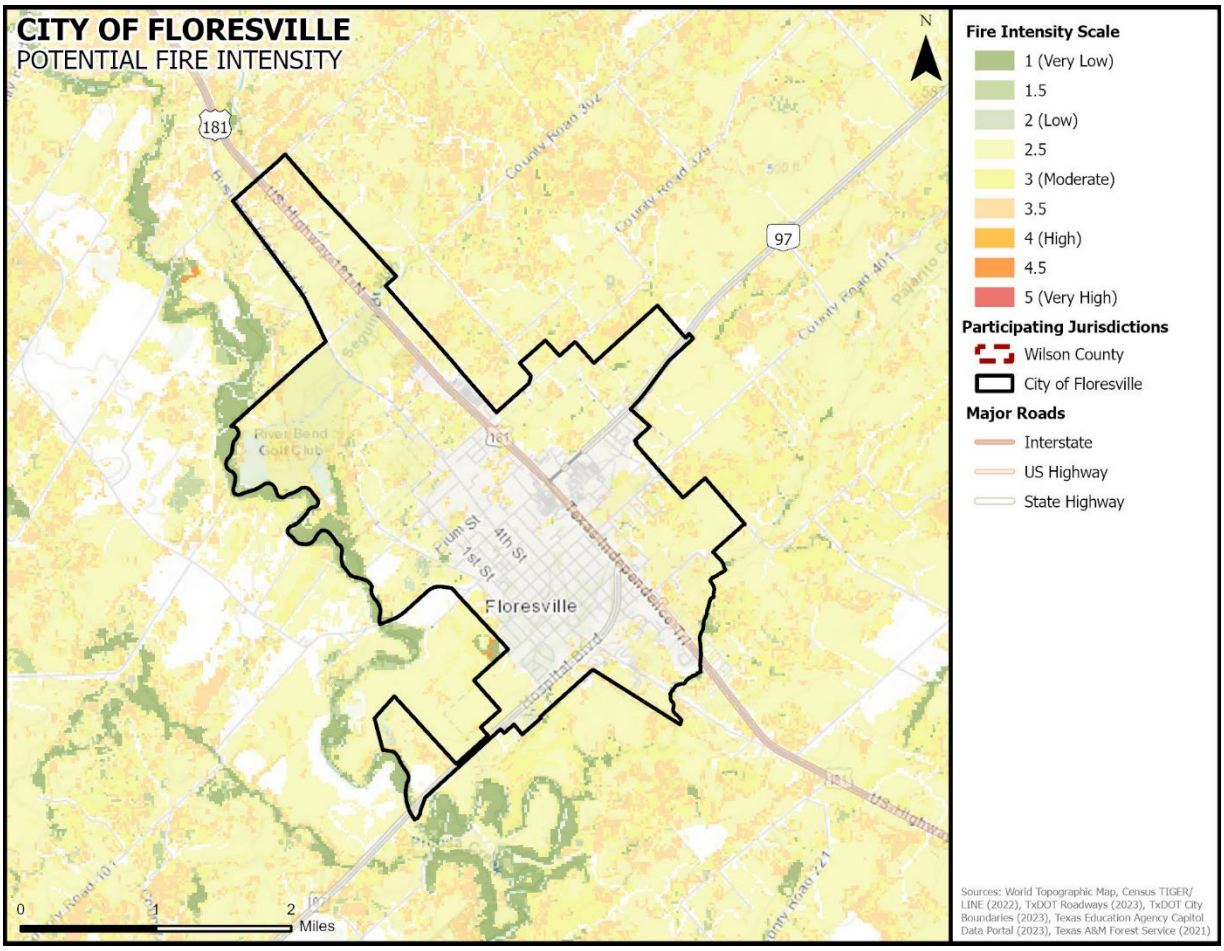


Figure 15-14. Fire Intensity Scale Map – City of La Vernia

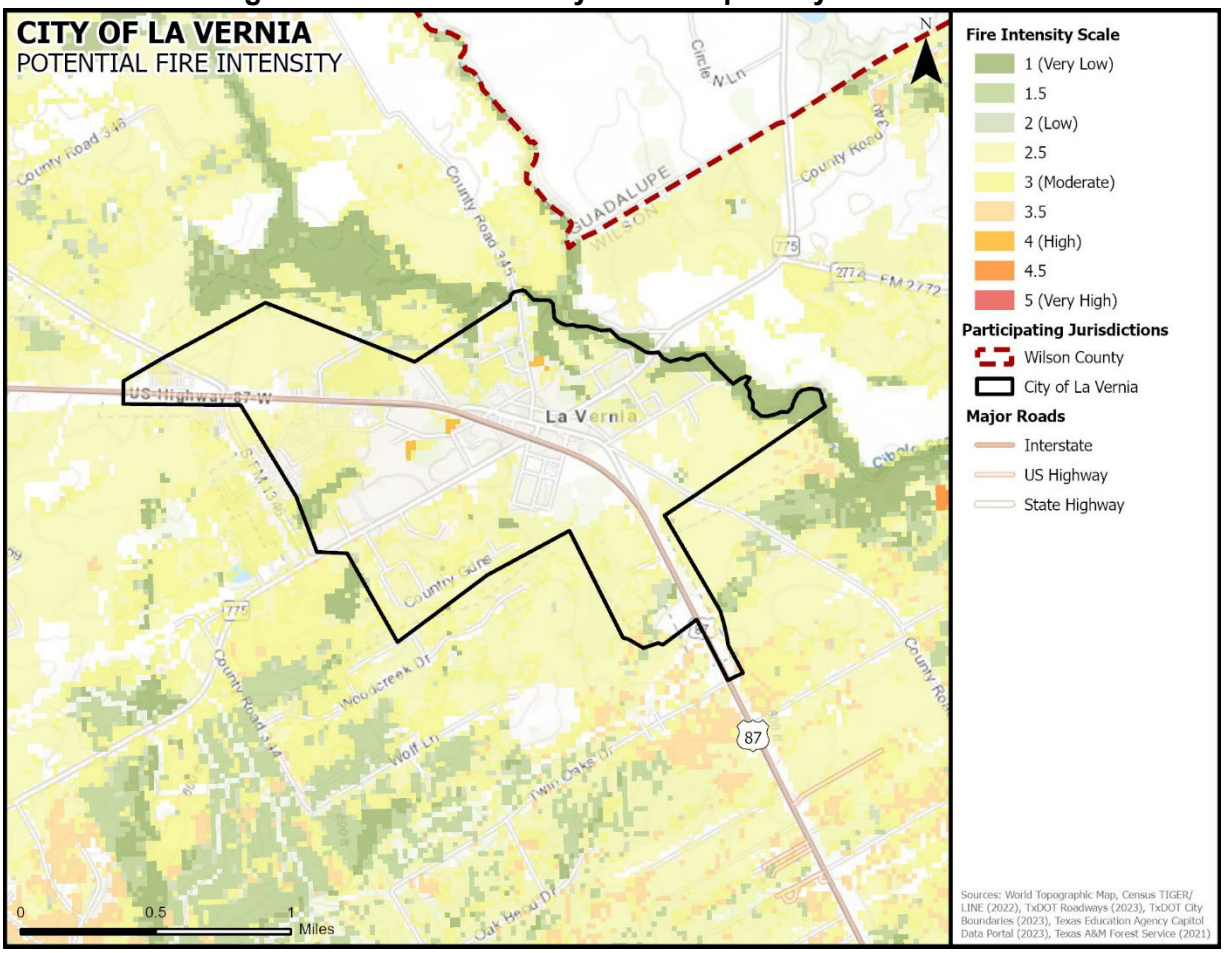


Figure 15-15. Fire Intensity Scale Map – City of Poth

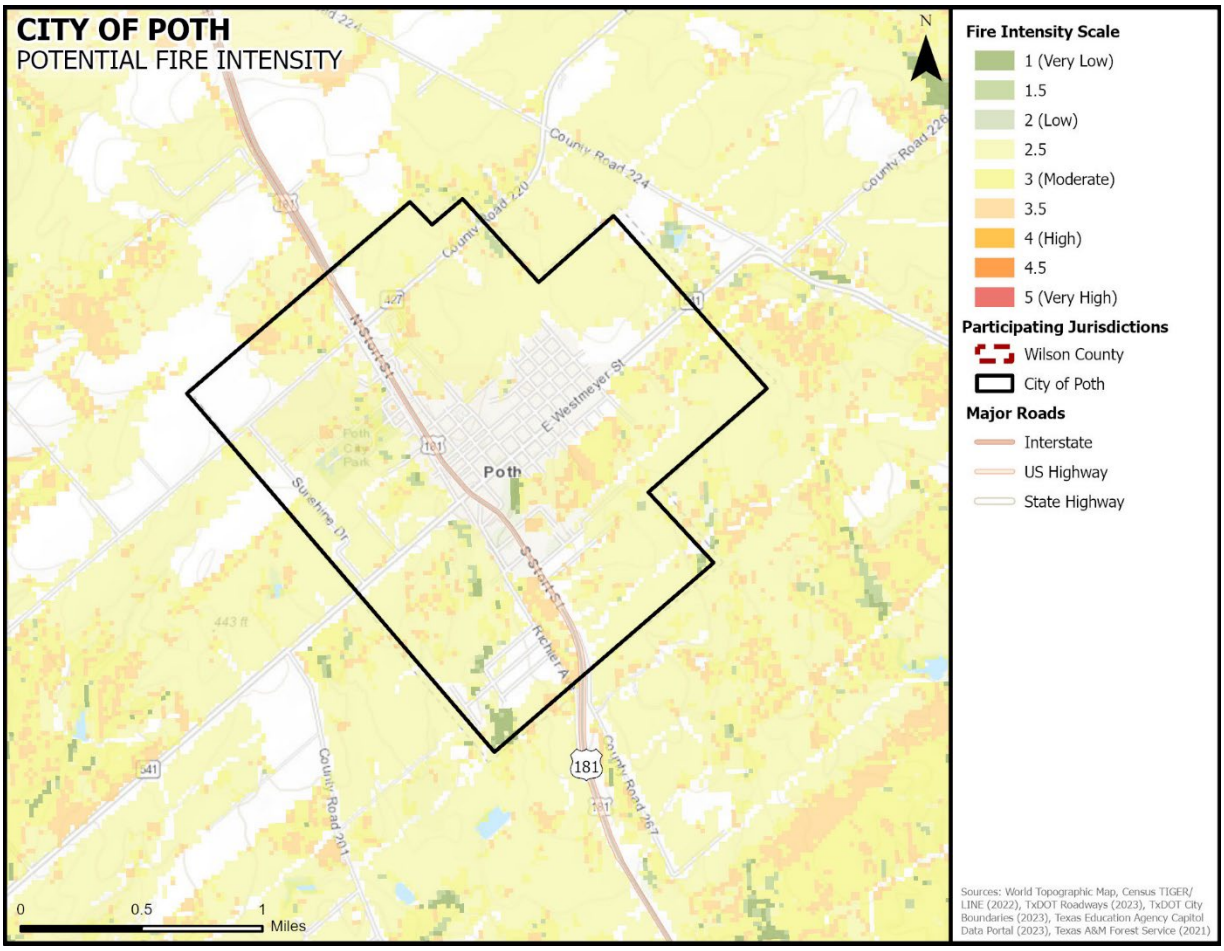


Figure 15-16. Fire Intensity Scale Map – City of Stockdale

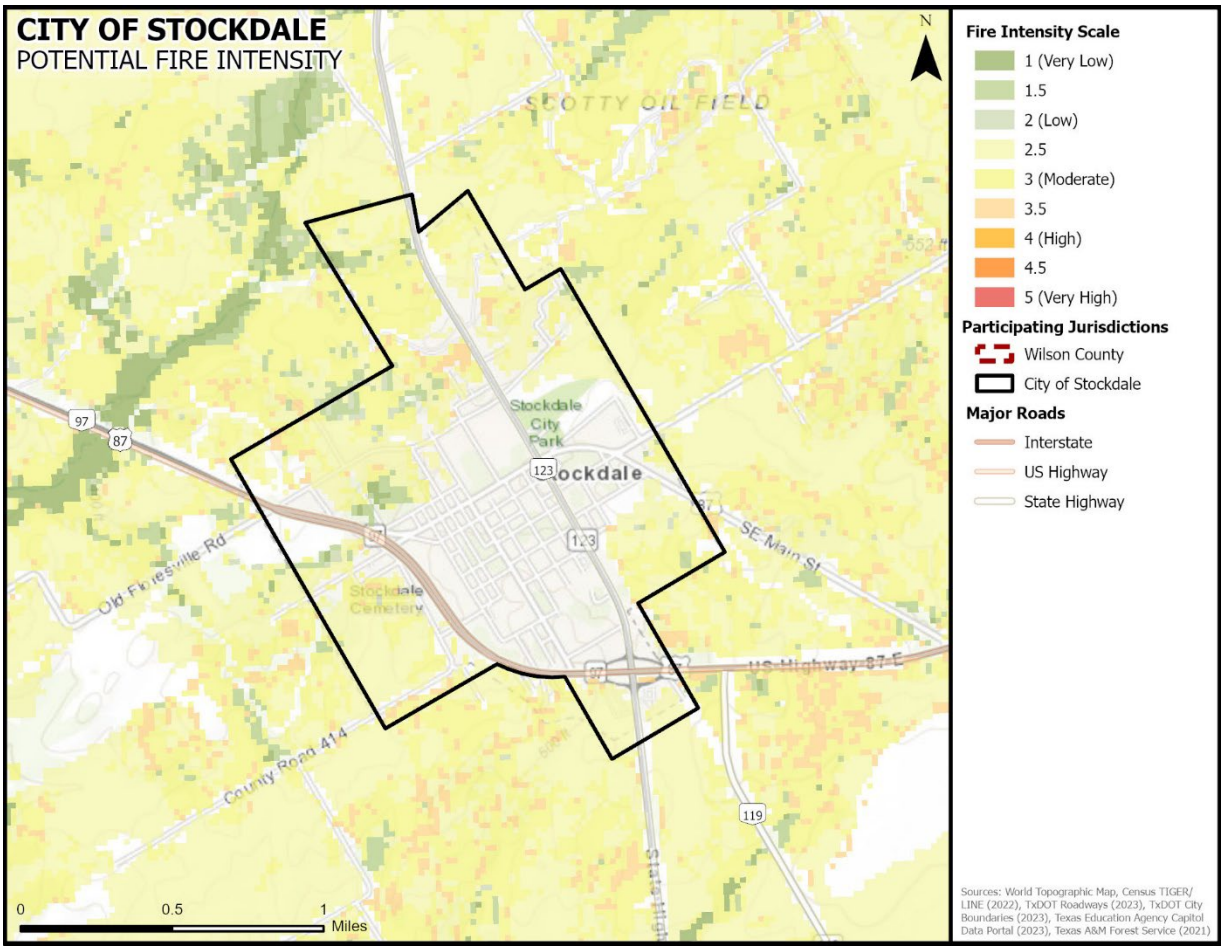


Figure 15-17. Fire Intensity Scale Map – Floresville ISD

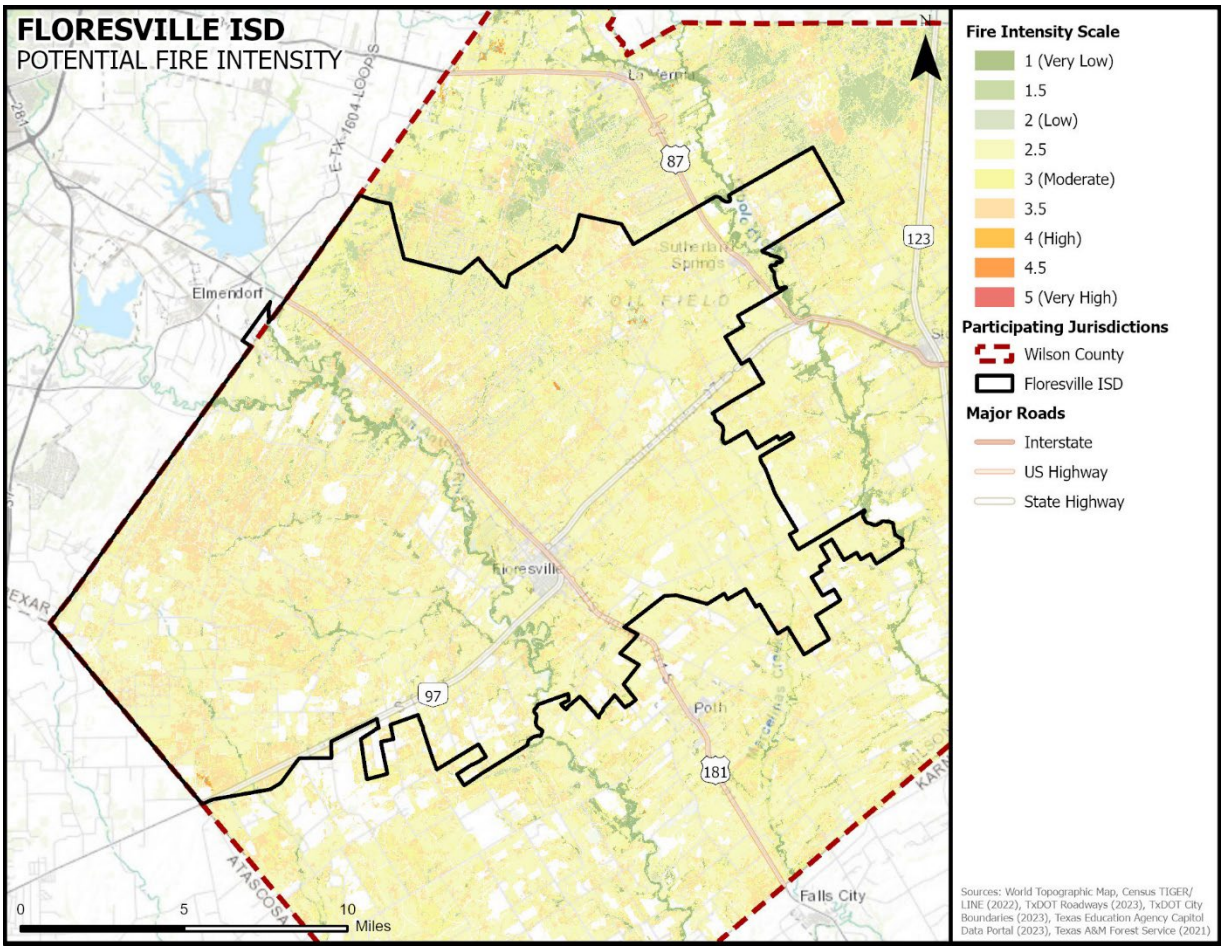


Figure 15-18. Fire Intensity Scale Map – La Vernia ISD

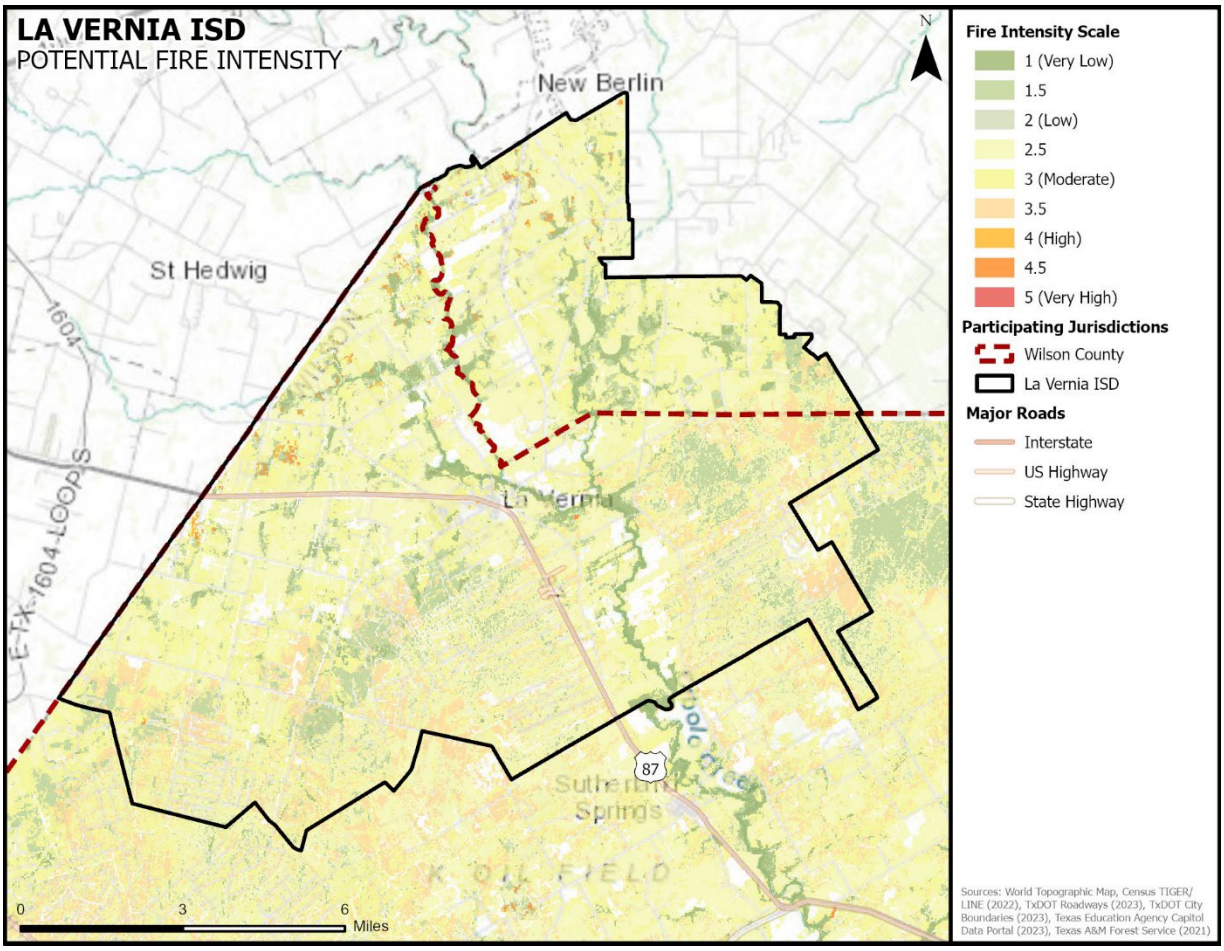


Figure 15-19. Fire Intensity Scale Map – Poth ISD

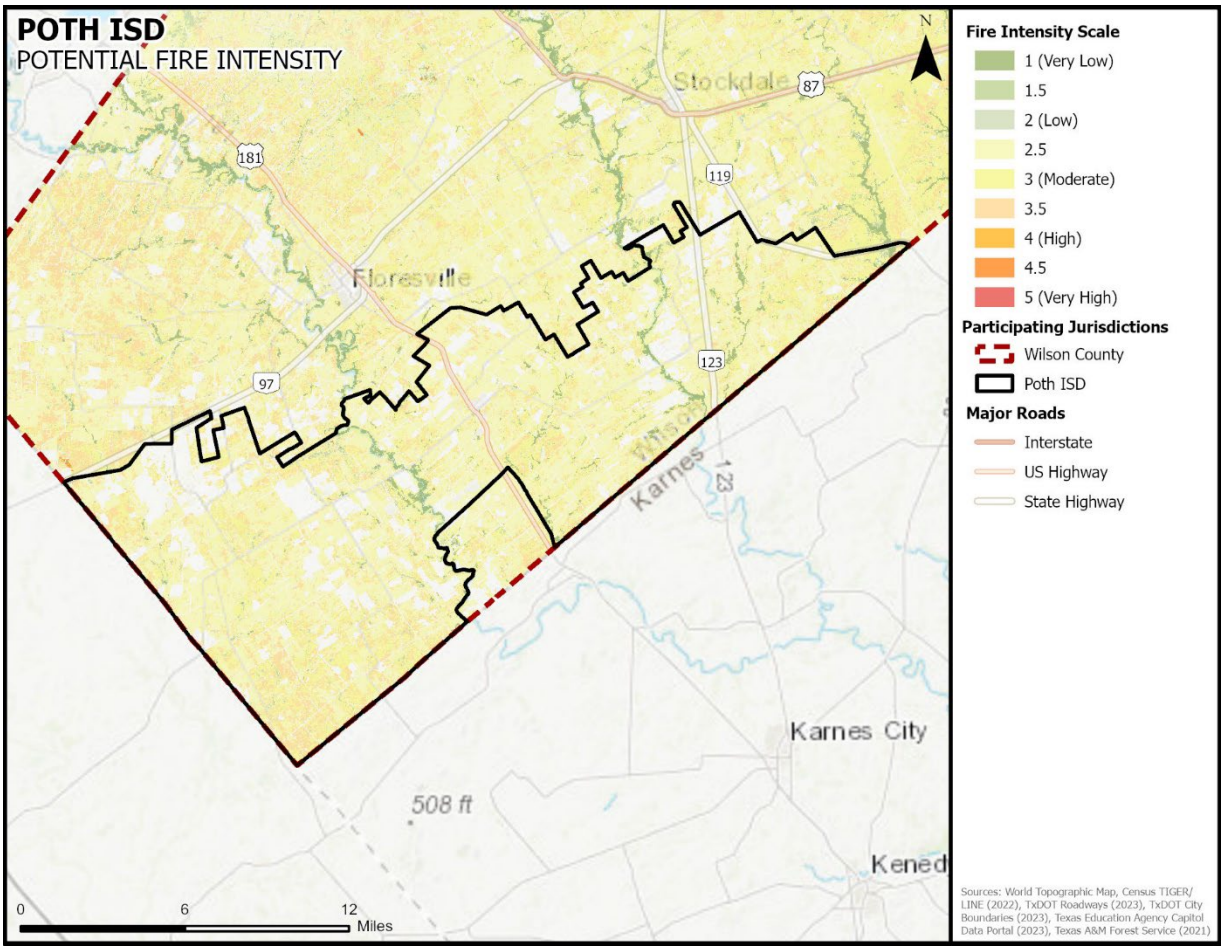
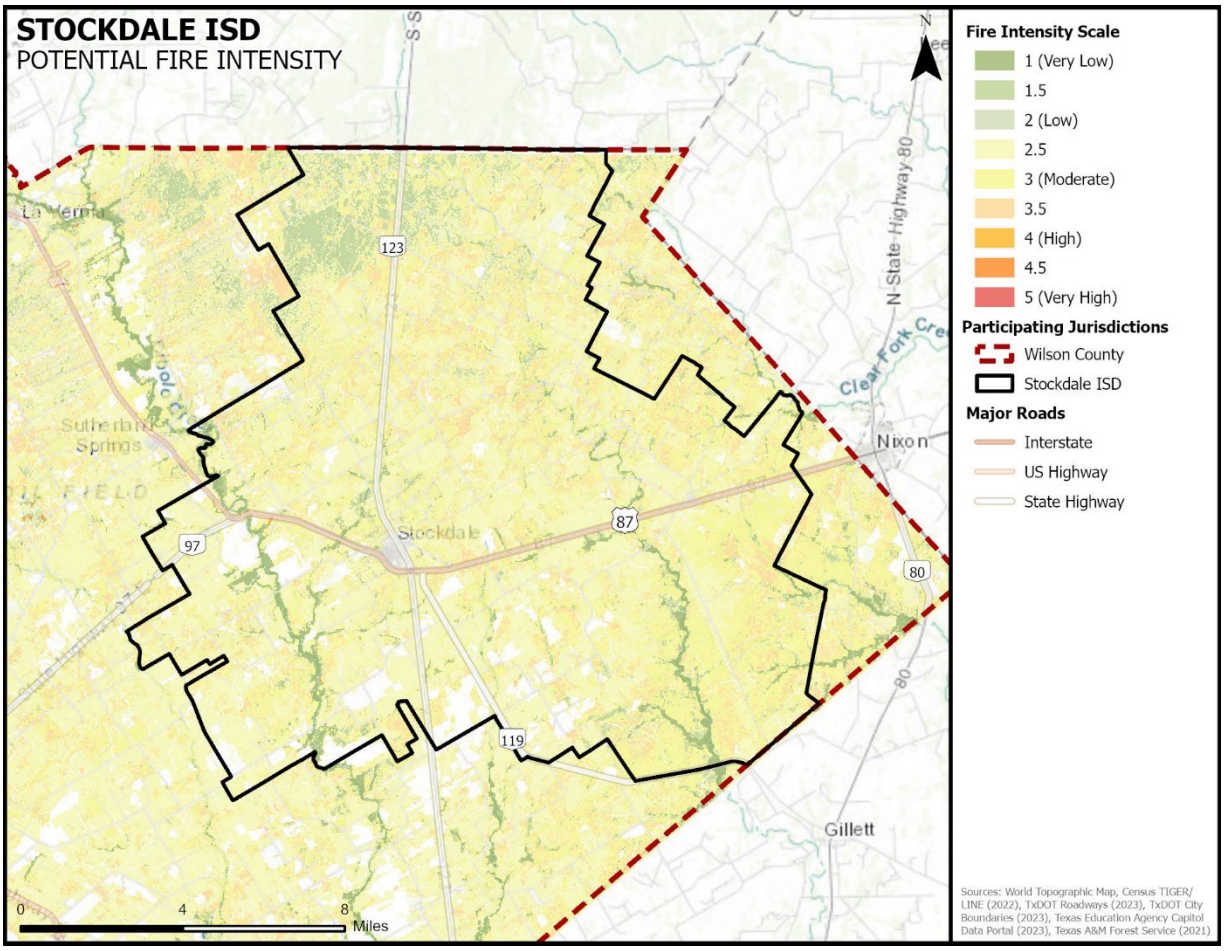


Figure 15-20. Fire Intensity Scale Map – Stockdale ISD



HISTORICAL OCCURRENCES

The Texas Forest Service reported 870 wildfire events for the Wilson County planning area between 2005 and 2021. There have been no additional events reported to the NCEI. The Texas A&M Forest Service (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 2021, frequency calculations are based on a 17-year reporting period, using only data from recorded years. The map below shows approximate locations of wildfires, which can be grass or brushfires of any size (Figure 15-21). Tables 15-1 through 15-3 identify the number of wildfires and total acreage burned each year within the county boundaries.

Historical wildfire data for the ISDs is provided within the reported jurisdiction in which they are located as they do not have events reported separately and apart from the events reported to the TFS. There have been no reported losses as a result of wildfire events for the participating ISDs.

Figure 15-21. Location and Historic Wildfire Events in Wilson County

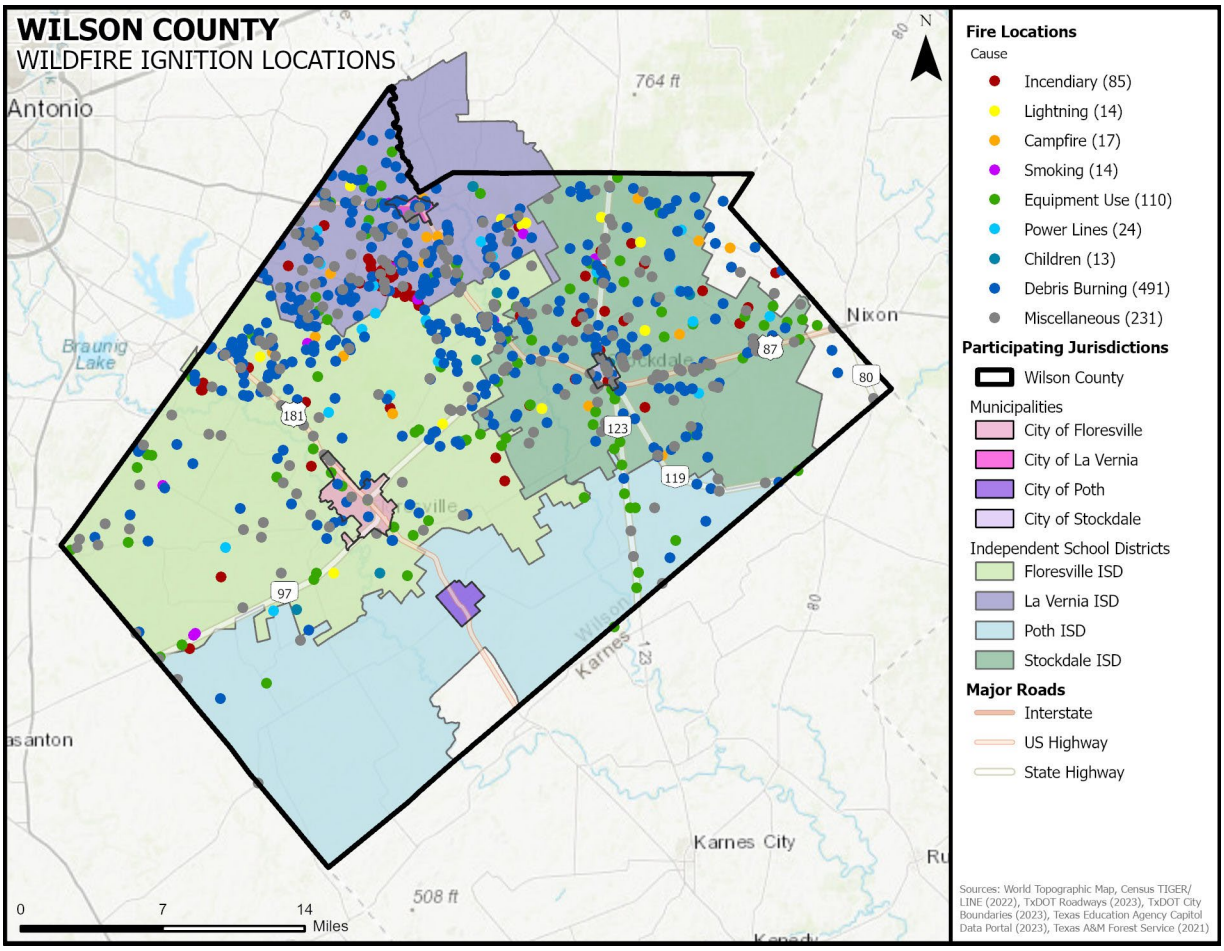


Table 15-1. Historical Wildfire Events Summary, 2005 - 2021[6]

JURISDICTION	NUMBER OF EVENTS	ACRES BURNED
Wilson County	811	17,615
City of Floresville	8	55
City of La Vernia	29	44
City of Poth	0	0
City of Stockdale	22	209
Floresville ISD	0	0
La Vernia ISD	0	0
Poth ISD	0	0
Stockdale ISD	0	0

[6] Source: Texas A&M Forest Service

Table 15-2. Historical Wildfire Events by Year

YEAR	WILSON COUNTY	CITY OF FLORESVILLE	CITY OF LA VERNIA	TOWN OF POTH	CITY OF STOCKDALE
2005	65	0	0	0	5
2006	151	0	7	0	3
2007	75	0	12	0	0
2008	141	1	2	0	5
2009	142	1	3	0	2
2010	60	0	1	0	1
2011	80	2	3	0	6
2012	21	2	0	0	0
2013	40	2	1	0	0
2014	21	0	0	0	0
2015	9	0	0	0	0
2016	0	0	0	0	0
2017	1	0	0	0	0
2018	4	0	0	0	0
2019	1	0	0	0	0
2020	0	0	0	0	0
2021	0	0	0	0	0
Total	**811**	**8**	**29**	**0**	**22**

Based on the list of historical wildfire events for the Wilson County planning area (listed above), no events have occurred since the 2020 plan.

Table 15-3. Acreage of Suppressed Wildfire by Year

YEAR	WILSON COUNTY	CITY OF FLORESVILLE	CITY OF LA VERNIA	TOWN OF POTH	CITY OF STOCKDALE
2005	1,587	0	0	0	7
2006	3,910	0	8	0	86
2007	5,567	0	24	0	0
2008	2,862	0	2	0	46

YEAR	WILSON COUNTY	CITY OF FLORESVILLE	CITY OF LA VERNIA	TOWN OF POTH	CITY OF STOCKDALE
2009	1,745	1	3	0	2
2010	239	0	2	0	1
2011	711	31	3	0	67
2012	270	2	0	0	0
2013	107	21	2	0	0
2014	459	0	0	0	0
2015	56	0	0	0	0
2016	0	0	0	0	0
2017	2	0	0	0	0
2018	82	0	0	0	0
2019	18	0	0	0	0
2020	0	0	0	0	0
2021	0	0	0	0	0
Total	**17,615**	**55**	**44**	**0**	**209**

SIGNIFICANT EVENTS

There have been three declared disasters related to wildfire in Wilson County between 1996 and 2024 (Table 15-4). There are no specific damages reported for these events.

Table 15-4. Disaster Declarations for Wildfire, 1996-2024

YEAR	DECLARATION TITLE	DECLARATION TYPE	DISASTER NO.
1999	Texas Extreme Fire Hazards	EM	EM-3142-TX
2006	Extreme Wildfire Threat in Texas	DR	DR-1624-TX
2008	Wildfires in Texas	EM	EM-3284-TX

PROBABILITY OF FUTURE EVENTS

Wildfires can occur at any time of the year. As Wilson County communities move into wildland, the potential area of occurrence of wildfire increases. With 870 events in a 17-year period, an event within the Wilson County planning area, including all participating jurisdictions and ISDs, 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 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.[7]

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.[8]

Additionally, it is projected that future changes to Wilson County will include increased temperatures, which according to the U.S. Climate Explorer, the planning area may experience a 5°F increase in the average extreme heat temperatures. Historically, extreme temperatures averaged 100°F in Wilson County, but between 2035 and 2064 the average will be 105°F, increasing the severity and frequency of extreme heat events, contributing to favorable wildfire conditions. Projections indicate that average extreme temperatures can be higher but will depend on overall future emissions.

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 8 of this Plan. The projected increases in favorable wildfire conditions, including drought and extreme heat, indicate an increase in favorable wildfire conditions. 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. Figure 15-22 through 15-30[9] illustrates the areas that are the most vulnerable to wildfire throughout the Wilson County planning area.

The Wilson County Planning Team identified the following critical facilities (Table 15-5) as assets that are considered the most important to the planning area and are susceptible to a range of

[7] NOAA Wildfire Climate Connection, August 2022: wildfire-climate-connection.
[8] 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.
[9] Source: TxWRAP portal at the following site: https://texaswildfirerisk.com/

impacts caused by wildfire events. For a comprehensive list by participating jurisdiction, please see Appendix C.

Table 15-5. Critical Facilities / Critical Services Vulnerable to Wildfire Events

CRITICAL FACILITIES	CRITICAL FACILITIES AT RISK	POTENTIAL IMPACTS
Emergency Response Services (EOC, Fire, Police, EMS), Hospitals and Medical Centers	Wilson County: 6 EMS, 17 Fire Stations, 1 Health Service Facility, 1 Police Station City of Floresville: 1 EMS, 1 Fire Station, 2 Health Services City of Poth: 1 Fire Station, 1 Police Station City of Stockdale: 1 Fire Station, 1 Health Service	► 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.
Airport, Academic Institutions, Animal Shelter, Evacuation Centers & Shelters, Governmental Facilities, Residential/	Wilson County: 2 Municipal Facilities City of Floresville: 1 Evacuation Shelter, 4 Residential (Vulnerable Populations), 3 Schools	► 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

CRITICAL FACILITIES	CRITICAL FACILITIES AT RISK	POTENTIAL IMPACTS
Assisted Living Facilities	City of La Vernia: 6 Municipal Facilities, 1 Transportation Facility City of Stockdale: 1 Community Facility, 1 Municipal Facility, 3 School Facilities Floresville ISD: 16 School Facilities La Vernia ISD: 7 School Facilities Poth ISD: 6 School Facilities Stockdale ISD: 11 School Facilities	command centers for logistics, communications, and emergency operations.
Commercial Supplier (food, fuel, etc.)	N/A	► 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.
Utility Services and Infrastructure (electric, water, wastewater, communications)	City of Floresville: 10 Sewage and Water Facilities City of La Vernia: 7 Sewage and Water Facilities, 1 Sanitation and Waste Facility City of Poth: 2 Sewage and Water Facilities City of Stockdale: 1 Energy Utility, 2 Sewage and Water Facilities	► 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. ► Exposure to untreated wastewater is harmful to people and the environment. ► Any service disruptions can negatively impact or delay emergency management operations.

Within the Wilson County planning area, a total of 870 fire events were reported from 2005 through 2021 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 15-6 below. The average frequency is approximately 51 events every year.

Table 15-6. Average Annualized Acreage Losses[10]

JURISDICTION	TOTAL ACRES BURNED	AVERAGE ANNUAL ACRE LOSSES
Wilson County	17,615	1,036
City of Floresville	55	3
City of La Vernia	44	3
City of Poth	0	0
City of Stockdale	209	12
Floresville ISD	N/A	N/A
La Vernia ISD	N/A	N/A
Poth ISD	N/A	N/A
Stockdale ISD	N/A	N/A
PLANNING AREA	**17,923**	**1,054**

Wildfire Ignition Density shows the likelihood of a wildfire starting based on historical ignition patterns. Occurrence is derived by modeling historic wildfire ignition locations to create an average ignition rate map. The ignition rate is measured in the number of fires per year per 1,000 acres. Wildfire Ignition Density is a key input into the calculation of the Wildfire Threat output. With most Texas fires being human caused, there is a repeatable spatial pattern of fire ignitions over time. This pattern identifies areas where wildfires are most likely to ignite, and prevention efforts can be planned accordingly.[11]

Figures 15-22 through 15-30 show the threat of wildfire to the Wilson County planning area.

[10] Events divided by 17 years of data.
[11] Source: TxWRAP portal at the following site: https://texaswildfirerisk.com/

Figure 15-22. Wildfire Ignition Density – Wilson County

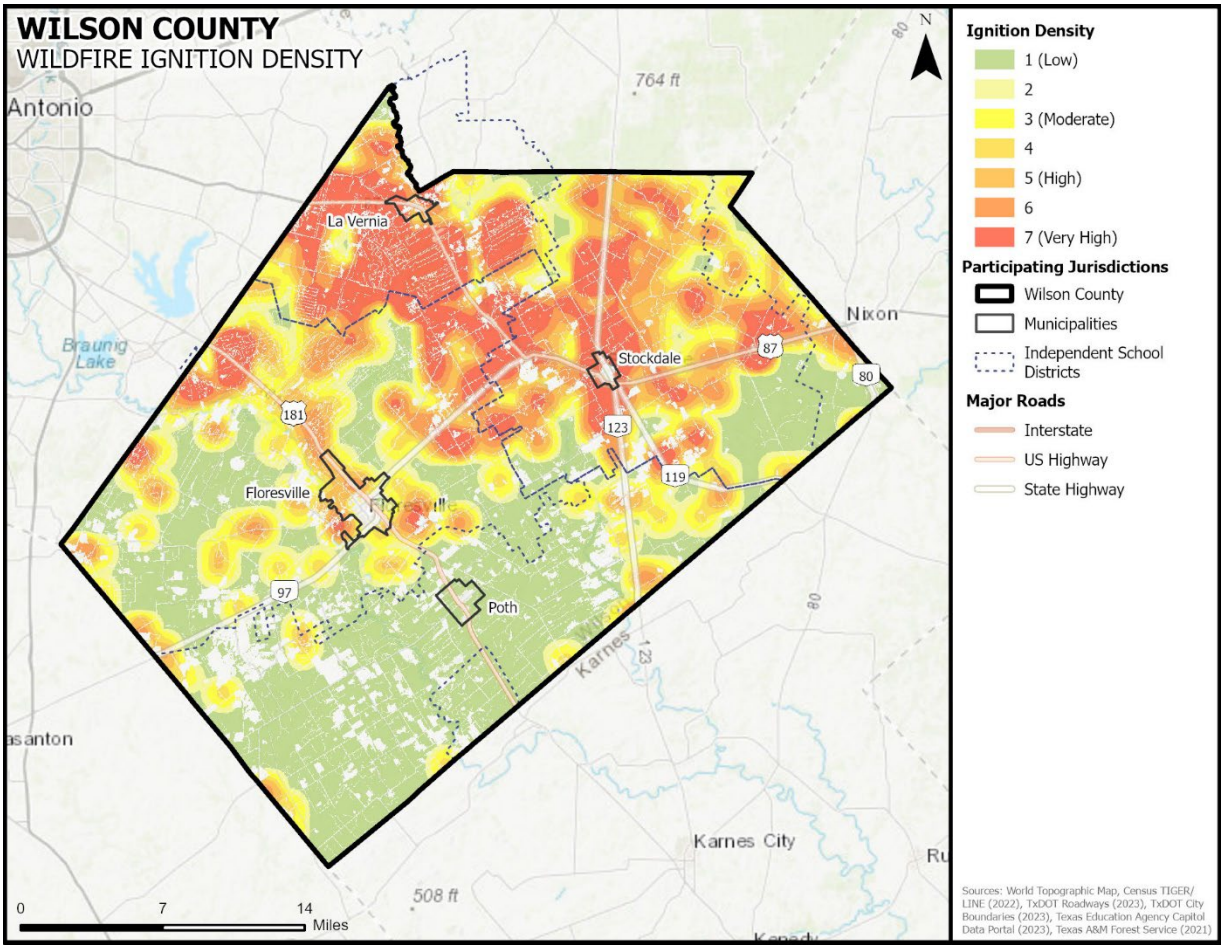


Figure 15-23. Wildfire Ignition Density – City of Floresville

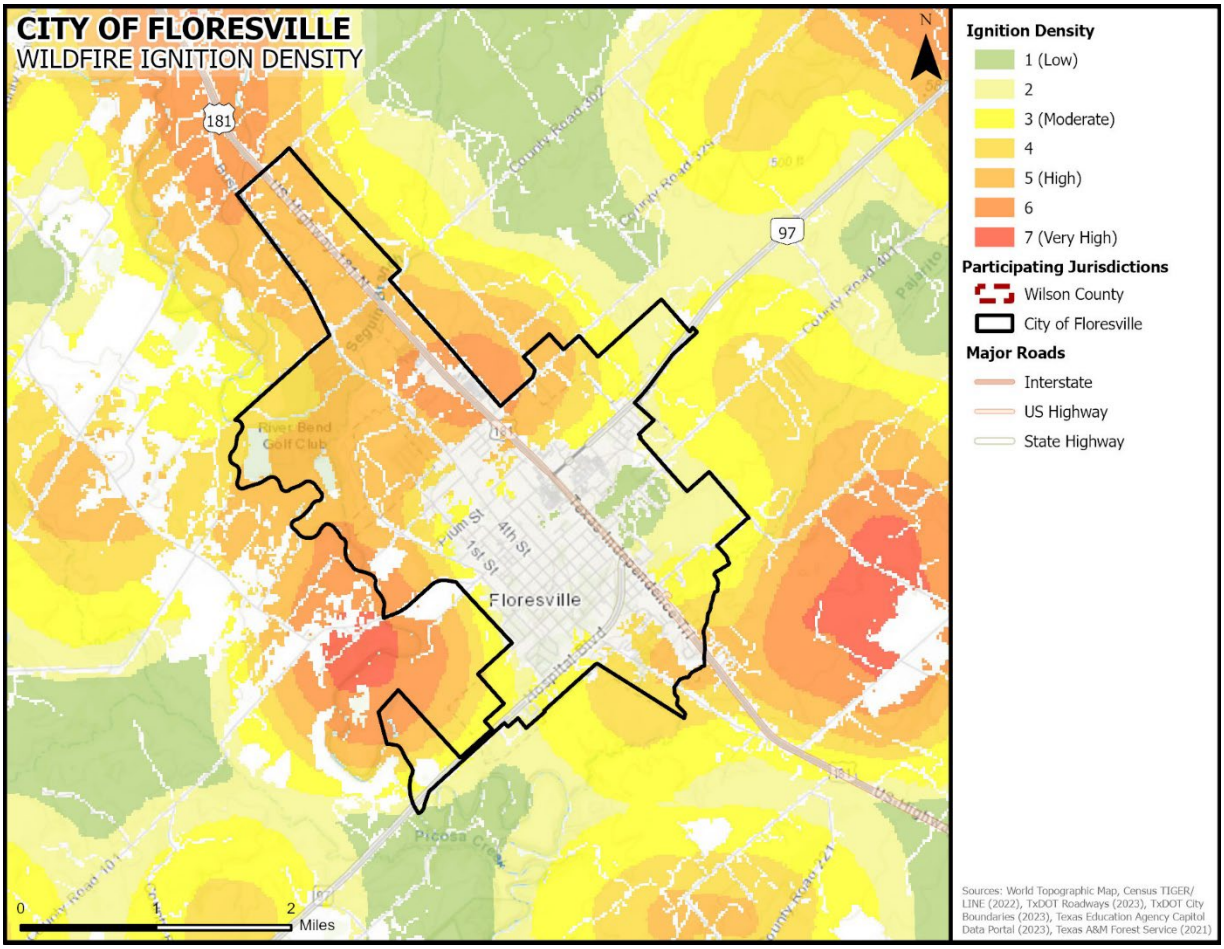


Figure 15-24. Wildfire Ignition Density – City of La Vernia

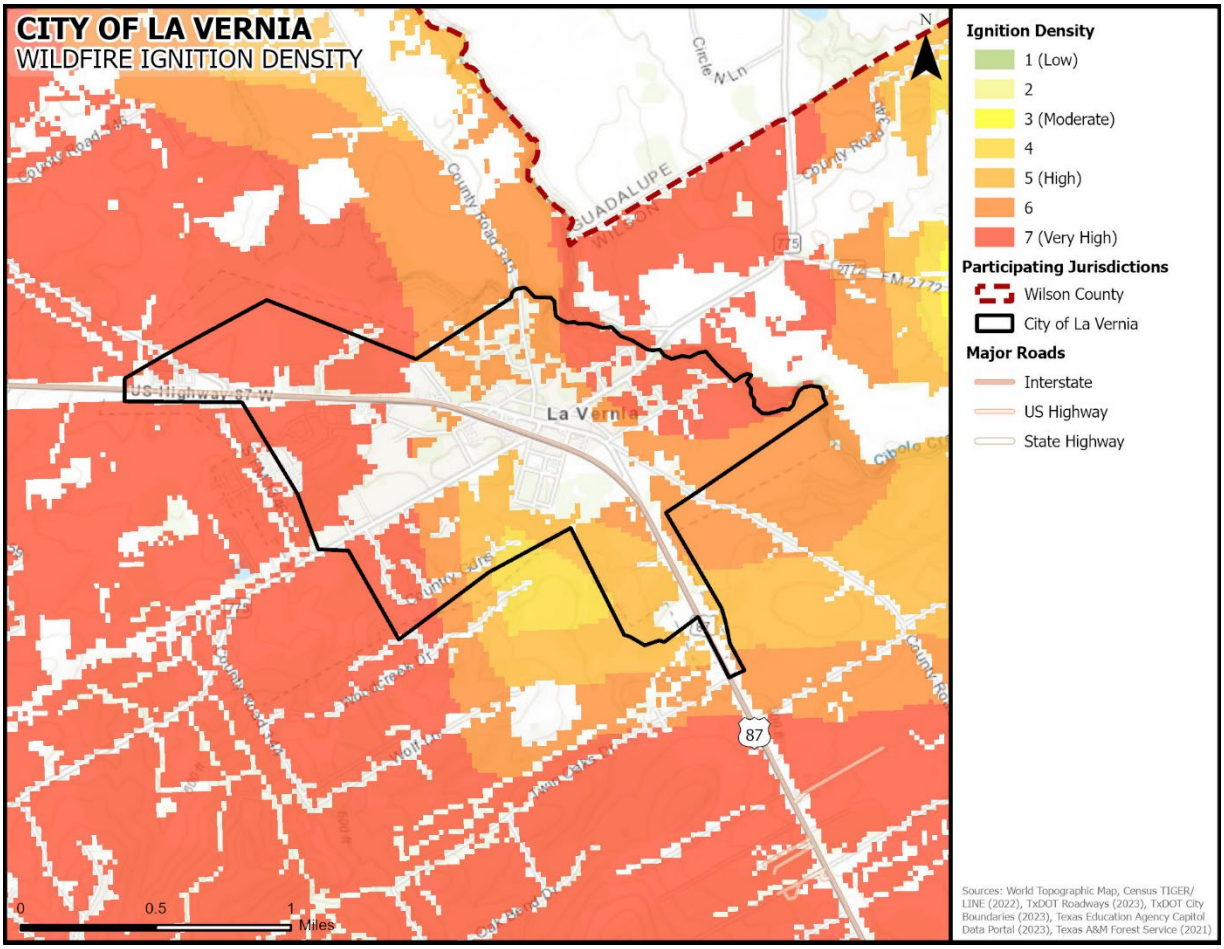


Figure 15-25. Wildfire Ignition Density – City of Poth

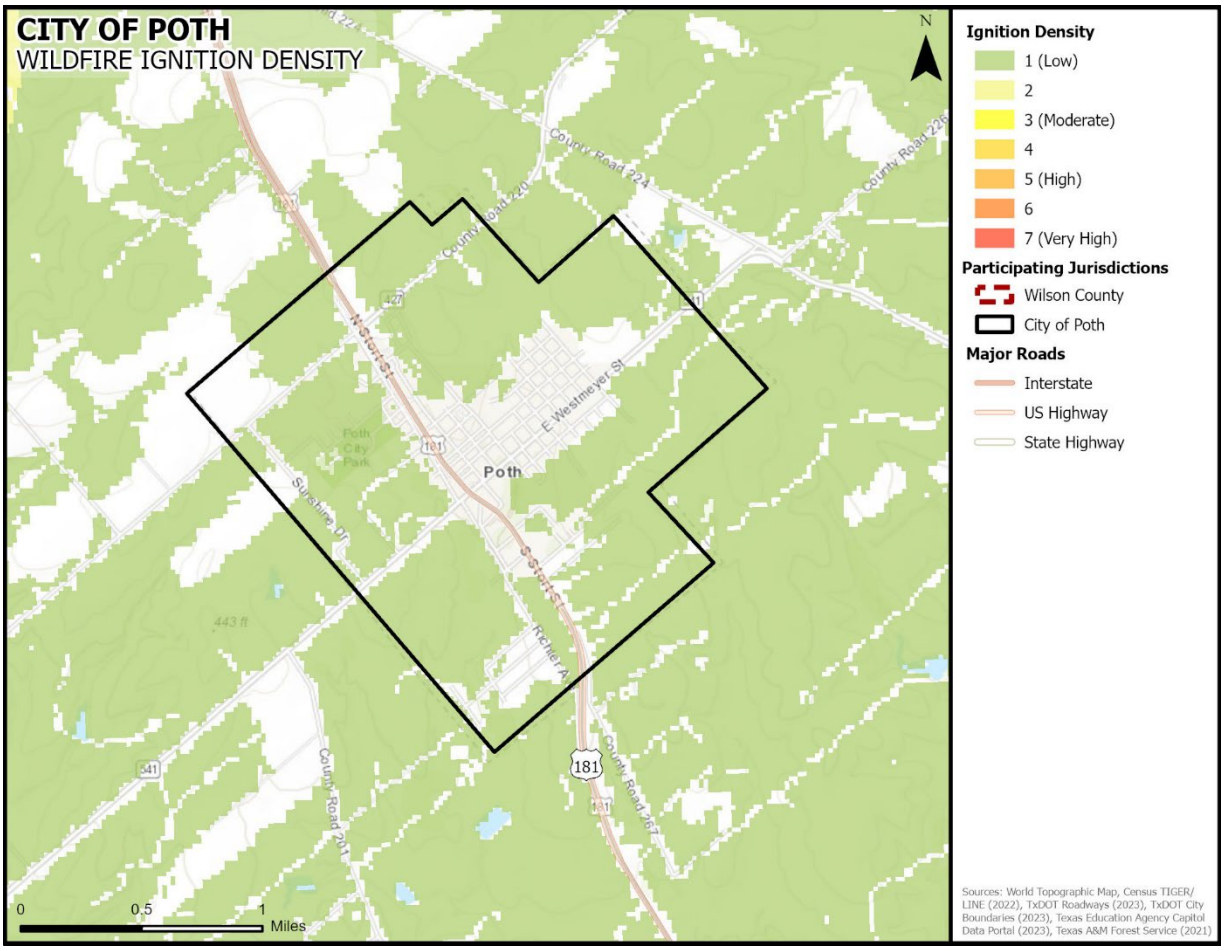


Figure 15-26. Wildfire Ignition Density – City of Stockdale

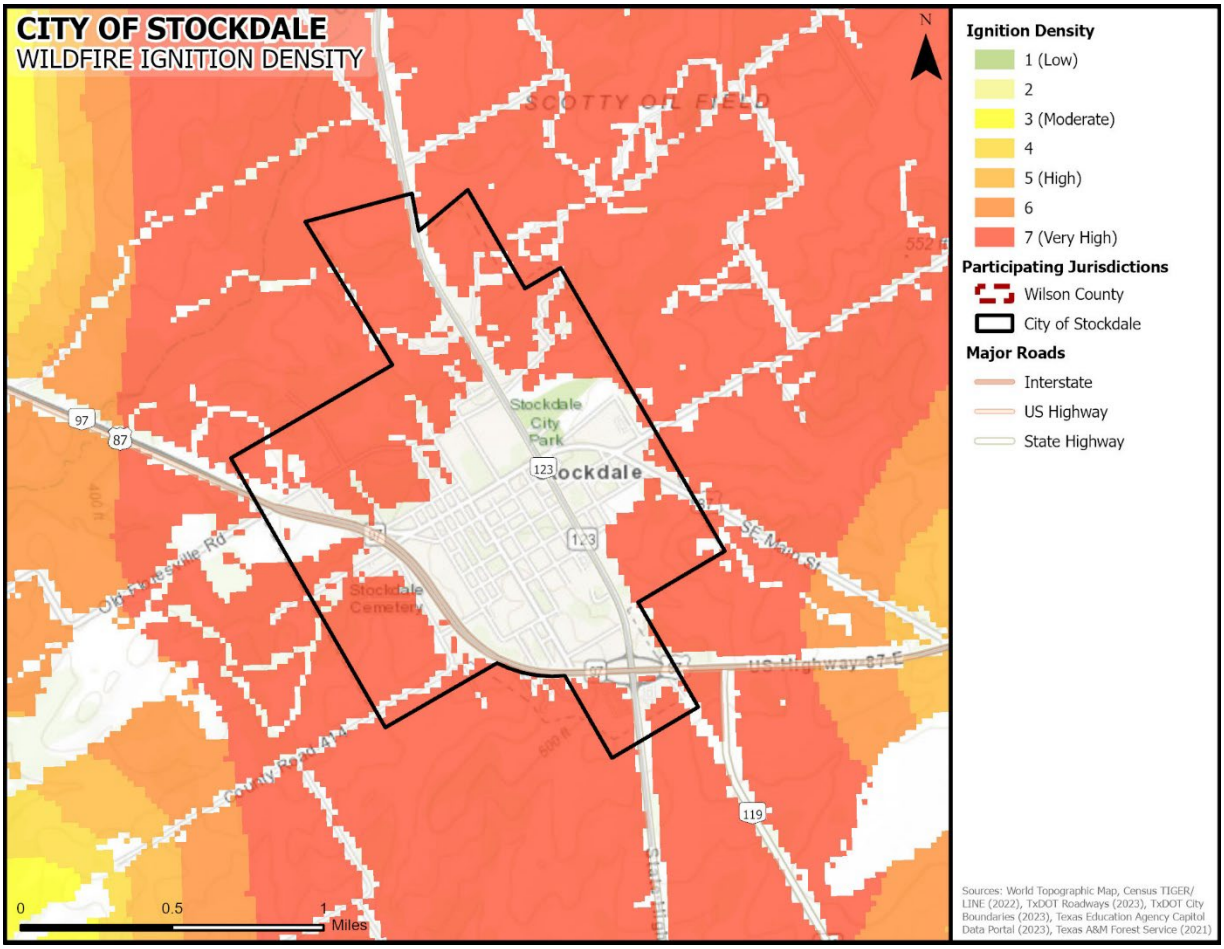


Figure 15-27. Wildfire Ignition Density – Floresville ISD

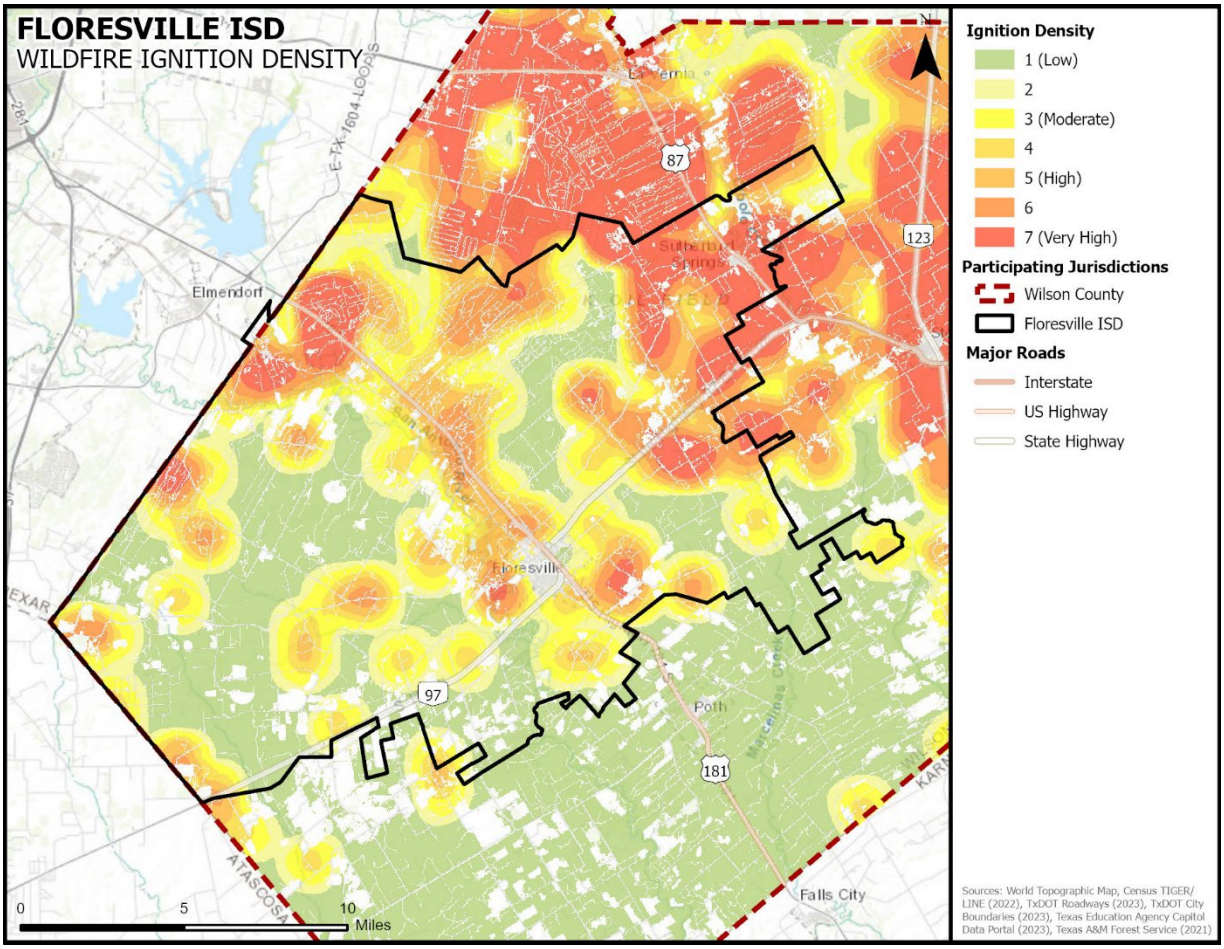


Figure 15-28. Wildfire Ignition Density – La Vernia ISD

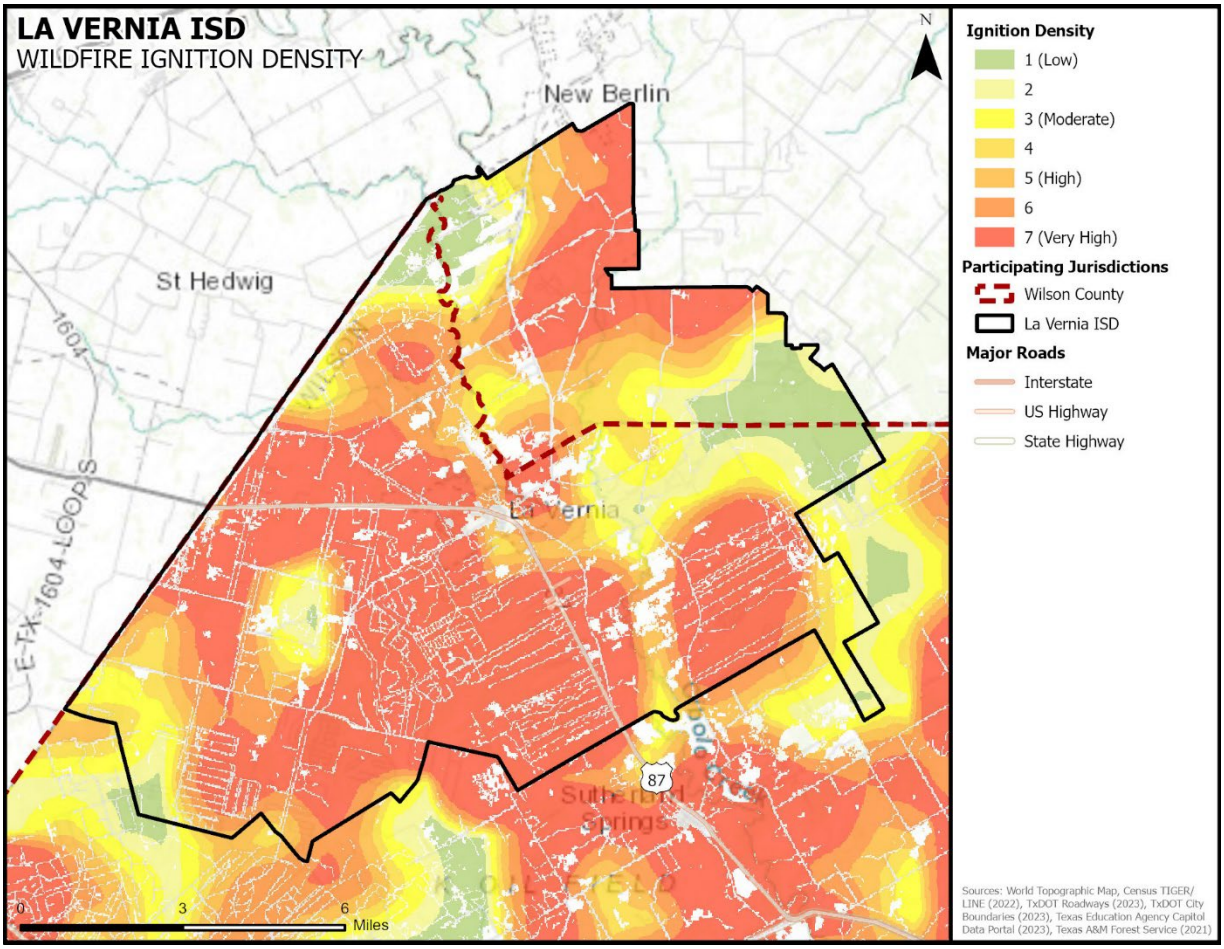


Figure 15-29. Wildfire Ignition Density – Poth ISD

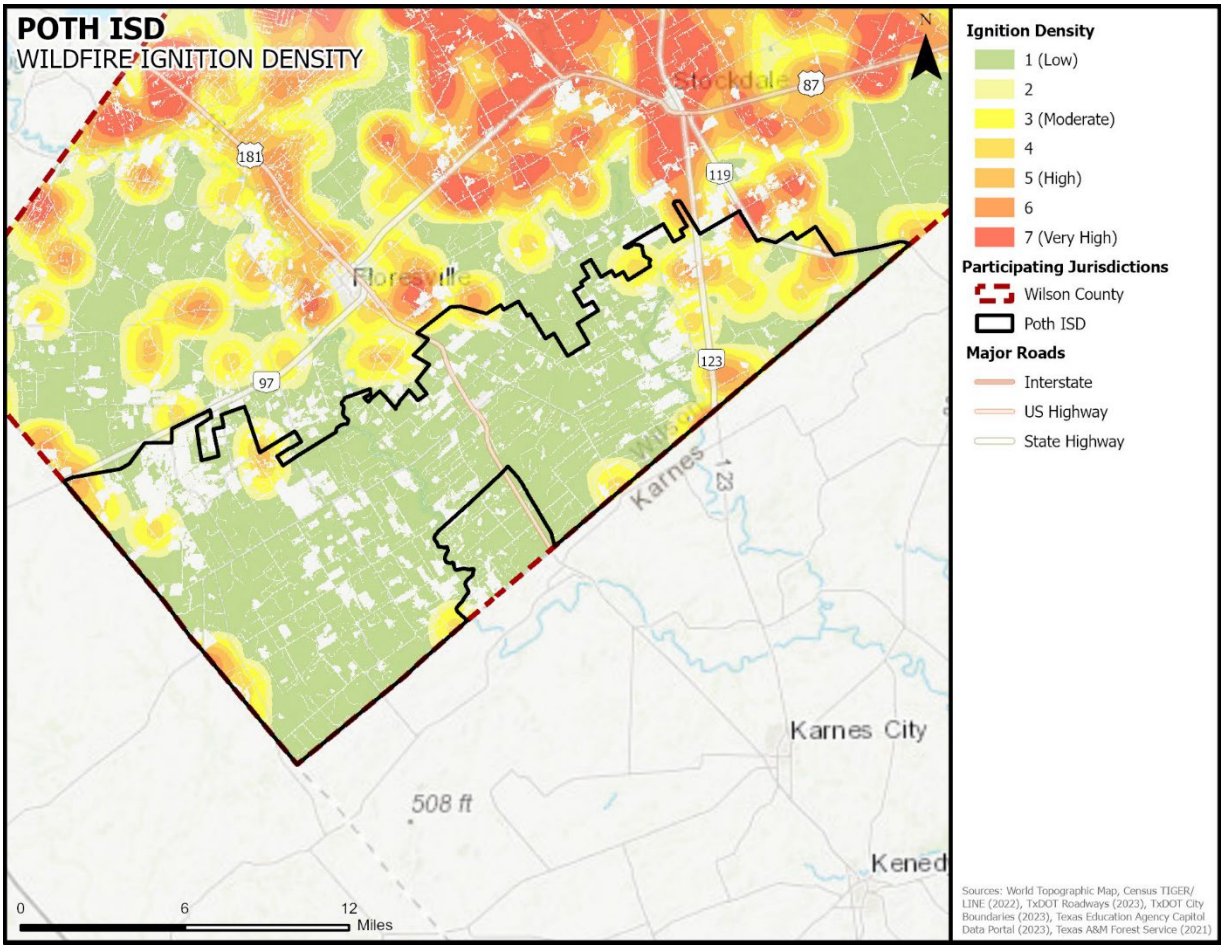
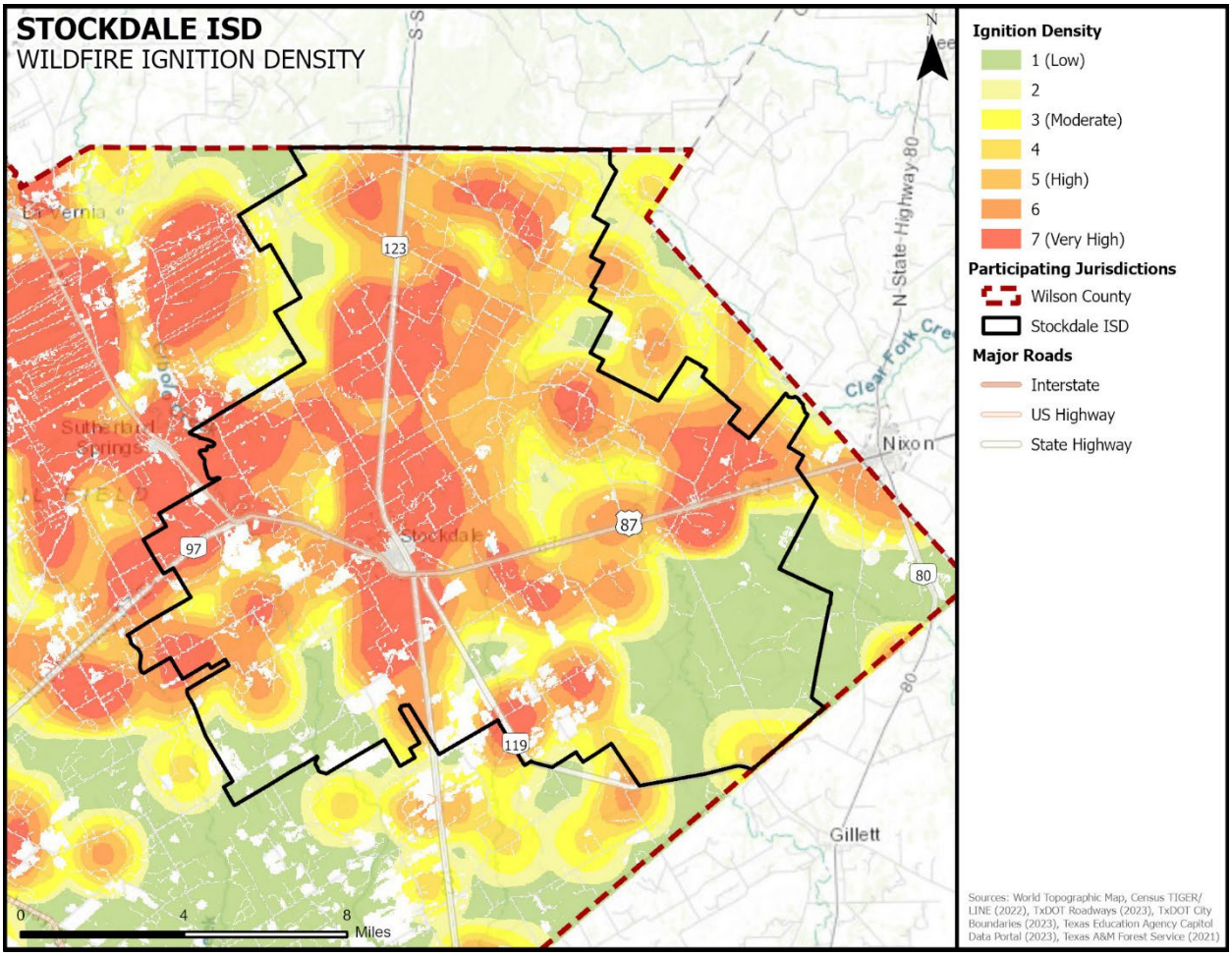


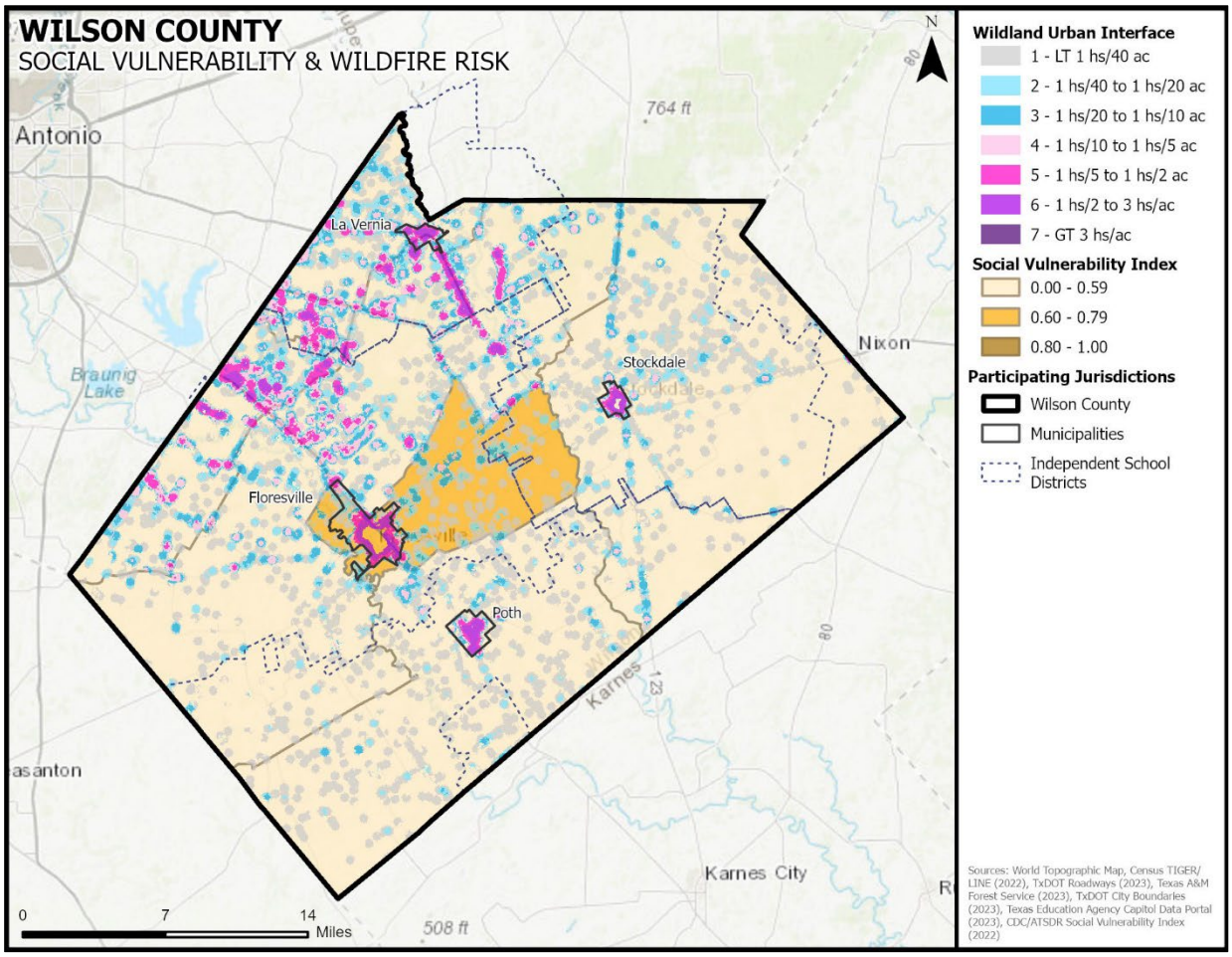
Figure 15-30. Wildfire Ignition Density – Stockdale ISD



Diminished air quality is an environmental impact that can result from a wildfire event and pose a potential health risk. The smoke plumes from wildfires can contain potentially inhalable carcinogenic matter. 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 15-31 identifies areas of social vulnerability using the CDC's SVI and where these areas overlap with the Wilson County WUI areas, where wildfire risk is considered the highest.

Figure 15-31. Wilson 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.

The severity of impact from major wildfire events can be substantial. Such events can cause multiple deaths, shut down facilities for 30 days or more, and cause more than 50 percent of affected properties to be destroyed or suffer major damage. Severity of impact is gauged by acreage burned, homes and structures lost, and the number of resulting injuries and fatalities.

For the Wilson County planning area, including all participating jurisdictions and ISDs, the impact from a wildfire event can be considered "Minor," meaning injuries and illnesses do not result in permanent disability, the complete shutdown of critical facilities for up to one week, and more than 10 percent of property destroyed or with major damage.

Table 15-7. Impact for Wilson County

JURISDICTION	IMPACT	DESCRIPTION
Wilson County	Minor	Wilson County has an estimated 37,374 people or 90% of the total population that live within the Wildland Urban Interface (WUI). The housing density is most commonly 1 house per 2 acres. County residents may suffer injuries that do not result in permanent disability. Critical facilities could be shut down for more than one week, and more than 10 percent of total property could be damaged.
City of Floresville	Minor	Within the City of Floresville, it is estimated that 6,888 people, or 66% of the total population, live within the Wildland Urban Interface (WUI). Average housing density is most commonly 1 house per 2 acres. City residents may suffer injuries that do not result in permanent disability. Critical facilities could be shut down for more than one week, and more than 10 percent of total property could be damaged.
City of La Vernia	Minor	Within the City of La Vernia, it is estimated that 1,251 people, or 99% of the total population, live within the Wildland Urban Interface (WUI). Average housing density is most commonly 1 house per 2 acres. City residents may suffer injuries that do not result in permanent disability. Critical facilities could be shut down for more than one week, and more than 10 percent of total property could be damaged.
City of Poth	Minor	Within the City of Poth, it is estimated that 2,115 people, or 100% of the total population, live within the Wildland Urban Interface (WUI). Average housing density is most commonly 1 house per 2 acres. City residents may suffer injuries that do not result in permanent disability. Critical facilities could be shut down for more than one week, and more than 10 percent of total property could be damaged.
City of Stockdale	Minor	Within the City of Stockdale, it is estimated that 1,574 people, or 88% of the total population, live within the Wildland Urban Interface (WUI). Average housing density is most commonly 1 house per 2 acres. City residents may suffer injuries that do not result in permanent disability. Critical facilities could be shut down for more than one week, and more than 10 percent of total property could be damaged.

JURISDICTION	IMPACT	DESCRIPTION
Floresville ISD	Limited	Floresville ISD has 16 facilities located within the WUI and has a limited risk of wildfire. Injuries and illnesses are treatable with first aid. Critical facilities and services could be shut down for 24 hours or less, and less than 10 percent of property destroyed or with major damage.
La Vernia ISD	Limited	La Vernia ISD has 7 facilities located within the WUI and has a limited risk of wildfire. Injuries and illnesses are treatable with first aid. Critical facilities and services could be shut down for 24 hours or less, and less than 10 percent of property destroyed or with major damage.
Poth ISD	Limited	Poth ISD has 6 facilities located within the WUI and has a limited risk of wildfire. Injuries and illnesses are treatable with first aid. Critical facilities and services could be shut down for 24 hours or less, and less than 10 percent of property destroyed or with major damage.
Stockdale ISD	Limited	Stockdale ISD has 11 facilities located within the WUI and has a limited risk of wildfire. Injuries and illnesses are treatable with first aid. Critical facilities and services could be shut down for 24 hours or less, and less than 10 percent of property destroyed or with major damage.

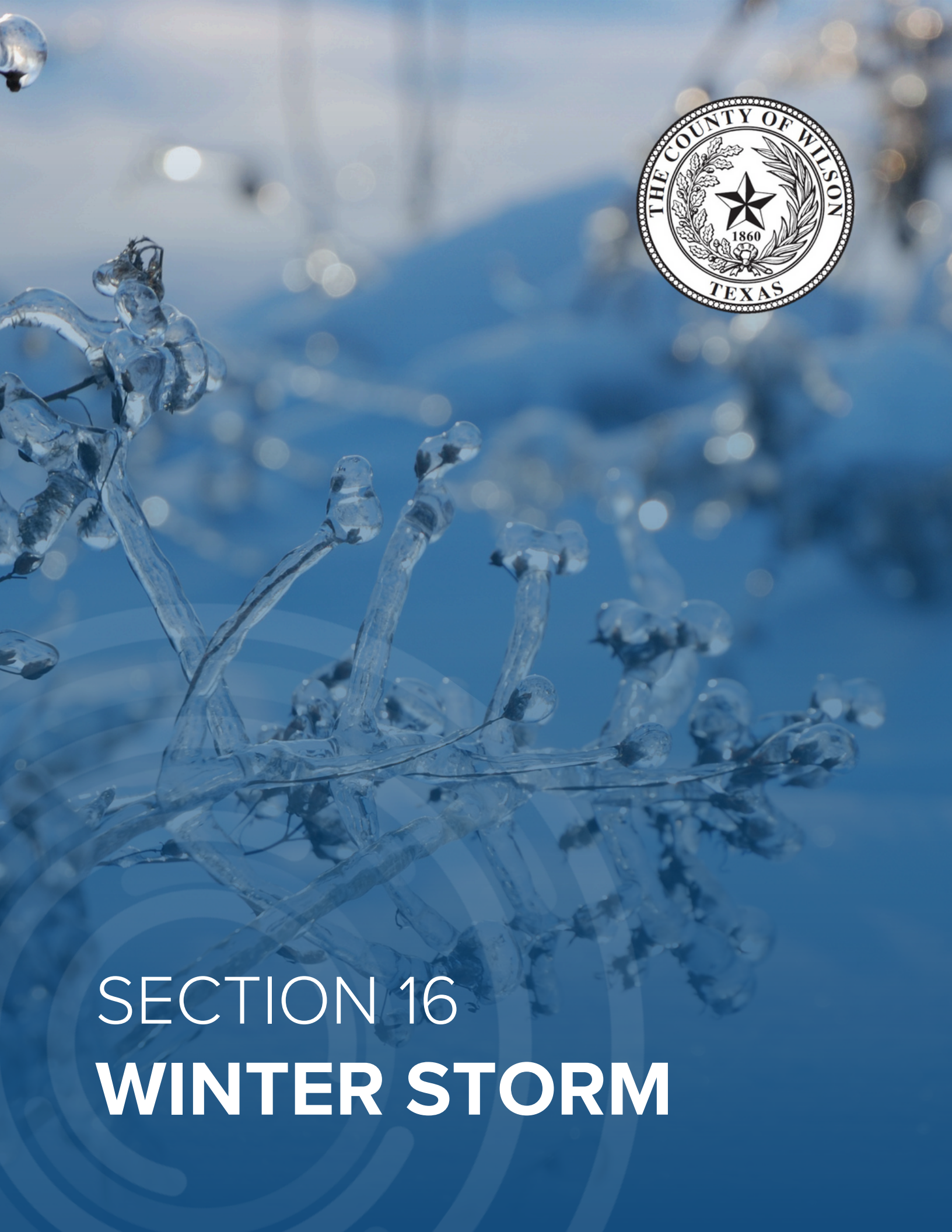
ASSESSMENT OF IMPACTS

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 a wildfire are not limited to direct damage. Significant wildfire events can be frequently associated with a variety of impacts, including:

- The Wilson 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 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 19 percent (approximately 3,592 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 five historical sites listed on the National Register of Historic Places for Wilson 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.
- Residential structures lost in a 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 16
WINTER STORM

SECTION 16: WINTER STORM

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 Wilson 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 16-1, the Wilson County planning area is located within USDA Hardiness Zones 9a, indicating annual minimum temperatures between 20°F and 25°F, with the coldest minimum temperatures most likely to occur in the northern half of the county. During times of ice and snow accumulation, response times will increase until public works road crews are able to make major roads passable. Table 16-1 describes the types of winter weather possible to occur in the Wilson County planning area.

Figure 16-1. Annual Minimum Temperature[1]

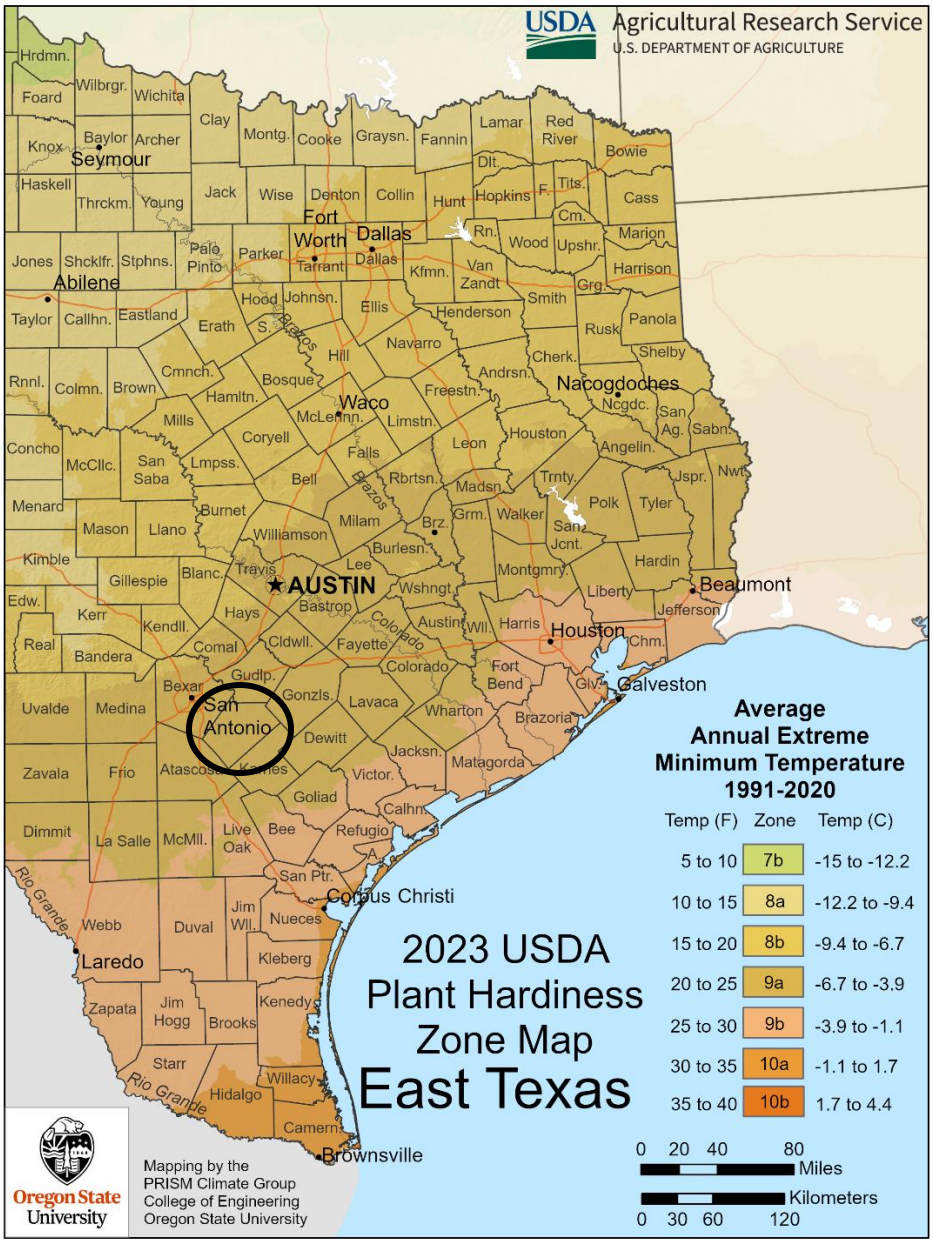


Table 16-1. Types of Winter Weather

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

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 Wilson County planning area, including all participating jurisdictions and ISDs, are vulnerable to a winter storm hazard and could potentially be impacted.

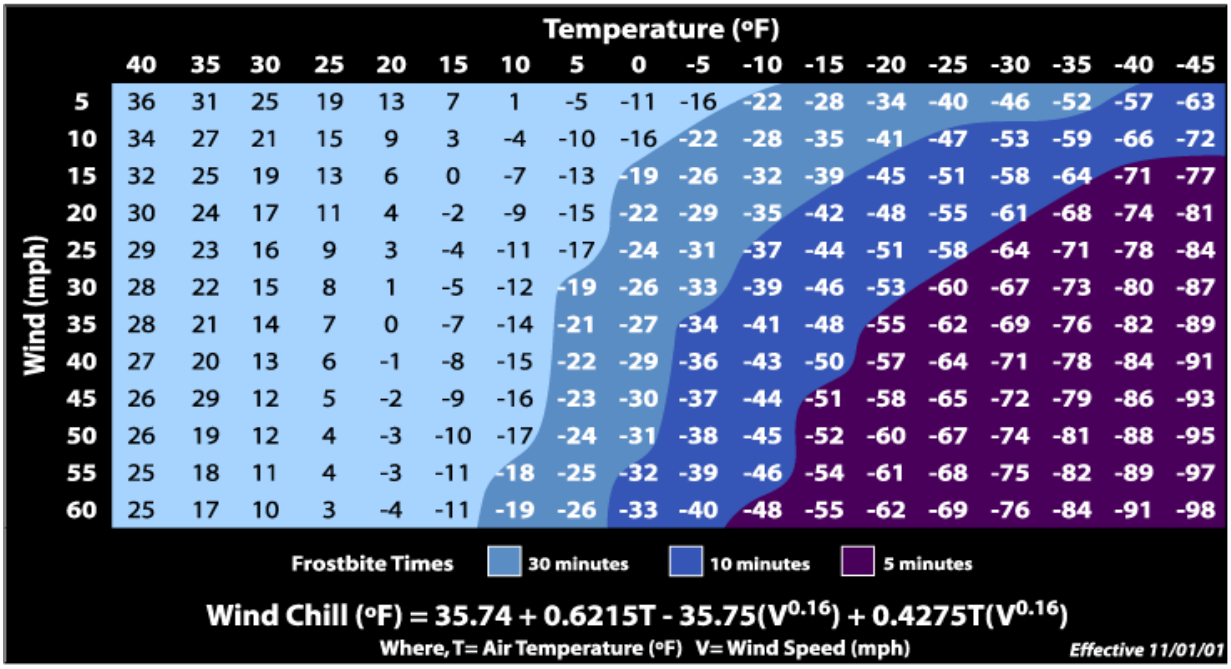
EXTENT

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 16-2. Table 16-2 should be read in conjunction with the wind chill factor described in Figure 16-2 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 16-2. 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

Figure 16-2. 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 0°F temperatures. The Wilson County planning area has 10 previous occurrences recorded from January 1996 through June 2024 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 winter weather and winter storms.

The average number of cold days is similar for the entire planning area. Therefore, the intensity or extent of a winter storm event to be mitigated for the area ranges from significant to severe according to the definitions in Table 16-2. The Wilson County planning area can expect anywhere between 0.1 to 4.0 inches of ice and snow during a winter storm event, and temperatures between 20°F and 25°F with winds ranging from 0 to over 35 mph. During Winter Storm Uri in February 2021, snowfall up to 3.5 inches and wind chill values as low as -5°F were reported in Wilson 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. Wilson County could be under any of these warning types in advance of a winter storm event. Table 16-3 describes when each warning type would be issued.

Table 16-3. 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 10 recorded winter storm events in the Wilson 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 16-4 shows historical incident information for the planning area.

Historical winter storm event data for the participating ISDs are provided within the Wilson County events. In the NCEI database, these entities do not have events reported separately and apart from the reported county and jurisdiction events. All participating ISDs reported additional damages outside of what is captured in the NCEI database. Floresville ISD reported damages due to extreme cold temperatures in January 2022, including a chiller needing to be replaced at the high school and several HVAC coils and actuators being damaged. The estimated cost of repairing or replacing these items was $406,800 (2024 dollars). La Vernia ISD reported an auditorium floor flooding in both 2022 and 2023 due to burst pipes. Poth ISD reported a water line break during Winter Storm Uri in 2021 which caused a gym floor to flood; Stockdale ISD also reported frozen pipes during the 2021 winter storm. Where available, monetary damages reported by the ISDs have been integrated into Tables 16-4 and 16-5 below to create the most comprehensive dataset possible.

Table 16-4. Historical Winter Storm Events, January 1996 – June 2024

JURISDICTION	DATE	DEATHS	INJURIES	PROPERTY DAMAGE	CROP DAMAGE
Wilson County	1/11/1997	0	0	$0	$0
Wilson County	12/12/2000	0	0	$0	$0
Wilson County	1/16/2007	0	0	$0	$0
Wilson County	2/3/2011	0	0	$0	$0
Wilson County	12/7/2013	0	0	$0	$0
Wilson County	12/7/2017	0	0	$0	$0
Wilson County	1/16/2018	0	0	$0	$0
Wilson County	1/12/2021	0	0	$0	$0
Wilson County	2/13/2021	0	0	$0	$0
Wilson County	2/16/2021	0	0	$0	$0
Floresville ISD	1/18/2022 - 1/19/2022	0	0	$406,800	$0
TOTALS		**0**	**0**	**$406,800**	

Table 16-5. Historical Winter Storm Events Summary, January 1996 – June 2024

JURISDICTION	NUMBER OF EVENTS	DEATHS	INJURIES	PROPERTY DAMAGES	CROP DAMAGES
Wilson County	11	0	0	$406,800	$0

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

SIGNIFICANT EVENTS

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 Wilson 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.[2]

In Wilson County, the winter weather resulted in snow accumulations up to 3.5 inches in the City of Floresville, as well as over 2 inches of snow in the City of Poth and City of La Vernia. Wind chill values in the planning area were as low as -5°F. No monetary damages, injuries, or fatalities were reported for the county. The gym floor at Poth ISD's junior high school had to be completely replaced after flooding resulted from a water line break due to the extreme cold. Stockdale ISD also reported issues with frozen pipes during Winter Storm Uri.

PROBABILITY OF FUTURE EVENTS

According to historical records, the Wilson County planning area is expected to experience a winter storm event approximately every three years. The probability of a future winter storm event affecting the Wilson County planning area, including all participating jurisdictions and ISDs, is considered "Likely," with a winter storm likely to occur within the next three years.

CLIMATE CHANGE CONSIDERATIONS

Climate change is expected to reduce the number of extreme cold events statewide but increase in the variability of events.[3] 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. A trend that is expected to continue with winter extremes estimated to be milder by 2036 compared to extremes in the historic record.[4]

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 or causing tree limbs to fall on the lines. These events can disrupt electric service for 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 Wilson County Planning Team identified the following critical facilities (Table 16-6) 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.

[2] 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
[3] Fourth National Climate Assessment. Chapter 23 Southern Great Plans. U.S. Global Change Program. 2018.
[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.

Table 16-6. Critical Facilities Vulnerable to Winter Storm Events

CRITICAL FACILITIES	POTENTIAL IMPACTS
Emergency Response Services (EOC, Fire, Police, EMS), Hospitals and Medical Centers	► 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.
Airport, Academic Institutions, Animal Shelter, Evacuation Centers & Shelters, Governmental Facilities, Residential/ Assisted Living Facilities	► 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. ► 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.)	► 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)	► 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 16-7). 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 Wilson County planning area is estimated at 17 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 14 percent of the total population. An estimated 10 percent of the planning area population live below the poverty level and 6 percent of the populations speak English 'less than very well' (Table 16-7).

Table 16-7. Populations at Greater Risk of Winter Storm Events[5]

JURISDICTION	POPULATION				
	65 AND OLDER	UNDER 5	WITH A DISABILITY	BELOW POVERTY LEVEL	LIMITED ENGLISH SPEAKING
Wilson County	8,588	2,810	7,042	5,047	2,976
City of Floresville	1,429	366	1,604	1,052	660
City of La Vernia	283	46	216	110	91
City of Poth	231	213	125	58	122
City of Stockdale	313	84	179	225	119

Participating ISDs also have vulnerable populations based on age or work location. Employees who work outdoors a substantial portion of the day face increased exposure and vulnerability to winter storm events. Children under 5 who attend school at the participating ISDs are also considered more vulnerable to the effects of winter storm events (Table 16-8).

Table 16-8. Populations at Greater Risk by Participating ISD

PARTICIPANT	YOUTH (under 5)	EMPLOYEES OPERATING OUTDOORS
Floresville ISD	300	300
La Vernia ISD	76	70
Poth ISD	2	27
Stockdale ISD	36	30

[5] U.S. Census Bureau 2023 data for Wilson County

Older homes tend to be more vulnerable to the impacts of winter storm events. Approximately, 19 percent (an estimated 3,560 structures) of the housing units in the planning area were built before 1980 (Table 16-9).

Table 16-9. Structures at Greater Risk of Winter Storm Events

JURISDICTION	BUILT PRIOR TO 1980
Wilson County	3,560
City of Floresville	1,022
City of La Vernia	195
City of Poth	285
City of Stockdale	218
Floresville ISD	4
La Vernia ISD	4
Poth ISD	6
Stockdale ISD	3

Winter Storms have been known to cause injury to humans and occasionally have been fatal. There have been no injuries or fatalities reported in the planning area due to winter storms historically. Overall, the total loss estimate of property and crops in the planning area is $406,800 (2024 dollars) with an average annualized loss of $14,300. Based on historic loss and damages, the impact of winter storm damages on the Wilson County planning area, including all participating jurisdictions and ISDs, can be 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 16-10. Winter Storm Event Damage Totals, January 1996 - June 2024

JURISDICTION	PROPERTY & CROP LOSS	AVERAGE ANNUAL LOSS ESTIMATES
Wilson County	$406,800	$14,300

ASSESSMENT OF IMPACTS

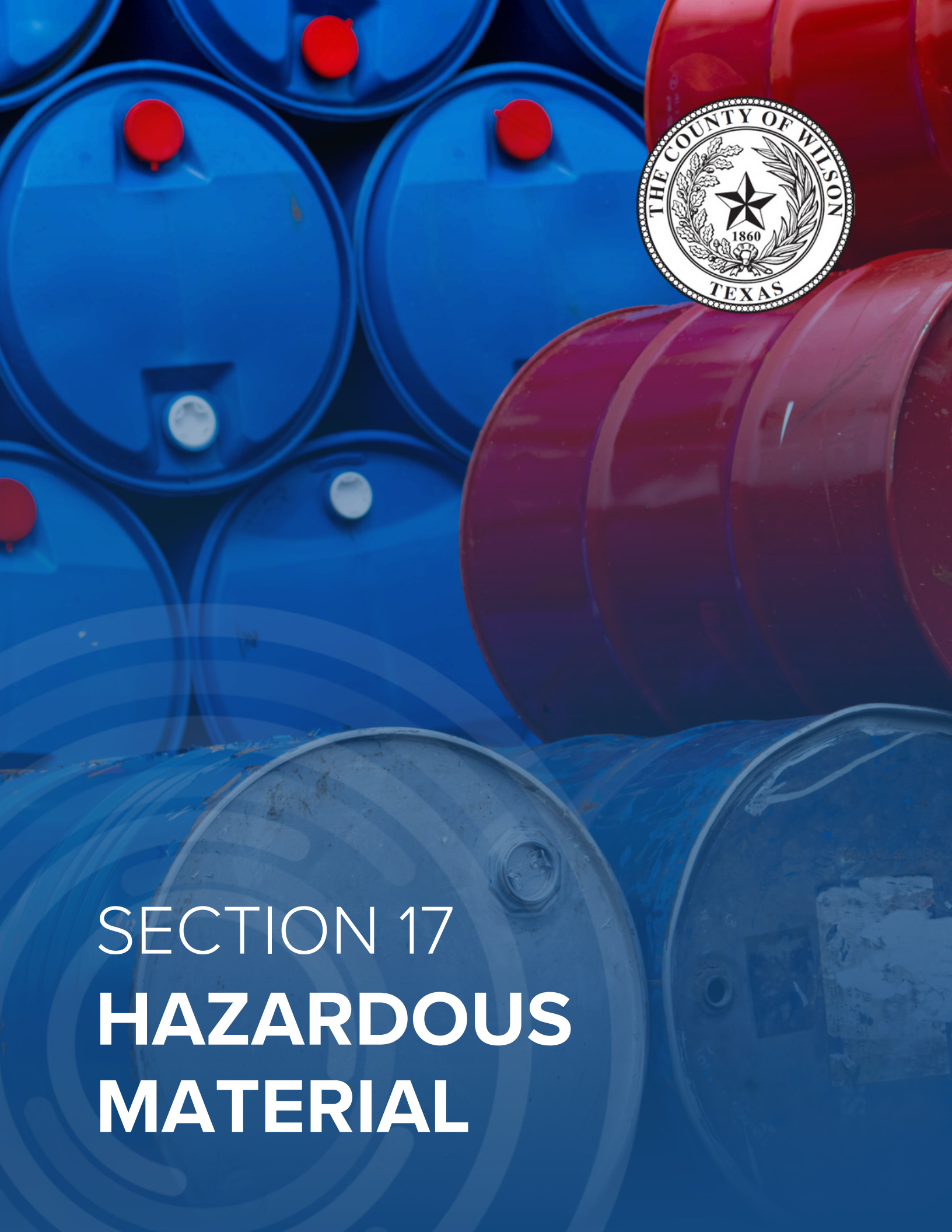
The greatest risk from a winter storm hazard is to public health and safety. The impact of climate change could produce longer, more intense winter storm events, exacerbating the current winter storm impacts. Worsening winter storm conditions can be frequently associated with a variety of impacts, including:

- Vulnerable populations, particularly the elderly (17 percent of total population), children under 5 (6 percent of total population), and those with a disability (14 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 19 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 five historical sites listed on the National Register of Historic Places for Wilson 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.

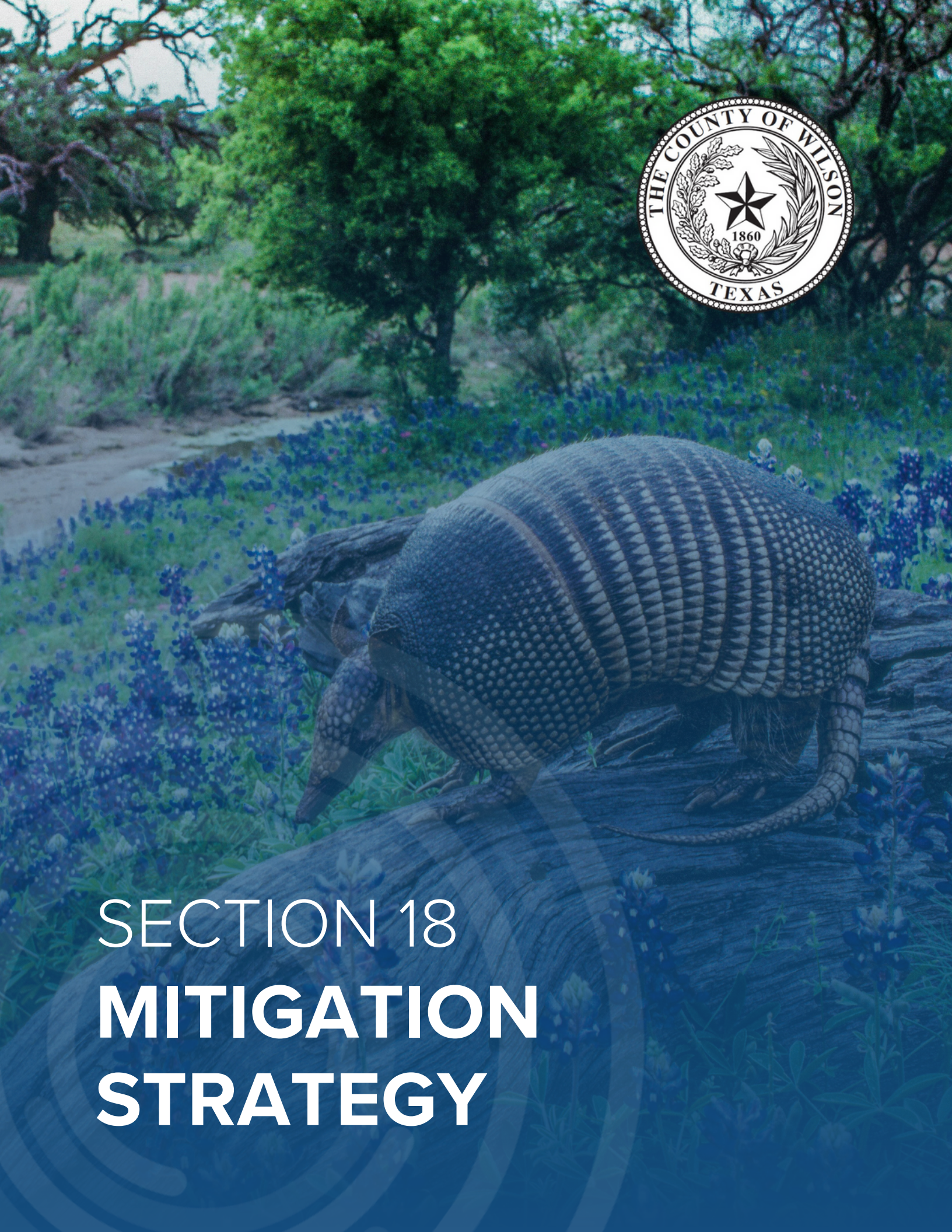


SECTION 17

HAZARDOUS MATERIAL

SECTION 17: HAZARDOUS MATERIALS

Portions of the Wilson County Hazard Mitigation Plan are considered confidential and not for release to the public. The information in this section is covered under Privacy Act of 1974 (5 U.S.C. Section 552a).



SECTION 18

MITIGATION STRATEGY

SECTION 18: MITIGATION STRATEGY

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 Workshop in November 2024, 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 some changes including expanding on existing goals and the addition of a goal around 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

Build and support local partnerships to continuously become less vulnerable to hazards.

OBJECTIVE 2.2

Build a cadre of committed volunteers to safeguard the community before, during, and after a disaster.

OBJECTIVE 2.3

Build hazard mitigation concerns into county, city, and ISD 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 and man-made 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 repetitive losses to the National Flood Insurance Program (NFIP).

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 put people in harm's way or increase threats to 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.

OBJECTIVE 6.2
Promote beneficial uses of hazardous areas while expanding open space and recreational opportunities.

OBJECTIVE 6.3

Utilize regulatory approaches to prevent 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 19
PREVIOUS ACTIONS

SECTION 19: PREVIOUS ACTIONS

SUMMARY

This section includes analysis from the 2020 Karnes and Wilson County Hazard Mitigation Plan. Planning Team members were given copies of the previous mitigation actions submitted in the 2020 Karnes and Wilson 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 deferred as an ongoing activity, or be deleted from the Plan Update. The actions from the 2020 Plans are included in this section as they were written in 2020, except for the “2025 Analysis” section. The following participating jurisdictions did not previously participate in a plan; therefore, they have no previous actions: Floresville ISD, Poth ISD, and Stockdale ISD.

WILSON COUNTY

		Wilson County – Previous Action #1
	Mitigation Action Title:	Public awareness and education on all hazards
	BACKGROUND INFORMATION	
	Description:	Post educational material on the effects of hazards to homeowners on the country website and Facebook sites. Publish articles concerning hazards in the local newspaper. Provide educational handouts at all county offices and satellite buildings.
	Applicable Goals:	G3: Identify, introduce and implement programs designed to raise awareness of and acceptance of the principles of hazard mitigation.
	Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$10,000
Potential Funding Sources:	County Budget
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	60 Months

2025 ANALYSIS:
Defer to plan update. Amend to include all actions and add verbiage to include relevant platforms for educational materials.

SECTION 19: PREVIOUS ACTIONS

		Wilson County – Previous Action #2
	Mitigation Action Title:	Erosion at CR 401 and Cibolo Creek
	BACKGROUND INFORMATION	
	Description:	Phase I: Engineering study of design solutions to erosion of CR 401 at Cibolo Creek. Phase II: Implementation of stabilization project to address stream incision and erosion CR 401 at Cibolo Creek.
	Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
	Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure Project

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$300,000
Potential Funding Sources:	County Budget, Grants
Lead Agency/Department Responsible:	County Commissioners
Implementation Schedule:	48 Months

2025 ANALYSIS:
Defer to plan update. Amend to include “Implement an erosion study and project at CR 401…”

SECTION 19: PREVIOUS ACTIONS

		Wilson County – Previous Action #3
	Mitigation Action Title:	Improve communication system between County and jurisdictions
	BACKGROUND INFORMATION	
	Description:	Improve interoperability of communications systems between first responder agencies and jurisdictions in Wilson County.
	Applicable Goals:	G1: Increase emergency preparedness, response and recovery capability.
	Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$50,000
Potential Funding Sources:	County Budget, Grants
Lead Agency/Department Responsible:	Wilson County Sherrif's Office
Implementation Schedule:	12 Months

2025 ANALYSIS:
Defer to plan update. Amend action to include updated cost.

SECTION 19: PREVIOUS ACTIONS

	Wilson County – Previous Action #4
Mitigation Action Title:	Portable generators for repeaters
BACKGROUND INFORMATION	
Description:	The County will purchase emergency back-up generators for deployment in the event of extended power loss for critical communications towers.
Applicable Goals:	G1, G2, G4: Increase emergency preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$150,000
Potential Funding Sources:	County Budget, Grants
Lead Agency/Department Responsible:	County Commissioners
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update. Amend action to state portable emergency generators.

SECTION 19: PREVIOUS ACTIONS

	Wilson County – Previous Action #5
Mitigation Action Title:	Erosion at CR 202 East and Marcelina Creek
BACKGROUND INFORMATION	
Description:	Phase I: Engineering study of design solutions to erosion of CR 202 East at Marcelina Creek. Phase II: Implementation of stabilization project to address stream incision and erosion CR 202 at Marcelina Creek.
Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$300,000
Potential Funding Sources:	Local, HMGP, PDM, CDBG
Lead Agency/Department Responsible:	County Commissioners
Implementation Schedule:	48 Months

2025 ANALYSIS:
Defer to plan update. Amend to add “Implement an erosion study and project at”

SECTION 19: PREVIOUS ACTIONS

		Wilson County – Previous Action #6
	Mitigation Action Title:	Erosion on CR 128 drainage channel Southeast of FM 775 intersection
	BACKGROUND INFORMATION	
	Description:	Improvements to drainage structure to minimize erosion downstream and upstream.
	Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
	Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$155,000
Potential Funding Sources:	Local, HMGP, PDM
Lead Agency/Department Responsible:	Wilson County Road & Bridge
Implementation Schedule:	60 Months

2025 ANALYSIS:
Completed per Commissioner.

SECTION 19: PREVIOUS ACTIONS

	Wilson County – Previous Action #7
Mitigation Action Title:	Wilson 4 - Storm Water Management Plan
BACKGROUND INFORMATION	
Description:	Develop flood hazard information by collecting information, high water marks, and conduct engineering studies to develop the 100-year and 500-year flood elevation levels.
Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	N
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$200,000
Potential Funding Sources:	Local, SARA, TWDB
Lead Agency/Department Responsible:	SARA
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

Wilson County – Previous Action #8	
Mitigation Action Title:	Wilson 5 - ICS Implementation
BACKGROUND INFORMATION	
Description:	Implement incident command system (ICS) training and exercise. Conduct "Tabletop Exercises" with emergency response personnel from multiple agencies, to determine further mitigation opportunities and response vulnerabilities.
Applicable Goals:	G1: Increase Emergency Preparedness, response and recovery capability.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Education and Awareness Programs

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	N
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	Local
Lead Agency/Department Responsible:	Wilson County
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

	Wilson County – Previous Action #9
Mitigation Action Title:	Wilson 10 - Acquisition of flooded structures
BACKGROUND INFORMATION	
Description:	Acquire flooded structures to remove them out of the SFHA and restrict further structures from development on the site. Consider the establishment of a "voluntary" acquisition and demolition program, "structure elevation program" to address repetitive loss, flood prone properties. Keep a database of flood prone, repetitive loss and severe repetitive loss properties with pertinent information about each property.
Applicable Goals:	G2: Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Natural Systems Protection

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	N
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$850,000
Potential Funding Sources:	Local, HMGP, PDM
Lead Agency/Department Responsible:	Wilson County, Office of Emergency Management
Implementation Schedule:	60 Months

2025 ANALYSIS:
Defer to plan update. Amend action to say “program and/or structure elevation…”

SECTION 19: PREVIOUS ACTIONS

		Wilson County – Previous Action #10
	Mitigation Action Title:	Wilson 9 - Install gates at low water crossings
	BACKGROUND INFORMATION	
	Description:	Install gates at low water crossings on country roads repeatedly resulting in road closure due to rapid rising flood waters.
	Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
	Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	N
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$600,000
Potential Funding Sources:	Local, HMGP, PDM
Lead Agency/Department Responsible:	Wilson County Road & Bridge
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update. Amend action to include verbiage for a phased project with Phase I and Phase II.

SECTION 19: PREVIOUS ACTIONS

		Wilson County – Previous Action #11
	Mitigation Action Title:	Wilson 7 - Upgrade low water crossings
	BACKGROUND INFORMATION	
	Description:	Upgrade infrastructure at low water crossings to provide unimpeded access during a 100-year base flood event to facilitate evacuation and response to emergency vehicles.
	Applicable Goals:	G1, G2, G4: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
	Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	N
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$1,200,000
Potential Funding Sources:	Local, HMGP, PDM
Lead Agency/Department Responsible:	Wilson County Road & Bridge
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update. Amend action to include verbiage for a phased project with Phase I and Phase II and update the cost.

SECTION 19: PREVIOUS ACTIONS

Wilson County – Previous Action #12	
Mitigation Action Title:	Plant drought tolerant trees along public sidewalks and parking lots
BACKGROUND INFORMATION	
Description:	Xeriscaping is a type of landscaping that uses little water by only using plants that are native to the area. Trees along sidewalks and parking lots provide shade from the heat and sun while preserving potable water supplies for drinking and fire suppression.
Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Natural Systems Protection

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat, Drought
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$40,000
Potential Funding Sources:	Local, HMGP, PDM, Texas Forest Service, TPRD
Lead Agency/Department Responsible:	Public Works
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update. Amend action to include verbiage for a phased project with Phase I and Phase II, update Lead Agency to Wilson County and Office of Emergency Management, and update cost.

SECTION 19: PREVIOUS ACTIONS

		Wilson County – Previous Action #13
	Mitigation Action Title:	Assess critical facilities for vulnerabilities to hazards and protect as necessary
	BACKGROUND INFORMATION	
	Description:	Critical facilities will be hardened to protect from lightning, wind, ice, earthquakes, wildfire, and other hazards.
	Applicable Goals:	G4: Reduce the potential of natural disasters on critical facilities and infrastructure.
	Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Windstorm, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, and Earthquakes,
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$150,000
Potential Funding Sources:	Local, HMGP, PDM
Lead Agency/Department Responsible:	Wilson County, Office of Emergency Management
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update. Amend action verbiage to include harden/retrofit critical facilities, include all applicable hazards and a list of priority locations and increase the cost.

SECTION 19: PREVIOUS ACTIONS

Wilson County – Previous Action #14	
Mitigation Action Title:	Map and assess vulnerability to wildfire
BACKGROUND INFORMATION	
Description:	Assess overall community vulnerability by implementing a GIS mapping program of wildfire hazard area, developing, and maintaining a database, and creating a scenario to estimate potential injuries and damage. Share information with municipalities to develop appropriate wildland-urban interface development regulations.
Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Education and Awareness Programs

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfire
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Local, HMGP, PDM, TNRIS
Lead Agency/Department Responsible:	Wilson County, Office of Emergency Management
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

	Wilson County – Previous Action #15
Mitigation Action Title:	Assemble LEPC to collect information on hazardous materials in the community and develop a plan to mitigate the effects of a hazardous materials incident
BACKGROUND INFORMATION	
Description:	Assemble Emergency Planning Committees (LEPCs) whose responsibilities include collecting information about hazardous materials in the community and making this information available to the public upon request. The LEPCs are also tasked with developing an emergency plan to prepare for and respond to chemical emergencies in the community.
Applicable Goals:	G1, G2, G3, G4: G1: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property. Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Education and Awareness Programs

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$20,000
Potential Funding Sources:	Local, HMGP, PDM
Lead Agency/Department Responsible:	Wilson County, Office of Emergency Management
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

CITY OF FLORESVILLE

	City of Floresville – Previous Action #1	
	Mitigation Action Title:	Purchase and install emergency generators at all schools and critical facilities
	BACKGROUND INFORMATION	
	Description:	Provide emergency generators in the case of electrical failure at all schools, water and lift station sites, the county emergency operations center, and other identified critical facilities. Also, consider alarms, meters, remote controls, and switchgear upgrades.
	Applicable Goals:	G1: Increase Emergency Preparedness, response and recovery capability.
	Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Extreme Heat, Windstorms, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	
Benefit (High, Medium, Low):	High
Estimated Cost:	$375,000
Potential Funding Sources:	Local, PDM, HMGP
Lead Agency/Department Responsible:	Public Works
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update. Amend to include all applicable hazards.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #2	
Mitigation Action Title:	Enhance floodplain management ordinance
BACKGROUND INFORMATION	
Description:	Assess existing floodplain management ordinances and recommend improvement to mitigate the flood and water quality impacts of new development and redevelopment. This can include requirement for drainage easements, water detention, road design, base flood elevation (BFE) height requirements, and green infrastructure.
Applicable Goals:	G2: Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Windstorm, Severe Winter Storms
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$200,000
Potential Funding Sources:	Local, CDBG
Lead Agency/Department Responsible:	City Council, Floodplain Manager, Planning Department
Implementation Schedule:	12 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #3	
Mitigation Action Title:	Flood early warning system
BACKGROUND INFORMATION	
Description:	Identify roadways that are submerged during high frequency rain events and develop and implement a flood/high water early warning system to notify city, county and first responders.
Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$150,000
Potential Funding Sources:	Local, PDM, HMGP
Lead Agency/Department Responsible:	Engineering, Planning
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #4	
Mitigation Action Title:	Early Warning Sirens to be installed at strategic locations within the city boundaries
BACKGROUND INFORMATION	
Description:	Currently sirens cannot be heard in the citywide area of 4.75 sq miles. Provide siren sites, with electrical services and siren poles.
Applicable Goals:	G1: Increase Emergency Preparedness, response and recovery capability.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Extreme Heat, Windstorms, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$10,000
Potential Funding Sources:	County Budget
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	60 Months

2025 ANALYSIS:
Defer to plan update. Amend action to include an increase in cost.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #5	
Mitigation Action Title:	Update IBC to 2015 version and enforce building codes
BACKGROUND INFORMATION	
Description:	The city will adopt and enforce the measures and guidelines of IBC 2015. This will increase the resilience of structures to natural hazards.
Applicable Goals:	G2: Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Extreme Heat, Windstorms, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$75,000
Potential Funding Sources:	Local
Lead Agency/Department Responsible:	City Council, City Manager, Code Enforcement
Implementation Schedule:	36 Months

2025 ANALYSIS:
Completed.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #6	
Mitigation Action Title:	Update community warning system - Reverse 911
BACKGROUND INFORMATION	
Description:	Implement a community warning system to alert citizens in the event of an emergency. Work with providers and Wilson County to coordinate and assist with outreach and education of warning system.
Applicable Goals:	G1: Increase Emergency Preparedness, response and recovery capability.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Education and Awareness Programs

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Extreme Heat, Windstorms, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$30,000
Potential Funding Sources:	Local, HMGP
Lead Agency/Department Responsible:	Wilson County, City Manager, City Council
Implementation Schedule:	12 Months

2025 ANALYSIS:
Completed.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #7	
Mitigation Action Title:	Floresville 2 - Drainage improvements at identified hazardous crossings
BACKGROUND INFORMATION	
Description:	Consult SARA San Antonio River lower watershed plan and to identify and rank improvements to mitigation flooding at low water crossings and improve reliability of transportation system during hazardous events.
Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Hazardous Materials Incidents
New Action: (Y/N)	N
Benefit (High, Medium, Low):	High
Estimated Cost:	$1,000,000
Potential Funding Sources:	Local, PDM, HMGP
Lead Agency/Department Responsible:	Engineering, Planning
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update. Amend to include the word Authority after San Antonio River and add (SARA) after it.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #8	
Mitigation Action Title:	Maintain storm drainage system
BACKGROUND INFORMATION	
Description:	The drainage system collects debris in culverts and becomes ineffective in containing flood water during rain events. The Public Works Department will maintain the storm drainage system by clearing debris and cutting and mowing vegetation in drainage ditches at least twice a year. This includes installing watertight covers or inflow guards on sewer manholes and detection and prevention of illicit discharges into storm water and sewer systems from home footing drains, downspouts, and sewer pumps. The city will also look to implement a public creek cleanup program.
Applicable Goals:	G4: Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure Natural Systems Protection

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$350,000
Potential Funding Sources:	Local
Lead Agency/Department Responsible:	Stormwater Operations and Maintenance
Implementation Schedule:	48 Months

2025 ANALYSIS:
Defer to plan update. Amend to remove first sentence and start action with “The Public Works Department…

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #9	
Mitigation Action Title:	Create Community Saferoom
BACKGROUND INFORMATION	
Description:	The High School Gym was hit by a tornado in 2016 and severely damaged. This structure is the best candidate for a community saferoom and should be retrofitted to withstand impact for natural hazards.
Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Tornado
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$250,000
Potential Funding Sources:	HMGP
Lead Agency/Department Responsible:	City Manager, City Council, Public Works
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #10	
Mitigation Action Title:	Develop vulnerability database and designate high-risk zones
BACKGROUND INFORMATION	
Description:	Develop and maintain a database to track community vulnerability such as exposure in known hazard areas and designate these high-risk zones as special assessment districts to fund necessary hazard mitigation projects.
Applicable Goals:	G1, G3: Increase Emergency Preparedness, response and recovery capability. Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Extreme Heat, Windstorms, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$180,000
Potential Funding Sources:	Local, PDM, HMGP
Lead Agency/Department Responsible:	City Council, City Manager
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #11	
Mitigation Action Title:	Structural hardening of critical facilities
BACKGROUND INFORMATION	
Description:	Review opportunities and implement findings to harden critical facilities against impacts of all hazards and implement findings.
Applicable Goals:	G4: Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Windstorms, Lightning, Tornado, Hailstorms, Earthquakes
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$200,000
Potential Funding Sources:	Local, HMGP
Lead Agency/Department Responsible:	Public Works
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update. Amend action to state “Assess critical facilities for hardening/retrofit opportunities, then harden/retrofit critical facilities to hazard-resistant levels.”

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #12	
Mitigation Action Title:	Conduct tornado drills and distribute information
BACKGROUND INFORMATION	
Description:	Conduct tornado drills in school and public buildings and distribute tornado shelter information to educate public about location and use of shelters.
Applicable Goals:	G3: Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Tornado, Windstorms
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$10,000
Potential Funding Sources:	Local
Lead Agency/Department Responsible:	City Council, City Manager, ISD
Implementation Schedule:	12 Months

2025 ANALYSIS:
Defer to plan update. Amend to include “the” before public.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #13	
Mitigation Action Title:	Develop and adopt a stormwater management plan
BACKGROUND INFORMATION	
Description:	Phase 1: Undertake storm water drainage study for the City of Floresville to protect people and property from flood events, manage the stormwater pipe system, enhance streams and floodplains, and recommend policy and regulatory enhancements. Phase II: Implement recommendations from study of most critical flood control improvements, low water crossing upgrades.
Applicable Goals:	G2: Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Natural Systems Protection Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$350,000
Potential Funding Sources:	Local, CDBG, TWDB
Lead Agency/Department Responsible:	City Manager, Floodplain Manager, Engineering
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #14	
Mitigation Action Title:	Improve compliance with NFIP
BACKGROUND INFORMATION	
Description:	Designate a local floodplain manager and provide education materials online and to real estate and insurance agencies to increase community understanding of flood insurance. Hold a town hall meeting with NFIP representatives to discuss the insurance purchase process. Enter the Community Rating System (CRS) program to enable reduced insurance premiums within the community. The first priority is to establish a program for public information (PPI) with a PPI committee as suggested by activity 332 of the CRS coordinator's manual.
Applicable Goals:	G1, G3: Increase Emergency Preparedness, response and recovery capability. Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$20,000
Potential Funding Sources:	Local, USDA, TWDB
Lead Agency/Department Responsible:	Floodplain Manager
Implementation Schedule:	60 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #15	
Mitigation Action Title:	Water System Emergency Response Plan
BACKGROUND INFORMATION	
Description:	Develop an emergency response plan to identify vulnerabilities in the water treatment and delivery systems and address possible water supply disruption or contamination.
Applicable Goals:	G1: Increase Emergency Preparedness, response and recovery capability.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Extreme Heat, Windstorms, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	County Budget
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	60 Months

2025 ANALYSIS:
Completed.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #16	
Mitigation Action Title:	Online GIS
BACKGROUND INFORMATION	
Description:	Offer GIS hazard mapping online for residents and design professionals.
Applicable Goals:	G1, G3: Increase Emergency Preparedness, response and recovery capability. Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Extreme Heat, Windstorms, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$150,000
Potential Funding Sources:	Local, PDM, HMGP, TWDB, CDBG, Regional
Lead Agency/Department Responsible:	City Manager, Planning & Engineering
Implementation Schedule:	24 Months

2025 ANALYSIS:
Completed.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #17	
Mitigation Action Title:	NOAA Weather Radios
BACKGROUND INFORMATION	
Description:	Purchase and distribute NOAA Weather Radios with uniform technology.
Applicable Goals:	G1: Increase Emergency Preparedness, response and recovery capability.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Extreme Heat, Windstorms, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	Local, HMGP
Lead Agency/Department Responsible:	City Manager, City Council
Implementation Schedule:	12 Months

2025 ANALYSIS:
Defer to plan update. Amend to include all appliable hazards.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #18	
Mitigation Action Title:	Citizen flood education outreach
BACKGROUND INFORMATION	
Description:	Educate citizens about mitigation strategies prior to any flood conditions, including dangers of debris flooding roads and how to best floodproof homes and businesses.
Applicable Goals:	G3: Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	Local
Lead Agency/Department Responsible:	City Council, City Manager, ISD
Implementation Schedule:	12 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #19	
Mitigation Action Title:	Sever Weather Awareness Week
BACKGROUND INFORMATION	
Description:	Support severe weather awareness week. Make available educational documentation regarding all hazards.
Applicable Goals:	G3: Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Extreme Heat, Windstorms, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	Local
Lead Agency/Department Responsible:	City Council, City Manager, ISD
Implementation Schedule:	12 Months

2025 ANALYSIS:
Defer to plan update. Amend action to include all appliable hazards, forms of social media, and remove the weather awareness week verbiage.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #20	
Mitigation Action Title:	Property acquisition and demolition and/or relocations
BACKGROUND INFORMATION	
Description:	Establish and implement a voluntary "acquisition and demolition program", "acquisition structure relocation program", and "structure elevation program", to address repetitive loss, flood prone properties. Keep lands subject to repetitive loss in natural state in perpetuity.
Applicable Goals:	G2: Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	N
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$1,500,000
Potential Funding Sources:	Local, PDM, HMGP
Lead Agency/Department Responsible:	City Council, Planning
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #21	
Mitigation Action Title:	Implement process to received latest hazard data from partners
BACKGROUND INFORMATION	
Description:	Establish and implement a process to coordinate with State and Federal Agencies to maintain up-to-date hazard data, maps, and assessments.
Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Extreme Heat, Windstorms, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Local
Lead Agency/Department Responsible:	City Council, City Manager, Planning, State, FEMA
Implementation Schedule:	60 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #22	
Mitigation Action Title:	Develop funding mechanism for flood mitigation
BACKGROUND INFORMATION	
Description:	Implement impact fees and drainage utility fees to fund improvements to the municipal drainage and flood control network.
Applicable Goals:	G1, G2, G4: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$150,000
Potential Funding Sources:	Local
Lead Agency/Department Responsible:	City Manager, City Council
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update. Amend action to state “flood mitigation by implementing impact…”

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #23	
Mitigation Action Title:	Build hazard reserve fund
BACKGROUND INFORMATION	
Description:	Establish a local reserve fund for public mitigation measures.
Applicable Goals:	G1: Increase Emergency Preparedness, response and recovery capability.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Extreme Heat, Windstorms, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$1,500,000
Potential Funding Sources:	Local
Lead Agency/Department Responsible:	City Council
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #24	
Mitigation Action Title:	Implement Drought and Extreme Heat Contingency Plan
BACKGROUND INFORMATION	
Description:	This city is most impacted by drought and extreme heat conditions as conditions are prevalent most years. Thus, a contingency plan for water usage is needed. The city will create and implement a drought and extreme heat contingency plan to create water conservation stages for users based on water availability.
Applicable Goals:	G1: Increase Emergency Preparedness, response and recovery capability.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought, Extreme Heat
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$120,000
Potential Funding Sources:	Local, PDM, HMGP
Lead Agency/Department Responsible:	Planning Department
Implementation Schedule:	72 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #25	
Mitigation Action Title:	Keep aerial imagery current
BACKGROUND INFORMATION	
Description:	Keep aerial photography current, especially in rapidly development areas.
Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Extreme Heat, Windstorms, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$200,000
Potential Funding Sources:	Local, Regional
Lead Agency/Department Responsible:	City Council, County, AACOG
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Floresville – Previous Action #26	
Mitigation Action Title:	Plant drought tolerant trees along public sidewalks and parking lots
BACKGROUND INFORMATION	
Description:	Xeriscaping is a type of landscaping that uses little water by using plants that are native to the area. Trees along sidewalks and parking lots provide shade from the heat and sun while preserving potable water supplies for drinking and fire suppression.
Applicable Goals:	G1, G2: G1: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Natural System Protection

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat, Drought
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$40,000
Potential Funding Sources:	Local, HMGP, PDM, Texas Forest Service, TPRD
Lead Agency/Department Responsible:	Public Works
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

CITY OF LA VERNIA

	City of La Vernia – Previous Action #1	
	Mitigation Action Title:	New Flood Control Infrastructure
	BACKGROUND INFORMATION	
	Description:	Study to determine master drainage plan construction of drainage culverts, acquisition of flood prone lands for detention or retention and implement findings.
	Applicable Goals:	G1, G2, G4: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
	Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	N
Benefit (High, Medium, Low):	High
Estimated Cost:	$2,500,000
Potential Funding Sources:	Local, TWDB, HMGP, PDM, SARA, TDEM
Lead Agency/Department Responsible:	Public Works
Implementation Schedule:	36 Months

2025 ANALYSIS:
Completed.

SECTION 19: PREVIOUS ACTIONS

City of La Vernia – Previous Action #2	
Mitigation Action Title:	Additional floodproof at wastewater treatment plan
BACKGROUND INFORMATION	
Description:	The wastewater treatment plant is particularly susceptible to rain events and needs to be floodproofed. If floodproofing does not meet the cost-benefit threshold, a new wastewater treatment plant needs to be built outside of the floodplain.
Applicable Goals:	G4: Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	N
Benefit (High, Medium, Low):	High
Estimated Cost:	$350,000
Potential Funding Sources:	Local, TWDB, HMGP, PDM, SARA
Lead Agency/Department Responsible:	Public Works
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of La Vernia – Previous Action #3	
Mitigation Action Title:	Develop and Implement Stormwater Management Plan
BACKGROUND INFORMATION	
Description:	More than half the land area in the City of La Vernia is within the 100-year floodplain of Cibolo Creek per the current FEMA Flood Insurance Rate Maps. US-87 is submerged going North and South out of the city during flood events which means the fire department and EMS are cutoff from the rest of the city. Conduct a detailed hydrologic and hydraulic study, and from the results, develop a flood protection plan for Cibolo Creek.
Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$1,500,000
Potential Funding Sources:	Local, HMGP, PDM, TWDB
Lead Agency/Department Responsible:	Planning, Engineering
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of La Vernia – Previous Action #3	
Mitigation Action Title:	Harden Critical Facilities
BACKGROUND INFORMATION	
Description:	The elevated storage tower, 3 lift stations, and wastewater treatment plant are all within the 100-year flood plain or floodway. Appropriate methods to harden these facilities against flooding and other impacts from hazards will be explored and implemented.
Applicable Goals:	G1, G4: Increase Emergency Preparedness, response and recovery capability. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$500,000
Potential Funding Sources:	Local, HMGP, PDM
Lead Agency/Department Responsible:	Public Works
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update. Amend action to “Harden/retrofit critical facilities to hazard-resistant levels.” Include all applicable hazards and add noted locations to the site.

SECTION 19: PREVIOUS ACTIONS

City of La Vernia – Previous Action #4	
Mitigation Action Title:	Get generators and quick connects for all schools and critical facilities
BACKGROUND INFORMATION	
Description:	Power loss during hazardous events is a common occurrence and standby generators for all critical facilities need to be implemented as well as long-term solutions to the provision of electric service to critical facilities.
Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$300,000
Potential Funding Sources:	Local, HMGP, PDM, TWDB
Lead Agency/Department Responsible:	Public Works
Implementation Schedule:	18 Months

2025 ANALYSIS:
Defer to plan update. Amend verbiage to include all hazards and updated verbiage to state “Acquire and install generators with hard wired quick connections at all critical facilities to include schools.”

SECTION 19: PREVIOUS ACTIONS

City of La Vernia – Previous Action #5	
Mitigation Action Title:	Maintenance of Flood Control Infrastructure
BACKGROUND INFORMATION	
Description:	Maintain existing minor flood control infrastructure to ensure functionality during flood events; clear debris from dedicated drainage channels. Implement a voluntary public creek cleanup program.
Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Natural System Protection

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	N
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$75,000
Potential Funding Sources:	Local, County
Lead Agency/Department Responsible:	Public Works, SARA
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of La Vernia – Previous Action #6	
Mitigation Action Title:	Public education and outreach
BACKGROUND INFORMATION	
Description:	Implement public education and outreach programs to educate citizens about mitigation against hazards; seek partnerships with country, neighboring communities, and San Antonio River Authority.
Applicable Goals:	G3: Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	N
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	Local, HMGP, OSD
Lead Agency/Department Responsible:	Office of Emergency Management, ISD
Implementation Schedule:	48 Months

2025 ANALYSIS:
Defer to plan update. Amend action to include “Implement public education and outreach programs using media, social media, bulletins, flyers, etc. to educate citizens on hazards that can threaten the area, and mitigation measures they can take.” Include all applicable hazards.

SECTION 19: PREVIOUS ACTIONS

City of La Vernia – Previous Action #7	
Mitigation Action Title:	Repetitive loss properties
BACKGROUND INFORMATION	
Description:	Offer relocation/mitigation incentives to current flood hazard area property owners; initiate a community program to acquire repetitive loss structures identified by FEMA.
Applicable Goals:	G2, G3: Reduce the impact of natural disasters on populations and private property. Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Natural System Protection

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	N
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$000 per program
Potential Funding Sources:	Local, HMGP, PDM, TDEM
Lead Agency/Department Responsible:	Office of Emergency Management, City Manager
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update. Amend action to include an update in cost.

CITY OF POTH

	City of Poth – Previous Action #1	
	Mitigation Action Title:	Mitigate local flooding in identified problem areas
	BACKGROUND INFORMATION	
	Description:	Identify problem flooding areas and implement a program to reduce localized flooding.
	Applicable Goals:	G1: Increase Emergency Preparedness, response and recovery capability.
	Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flooding
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	Local
Lead Agency/Department Responsible:	City of Poth, ISD, Police, Fire
Implementation Schedule:	12 Months

2025 ANALYSIS:
Completed.

SECTION 19: PREVIOUS ACTIONS

City of Poth – Previous Action #2	
Mitigation Action Title:	Provide emergency generator for the wastewater treatment plant
BACKGROUND INFORMATION	
Description:	Install emergency generator at wastewater treatment plant.
Applicable Goals:	G4: Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Windstorms, Lightning, Tornado, Hailstorms, Earthquakes, Severe Winter Storms
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$120,000
Potential Funding Sources:	Local, HMGP
Lead Agency/Department Responsible:	Public Works
Implementation Schedule:	24 Months

2025 ANALYSIS:
Completed.

SECTION 19: PREVIOUS ACTIONS

City of Poth – Previous Action #3	
Mitigation Action Title:	Strengthen floodplain management ordinances
BACKGROUND INFORMATION	
Description:	Adopt higher floodplain standards for new development.
Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flooding
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$25,000
Potential Funding Sources:	Local, CDBG
Lead Agency/Department Responsible:	Engineering, Planning
Implementation Schedule:	24 Months

2025 ANALYSIS:
Completed.

SECTION 19: PREVIOUS ACTIONS

City of Poth – Previous Action #4	
Mitigation Action Title:	Maintain Storm Drainage System
BACKGROUND INFORMATION	
Description:	The drainage system collects debris in culverts and becomes ineffective in containing flood water during rain events. The Public Works Department will maintain the storm drainage system by clearing debris and cutting and mowing vegetation in drainage ditches at least twice a year. A voluntary public creek cleanup program will be implemented.
Applicable Goals:	G2: Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Natural Systems Protection

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flooding
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$20,000
Potential Funding Sources:	Local, CDBG
Lead Agency/Department Responsible:	Public Works
Implementation Schedule:	12 Months

2025 ANALYSIS:
Completed, this is standard maintenance practice.

SECTION 19: PREVIOUS ACTIONS

	City of Poth – Previous Action #5
Mitigation Action Title:	Install early warning system
BACKGROUND INFORMATION	
Description:	Conduct a feasibility study that evaluates the coverage areas, property ownership and availability, power requirements, telemetry requirements, technology, cost, and other local considerations. Based on study finding, install an emergency warning system citywide.
Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$100,000
Potential Funding Sources:	Local, HMGP, ODM
Lead Agency/Department Responsible:	City Council, Police
Implementation Schedule:	12 Months

2025 ANALYSIS:
Completed, new city website will have warning.

SECTION 19: PREVIOUS ACTIONS

City of Poth – Previous Action #6	
Mitigation Action Title:	Adopt ordinances that enforce flood mitigation strategies
BACKGROUND INFORMATION	
Description:	Institute fine for trash or wooded build-up in creek or for going around barricades setup to prevent vehicles going over flooded crossings.
Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flooding
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$5,000
Potential Funding Sources:	Local
Lead Agency/Department Responsible:	City Council
Implementation Schedule:	24 Months

2025 ANALYSIS:
Completed, ordinances are in effect.

SECTION 19: PREVIOUS ACTIONS

City of Poth – Previous Action #7	
Mitigation Action Title:	Educational Signage
BACKGROUND INFORMATION	
Description:	Install educational signage such as "Turn Around Don't Drown" at high risk low-water crossings.
Applicable Goals:	G3: Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flooding
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$5,000
Potential Funding Sources:	Local, CDBG, FEMA
Lead Agency/Department Responsible:	City, public works
Implementation Schedule:	12 Months

2025 ANALYSIS:
Defer to plan update. Amend action to include update in cost.

SECTION 19: PREVIOUS ACTIONS

City of Poth – Previous Action #8	
Mitigation Action Title:	Digital signage for communication
BACKGROUND INFORMATION	
Description:	Coordinate with school district to use sign on US 181 for emergency info and safety directions during hazard events.
Applicable Goals:	G1, G2: Increase emergency preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	Local, CDBG, ISD
Lead Agency/Department Responsible:	ISD, City
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Poth – Previous Action #9	
Mitigation Action Title:	Early Warning System Education
BACKGROUND INFORMATION	
Description:	Alert the population through education material, media, and other methods about enrolling in their early warning system.
Applicable Goals:	G3: Identify, introduce, and implement programs designed to raise awareness of and acceptance of the principles of hazard mitigation.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness Programs

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flooding, Tornado
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	Local, CDBG, TWDB
Lead Agency/Department Responsible:	County, Emergency mgmt..
Implementation Schedule:	48 Months

2025 ANALYSIS:
Defer to plan update. Amend verbiage to include all forms of media, promote early warning system enrollment, and all applicable actions.

SECTION 19: PREVIOUS ACTIONS

City of Poth – Previous Action #10	
Mitigation Action Title:	Install pipe gates to close off streets
BACKGROUND INFORMATION	
Description:	Install automated systems at low-water crossings with high rate of vehicular access resulting in frequency of accidents and loss of life.
Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$250,000
Potential Funding Sources:	Local, HMGP, TWDB
Lead Agency/Department Responsible:	Police, Public Works
Implementation Schedule:	24 Months

2025 ANALYSIS:
Delete from plan. The City no longer considers this a priority.

SECTION 19: PREVIOUS ACTIONS

City of Poth – Previous Action #11	
Mitigation Action Title:	Drainage Study Marcelina's Creek and its tributary
BACKGROUND INFORMATION	
Description:	Marcelina's Creek has a floodplain that runs through the center of the city. Install stream gauges and identify alternative to mitigate flooding, implement study findings.
Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Natural Systems Protection Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flooding
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$250,000
Potential Funding Sources:	Local, HMGP, TWDB
Lead Agency/Department Responsible:	Engineering, Planning
Implementation Schedule:	36 Months

2025 ANALYSIS:
Delete from plan. The City no longer considers this a priority.

SECTION 19: PREVIOUS ACTIONS

City of Poth – Previous Action #12	
Mitigation Action Title:	Construct Community Safe Room
BACKGROUND INFORMATION	
Description:	Conduct a feasibility study to evaluate site options, including utilities, transportation, proximity to vulnerable populations, cost, and other local conditions. Based upon study, build a Safe Room near the geographic center of the populations.
Applicable Goals:	G2: Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Tornado
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$250,000
Potential Funding Sources:	Local, HMGP
Lead Agency/Department Responsible:	ISD, City of Poth
Implementation Schedule:	36 Months

2025 ANALYSIS:
Delete from plan. The City no longer considers this a priority.

SECTION 19: PREVIOUS ACTIONS

City of Poth – Previous Action #13	
Mitigation Action Title:	Structural hardening of critical facilities
BACKGROUND INFORMATION	
Description:	Harden critical facilities against impacts of hazards.
Applicable Goals:	G4: Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Windstorms, Lightning, Tornado, Hailstorms, Earthquakes, Severe Winter Storms
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$200,000
Potential Funding Sources:	Local, HMGP
Lead Agency/Department Responsible:	Public Works
Implementation Schedule:	36 Months

2025 ANALYSIS:
Completed, hardening/retrofitting currently in place.

SECTION 19: PREVIOUS ACTIONS

City of Poth – Previous Action #14	
Mitigation Action Title:	Build Detention Pond
BACKGROUND INFORMATION	
Description:	Phase I: Perform a study to evaluate Poth Branch Watershed - Phase II: Purchase land and construct a drainage infrastructure facility in accordance with the engineering recommendations of study.
Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Natural System Protection

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flooding
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$100,000
Potential Funding Sources:	Local, HMGP, ODM
Lead Agency/Department Responsible:	City Council
Implementation Schedule:	36 Months

2025 ANALYSIS:
Completed Phase I. Delete from plan, as studies determined Phase II is not feasible.

SECTION 19: PREVIOUS ACTIONS

City of Poth – Previous Action #15	
Mitigation Action Title:	Plant drought tolerant trees along public sidewalks and parking lots
BACKGROUND INFORMATION	
Description:	Xeriscaping is a type of landscaping that uses little water by only using plants that are native to the area. Trees along sidewalks and parking lots provide shade from the heat and sun while preserving potable water supplies for drinking and fire suppression.
Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Natural System Protection

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat, Drought
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$40,000
Potential Funding Sources:	Local, HMGP, PDM, Texas Forest Service, TPRD
Lead Agency/Department Responsible:	Public Works
Implementation Schedule:	24 Months

2025 ANALYSIS:
Completed.

	City of Poth – Previous Action #16
Mitigation Action Title:	Map and access vulnerability to wildfire
BACKGROUND INFORMATION	
Description:	Assess overall community vulnerability by implementing a GIS mapping program of wildfire hazard area, developing, and maintaining a database, and creating a scenario to estimate potential injuries and damage. Work with County on effort to develop appropriate Windland-urban interface development regulations.
Applicable Goals:	G1, G2, G4: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Education and Awareness Programs

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Wildfire
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$50,000
Potential Funding Sources:	Local, HMGP, PDM, TNRIS
Lead Agency/Department Responsible:	City Manager, City Council
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

CITY OF STOCKDALE

	City of Stockdale – Previous Action #1
Mitigation Action Title:	Harden Critical Facilities
BACKGROUND INFORMATION	
Description:	The water plant, emergency services building and City Hall lose power under a variety of rain events. There is an immediate need for stand-by power generators and a long term need to harden these facilities against flood hazard or relocate these facilities to less hazardous areas. The City of Stockdale has 48 hours of emergency water storage.
Applicable Goals:	G1, G4: Increase Emergency Preparedness, response and recovery capability. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	N
Benefit (High, Medium, Low):	High
Estimated Cost:	$500,000
Potential Funding Sources:	Local; HMGP; PDM; CDBG
Lead Agency/Department Responsible:	Engineering, Planning, Public Works
Implementation Schedule:	48 Months

2025 ANALYSIS:
Defer to plan update. Amend action to remove the first sentence and place that in the site section of the action.

City of Stockdale – Previous Action #2	
Mitigation Action Title:	Develop and implement a stormwater management plan for Stockdale Creek
BACKGROUND INFORMATION	
Description:	Stockdale Creek, a tributary of Clifton branch which flows into Cibolo Creek, does not have sufficient capability to contain floodwater as it flows through the center of Stockdale. The railroad on the east side of town used to act as a levee, but when it was removed flooding was exacerbated throughout the city. One major impact during flooding is that the EMS is located on the north side of town at the VFD and is cutoff from the majority of the city in a flood. A study needs to be conducted to identify solutions. Engineering recommendations to be implemented.
Applicable Goals:	G1, G3, G4: Increase Emergency Preparedness, response and recovery capability. Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure Project Local Plans and Regulations Education and Awareness

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$1,200,000
Potential Funding Sources:	Local; TWDB; HMGP; PDM; CDBG
Lead Agency/Department Responsible:	City Council, Planning, Engineering
Implementation Schedule:	48 Months

2025 ANALYSIS:
Defer to plan update. Amend action to state “Implement a flood study for identified areas in the community. Phase I: Engineering study to identify solutions to flooding at Stockdale Creek. Phase II: Implement projects to address flooding.” The creek location will be added to the site portion of the action.

SECTION 19: PREVIOUS ACTIONS

City of Stockdale – Previous Action #3	
Mitigation Action Title:	Maintain Drainage System
BACKGROUND INFORMATION	
Description:	Improve storm water drainage within residential and commercial areas by removing brush and debris, opening, and widening waterways, restricting building in the flood zone, and widening bridges. Status of project was 90% completed in 2012 awaiting purchase of two remaining properties.
Applicable Goals:	G1, G4: Increase Emergency Preparedness, response and recovery capability. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Natural Systems Protection

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	N
Benefit (High, Medium, Low):	High
Estimated Cost:	$2,000,000
Potential Funding Sources:	Local; HMGP; PDM; TWDB; USACE
Lead Agency/Department Responsible:	Engineering, Planning, Public Works
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Stockdale – Previous Action #4	
Mitigation Action Title:	Drainage Improvements to Wastewater Treatment Plant
BACKGROUND INFORMATION	
Description:	A drainage improvement was completed in 2018 with 2016 disaster relief funding. Internal pumping was buried and the size of the weir box was increased. Funding and improvements are still needed to connect 2 and 3 and cross CR 401 to increase discharge capabilities. The diameter of the outfall pipe will be increased from 8 inch to 15 inch.
Applicable Goals:	G1, G4: Increase Emergency Preparedness, response and recovery capability. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$800,000
Potential Funding Sources:	Local; HMGP; PDM; CDBG
Lead Agency/Department Responsible:	Engineering, Planning, Public Works
Implementation Schedule:	12 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Stockdale – Previous Action #5	
Mitigation Action Title:	New Bridges on 6th and 8th Streets
BACKGROUND INFORMATION	
Description:	New construction of waterway bridges on 6th and 8th Streets crossing Stockdale Creek. Lift elevation profile of the two bridges that provide access to critical facilities and services within the city as well as access from the City to the surrounding region.
Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	N
Benefit (High, Medium, Low):	High
Estimated Cost:	$500,000
Potential Funding Sources:	Local; HMGP; PDM; TWDB
Lead Agency/Department Responsible:	Engineering, Planning, Public Works
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

City of Stockdale – Previous Action #6	
Mitigation Action Title:	Testing and Coding Fire Hydrants
BACKGROUND INFORMATION	
Description:	Testing and coding fire hydrants to mitigate against uncontrollable spread of fire.
Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Drought, Extreme Heat, Wildfire, Hazardous Materials Incidents
New Action: (Y/N)	N
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$15,000
Potential Funding Sources:	Local
Lead Agency/Department Responsible:	City Water; Fire Department
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update. Amend action to state “Implement a process for testing…”

City of Stockdale – Previous Action #7	
Mitigation Action Title:	Get generators and quick connects for all schools and critical facilities
BACKGROUND INFORMATION	
Description:	Power loss during hazard events is a common occurrence and standby generators for all critical facilities needs to be implemented as well as long-term solution to the provision of electric service to critical facilities.
Applicable Goals:	G1, G2, G4: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$250,000
Potential Funding Sources:	Local; HMGP; PDM; CDBG
Lead Agency/Department Responsible:	Public Works
Implementation Schedule:	12 Months

2025 ANALYSIS:
Defer to plan update. Amend action to state “ Acquire and install generators with hard-wired quick connections at all critical facilities to include schools.” Include all applicable hazards.

SECTION 19: PREVIOUS ACTIONS

City of Stockdale – Previous Action #8	
Mitigation Action Title:	Detention/Retention pond on school property
BACKGROUND INFORMATION	
Description:	Install a detention/ retention pond and reservoir to store excess stormwater on school property along Fordtran Street.
Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood
New Action: (Y/N)	N
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$1,500,000
Potential Funding Sources:	Local; SISD; HMGP; PDM
Lead Agency/Department Responsible:	Stockdale ISD, Public Works, Engineering
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

City of Stockdale – Previous Action #9	
Mitigation Action Title:	Education to homeowners on all hazards
BACKGROUND INFORMATION	
Description:	Obtain printed detailed instruction checklist and other education brochures for homeowners to mitigate the three of hazards to their homes. Distribute information through information booths at public events, social media, and webpages with links to severe weather related agencies.
Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Education and Awareness

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$10,000
Potential Funding Sources:	Local; SISD
Lead Agency/Department Responsible:	Emergency Management, Stockdale ISD
Implementation Schedule:	12 Months

2025 ANALYSIS:
Defer to plan update. Amend action to state “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.” Include all applicable hazards.

City of Stockdale – Previous Action #10	
Mitigation Action Title:	Plant drought tolerant trees along public sidewalks and parking lots
BACKGROUND INFORMATION	
Description:	Xeriscaping is a type of landscaping that uses little water by using plants that are native to the area. Trees along sidewalks and parking lots provide shade from the heat and sun while preserving potable water supplies for drinking and fire suppression.
Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Natural System Protection

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat, Drought
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$40,000
Potential Funding Sources:	Local, HMGP, PDM, Texas Forest Service, TPRD
Lead Agency/Department Responsible:	Office of Emergency Management
Implementation Schedule:	60 Months

2025 ANALYSIS:
Defer to plan update.

LA VERNIA ISD

	La Vernia ISD – Previous Action #1
Mitigation Action Title:	Upgrade/Harden Schools against all hazards
BACKGROUND INFORMATION	
Description:	The schools in La Vernia are most at risk of flooding. A detailed study of cost effective measures to protect and harden schools against all hazards needs to be developed and the findings implemented.
Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure Project

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$275,000
Potential Funding Sources:	LVISD, Local, TWDB, HMGP
Lead Agency/Department Responsible:	LVISD, Public Works
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update. Amend action to state “Assess critical facilities for hardening/retrofit opportunities, then harden/retrofit critical facilities to hazard-resistant levels.”

SECTION 19: PREVIOUS ACTIONS

La Vernia ISD – Previous Action #2	
Mitigation Action Title:	Install backup generators
BACKGROUND INFORMATION	
Description:	Install backup generators at school sites.
Applicable Goals:	G2, G4: Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure Project

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$150,000
Potential Funding Sources:	LVISD, Local, TWDB, HMGP
Lead Agency/Department Responsible:	LVISD, Public Works
Implementation Schedule:	36 Months

2025 ANALYSIS:
Defer to plan update. Amend action to include all applicable hazards.

SECTION 19: PREVIOUS ACTIONS

La Vernia ISD – Previous Action #3	
Mitigation Action Title:	Community Safe Room
BACKGROUND INFORMATION	
Description:	Construct a safe room/building for public to go to for shelter during storms by upgrading existing high school gym facility.
Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Structure and Infrastructure Project

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	High
Estimated Cost:	$150,000
Potential Funding Sources:	LVISD, HMGP, PDM
Lead Agency/Department Responsible:	LVISD, City of La Vernia
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.

SECTION 19: PREVIOUS ACTIONS

La Vernia ISD – Previous Action #4	
Mitigation Action Title:	Hazard Education Program
BACKGROUND INFORMATION	
Description:	Create and implement a Hazard Educational Enhancement Program in which faculty/students can collaborate in understanding and communicating hazards of concern, such as a post contest, essay contest, or field work that teaches practical understanding of local concerns. Encourage good practices at home such as water conservation.
Applicable Goals:	G1, G2, G3: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property. Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Education and Awareness Programs

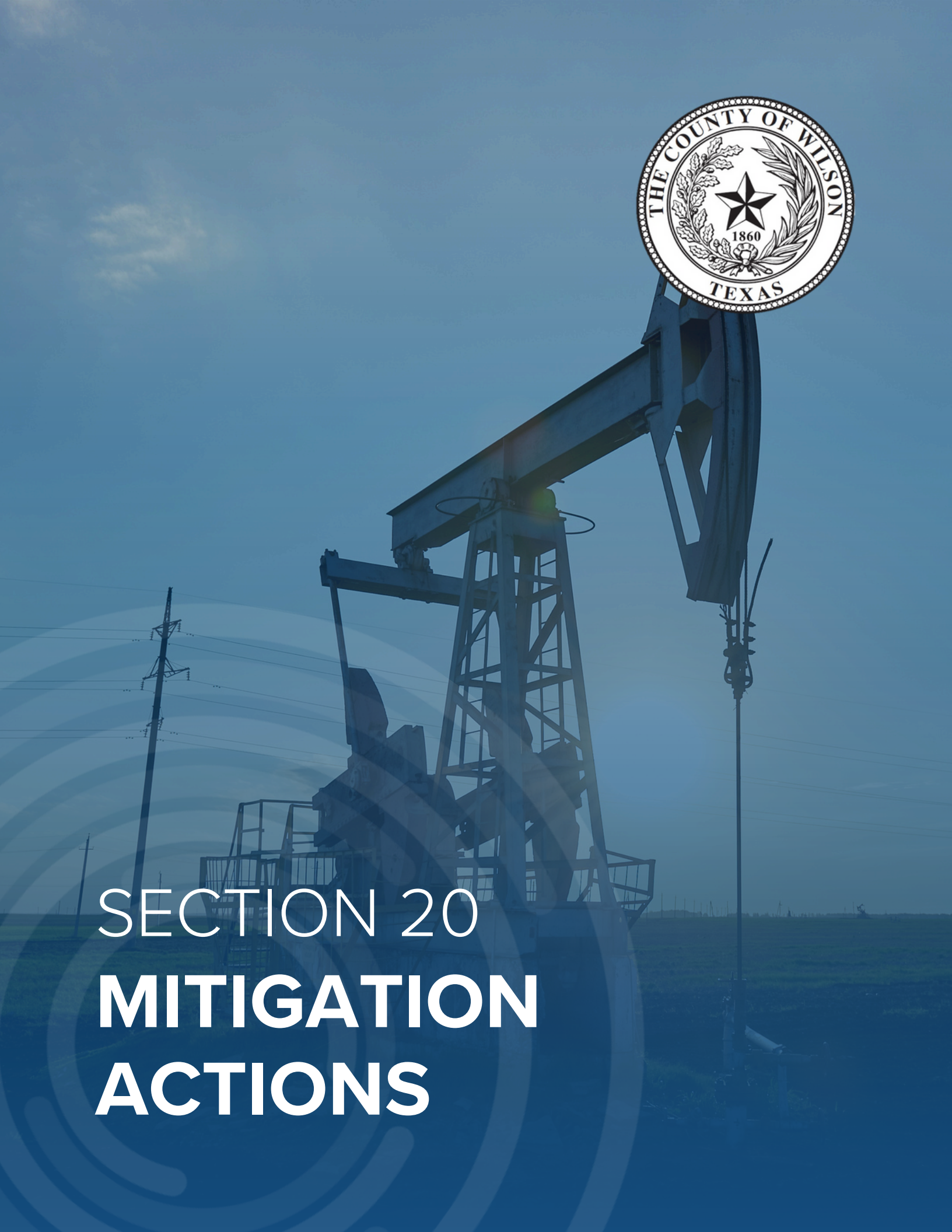
MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Hurricane, Flood, Drought, Windstorm, Extreme Heat, Lightning, Tornado, Hailstorms, Wildfire, Severe Winter Storms, Earthquakes, Hazardous Materials Incidents
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$5,000
Potential Funding Sources:	LVISD, HMGP
Lead Agency/Department Responsible:	LVISD
Implementation Schedule:	12 Months

2025 ANALYSIS:
Defer to plan update.

La Vernia ISD – Previous Action #5	
Mitigation Action Title:	Plant drought tolerant trees along school sidewalks and parking lots
BACKGROUND INFORMATION	
Description:	Xeriscaping is a type of landscaping that uses little water by only using plants that are native to the area. Trees along sidewalks and parking lots provide shade from the heat and sun while preserving.
Applicable Goals:	G1, G2: Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.
Type of Action: *(Local Plans and Regulations, Structure and Infrastructure Projects, Natural Systems Protection, or Education and Awareness)*	Local Plans and Regulations Natural Systems Protection

MITIGATION ACTION DETAILS	
Hazard(s) Addressed:	Extreme Heat, Drought
New Action: (Y/N)	Y
Benefit (High, Medium, Low):	Medium
Estimated Cost:	$40,000
Potential Funding Sources:	Local, HMGP, PDM, Texas Forest Service, TPRD
Lead Agency/Department Responsible:	LVISD
Implementation Schedule:	24 Months

2025 ANALYSIS:
Defer to plan update.



SECTION 20
MITIGATION ACTIONS

SECTION 20: MITIGATION ACTIONS

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 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 cost's 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 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 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

[1] Cost, funding sources, and implementation schedules are subject to change upon full scoping of project and grant availability.

of 2024. 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 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.

Wilson County and the Cities of Floresville, La Vernia, Poth, and Stockdale are participants in the National Flood Insurance Program (NFIP). Flooding was identified as a significant risk for these communities therefore many of the mitigation actions were developed with flood mitigation in mind. Actions related to NFIP compliance include additional narrative when deemed appropriate.

SECTION 20: MITIGATION ACTIONS

Table 20-1. Wilson 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	Earthquake	Extreme Heat	Flood	Hail	Hurricane/Tropical Storm	Lightning	Thunderstorm Wind	Tornado	Wildfire	Winter Storm	Hazardous Materials
Wilson County	●●●●	●●●●●	●●●●	●●●●●	●●●●●	●●●●	●●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●
City of Floresville	N/A	●●●●●	●●●	●●●●●	●●●●●	●●●	●●●●●	●●●	●●●●	●●●●	●●●	●●●	●●●
City of La Vernia	N/A	●●	●●	●●	●●●●	●●	●●●●	●●	●●	●●	●●	●●	●●
City of Poth	N/A	●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
City of Stockdale	N/A	●●●●	●●	●●●●	●●●●	●●	●●●●	●●	●●	●●	●●●	●●	●●●
Floresville ISD	N/A	●●	●●	●●●	●●●	●●	●●	●●	●●	●●	●●	●●	●●
La Vernia ISD	N/A	●●●●	●●●	●●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●
Poth ISD	N/A	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●
Stockdale ISD	N/A	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●

WILSON COUNTY

WILSON 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	Coordinate with Cities and ISDs to build a FEMA-compliant dome. Critical facilities are at high risk for windstorm related events.	County-wide	Reduce risk to citizens by providing shelter in high-risk areas during extreme weather events.	Structure and Infrastructure	Hurricane/Tropical Storm, Thunderstorm Wind, Tornado	Safety/Security, Food/Hydration/Shelter	Y	H	$2,500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Office of Emergency Management	48-60 Months	Emergency Operations Plan, Emergency Management Action Plan	N/A
2	Install/Implement redundancy in our network/communications systems and infrastructure to ensure business continuity and essential services during hazard events, natural disasters, etc.	County-wide*	Reduce loss of life and property. Increase communication and continuity of services during hazard events.	Local Plans and Regulations	Dam Failure, Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	H	$750,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Office of Emergency Management	60 Months	Emergency Operations Plan, Emergency Management Action Plan, Continuity of Operations Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to students and staff.
	* This will be utilizing software and networks such as Starlink or other comparable service													

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WILSON 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**
3	Implement education and awareness programs 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	Identify, introduce and implement programs designed to raise awareness of and acceptance of the principles of hazard mitigation.	Education and Awareness	Dam Failure, Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Office of Emergency Management	60 Months	Emergency Management Action Plan	Promotes public safety.
4	Implement an erosion study and project at CR 401 and Cibolo Creek. Phase I: Engineering study of design solutions to erosion of CR 401 at Cibolo Creek. Phase II: Implementation of stabilization project to address stream incision and erosion CR 401 at Cibolo Creek.	CR 401 at Cibolo Creek	Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Flood, Hurricane/Tropical Storm	Safety/Security	N/A	H	$300,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	County Commissioner	48 Months	Stormwater Management Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

SECTION 20: MITIGATION ACTIONS

WILSON 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**
5	Improve interoperability of communications systems between first responder agencies and jurisdictions in Wilson County.	County-wide	Increase emergency preparedness, response and recovery capability.	Local Plans and Regulations, Preparedness /Response	Dam Failure, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	H	$150,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Wilson County Sheriff's Office	12 Months	Emergency Operations Plan, Emergency Management Action Plan, Continuity of Operations Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
6	The County will purchase portable emergency back-up generators for deployment in the event of extended power loss for critical communications towers.	County-wide	Increase emergency preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.	Preparedness /Response	Dam Failure, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	$150,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	County Commissioner	24 Months	Emergency Operations Plan, Emergency Management Action Plan, Continuity of Operations Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

WILSON 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**
7	Implement an erosion study and project at CR 202 East and Marcelina Creek Phase I: Engineering study of design solutions to erosion of CR 202 East at Marcelina Creek. Phase II: Implementation of stabilization project to address stream incision and erosion CR 202 at Marcelina Creek.	County-wide identified sites*	Reduce the potential of natural disasters on critical facilities and infrastructure. Reduce the impact of natural disasters on populations and private property.	Structure and Infrastructure	Flood, Hurricane/Tropical Storm	Safety/Security	N/A	H	$300,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	County Commissioner	48 Months	Stormwater Management Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
	* CR 202 East at Marcelina Creek													
8	Develop flood hazard information by collecting information, high water marks, and conduct engineering studies to develop the 100-year and 500-year flood elevation levels.	County-wide	Reduce the potential of natural disasters on critical facilities and infrastructure. Reduce the impact of natural disasters on populations and private property.	Local Plans and Regulations	Flood, Hurricane/Tropical Storm	Safety/Security	N/A	M	$200,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	SARA	36 Months	Floodplain Ordinance	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

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WILSON COUNTY MITIGATION ACTIONS														
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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**
9	Implement incident command system (ICS) training and exercise. Conduct "Tabletop Exercises" with emergency response personnel from multiple agencies, to determine further mitigation opportunities and response vulnerabilities.	County-wide	Increase emergency preparedness, response and recovery capability.	Education and Awareness, Local Plans and Regulations, Preparedness /Response	Dam Failure, Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Safety/Security	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Wilson County	36 Months	Emergency Operations Plan, Emergency Management Action Plan, Continuity of Operations Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
10	Acquire flooded structures to remove them out of the SFHA and restrict further structures from development on the site. Consider the establishment of a "voluntary" acquisition and demolition program and/or "structure elevation program" to address repetitive loss, flood prone properties. Keep a database of flood prone, repetitive loss and severe repetitive loss properties with pertinent information about each property.	County-wide	Reduce the potential of natural disasters on critical facilities and infrastructure.	Local Plans and Regulations, Natural Systems Protection	Flood, Hurricane/Tropical Storm	Safety/Security	Y	M	$850,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Wilson County, Office of Emergency Management	60 Months	Floodplain Ordinance	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

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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**
11	Implement a Phased Project for low water crossing gate installation. Phase I: Complete a study of county roads with a history of road closure due to rapidly rising flood waters with the goal of identifying and assessing low water crossings. This study will identify priority locations and costs for gate installation. Phase II: Implement installation of low water crossing gates at areas that were identified in the Phase I study.	County-wide	Increase emergency preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.	Education and Awareness, Structure and Infrastructure	Flood, Hurricane/Tropical Storm	Safety/Security	N/A	H	$600,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	County Commissioner	60 Months	Floodplain Ordinance	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

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WILSON COUNTY MITIGATION ACTIONS														
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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	Implement a Phased Project for upgrading infrastructure at low water crossings to provide unimpeded access during a 100-year base flood event to facilitate evacuation and response to emergency vehicles. Phase I: Complete a study to identify and assess low water crossings for upgraded infrastructure. This study will identify priority locations, upgrades necessary, and costs for upgrades. Phase II: Implement study findings by installing upgraded infrastructure at areas that were identified in the Phase I study.	County-wide	Increase emergency preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Flood, Hurricane/Tropical Storm	Safety/Security	N/A	M	$2,500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	County Commissioner	60 Months	Emergency Operations Plan, Emergency Management Action Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

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**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**
13	Implement a Phased Project for appropriate places in the County for installation of Xeriscaping and tree canopies. Phase I would be an assessment of highly populated and County owned areas/property to determine the highest risk for heat exposure. Phase II: Implement installation of Xeriscaping and tree canopies in the identified areas to reduce extreme heat and sun exposure while preserving potable water supplies for drinking and fire suppression.	County-wide	Increase emergency preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.	Local Plans and Regulations, Natural Systems Protection	Drought, Extreme Heat	Safety/Security	N/A	M	$200,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Wilson County, Office of Emergency Management	24 Months	Extreme Heat Protocol	N/A

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14	Harden/retrofit critical facilities to hazard-resistant levels.	County-wide*	Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Dam Failure, Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Safety/Security	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Wilson County, Office of Emergency Management	36 Months	Emergency Operations Plan, Emergency Management Action Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
	* Priority sites include all critical facilities to include Wilson County Courthouse, Wilson County Annex II, Wilson County Annex III, Wilson County District Courthouse; Wilson County Public Libraries; Wilson County Tax Office; Wilson County Expo Center; Wilson County Justice of the Peace offices; Wilson County Sheriff Office. This list is not comprehensive and may have additional identified critical facilities listed in the future.													
15	Assess overall community vulnerability by implementing a GIS mapping program of wildfire hazard area, developing and maintaining a database, and creating a scenario to estimate potential injuries and damage. Share information with municipalities to develop appropriate wildland-urban interface development regulations.	County-wide	Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.	Local Plans and Regulations, Education and Awareness	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Wilson County, Office of Emergency Management	24 Months	Emergency Operations Plan, Emergency Management Action Plan	N/A

WILSON 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**
16	Assemble Emergency Planning Committees (LEPCs) whose responsibilities include collecting information about hazardous materials in the community and making this information available to the public upon request. The LEPCs are also tasked with developing an emergency plan to prepare for and respond to chemical emergencies in the community.	County-wide	Increase emergency preparedness, response and recovery capability. Reduce the potential of natural disasters on critical facilities and infrastructure. Identify, introduce, and implement programs designed to raise awareness of and acceptance of the principles of hazard mitigation.	Local Plans and Regulations, Education and Awareness	Hazardous Materials	Hazardous Material, Safety/Security	N/A	M	$20,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Wilson County, Office of Emergency Management	24 Months	Emergency Operations Plan, Emergency Management Action Plan	N/A

CITY OF FLORESVILLE

CITY OF FLORESVILLE 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	Coordinate with County and ISD to build a FEMA-compliant dome. Critical facilities are at high risk for windstorm related events.	City-wide	Reduce risk to citizens by providing shelter in high-risk areas during extreme weather events.	Structure and Infrastructure	Hurricane/Tropical Storm, Thunderstorm Wind, Tornado	Safety/Security, Food/Hydration/Shelter	Y	H	$1,500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Floresville, Floresville ISD Administration	48-60 Months	Emergency Operations Plan, Emergency Management Action Plan	N/A
2	Purchase and install emergency generators in case of electrical failure at all schools, water and lift station sites, the county emergency operations center, and other identified critical facilities. Also, consider alarms, meters, remote controls, and switchgear upgrades.	City-wide	Increase emergency preparedness, response and recovery capability.	Structure and Infrastructure	Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	$375,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Public Works	36 Months	Continuity of Operations Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

CITY OF FLORESVILLE 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**
3	Assess existing floodplain management ordinances and recommend improvement to mitigate the flood and water quality impacts of new development and redevelopment. This can include requirement for drainage easements, water detention, road design, base flood elevation (BFE) height requirements, and green infrastructure.	City-wide	Reduce the impact of natural disasters on populations and private property.	Local Plans and Regulations	Flood, Hurricane/Tropical Storms, Thunderstorm Wind, Winter Storms	Safety/Security	N/A	H	$200,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Council, Floodplain Manager, Planning Department	12 Months	Floodplain Ordinance	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
4	Identify roadways that are submerged during high frequency rain events and develop and implement a flood/high water early warning system to notify city, county and first responders.	City-wide*	Increase emergency preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.	Structure and Infrastructure	Flood, Hurricane/Tropical Storm	Safety/Security	N/A	H	$150,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Engineering, Planning	24 Months	Continuity of Operations Plan, Evacuation Plan, Emergency Operations Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
	* Various Low Water Crossings													

CITY OF FLORESVILLE 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**
5	Early Warning Sirens to be installed at strategic locations within the city boundaries. Currently sirens cannot be heard in the citywide area of 4.75 sq miles. Provide siren sites, with electrical services and siren poles.	City-wide	Increase emergency preparedness, response and recovery capability.	Structure and Infrastructure, Education and Awareness	Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Safety/Security	N/A	H	$125,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Public Works	24 Months	Emergency Operations Plan, Emergency Management Action Plan	Promotes public safety.
6	Consult San Antonio River Authority (SARA) lower watershed plan and to identify and rank improvements to mitigation flooding at low water crossings and improve reliability of transportation system during hazardous events.	City-wide	Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Flood, Hurricane/Tropical Storm, Hazardous Materials	Safety/Security	N/A	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Engineering, Planning	36 Months	Floodplain Ordinance	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

CITY OF FLORESVILLE 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**
7	The Public Works Department will maintain the storm drainage system by clearing debris and cutting and mowing vegetation in drainage ditches at least twice a year. This includes installing watertight covers or inflow guards on sewer manholes and detection and prevention of illicit discharges into storm water and sewer systems from home footing drains, downspouts, and sewer pumps. The city will also look to implement a public creek cleanup program.	City-wide	Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure, Natural Systems Protection	Flood, Hurricane/Tropical Storm	Safety/Security	N/A	H	$350,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Stormwater Operations and Maintenance	48 Months	Stormwater Management Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

CITY OF FLORESVILLE 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	The High School Gym was hit by a tornado in 2016 and severely damaged. This structure is the best candidate for a community saferoom and should be retrofitted to withstand impact for natural hazards.	City High School	Increase emergency preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.	Structure and Infrastructure	Hurricane/Tropical Storm, Tornado	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Manager, City Council, Public Works	24 Months	Emergency Operations Plan, Emergency Management Action Plan	N/A
9	Develop and maintain a database to track community vulnerability such as exposure in known hazard areas and designate these high-risk zones as special assessment districts to fund necessary hazard mitigation projects.	City-wide	Increase emergency preparedness, response and recovery capability. Identify, introduce, and implement programs designed to raise awareness of and acceptance of the principles of hazard mitigation.	Education and Awareness, Local Plans and Regulations	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Safety/Security	Y	H	$180,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Council, City Manager	36 Months	Comprehensive Plan, Capital Improvement Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

SECTION 20: MITIGATION ACTIONS

CITY OF FLORESVILLE 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	Assess critical facilities for hardening/retrofit opportunities, then harden/retrofit critical facilities to hazard-resistant levels.	City-wide Critical Facilities	Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Safety/Security	Y	H	$200,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Public Works	36 Months	Capital Improvement Plan, Comprehensive Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
11	Conduct tornado drills in school and public buildings and distribute tornado shelter information to educate the public about locations and use of shelters.	City-wide	Identify, introduce, and implement programs designed to raise awareness of and acceptance of the principles of hazard mitigation.	Education and Awareness, Preparedness /Response	Thunderstorm Wind, Tornado	Safety/Security, Communication	Y	H	$10,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Council, City Manager, Floresville ISD Administration	12 months	Emergency Operations Plan, Emergency Management Action Plan	N/A

SECTION 20: MITIGATION ACTIONS

CITY OF FLORESVILLE 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	Develop and adopt a stormwater management plan. Phase 1: Undertake storm water drainage study for the City of Floresville to protect people and property from flood events, manage the stormwater pipe system, enhance streams and floodplains, and recommend policy and regulatory enhancements. Phase II: Implement recommendations from study of most critical flood control improvements, low water crossing upgrades.	City-wide	Reduce the impact of natural disasters on populations and private property.	Local Plans and Regulations, Natural Systems Protection, Structure and Infrastructure	Flood, Hurricane/Tropical Storm	Safety/Security	N/A	H	$350,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Manager, Floodplain Manager, Engineering	24 Months	Stormwater Management Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

SECTION 20: MITIGATION ACTIONS

CITY OF FLORESVILLE 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**
13	Designate a local floodplain manager and provide education materials online and to real estate and insurance agencies to increase community understanding of flood insurance. Hold a town hall meeting with NFIP representatives to discuss the insurance purchase process. Enter the Community Rating System (CRS) program to enable reduced insurance premiums within the community. The first priority is to establish a program for public information (PPI) with a PPI committee as suggested by activity 332 of the CRS coordinator's manual.	City-wide	Increase emergency preparedness, response and recovery capability. Identify, introduce, and implement programs designed to raise awareness of and acceptance of the principles of hazard mitigation.	Education and Awareness, Local Plans and Regulations	Flood, Hurricane/Tropical Storm	Safety/Security	N/A	M	$20,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Floodplain Manager	60 Months	Floodplain Ordinance	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

CITY OF FLORESVILLE 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**
14	Purchase and distribute NOAA Weather Radios with uniform technology.	City-wide	Increase emergency preparedness, response and recovery capability.	Education and Awareness	Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Safety/Security, 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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Manager, City Council	12 Months	Emergency Operations Plan, Emergency Management Action Plan	Promotes public safety.
15	Educate citizens about mitigation strategies prior to any flood conditions, including dangers of debris flooding roads and how to best floodproof homes and businesses.	City-wide	Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation.	Education and Awareness	Flood, Hurricane/Tropical Storm	Safety/Security, 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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Council, City Manager, Floresville ISD Administration	12 Months	Floodplain Ordinance	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

CITY OF FLORESVILLE 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**
16	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	Identify, introduce, and implement programs designed to raise awareness of and acceptance of the principles of hazard mitigation.	Education and Awareness	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, 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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Council, City Manager, Floresville ISD Administration	12 Months	Emergency Operations Plan, Emergency Management Action Plan	Promotes public safety.
17	Establish and implement a voluntary "acquisition and demolition program", "acquisition structure relocation program", and "structure elevation program", to address repetitive loss, flood prone properties. Keep lands subject to repetitive loss in natural state in perpetuity.	City-wide Flood prone Areas	Reduce the impact of natural disasters on populations and private property.	Structure and Infrastructure, Local Plans and Regulations	Flood, Hurricane/Tropical Storm	Safety/Security	Y	M	$1,500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Council, Planning	36 Months	Floodplain Ordinance	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

SECTION 20: MITIGATION ACTIONS

CITY OF FLORESVILLE 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**
18	Establish and implement a process to coordinate with State and Federal Agencies to maintain up-to-date hazard data, maps and assessments.	City-wide	Increase emergency preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.	Education and Awareness, Local Plans and Regulations	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Safety/Security	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Council, City Manager, Planning, State, FEMA	36 Months	Emergency Operations Plan, Emergency Management Action Plan	Promotes public safety.
19	Develop funding mechanism for flood mitigation by implementing impact fees and drainage utility fees to fund improvements to the municipal drainage and flood control network.	City-wide	Increase emergency preparedness, response and recovery capability. Reduce the potential of natural disasters on critical facilities and infrastructure. Reduce the impact of natural disasters on populations and private property.	Local Plans and Regulations	Flood, Hurricane/Tropical Storm	Safety/Security	N/A	M	$150,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Manager, City Council	24 Months	N/A	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

CITY OF FLORESVILLE 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**
20	Establish a local reserve fund for public mitigation measures.	City-wide	Increase emergency preparedness, response and recovery capability.	Local Plans and Regulations	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Safety/Security	N/A	M	$1,500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Council	24 Months	N/A	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
21	Implement Drought and Extreme Heat Contingency Plan. This city is most impacted by drought and extreme heat conditions as conditions are prevalent most years. Thus, a contingency plan for water usage is needed. The city will create and implement a drought and extreme heat contingency plan to create water conservation stages for users based on water availability.	City-wide	Increase emergency preparedness, response and recovery capability.	Local Plans and Regulations	Drought, Extreme Heat	Safety/Security	N/A	M	$120,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Planning Department	60 Months	Drought Contingency Plan, Extreme Heat Protocol	N/A

CITY OF FLORESVILLE 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**
22	Keep aerial photography current, especially in rapidly developing areas.	City-wide	Increase emergency preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.	Education and Awareness, Local Plans and Regulations	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Safety/Security	N/A	M	$200,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Council, County, AACOG	24 Months	Economic Development Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
23	Xeriscaping is a type of landscaping that uses little water by using plants that are native to the area. Trees along sidewalks and parking lots provide shade from the heat and sun while preserving potable water supplies for drinking and fire suppression.	City-wide	Increase emergency preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.	Natural System Protection, Local Plans and Regulations	Drought, Extreme Heat	Safety/Security	N/A	M	$40,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Public Works	24 Months	Drought Contingency Plan, Extreme Heat Protocol	N/A

CITY OF LA VERNIA

CITY OF LA VERNIA 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	Coordinate with County and ISD to build a FEMA-compliant dome. Critical facilities are at high risk for windstorm related events.	City-wide	Reduce risk to citizens by providing shelter in high-risk areas during extreme weather events.	Structure and Infrastructure	Hurricane/Tropical Storm, Thunderstorm Wind, Tornado	Safety/Security, Food/Hydration/Shelter	Y	H	$1,500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of La Vernia, La Vernia ISD Administration	48-60 Months	Emergency Operations Plan, Emergency Management Action Plan	N/A
2	The wastewater treatment plant is particularly susceptible to rain events and needs to be floodproofed. The wastewater treatment plant needs to be built outside of the floodplain.	City locations*	Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Flood, Hurricane/Tropical Storms	Safety/Security, Water Systems	N/A	H	$350,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Public Works	36 Months	Comprehensive Plan, Capital Improvement Plan, Floodplain Ordinance	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
	* Wastewater Treatment Plant													

CITY OF LA VERNIA 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**
3	More than half the land area in the City of La Vernia is within the 100-year floodplain of Cibolo Creek per the current FEMA Flood Insurance Rate Maps. US-87 is submerged going North and South out of the city during flood events which means the fire department and EMS are cutoff from the rest of the city. Conduct a detailed hydrologic and hydraulic study, and from the results, develop a flood protection plan for Cibolo Creek and Dry Hollow Creek.	City identified creeks*	Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.	Local Plans and Regulations, Structure and Infrastructure	Flood, Hurricane/Tropical Storms	Safety/Security, Water Systems	N/A	H	$1,500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City administration, SW Engineering	24 Months	Comprehensive Plan, Capital Improvement Plan, Floodplain Ordinance	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
	* US-87 at Cibolo Creek and Dry Hollow Creek													

CITY OF LA VERNIA MITIGATION ACTIONS														
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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	Harden/retrofit critical facilities to hazard-resistant levels.	City-wide critical facilities *	Increase Emergency Preparedness, response and recovery capability. Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Public Works	24 Months	Comprehensive Plan, Capital Improvement Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
	* 3 lift stations, and wastewater treatment plant are all within the 100-year flood plain or floodway.													
5	Acquire and install generators with hard wired quick connections at all critical facilities to include schools.	City-wide Critical Facilities	Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	$300,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Public Works	18 Months	Comprehensive Plan, Capital Improvement Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.

CITY OF LA VERNIA 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	Maintain existing minor flood control infrastructure to ensure functionality during flood events; clear debris from dedicated drainage channels. Implement a voluntary public creek cleanup program.	City-wide	Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.	Natural Systems Protection	Flood, Hurricane/Tropical Storms	Safety/Security	N/A	M	$75,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Public Works, SARA	36 Months	Floodplain Ordinance	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
7	Implement public education and outreach programs using media, social media, bulletins, flyers, etc. to educate citizens on hazards that can threaten the area, and mitigation measures they can take. Seek partnerships with county, neighboring communities, and San Antonio River Authority.	City-wide	Identify, introduce, and implement programs designed to raise awareness of and acceptance of the principles of hazard mitigation.	Education and Awareness	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, 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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Office of Emergency Management, City PIO	48 Months	Emergency Management Action Plan, Emergency Operations Plan	Promotes public safety.

SECTION 20: MITIGATION ACTIONS

CITY OF LA VERNIA 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	Offer relocation/mitigation incentives to current flood hazard area property owners; initiate a community program to acquire repetitive loss structures identified by FEMA.	City-wide	Reduce the impact of natural disasters on populations and private property. Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation.	Local Plans and Regulations, Natural Systems Protection	Flood, Hurricane/Tropical Storms	Safety/Security	Y	M	$1,500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Office of Emergency Management, City Administration	36 Months	Comprehensive Plan, Capital Improvement Plan, Floodplain Ordinance	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

CITY OF POTH

CITY OF POTH 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	Acquire and install generators with hard wired quick connections at all critical facilities.	City-wide critical facilities	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	N/A	H	$700,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Poth	24 Months	Continuity of Operations Plan, Emergency Operations Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
2	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. Promote early warning system enrollment.	City-wide	Promote hazard awareness and protect citizens from potential injuries and damages.	Education and Awareness	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Poth	12 Months	Emergency Management Action Plan, Emergency Operations Plan	Promote public safety.

CITY OF POTH 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**
3	Install educational signage such as "Turn Around Don't Drown" at high risk low-water crossings.	City-wide	Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation.	Education and Awareness	Flood	Communication	N/A	H	$15,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Poth, Public Works	12 Months	Emergency Management Action Plan	Promotes public safety.
4	Coordinate with County and ISD to build a FEMA-compliant dome. Critical facilities are at high risk for windstorm related events.	City-wide	Reduce risk of injuries, fatalities and damages through education and awareness.	Education and Awareness	Hurricane/Tropical Storm, Thunderstorm Wind, Tornado	Communication	N/A	H	$15,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Poth, Poth ISD Administration	12 Months	Emergency Management Action Plan, Emergency Operations Plan	Promotes public safety.

CITY OF POTH 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**
5	Coordinate with school district to use sign on US 181 for emergency info and safety directions during hazard events.	City-wide	Increase emergency preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.	Education and Awareness, Structure and Infrastructure	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Manager, Poth ISD Administration	24 Months	Emergency Operations Plan	Promote public safety.
6	Assess overall community vulnerability by implementing a GIS mapping program of wildfire hazard area, developing and maintaining a database, and creating a scenario to estimate potential injuries and damage. Work with County on effort to develop appropriate Windland-urban interface development regulations.	City-wide	Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Wildfire	Communication, Safety/Security	N/A	M	$100,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Manager, City Council	24 Months	Continuity of Operations Plan, Emergency Operations Plan	N/A

CITY OF STOCKDALE

CITY OF STOCKDALE 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	Coordinate with County and ISD to build a FEMA-compliant dome. Critical facilities are at high risk for windstorm related events	City-wide	Reduce risk to citizens by providing shelter in high-risk areas during extreme weather events.	Structure and Infrastructure	Hurricane/Tropical Storm, Thunderstorm Wind, Tornado	Safety/Security, Food/Hydration/Shelter	Y	H	$1,500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Stockdale, Stockdale ISD Administration	48-60 Months	Emergency Management Action Plan, Emergency Operations Plan	N/A
2	There is an immediate need for stand-by power generators and a long term need to harden these facilities against flood hazard or relocate these facilities to less hazardous areas. The City of Stockdale has 48 hours of emergency water storage.	City-wide critical facilities *	Increase Emergency Preparedness, response and recovery capability. Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Flood, Hurricane/Tropical Storm	Energy (Power/Fuel)	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Engineering, Planning, Public Works	48 Months	Emergency Management Action Plan, Emergency Operations Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
	* The water plant, emergency services building, and City Hall lose power under a variety of rain events.													

CITY OF STOCKDALE 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**
3	Implement a flood study for identified areas in the community. Phase I: Engineering study to identify solutions to flooding at Stockdale Creek. Phase II: Implement projects to address flooding.	City-wide creeks*	Increase Emergency Preparedness, response and recovery capability. Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation. Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure Local Plans and Regulations Education and Awareness	Flood, Hurricane/Tropical Storm	Safety/Security, Communication	N/A	H	$1,200,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Council, Planning, Engineering	48 Months	Capital Improvement Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
	*Stockdale Creek is uncontained when flooding, cutting off the VFD and EMS during flooding events													

SECTION 20: MITIGATION ACTIONS

CITY OF STOCKDALE 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	Improve storm water drainage within residential and commercial areas by removing brush and debris, opening and widening waterways, restricting building in the flood zone, and widening bridges. Status of project was 90% completed in 2012 awaiting purchase of two remaining properties.	City-wide	Increase Emergency Preparedness, response and recovery capability. Reduce the potential of natural disasters on critical facilities and infrastructure.	Natural Systems Protection	Flood, Hurricane/Tropical Storm	Safety/Security	N/A	H	$2,000,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Engineering, Planning, Public Works	24 Months	Capital Improvement Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
5	A drainage improvement was completed in 2018 with 2016 disaster relief funding. Internal pumping was buried, and the size of the weir box was increased. Funding and improvements are still needed to connect 2 and 3 and cross CR 401 to increase discharge capabilities. The diameter of the outfall pipe will be increased from 8 inches to 15 inches.	City-wide *	Increase Emergency Preparedness, response and recovery capability. Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Flood, Hurricane/Tropical Storm	Safety/Security	N/A	H	$800,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Engineering, Planning, Public Works	12 Months	Capital Improvement Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
	*wastewater treatment plant													

CITY OF STOCKDALE 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	New construction of waterway bridges on 6th and 8th Streets crossing Stockdale Creek. Lift elevation profile of the two bridges that provide access to critical facilities and services within the city as well as access from the City for surrounding region.	City-wide at 6th and 8th Streets	Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Flood, Hurricane/Tropical Storm	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Engineering, Planning, Public Works	24 Months	Capital Improvement Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.
7	Implement a process for testing and coding fire hydrants to mitigate against uncontrollable spread of fire.	City-wide	Increase emergency preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.	Local Plans and Regulations	Drought, Extreme Heat, Wildfire, Hazardous Materials	Safety/Security	N/A	M	$15,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City Water, Fire Department	36 Months	Drought Contingency Plan	N/A

CITY OF STOCKDALE MITIGATION ACTIONS														
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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	Acquire and install generators with hard wired quick connections at all critical facilities, to include schools.	City-wide	Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	N/A	M	$250,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Public Works	12 Months	Capital Improvement Plan, Emergency Management Action Plan	Helps ensure critical facilities continue to provide services during a power outage caused by unforeseen events.
9	Install a detention/ retention pond and reservoir to store excess stormwater on school property along Fordtran Street.	City-wide Schools	Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Flood, Hurricane/Tropical Storm	Safety/Security	N/A	M	$1,500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	City of Stockdale, Stockdale ISD Administration, Public Works, Engineering	24 Months	Capital Improvement Plan, Emergency Management Action Plan	Protects infrastructure, reduces cost of reparation, and prevents injury to residents.

SECTION 20: MITIGATION ACTIONS

CITY OF STOCKDALE 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	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	Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.	Education and Awareness	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, 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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Emergency Management, Stockdale ISD Administration	12 Months	Capital Improvement Plan, Emergency Management Action Plan	Promotes public safety.
11	Xeriscaping is a type of landscaping that uses little water by using plants that are native to the area. Trees along sidewalks and parking lots provide shade from the heat and sun while preserving potable water supplies for drinking and fire suppression.	City-wide	Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.	Local Plans and Regulations, Natural System Protection	Drought, Extreme Heat	Safety/Security	N/A	M	$40,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Public Works	24 Months	Drought Contingency Plan	N/A

FLORESVILLE ISD

FLORESVILLE ISD 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	Build safe room shelters throughout ISD facilities so the occupants can reach shelter in less than five minutes.	ISD-wide	Reduce risk to citizens by providing shelter in high-risk areas during extreme weather events.	Structure and Infrastructure	Hurricane/Tropical Storm, Thunderstorm Wind, Tornado	Safety/Security, Food/Hydration/Shelter	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Floresville ISD Administration	48-60 Months	Emergency Management Action Plan, Emergency Operations Plan	N/A
2	Coordinate with County, City and ISD to build a FEMA-compliant dome. Critical facilities are at high risk for windstorm related events.	ISD-wide	Reduce risk to citizens by providing shelter in high-risk areas during extreme weather events.	Structure and Infrastructure	Hurricane/Tropical Storm, Thunderstorm Wind, Tornado	Safety/Security, Food/Hydration/Shelter	Y	H	$1,500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Floresville ISD Administration	48-60 Months	Emergency Management Action Plan, Emergency Operations Plan	N/A

SECTION 20: MITIGATION ACTIONS

FLORESVILLE ISD 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**
3	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.	ISD-wide	Increase Emergency Preparedness, response and recovery capability. Reduce the potential of natural disasters on critical facilities and infrastructure.	Education and Awareness	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, 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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Floresville ISD Administration	12 Months	Extreme Heat Protocol, Emergency Management Action Plan	N/A
4	Drainage Study: Consult with the city to perform comprehensive study of flood risk and determine appropriate mitigation projects. The priority location is the Early Childhood Center back parking lot and playground area.	ISD-wide identified campuses	Improve risk assessment; Reduce risk of damages or injuries through drainage improvements.	Structure and Infrastructure, Local Plans and Regulations	Flood	Communication, 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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Floresville ISD Administration	36 Months	Emergency Management Action Plan	N/A

FLORESVILLE ISD 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**
5	Install energy efficient heating, ventilation, and air conditioning systems (HVAC) or make upgrades to existing ones.	ISD-wide	Reduce risk to life and property during hazard events.	Structure and Infrastructure	Extreme Heat, Winter Storm	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Floresville ISD Administration	36 Months	Emergency Operations Plan	N/A
6	Construction of covered shelter for playgrounds, recreational areas, vehicles, and equipment to reduce or eliminate weather related impacts.	ISD-wide	Reduce loss of life and property due to hazard events.	Structure and Infrastructure	Extreme Heat, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm	Safety/Security	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Floresville ISD Administration	48 Months	Emergency Management Action Plan, Emergency Operations Plan	N/A

FLORESVILLE ISD 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**
7	Upgrading air conditioning to our school bus fleet by upgrading the front-panel A/C system that is currently in place or installing a roof-mounted unit to existing fleet to lower temperature.	ISD-wide	Reduce injuries related to extreme heat events.	Structure and Infrastructure	Extreme Heat	Safety/Security	N/A	M	$400,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Floresville ISD Administration	36 Months	Extreme Heat Protocol	N/A
8	Acquire and install generators with hard wired quick connections at all critical facilities to include technology, maintenance, and transportation facilities.	ISD-wide identified sites	Provide power for critical facilities during power outages and ensure continuity of critical services.	Structure and Infrastructure	Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Winter Storm, Wildfire, Hazardous Materials	Energy (Power/Fuel)	N/A	M	$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Floresville ISD Administration	24 Months	Emergency Management Action Plan, Emergency Operations Plan	N/A

FLORESVILLE ISD MITIGATION ACTIONS														
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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**
9	Retrofit school rooftops or upgrade material to be weather resistant.	ISD-wide	Reduce loss of ISD property.	Structure and Infrastructure	Extreme Heat, Hail, Thunderstorm Wind, Tornado, Wildfire, Winter Storm	Safety/Security	Y	M	$250,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Floresville ISD Administration	48 Months	Extreme Heat Protocol	N/A
10	When landscaping campus grounds use low water native or drought resistant vegetation or Xeriscaping.	ISD-wide	Reduce loss of property and resources due to drought or extreme heat.	Natural Systems Protection	Drought, Extreme Heat	Safety/Security	Y	M	$100,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Floresville ISD Administration	24 Months	Extreme Heat Protocol	N/A

FLORESVILLE ISD 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**
11	Installation of protective film on windows campus wide or upgrade windows to maintain hazard resistance.	ISD-wide	Protect critical infrastructure during hazard events.	Structure and Infrastructure	Earthquake, Extreme Heat, Hail, Hurricane/Tropical Storm, Thunderstorm Wind, Tornado, Winter Storm	Safety/Security	Y	M	$400,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Floresville ISD Administration	36 Months	Extreme Heat Protocol	N/A

LA VERNIA ISD

LA VERNIA ISD 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	Coordinate with County, City and ISD to build a FEMA-compliant dome. Critical facilities are at high risk for windstorm related events.	ISD-wide	Reduce risk to citizens by providing shelter in high-risk areas during extreme weather events.	Structure and Infrastructure	Hurricane/Tropical Storm, Thunderstorm Wind, Tornado	Safety/Security, Food/Hydration/Shelter	Y	H	$1,500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	LVISD Administration	48-60 Months	Capital Improvement Plan	N/A
2	Assess critical facilities for hardening/retrofit opportunities, then harden/retrofit critical facilities to hazard-resistant levels.	ISD-wide	Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Safety/Security	Y	H	$275,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	LVISD Administration, Public Works	36 Months	Capital Improvement Plan, Emergency Operations Plan	N/A

LA VERNIA ISD 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**
3	Install backup generators at school sites.	ISD-wide	Reduce the impact of natural disasters on populations and private property. Reduce the potential of natural disasters on critical facilities and infrastructure.	Structure and Infrastructure	Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	Y	H	$150,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	LVISD Administration, Public Works	36 Months	Capital Improvement Plan, Emergency Operations Plan	N/A
4	Construct a safe room/building for public to go to for shelter during storms by upgrading existing high school gym facility.	ISD-wide	Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.	Structure and Infrastructure	Earthquake, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Winter Storm	Safety/Security, Food/Hydration/Shelter	Y	H	$150,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	LVISD Administration, City of La Vernia	24 Months	Capital Improvement Plan, Emergency Operations Plan	N/A

SECTION 20: MITIGATION ACTIONS

LA VERNIA ISD 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**
5	Create and implement a Hazard Educational Enhancement Program in which faculty/students can collaborate in understanding and communicating hazards of concern, such as a post contest, essay contest, or field work that teaches practical understanding of local concerns. Encourage good practices at home such as water conservation.	ISD-wide	Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property. Identify, introduce, and implement programs designed to raise awareness of and acceptance of principles of hazard mitigation.	Local Plans and Regulations, Education and Awareness	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	Y	M	$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	LVISD Administration	12 Months	Emergency Operations Plan, Extreme Heat Protocol	N/A

LA VERNIA ISD 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	Xeriscaping is a type of landscaping that uses little water by only using plants that are native to the area. Trees along sidewalks and parking lots provide shade from the heat and sun while preserving.	ISD-wide	Increase Emergency Preparedness, response and recovery capability. Reduce the impact of natural disasters on populations and private property.	Local Plans and Regulations, Natural Systems Protection	Extreme Heat, Drought	Safety/Security	Y	M	$40,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	LVISD Administration	24 Months	Capital Improvement Plan, Emergency Operations Plan, Extreme Heat Protocol	N/A

POTH ISD

POTH ISD 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	Coordinate with County, City and ISD to build a FEMA-compliant dome. Critical facilities are at high risk for windstorm related events.	ISD-wide	Reduce risk to citizens by providing shelter in high-risk areas during extreme weather events.	Structure and Infrastructure	Hurricane/Tropical Storm, Thunderstorm Wind, Tornado	Safety/Security, Food/Hydration/Shelter	Y	H	$1,500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Poth ISD Administration	48-60 Months	Emergency Operations Plan	N/A
2	Harden/retrofit critical facilities/critical buildings to hazard-resistant levels.	ISD-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after event.	Structure and Infrastructure	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Poth ISD Administration	24-36 Months	Emergency Operations Plan	N/A

POTH ISD 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**
3	Construct covered areas, awnings, and walkways, throughout ISD to protect students and staff from extreme heat and other hazard events.	ISD-wide	Reduce risk of damages or injuries through improved building standards.	Structure and Infrastructure	Extreme Heat, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Winter Storm	Safety/Security	N/A	H	$200,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Poth ISD Administration	24-36 Months	Extreme Heat Protocol	N/A
4	Provide training and education to Poth ISD staff of hazards that can threaten the ISD and mitigation measures to reduce injuries, fatalities, and property damages.	ISD-wide	Promote hazard awareness and protect staff and students from potential injuries and damages.	Education and Awareness	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	H	$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Poth ISD Administration	12 Months	Extreme Heat Protocol	N/A

POTH ISD 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**
5	Acquire and install generators with hard wired quick connections at all critical facilities.	ISD-wide	Maintaining power at critical facilities during outages will ensure continuity of essential services, potentially saving lives and reducing economic losses.	Structure and Infrastructure	Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Poth ISD Administration	24-36 Months	Emergency Operations Plan	N/A
6	Acquire and implement a hazard warning system, including a system that detects and provides warnings during hazard events.	ISD-wide	Reduce risk through improved communications and early warning.	Education and Awareness, Preparedness /Response	Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm	Communication	N/A	M	$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Poth ISD Administration	24-36 Months	Emergency Operations Plan	N/A

POTH ISD 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**
7	Acquire and distribute NOAA weather radios.	ISD-wide	Reduce risk through improved communications and early warning.	Education and Awareness, Preparedness /Response	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Safety/Security	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Poth ISD Administration	24-36 Months	Emergency Operations Plan	N/A
8	Build safe room shelters throughout ISD facilities so the occupants can reach shelter in less than five minutes.	ISD-wide	Reduce risk to citizens by providing shelter in high-risk areas during extreme weather events.	Structure and Infrastructure	Hurricane/Tropical Storm, Thunderstorm Wind, Tornado	Safety/Security, Food/Hydration/Shelter	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Poth ISD Administration	48-60 Months	Emergency Operations Plan	N/A

STOCKDALE ISD

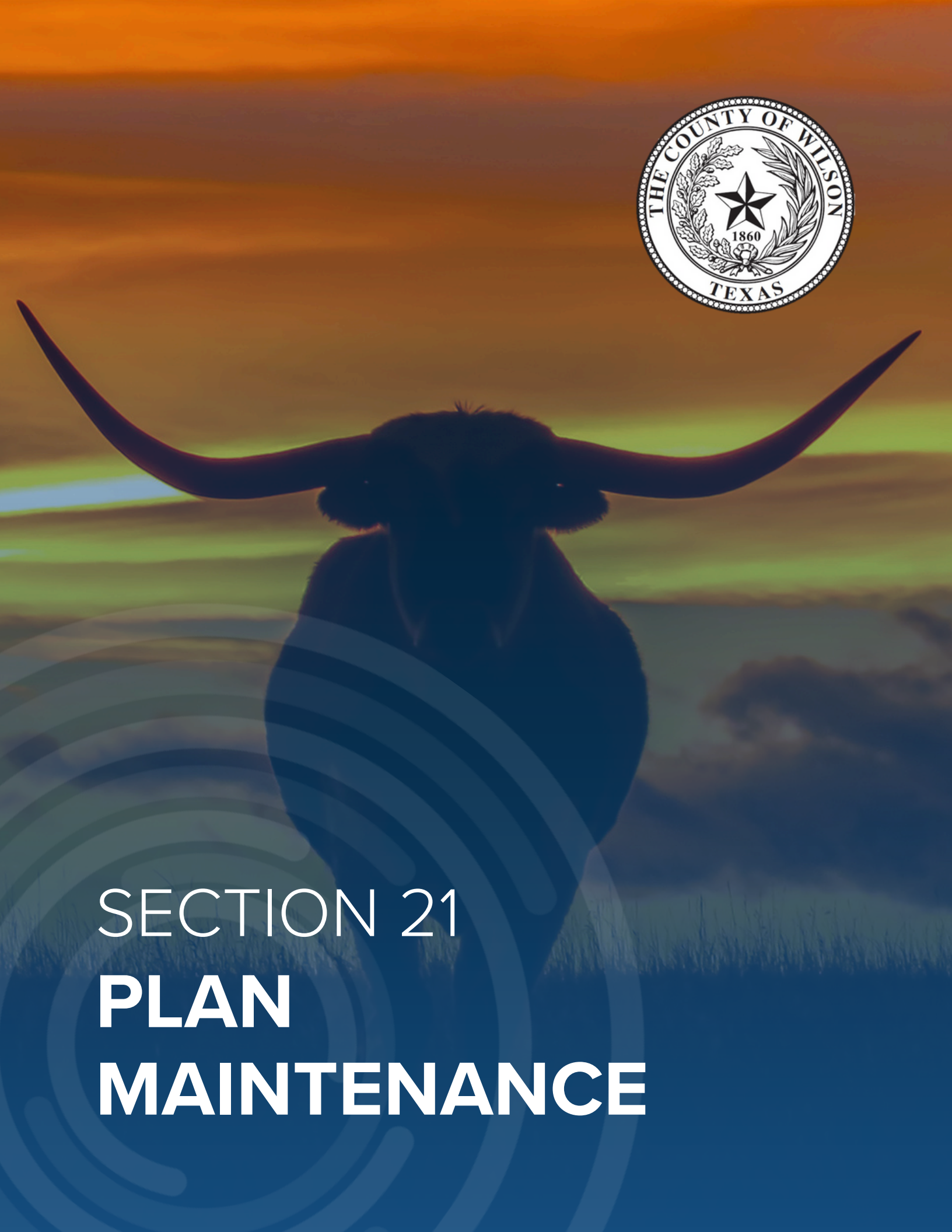
STOCKDALE ISD MITIGATION ACTIONS														
**Reduces risk to new and/or existing buildings and infrastructure*														
Action #	**Proposed Action**	**Site**	**Benefit**	**Action Type**	**Hazards**	**Community Lifeline**	**Infra.***	**Priority (High, Mod., Low)**	**Cost**	**Potential Funding Sources**	**Lead Agency**	**Timeline**	**Existing Plans**	**NFIP**
1	Harden/retrofit critical facilities/critical buildings to hazard-resistant levels.	ISD-wide	Reduce damages at critical facilities; Ensure continuity of critical services during and after event.	Structure and Infrastructure	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Stockdale ISD Administration	24-36 Months	Emergency Operations Plan	N/A
2	Construct covered areas, awnings, and walkways, throughout ISD to protect students and staff from extreme heat and other hazard events.	ISD-wide	Reduce risk of damages or injuries through improved building standards.	Structure and Infrastructure	Extreme Heat, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Winter Storm	Safety/Security	N/A	H	$200,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Stockdale ISD Administration	24-36 Months	Evacuation Plan	N/A

SECTION 20: MITIGATION ACTIONS

STOCKDALE ISD 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**
3	Provide training and education to Stockdale ISD staff of hazards that can threaten the ISD and mitigation measures to reduce injuries, fatalities, and property damages.	ISD-wide	Promote hazard awareness and protect staff and students from potential injuries and damages.	Education and Awareness	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Communication	N/A	H	$5,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Stockdale ISD Administration	12 Months	Emergency Operations Plan	N/A
4	Acquire and install generators with hard wired quick connections at all critical facilities.	ISD-wide	Maintaining power at critical facilities during outages will ensure continuity of essential services, potentially saving lives and reducing economic losses.	Structure and Infrastructure	Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Energy (Power/Fuel)	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Stockdale ISD Administration	24-36 Months	Emergency Operations Plan	N/A

STOCKDALE ISD 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**
5	Acquire and implement a hazard warning system, including a system that detects and provides warnings during hazard events.	ISD-wide	Reduce risk through improved communications and early warning.	Education and Awareness, Preparedness /Response	Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm	Communication	N/A	M	$500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Stockdale ISD Administration	24-36 Months	Emergency Operations Plan	N/A
6	Acquire and distribute NOAA weather radios.	ISD-wide	Reduce risk through improved communications and early warning.	Education and Awareness, Preparedness /Response	Drought, Earthquake, Extreme Heat, Flood, Hail, Hurricane/Tropical Storm, Lightning, Thunderstorm Wind, Tornado, Wildfire, Winter Storm, Hazardous Materials	Safety/Security	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Stockdale ISD Administration	24-36 Months	Emergency Operations Plan	N/A

STOCKDALE ISD 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**
7	Build safe room shelters throughout ISD facilities so the occupants can reach shelter in less than five minutes.	ISD-wide	Reduce risk to citizens by providing shelter in high-risk areas during extreme weather events.	Structure and Infrastructure	Hurricane/Tropical Storm, Thunderstorm Wind, Tornado	Safety/Security, Food/Hydration/Shelter	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, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Stockdale ISD Administration	48-60 Months	Emergency Operations Plan	N/A
8	Coordinate with County, City and ISD to build a FEMA-compliant dome. Critical facilities are at high risk for windstorm related events.	ISD-wide	Reduce risk to citizens by providing shelter in high-risk areas during extreme weather events.	Structure and Infrastructure	Hurricane/Tropical Storm, Thunderstorm Wind, Tornado	Safety/Security, Food/Hydration/Shelter	Y	H	$1,500,000	Local Budget; State Grants (GLO, TAMFS, TDA, TDEM, TWDB, TXDOT); Federal Grants: (FEMA HMA Grants, CDBG, CDC, DOH, EDA, EPA, HUD, NFIP, NFWF, NOAA, NRCS, SBA, USACE, USDA, USFS, USFWS)	Stockdale ISD Administration	48-60 Months	Emergency Operations Plan	N/A



SECTION 21

PLAN MAINTENANCE

SECTION 21: PLAN MAINTENANCE

PLAN MAINTENANCE PROCEDURES

The following is an explanation of how the participating jurisdictions and ISDs within Wilson County, and the general public will be involved in implementing, evaluating, and enhancing the Plan 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

Participating jurisdictions and ISDs within Wilson County will be responsible for further development and implementation of mitigation actions. Each action has been assigned to a specific department within the participating jurisdictions or ISDs. The following describes the process by which participating jurisdictions and ISDs will incorporate elements of the mitigation plan into other planning mechanisms.

PROCESS OF INCORPORATION

Once the Plan Update is adopted, participating jurisdictions and ISDs within Wilson County will implement actions based on priority and the availability of funding. The planning area currently implements policies and programs to reduce loss to 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 or ISD 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.

Participating jurisdictions and ISDs within Wilson County 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

planning efforts. Coordinating and integrating components of other plans and policies into 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 and ISD 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, capital improvement plans, annual budget reviews, emergency operations or management plans, and transportation plans (applicable jurisdictions only) to guide and control development. Participating jurisdictions and ISDs 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 and ISD.

Wilson County is committed to supporting the participating jurisdictions and ISDs 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 mitigation action plan. 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 21-1 identifies types of planning mechanisms and examples of methods for incorporating the Plan Update into other planning efforts. The team members, listed in Table 21-2 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 21-1. Methods of Incorporation of the Plan

PLANNING MECHANISM	DEPARTMENT / TITLE RESPONSIBLE	INCORPORATION OF PLAN
Annual Budget Review	**Wilson County –** Emergency Management: Emergency Management Coordinator **City of Floresville –** Government: City Manager **City of La Vernia –** Government: City Administrator **City of Poth –** Government: Mayor **City of Stockdale –** Government: City Manager **Floresville ISD –** Student Services: Assistant Superintendent **La Vernia ISD –** Administration: Director of District Safety and Security **Poth ISD –** Administration: Director of Learning **Stockdale ISD –** Administration: Superintendent	Various departments and key personnel that participated in the planning process for participating jurisdictions and ISDs within Wilson County 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.

PLANNING MECHANISM	DEPARTMENT / TITLE RESPONSIBLE	INCORPORATION OF PLAN
Capital Improvement Plans	**City of Floresville –** Government: City Manager **City of La Vernia –** Government: City Administrator **City of Poth –** Government: Mayor **City of Stockdale –** Government: City Manager **La Vernia ISD –** Administration: Director of District Safety and Security **Stockdale ISD –** Administration: Superintendent	Several participating jurisdictions and ISDs within Wilson County have a Capital Improvement Plan (CIP) in place or under development. Prior to any revisions to the CIP, City and ISD 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 Plan	**City of La Vernia –** Government: City Administrator	Community Wildfire Protection Plans (CWPPs) include preventative and corrective actions to address a community's risk of damage from wildfire. Information found in Section 15 of this Plan Update discussing the people and property at risk to wildfire will be reviewed and revised when participating jurisdictions update their CWPP or develop new plans.
Comprehensive Plans	**City of Floresville –** Government: City Manager **City of La Vernia –** Government: City Administrator **City of Poth –** Government: Mayor	Several participating jurisdictions within Wilson 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 will be reviewed in the development or revision of a Comprehensive Plan.
Floodplain Management Plans	**Wilson County –** Floodplain Administrator **City of Floresville –** Floodplain Administrator **City of La Vernia –** Floodplain Administrator **City of Poth –** Floodplain Administrator **City of Stockdale –** Floodplain Administrator	Floodplain management plans include preventative and corrective actions to address the flood hazard. Therefore, the actions for flooding and information found in Section 9 of this Plan Update discussing the people and property at risk to flood will be reviewed and revised when the county and participating cities within Wilson County update their

PLANNING MECHANISM	DEPARTMENT / TITLE RESPONSIBLE	INCORPORATION OF PLAN
		management plans or develops new plans.
Grant Applications	**Wilson County –** Emergency Management: Emergency Management Coordinator **City of Floresville –** Government: City Manager **City of La Vernia –** Government: City Administrator **City of Poth –** Government: Mayor **City of Stockdale –** Government: City Manager **Floresville ISD –** Student Services: Assistant Superintendent **La Vernia ISD –** Administration: Director of District Safety and Security **Poth ISD –** Administration: Director of Learning **Stockdale ISD –** Administration: Superintendent	The HMAP will be evaluated by participating jurisdictions and ISDs within Wilson County 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.
Regulatory Plans	**Wilson County –** Emergency Management: Emergency Management Coordinator **City of Floresville –** Government: City Manager **City of La Vernia –** Government: City Administrator **City of Poth –** Government: Mayor **City of Stockdale –** Government: City Manager **Floresville ISD –** Student Services: Assistant Superintendent **La Vernia ISD –** Administration: Director of District Safety and Security **Poth ISD –** Administration: Director of Learning **Stockdale ISD –** Administration: Superintendent	Currently, several participating jurisdictions and ISDs within Wilson County have regulatory plans in place, such as Emergency Operations Plans, Land Use Plans, and Evacuation Plans. The Plan Update will be consulted when County, City, and ISD departments review or revise their current regulatory planning mechanisms, or in the development of regulatory plans that are not currently in place.

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 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 21-2 indicates the department and title of the party responsible for Plan monitoring, evaluating, updating, and review of the Plan.

Table 21-2. Team Members Responsible for Plan Monitoring, Evaluating, Updating, and Review of the Plan

ORGANIZATION / DEPARTMENT	TITLE
Wilson County – Emergency Management	Emergency Management Coordinator
City of Floresville – Government	City Manager
City of La Vernia – Government	City Administrator
City of Poth – Government	Mayor
City of Stockdale – Government	City Manager
Floresville Independent School District – Student Services	Assistant Superintendent
La Vernia Independent School District – Administration	Director of District Safety and Security
Poth Independent School District – Administration	Director of Learning & Assessment
Stockdale Independent School District – Administration	Superintendent

MONITORING

Designated Planning Team members are responsible for monitoring, evaluating, updating, and reviewing the Plan, as shown in Table 21-2. Individuals holding the title listed in Table 21-2 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, City, and ISD departments to determine if mitigation actions need to be re-evaluated and updated; evaluating and updating the Plan as necessary; and monitoring 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 and 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 Wilson County Hazard Mitigation Action Plan Update 2025. 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 and ISDs within Wilson 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 and ISDs 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.

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 the participating jurisdictions and ISDs within Wilson 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.

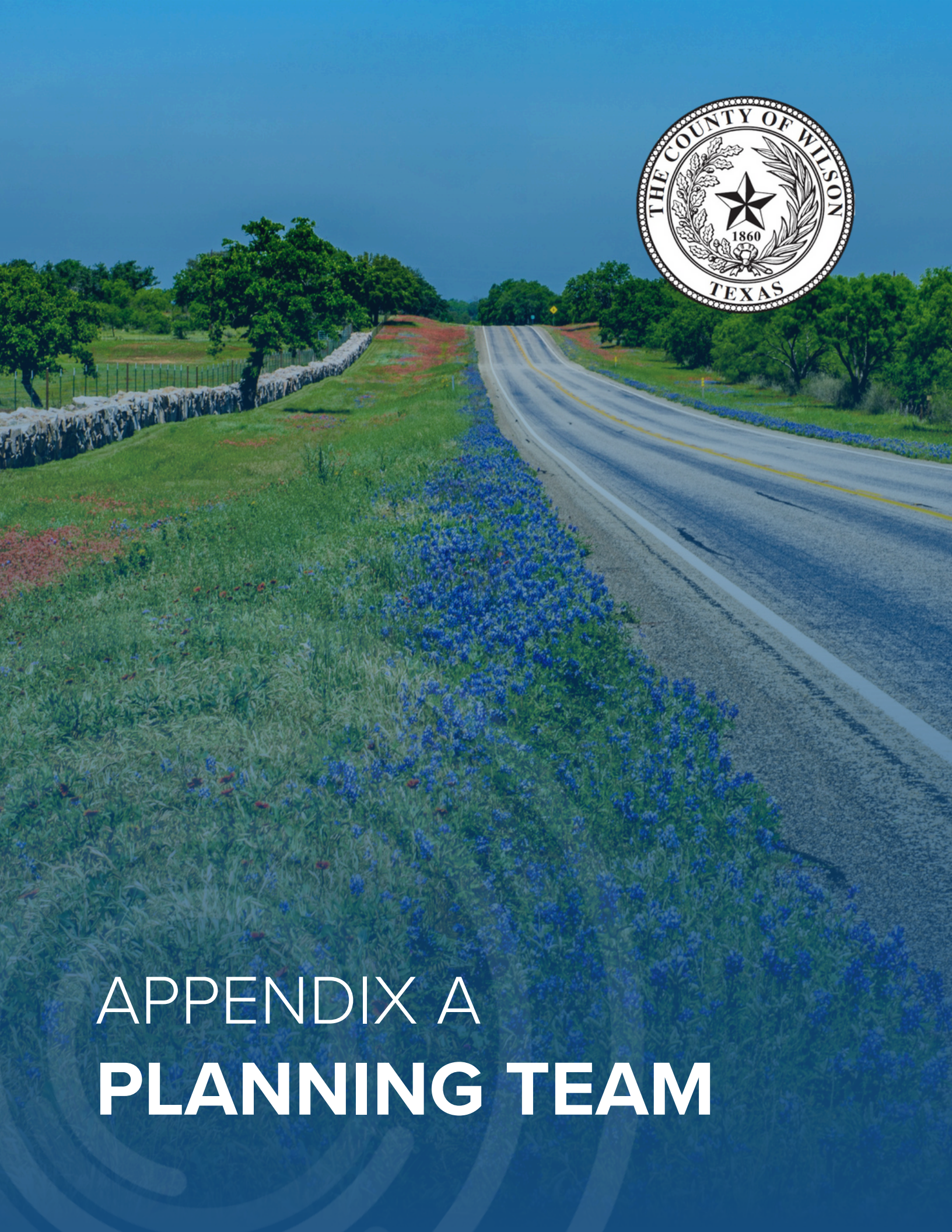
CONTINUED PUBLIC INVOLVEMENT

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' and ISDs' websites, where officials and the public are invited to provide ongoing feedback, via email.

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 newspaper 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, status of grant applications, and project implementation. Local and social media outlets, such as Facebook, Instagram, and/or X (formerly Twitter), 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

The Wilson County Hazard Mitigation Action Plan Update 2025 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 which consists 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
Wilson County – Emergency Management	Emergency Management Coordinator
City of Floresville – Administration	City Manager
City of La Vernia – Administration	City Administrator
City of Poth – Government	Mayor
City of Stockdale – Administration	City Manager
Floresville Independent School District – Student Services	Assistant Superintendent
La Vernia Independent School District – Administrative Office	Director of District Safety & Security
Poth Independent School District – Administration	Director of Learning & Assessment
Stockdale Independent School District – Administration	Superintendent

Table A-2. Advisory Planning Team

ORGANIZATION / DEPARTMENT	TITLE
Wilson County – Administration	GIS Technician
Wilson County – Administration	Grant Coordinator
Wilson County – Commissioners Court	Commissioner Pct 1
Wilson County – Commissioners Court	Commissioner Pct 2
Wilson County – Commissioners Court	Commissioner Pct 3
Wilson County – Commissioners Court	Commissioner Pct 4

APPENDIX A: PLANNING TEAM

ORGANIZATION / DEPARTMENT	TITLE
Wilson County – County Judge	County Judge
Wilson County – County Sheriff	Chief Deputy
Wilson County – County Sheriff	County Sheriff
Wilson County – Emergency Management	Assistant Emergency Management Coordinator
Wilson County – Permitting & Development	Development Director
City of Floresville – Administration	City Secretary
City of Floresville – Building & Permits	Building Inspector
City of Floresville – Community Development	Director of Community Development
City of Floresville – Finance	Director
City of Floresville – Fire & EMS	Fire Chief
City of Floresville – Government	Mayor
City of Floresville – Police	Chief of Police
City of Floresville – Public Works	Director
City of Floresville – Wastewater	Supervisor
City of Floresville – Water	Supervisor
City of La Vernia – Administration	City Secretary
City of La Vernia – Code Enforcement	Code Enforcement
City of La Vernia – Government	Mayor
City of La Vernia – Municipal Development	Director
City of La Vernia – Police	Chief of Police
City of La Vernia – Public Works	Director
City of Poth – Administration	City Secretary
City of Poth – Police	Chief of Police
City of Poth – Public Works	Public Works
City of Stockdale – Administration	City Secretary
City of Stockdale – Government	Mayor
Floresville Independent School District – Central Office	Assistant to the Superintendent

APPENDIX A: PLANNING TEAM

ORGANIZATION / DEPARTMENT	TITLE
Floresville Independent School District – Central Office	Superintendent
Floresville Independent School District – Police	Chief of Police
La Vernia Independent School District – Administrative Office	Executive Secretary to Superintendent & Board
La Vernia Independent School District – Administrative Office	Superintendent
Poth Independent School District – Administration	Chief Financial Officer
Poth Independent School District – Administration	Superintendent
Poth Independent School District – Administration	Superintendent's Secretary

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 organizations invited and stakeholders participated were integral to providing comments and data for the Plan. For a list of attendees at meetings, please see Appendix E[1].

Table A-3. Stakeholders

AGENCY	TITLE	STAKEHOLDER TYPE
Alamo Area Council of Governments	Homeland Security and Criminal Justice Coordinator	Regional and Local Agencies
Alamo Workforce Center	Communications	Community Organizations
American Red Cross Central and South Texas Region	Regional Disaster Officer	Non-profit / Community Organizations
Atascosa County	Emergency Management Coordinator / Fire Marshall	Neighboring Jurisdictions
Bexar County	Office of Emergency Management	Neighboring Jurisdictions
Carrizo Comecrudo Nation of Texas Inc	Chairman	Community Organizations
Children's Alliance of South Texas	General Representative	Community Organizations

[1] Information contained in Appendix E is exempt from public release under the Freedom of Information Act (FOIA).

APPENDIX A: PLANNING TEAM

AGENCY	TITLE	STAKEHOLDER TYPE
Community Action	General Representative	Community Organizations
Connally Memorial Medical Center	Chief Operating Officer	Healthcare Agency
Environmental Protection Agency, Region 6	Director of Superfund and Emergency Management	Federal Agency
Evergreen Underground Water Conservation District	Board Member	Utility Provider
Evergreen Underground Water Conservation District	Vice President	Utility Provider
Falls City Independent School District	Superintendent	Academia
Floresville, City of	Councilman - Place 1	Local Government
Floresville, City of	Councilman - Place 2	Local Government
Floresville, City of	Councilman - Place 3	Local Government
Floresville, City of	Councilman - Place 4	Local Government
Floresville, City of	Councilman - Place 5	Local Government
Floresville Electric Light and Power	CEO	Utility Provider
Floresville Food Pantry	General Representative	Community Organizations
Floresville Housing Authority	General Representative	Community Organizations
Gonzales County	Emergency Management Coordinator	Neighboring Jurisdictions
Guadalupe County	Emergency Management Coordinator	Neighboring Jurisdictions
Guadalupe Valley Electric Cooperative	General Representative	Utility Provider
Jane Yelvington McCallum Public Library	Librarian	Community Organization
Karnes County	Emergency Management Coordinator / Commissioner Precinct #1	Neighboring Jurisdictions
La Vernia Christian Food Pantry	General Representative	Community Organizations
Nixon, City of	Interim City Manager	Neighboring Communities
Nixon Public Library	Librarian	Community Organization
Nixon-Smiley Consolidated Independent School District	Superintendent	Academia

APPENDIX A: PLANNING TEAM

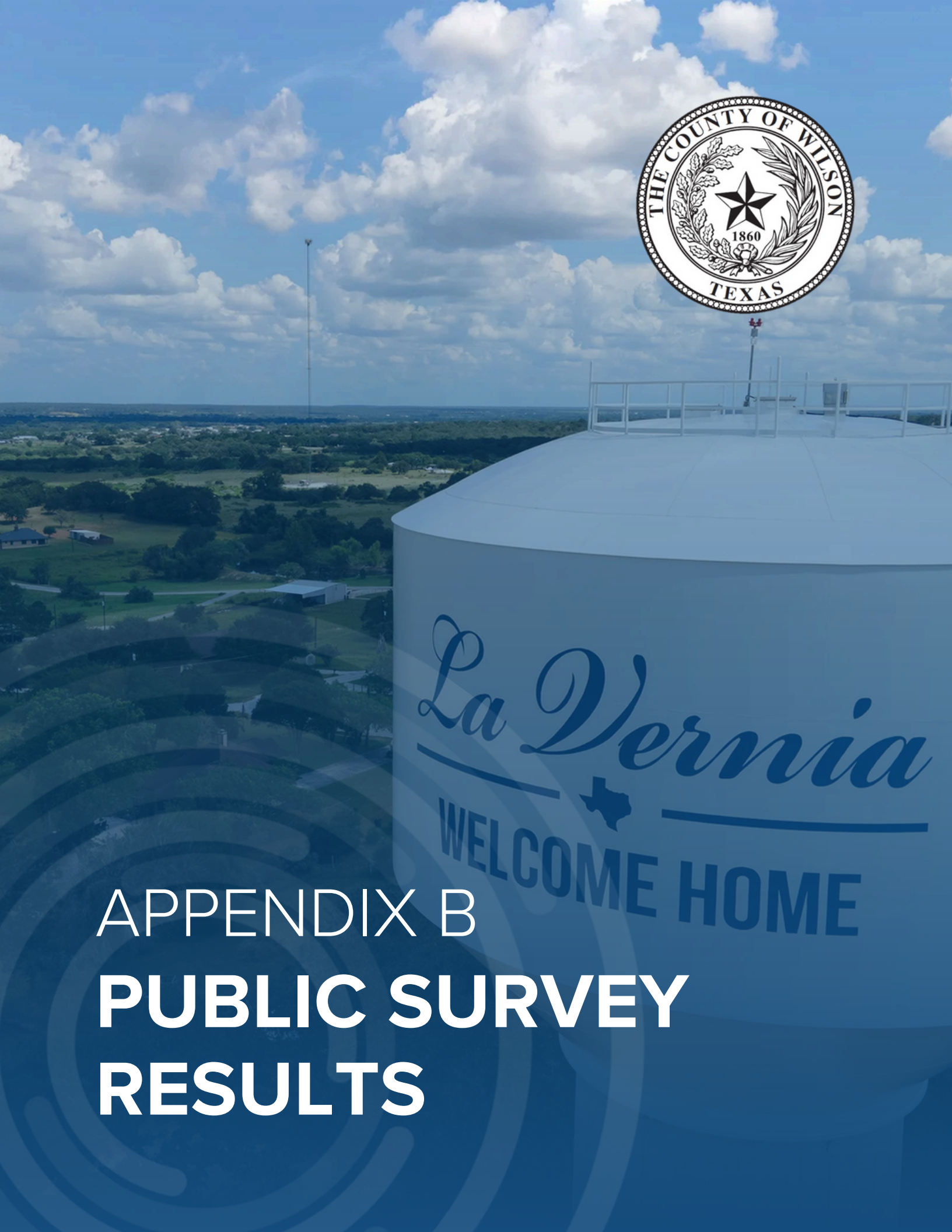
AGENCY	TITLE	STAKEHOLDER TYPE
NOAA	Chief of Policy, Planning & Communications	Federal Agency
NWS	Regional Representative	Federal Agency
Poth VFD	Fire Chief	Community Organization
Sam Fore Jr. Public Library	Outreach Librarian	Community Organization
Sarah Bain Chandler Public Library	Librarian	Community Organization
Small Town Medical Solutions	General Representative	Healthcare Agency
Stockdale Chambers of Commerce	General Representative	Community Organization
Stockdale Family Medical Center	Medical Director	Healthcare Agency
Stockdale Marshal's Office	Fire Marshal	City Department
Stockdale VFD	Fire Chief	Community Organization
Texas A&M AgriLife Extension	District Coordinator	State Agency
Texas A&M Forest Service	Fire Coordinator	State Agency
Texas Commission on Environmental Quality, Region 13	Assistant to Executive Director	State Agency
Texas Commission on Environmental Quality, Region 13	Executive Director	State Agency
Texas Department of Health Services	Disaster, Response and Recovery Representative	State Agency
Texas Department of Health Services, Region 8	Preparedness and Recovery Program Manager	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 Public Safety	Communications Representative	State Agency
Texas Department of Transportation	District Engineer	State Agency
Texas Department of Transportation	Floresville Engineer	State Agency
Texas Division of Emergency Manager (TDEM), Region 6	DC 18 Coordinator	State Agency

APPENDIX A: PLANNING TEAM

AGENCY	TITLE	STAKEHOLDER TYPE
Texas Division of Emergency Manager (TDEM), Region 6	Recovery and Mitigation Section Chief	State Agency
Texas Division of Emergency Manager (TDEM), Region 6	TDEM CLO	State Agency
Texas Floodplain Management Association, Region 6	Director	State Agency
Texas Parks and Wildlife	Press Officer - Inland Fisheries	State Agency
Texas Parks and Wildlife	Press Officer - Law Enforcement	State Agency
Texas Parks and Wildlife	Press Office Manager / Press Officer - Parks	State Agency
Texas Parks and Wildlife	Press Officer – Wildlife	State Agency
Texas State Representative	House District 31	State Legislature
Texas State Senate	District 21	State Legislature
Texas State Soil & Water Conservation Board	Government Relations Specialist	State Agency
Texas State Soil & Water Conservation Board	San Angelo Regional Office Administrative Assistant	State Agency
Texas Water Development Board	General Representative	State Agency
Texas Windstorm Insurance Associations	General Representative	State Agency
Three Oaks VFD	Fire Chief	Community Organization
U.S. Army Corps of Engineers	Fort Worth and Galveston District	Federal Agency
U.S. Fish & Wildlife	Southwest Regional Representative	Federal Agency
Wilson County District 1 Fire & Rescue	Fire Chief	Community Organization
Wilson County ESD #2	Fire Chief	Community Organization
Wilson County ESD #3	Administrator	Community Organization
Wilson County ESD #5	Fire Chief	Community Organization
Wilson County Libraries	Director	Community Organization
Wilson County News	Publisher	Community Organization
Wilson County Non-Kill Animal Shelter Inc	General Representative	Community Organization

APPENDIX A: PLANNING TEAM

AGENCY	TITLE	STAKEHOLDER TYPE
Wilson County Senior Wellness Center / Wilson County Cares	Executive Director	Community Organization
Wilson County Veteran Services	Veteran Service Officer	Local Department



APPENDIX B

PUBLIC SURVEY RESULTS

APPENDIX B: PUBLIC SURVEY RESULTS

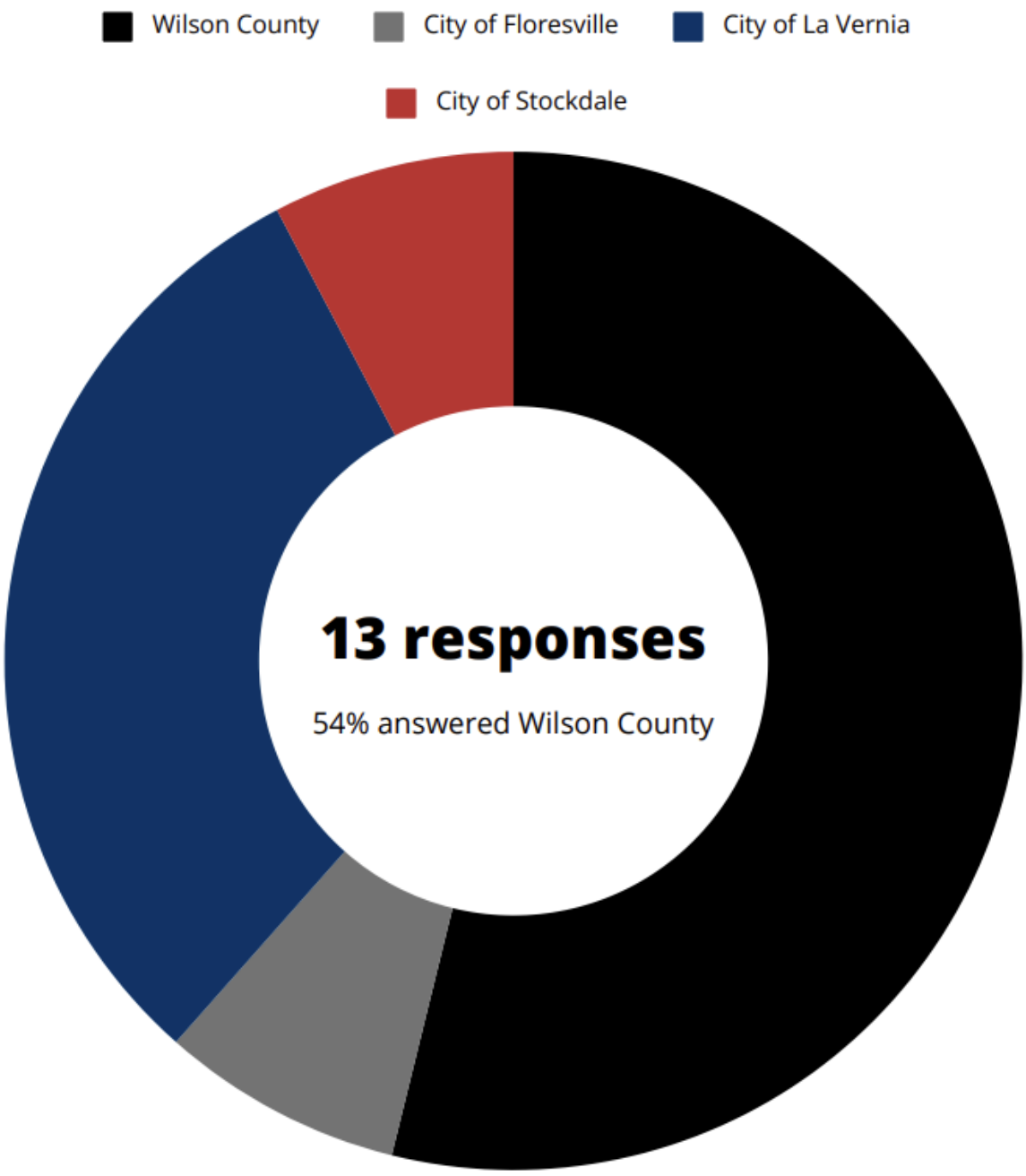
OVERVIEW

Wilson 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.

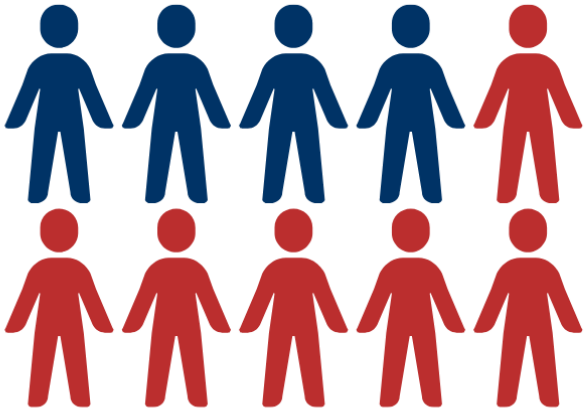
A total of 13 surveys were collected, the results of which are analyzed in Appendix B. The purpose of the survey was twofold: 1) to solicit public input during the planning process, and 2) to help the jurisdictions identify any potential actions or problem areas.

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.

PUBLIC SURVEY RESULTS



Have you ever experienced or been impacted by a disaster?



38.46% Responded 'Yes'

Personal experiences shared in survey responses included:

"Been at least 15 years ago when we had an actual flood. Some roads were flooded and the river rose so much it came up to the house."

"Tornado; floods; mass shooting."

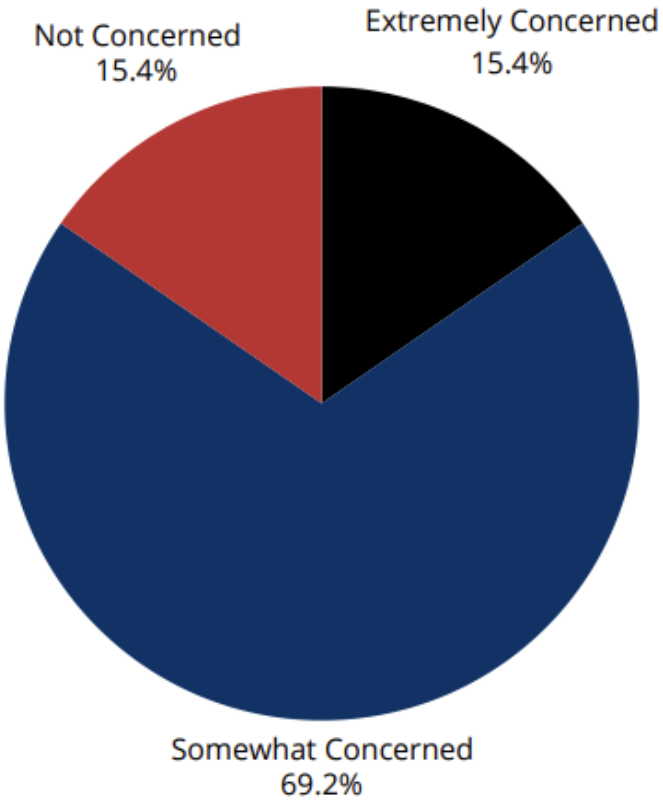
"Extreme weather- Heat, Hail, strong rain and wind."

"Flood of 1998. October 2015 tornado. FBC Sutherland Springs church shooting. COVID-19 pandemic. FBC Sutherland Springs old sanctuary demolition."

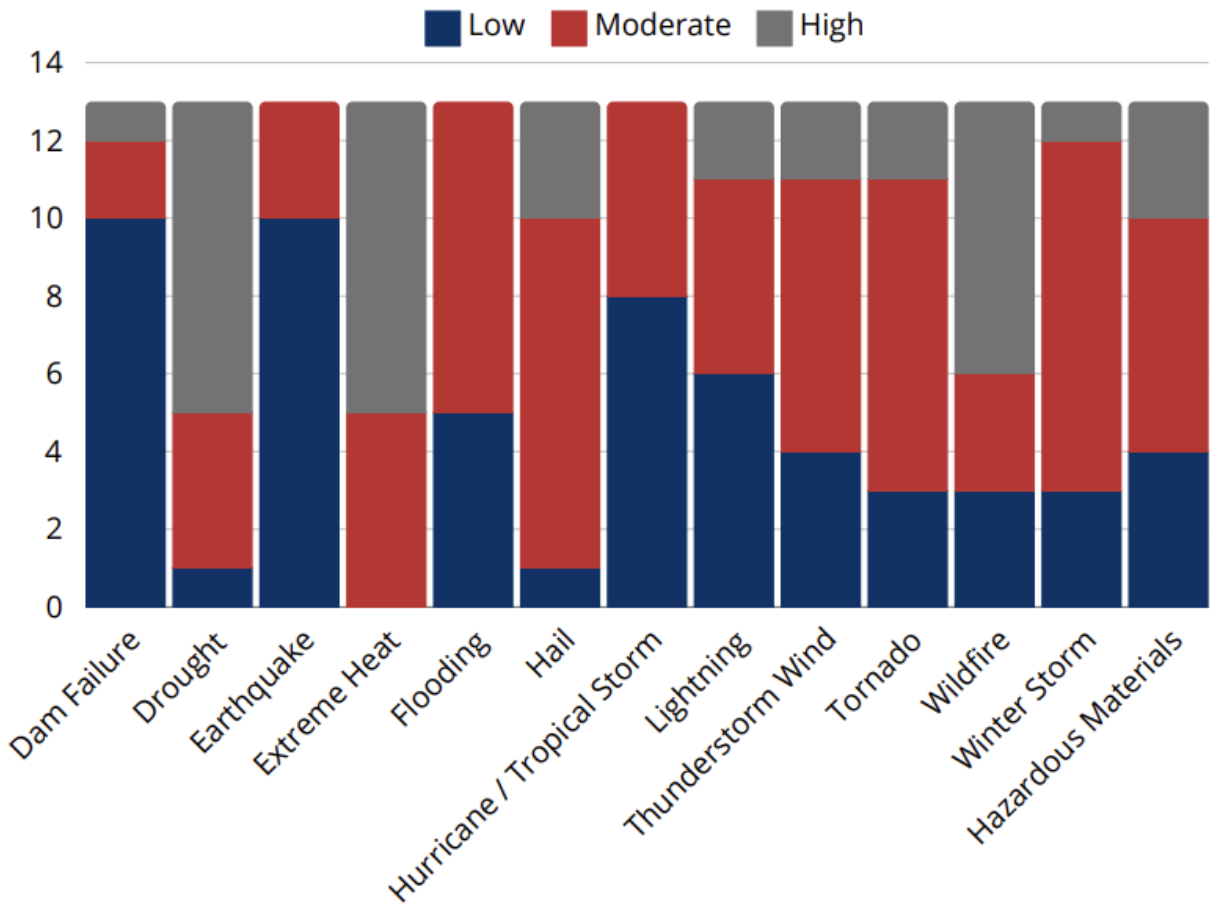
"Tornado."

60% of those who have been impacted by a disaster mentioned flood and/or tornadoes in their explanations.

Concern level for the possibility of their community being impacted by a disaster.



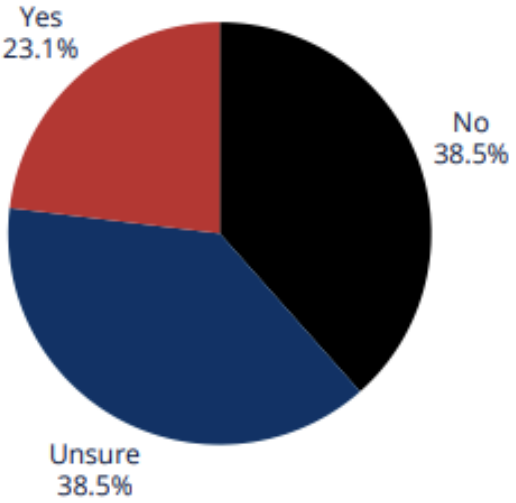
With the consideration of frequency of occurrence and potential impact severity, please select the one hazard you think is the highest and second highest threat to your neighborhood:



Is there another hazard not listed above that you think is a wide-scale threat to your neighborhood?

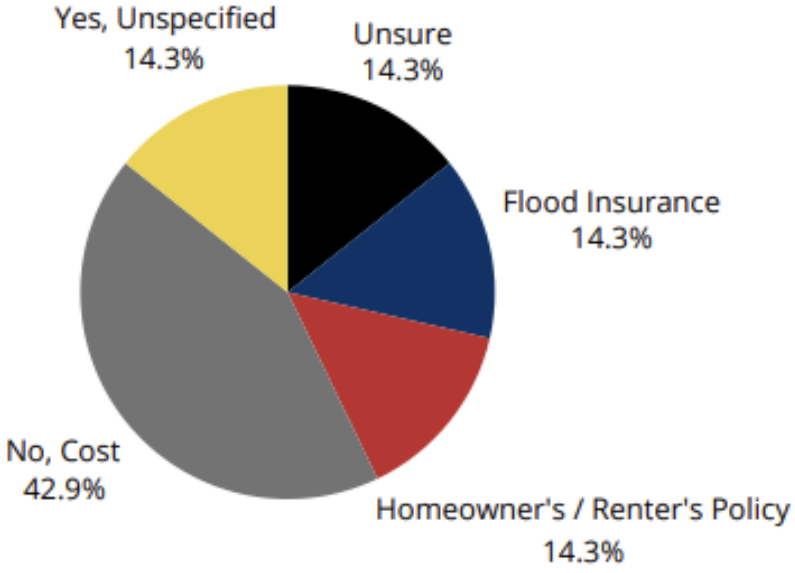
Terrorism

To your knowledge, is your home located in any high hazard risk zones?

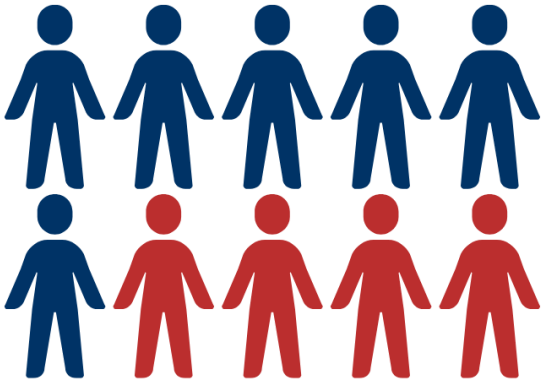


Have you had any issues getting homeowners or renters insurance due to risks of hazardous events?

Do you have any hazard specific insurance? Why or why not?



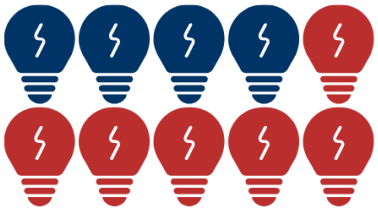
Have you taken any actions to make your home or neighborhood more resistant to hazards?



61.5% Responded 'Yes'

50% of those who have taken action have done so through fuels reduction

37.5% of those who have taken action have done so through preparedness



85% of survey responders are interested in making their homes or neighborhoods more resistant to hazards.

Actions taken included:

"Cutting dead trees."

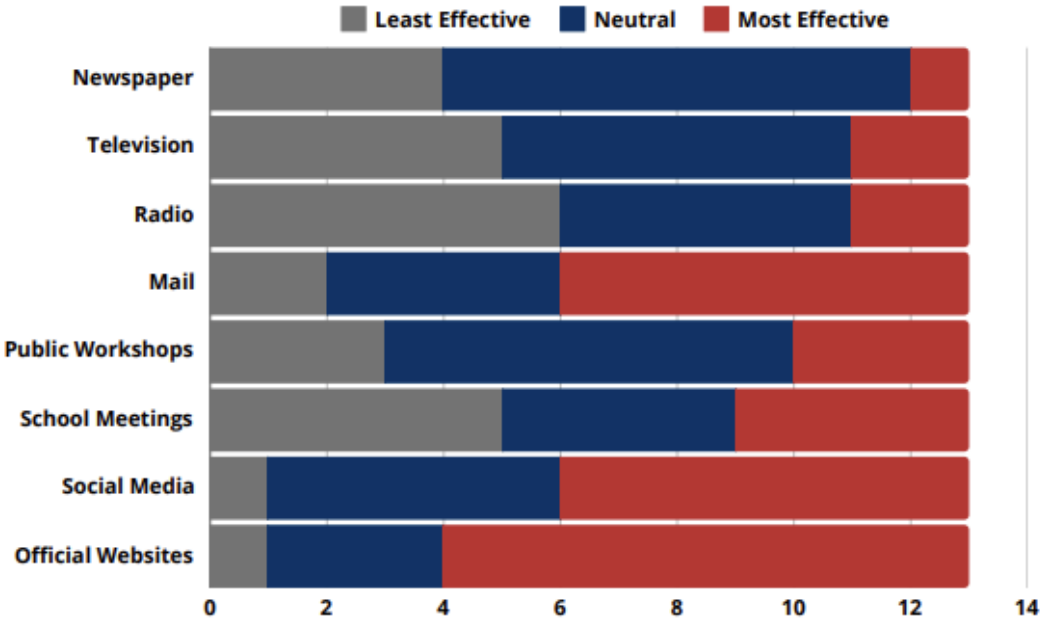
"Mowing/clearing."

"Removed dead trees and has a generator to run small appliances if need be."

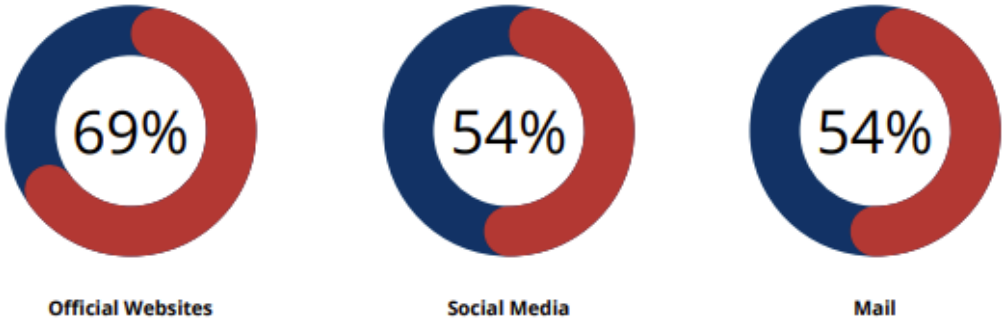
"Generator, large propane tank for long-term outages, long-term food supply, Water well in case out municipal supply outages. Emergency fund for emergency expenses."

"Removed dry brush and dead trees to prevent fire hazards."

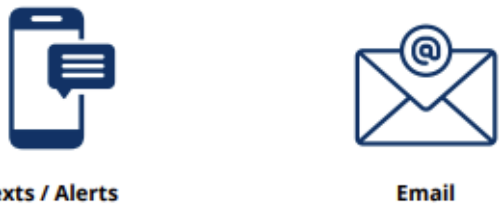
What is the most effective way for you to receive information about how to make your home and neighborhood more resistant to hazards?

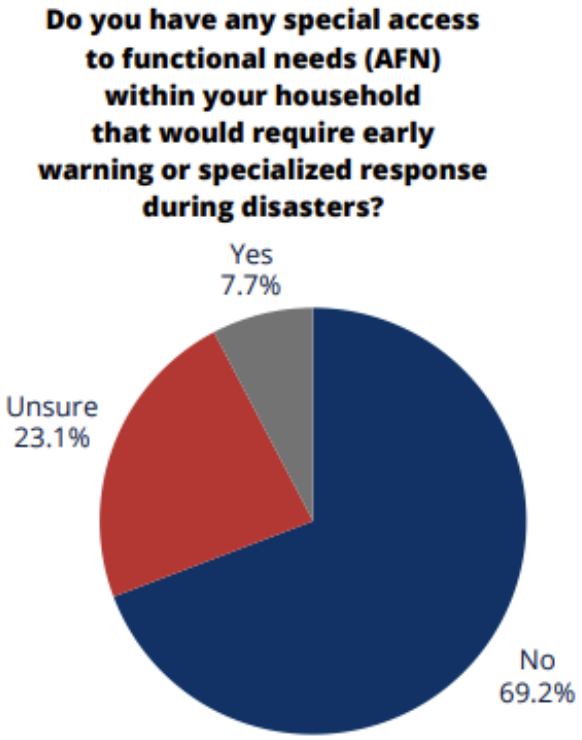


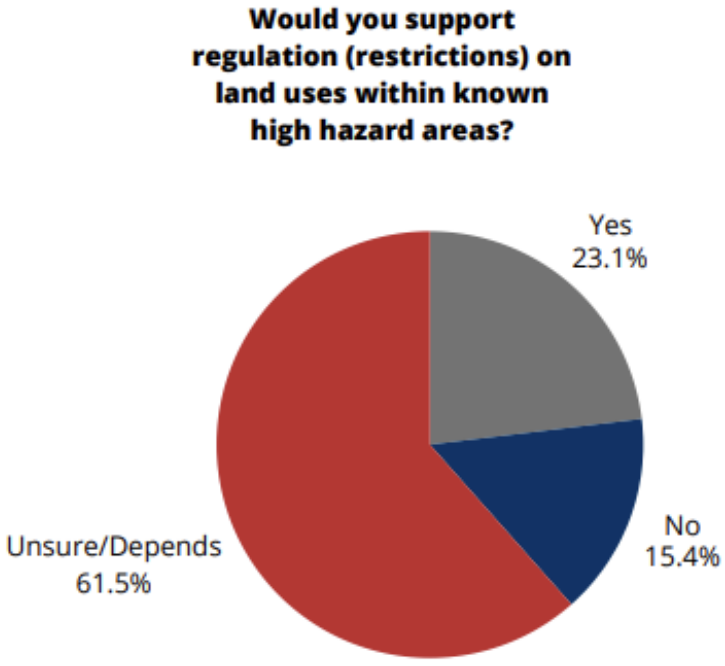
Effectiveness of communication methods for receiving information about how to make your home and neighborhood more resistant to hazards



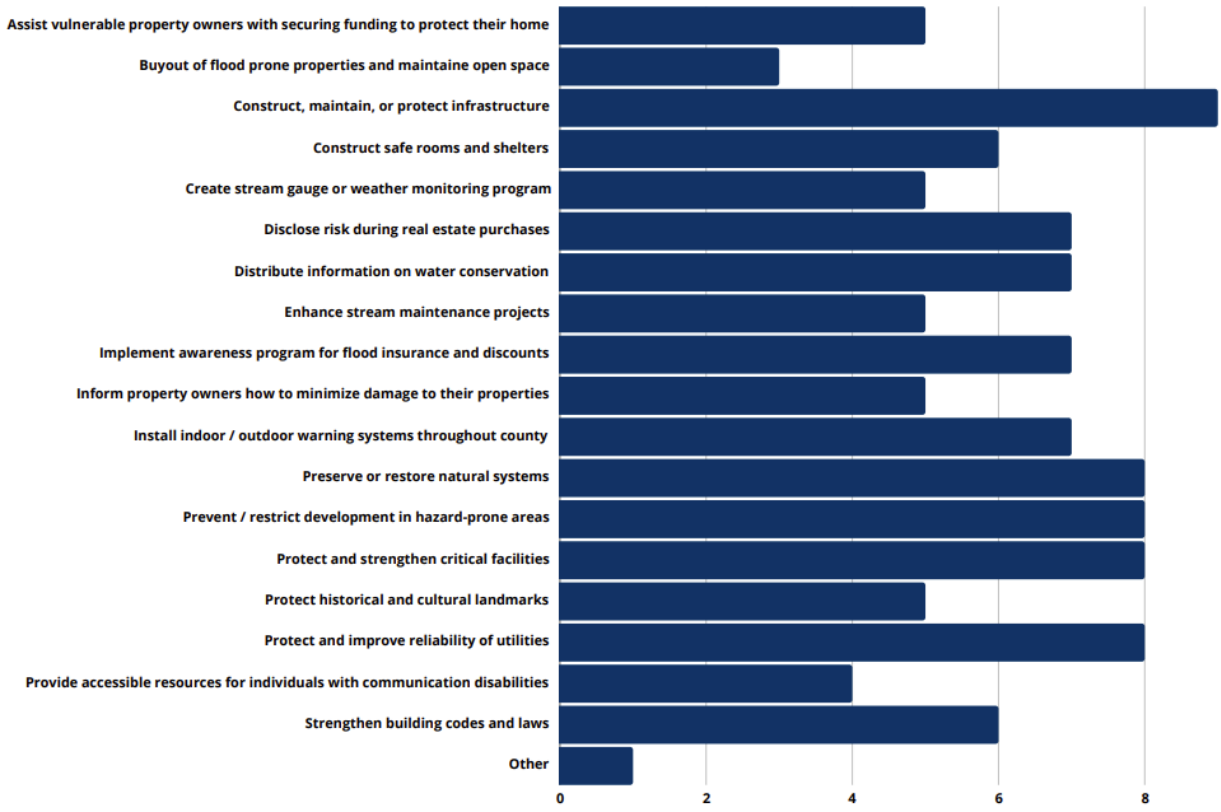
Additional communication methods recommended:

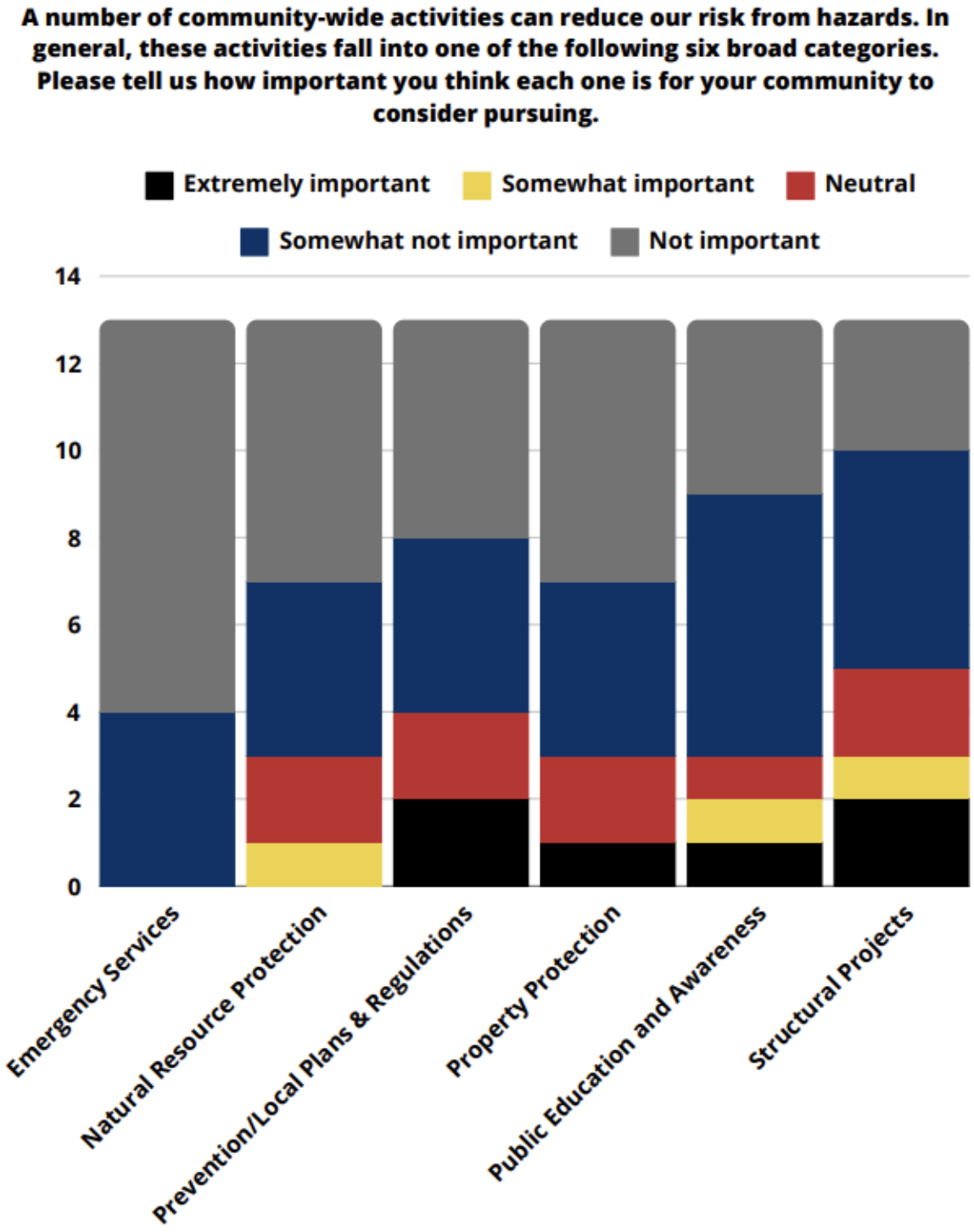



Do you have any special access to functional needs (AFN) within your household that would require early warning or specialized response during disasters?
Yes
7.7%
Unsure
23.1%
No
69.2%


Would you support regulation (restrictions) on land uses within known high hazard areas?
Yes
23.1%
No
15.4%
Unsure/Depends
61.5%

In your opinion, please select steps your local government should prioritize to reduce or eliminate the risk of future hazard damages in your neighborhood.





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.

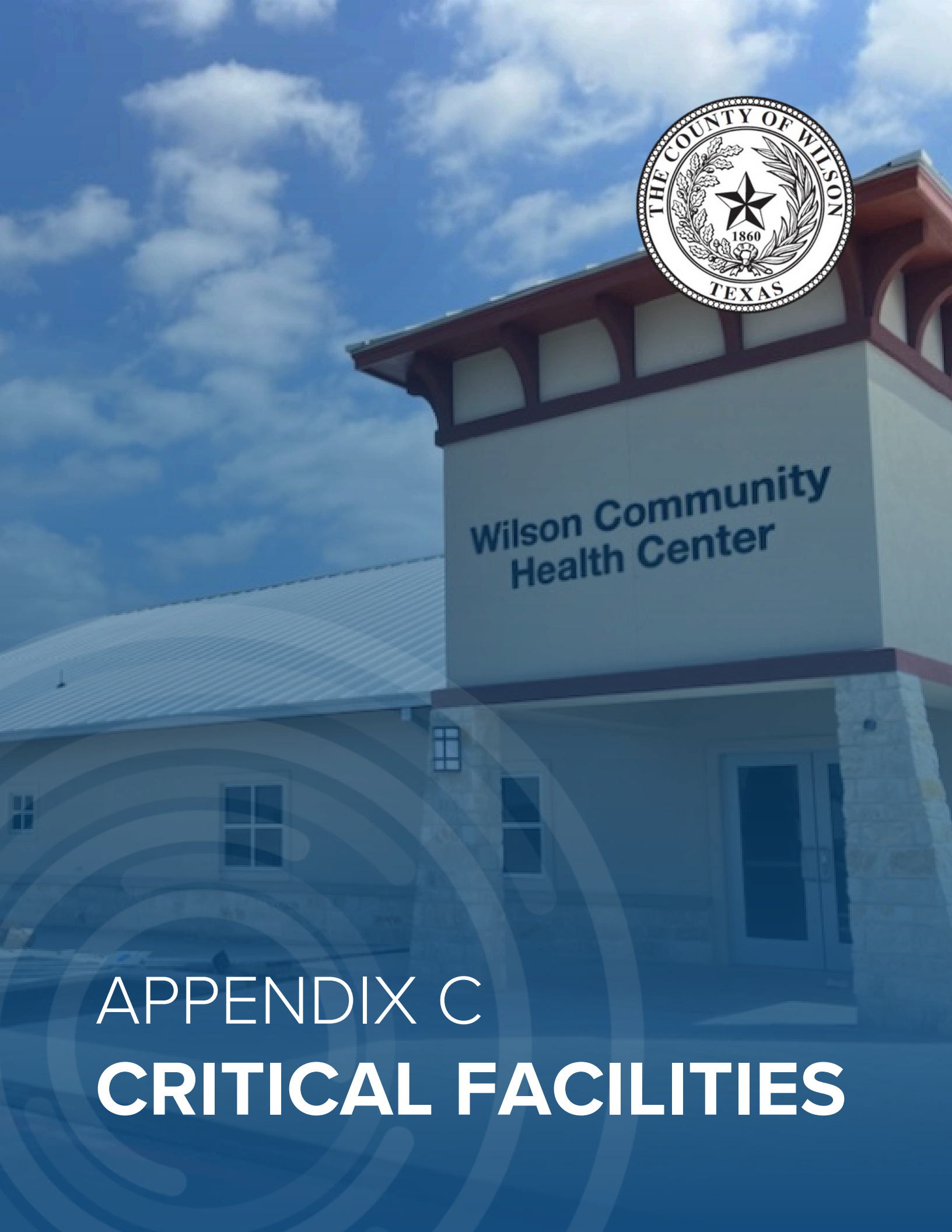
Natural Resource Protection - Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural systems. Examples include floodplain protection, habitat preservation, slope stabilization, riparian buffers, and forest management.

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.

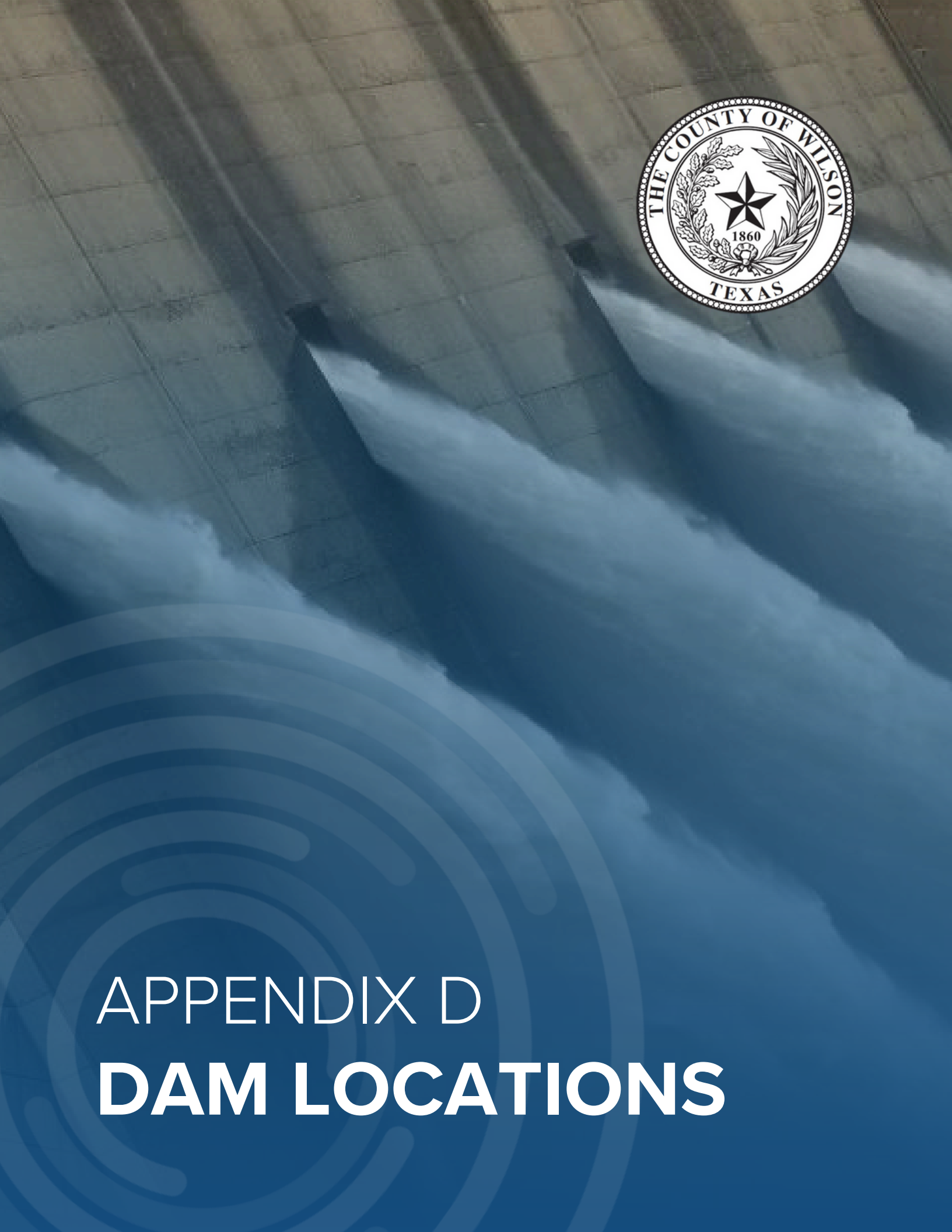
Structural Projects - Actions intended to lessen the impact of a hazard by modifying the natural progression of the hazard. Examples include dams, levees, seawalls detention / retention basins, channel modification, retaining walls, and storm sewers.



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

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APPENDIX E
MEETING DOCUMENTATION

APPENDIX E: MEETING DOCUMENTATION

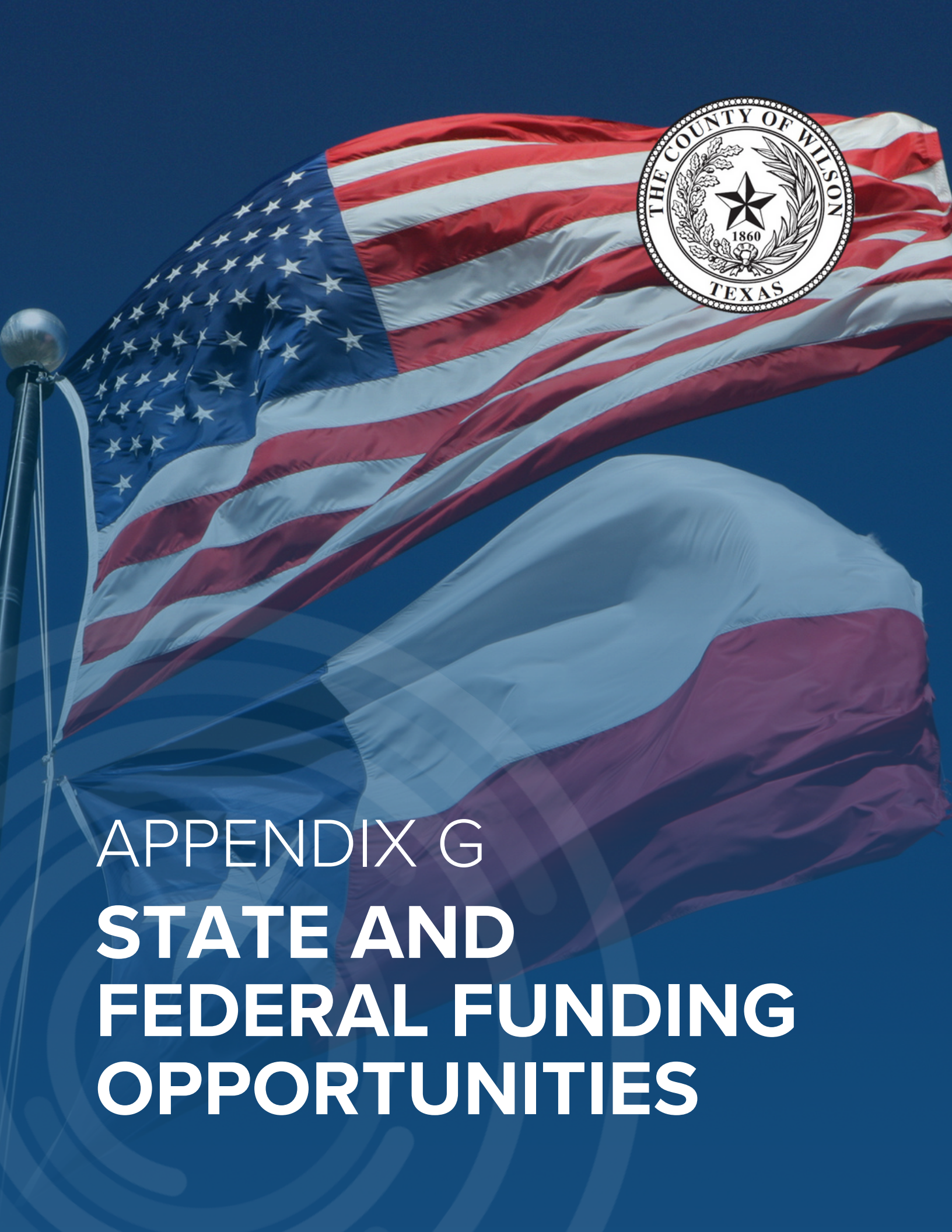
Appendix E is For **Official Use Only (FOUO)** and may be exempt from public release under the Freedom of Information Act (FOIA).

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

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)	► 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)	► 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)	► 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)	► Texas HOME Disaster Relief
Texas Department of State Health Services (TXDSHS)	► Hospital Preparedness Program (HPP) Cooperative Agreement ► Public Health Emergency Preparedness (PHEP) Cooperative Agreement

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AGENCY	FUNDING PROGRAM
Texas Department of Transportation (TXDOT)	► 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)	► Building Resilient Infrastructure & Communities (BRIC) ► 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)	► Economic Development Administration Grants and Investments
Texas General Land Office (TXGLO)	► 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 -LHMPP
Texas Parks and Wildlife Department (TPWD)	► 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)	► Clean Water Act Section 319 Grants ► Nonpoint Source Grant Program
Texas Water Development Board (TWDB)	► Agricultural Water Conservation Grants ► Agricultural Water Conservation Loans ► Clean Water State Revolving Fund (SWSRF) ► 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

AGENCY	FUNDING PROGRAM
TWDB (continued)	► Flood Mitigation Assistance (FMA) Swift Program ► Flood Protection Planning Program ► 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 ► 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 ► Water SMART - 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 described additional Federal, State, Local, and Non-Profit 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.
Agricultural Water Conservation Grants	State	TWDB	TWDB	Provided to state agencies and political subdivisions for projects that support the implementation of conservation of water management strategies identified in state and regional water plans. Yearly applications. Up to $1.2 million available annually. Grant categories vary from year to year.
Agricultural Water Conservation Loans	State	TWDB	TWDB	Agricultural water conservation loans to use either for improvements on facilities or as loan 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.

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
American Recovery and Reinvestment Act (ARRA)	Federal	DOT Federal Transit Administration	TDA	Nicknamed the Recovery Act, ARRA is a stimulus package enacted by the 111th U.S. Congress and signed into law by President Barack Obama in February 2009. Developed in response to the Great Recession, the primary objective of this federal statute was to save existing jobs and create new ones as soon as possible. Other objectives are to provide temporary relief programs for those most affected by the recession and invest in infrastructure, education, health, and renewable energy.
Aquatic Ecosystem Restoration	Federal	DOD-USACE		Direct support for carrying out aquatic ecosystem restoration project that will improve the equality of the environment.
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 keep their beaches maintained. 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. The Bridge Division develops an initial list each FY of eligible bridges in each district and distributes to the districts for the annual program call.

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Building Resilient Infrastructure & Communities (BRIC)	Federal	FEMA	TDEM	Pre-disaster/annual cycle addressing all natural hazards, emphasis on infrastructure & lifelines.
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.
Clean School Bus Program	Federal	EPA	TCEQ	Provides assistance to replace 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 New Mexicans, especially Low Income or Disadvantaged communities (LIDAC) as defined by US EPA. This grant will give New Mexico communities the opportunity to collaborate with the State to build projects and programs that provided high-quality jobs, improve health, and keep families safe where they live.

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Coastal Erosion Planning and Response Act (CEPRA)	State	GLO	TXGLO	Since 2000, the Texas General Land Office's Coastal Erosion Planning and Response Program has received more than $62 million in state funding and more than $62 million in matching funds, completing more than 200 coastal erosion projects and studies. The application process for non-emergency project funding requests opens every even year in February and closes in early June of that same year.
Coastal and Estuarine Land Conservation Program (CELCP)	Federal	NOAA	TXGLO	When NOAA provides funding for CELCP, the GLO provides coastal communities an opportunity to apply for up to three projects per year, with federal grants for any single project not to exceed $3 million.
Coastal Management Program (CMP)	Federal	NOAA	TXGLO	Texas receives approximately $2 million annually in grants from NOAA and 90% of the funds are passed through to local governments and entities to address environmental needs and to 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 and 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 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.

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Community Development Block Grant (CDBG) (continued)				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 are not eligible for direct CDBG funding from HUD may apply for funding through any of the Texas CDBG programs.
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 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 to 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 delivered via USDA Forest Service and Private Forestry Coop Fire Program.

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Community Rating System (CRS)	Federal	FEMA		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 on 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 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 mitigating 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. 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	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.

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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 for research and related educational activities on risk, perception, communication, and management (primarily 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 support 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 towards 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	Invests and provides grants 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.

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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 less than $65,900. Aids communities who 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, planning.
Emergency Management Institute	Federal	FEMA		Education training programs to prepare emergency management professionals to prepare for, respond to, and recover from disasters and emergency.
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 funds for roads and bridges on Federal-aid highways that are damaged as a direct result of a natural disaster or catastrophic failure from an external cause.
Emergency Watershed Protection (EWP)	Federal	USDA, NRCS	TWDB	Provides funding and technical assistance for emergency measures such as floodplain easements in impaired watersheds. Funding available through the Simplified Acquisition Procedures (SAP) ranges from $25K to $100K. Funded through contracts between project sponsors and the NRCS. There are no grants. The NRCS pays 75% of the costs.
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.

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
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 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 works collectively on actionable steps to reduce risk of loss by protecting property and increasing 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		Funds to support 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.
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. The SWIFT Advisory Committee is the oversight entity.

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
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		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 available to political subdivisions of the State of Texas for evaluation of structural and nonstructural solutions to flooding problems. Upstream and/or downstream effects of proposed solutions must be considered in the planning. The proposed planning 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 problems resulting from or relating to flooding; conducting hydrologic and hydraulic studies; identifying potential solutions; estimating benefits and costs of potential solutions, including structural and nonstructural measures; determining the views and needs of the affected public relating to flooding problems; recommending feasible solutions to flood protection problems; evaluating environmental, social, and cultural factors; and ensuring proposed solutions are consistent with appropriate regional or statewide plans and 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.
Forest Legacy Program	Federal	USFS	TAMFS	Provides funding to protect private forest lands that are environmentally, economically, and socially critical. This program reduces 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.

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
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	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 will range from $20,000 – $100,000.
Hazardous Materials Emergency Preparedness (HMEP) **Grant Program**	Federal	DOT	TDEM	Funding available to help facilitate preparedness in transporting hazardous materials. The program recognizes Local Emergency Planning Committees (LEPCs) as applicants to maximize funding impact in regional partnerships.
Healthy Forests Reserve Program (HFRP)	Federal	NRCS		Assist landowners, on a voluntary basic, in restoring, enhancing and protecting forestland resources on private lands through easements.
High Hazard Potential Dam Program (HHPD)	Federal	FEMA	TCEQ	Pre-disaster/annual cycle, for non-federal high hazard dams classified as high hazard potential by the state/territory dam safety agency, has an approved EAP and rated in poor condition. Provides assistance for technical, planning, and design activities towards the repair, removal, and/or structural/nonstructural rehabilitation of eligible high hazard potential dams.
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	Homeland security activities identified in the state and local strategic plans. Funding supports threat & hazard and risk identification for natural, technological, and human-caused hazards. Some prevention activities may be considered mitigation.

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Hospital Preparedness Program (HPP) **Cooperative Agreement**	Federal	HHS	TXDSHS	HPP is the primary source of federal funding for health care system preparedness and response and, in collaboration with public health, 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 and provide training, and coordinate regional exercises.
Hydrologic Research Grants	Federal	NOAA		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 are 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 the spacing of water wells, the production from water wells, or both. 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.
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, and Texas, and their coastal political subdivisions (CPSs). Funds are used for coastal conservation, restoration, and hurricane protection. The second phase of GOMESA revenue sharing began in Fiscal Year 2017 and expands the definition of qualified Outer Continental Shelf revenues to include receipts from Gulf of Mexico leases 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 applies from fiscal years 2016 through 2055.

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Indian Housing Assistance - Housing Improvement Program (HIP)	Federal	DOI-BIA		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 for American Indians and Alaska Native (AI/AN) individuals and families who have no immediate resource for standard housing.
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	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 or purchases easements on high quality lands and waters for inclusion into the National Wildlife Refuge System.
Landowner Incentive Program	Federal	USFWS	EMNRD	Collaboration with Forestry Division and private landowners to protect the habitat of at-risk species on private lands. Landowner involvement is voluntary.
Mapping Standards Support	Federal	DOI/USGS		Expertise in mapping and digital data standards to support the National Flood Insurance Program.
Mitigation Banks	Federal	USACE	Community Applicants	Mitigation Banks are sites approved by the Corps to sell compensatory mitigation credits for projects resulting in unavoidable impacts to waters of the U.S. When a permit is issued that requires compensatory mitigation, the permit will specify how many credits are required to be purchased at an approved mitigation bank.
National Dam Safety Program	Federal	FEMA		Technical assistance, training, and grants to help improve State dam safety programs.
National Digital Orthophoto Program	Federal	DOI-USGS		Develops topographic quadrangles for use in mapping of flood and other hazards.

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
National Earthquake Hazards Reduction Program (NEHRP)	Federal	FEMA	TDEM	Provides money to support enhanced earthquake risk assessments in local hazard mitigation plans and other earthquake hazard mitigation and preparedness activities.
National Earthquake Hazard Reduction Program (NEHRP) **in Earth Sciences**	Federal	NSF		Research into 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.
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 stressors (e.g., cleanup activities) or chemical stressors (e.g., release of hazardous substances) at a site.
National Flood Insurance Program (NFIP)	Federal	FEMA	TWDB	Provides affordable insurance to property owners and encourages communities to adopt and enforce floodplain management regulations.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
National Flood Insurance Program: Technical Mapping Advisory Council	Federal	DOI-USGS		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		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		NWS offers storm spotter training, along with weather and flooding safety guides. They can also sometimes provide funding to support severe weather signage in parks or other public places.
National Wildlife Wetland Refuge System	Federal	USFWS	TPWD	Provides funding for the acquisition of land into the federal wildlife refuge system.
Nonpoint Source Grant Program	Federal	EPA	TCEQ, TSSWCB	The federal Clean Water Act (CWA) requires States to develop a program to protect the quality of water resources from the adverse effects of nonpoint source (NPS) water pollution. TCEQ and TSSWCB administer federal grants for activities that prevent or reduce nonpoint source pollution (NPS).
Non-Structural Alternatives to Structural Rehabilitation of Damaged Flood Control Works	Federal	DOD-USACT		Direct planning and construction grants for non- structural alternatives to the structural rehabilitation of flood control works damaged in floods or coastal storms.
North American Wetland Conservation Fund	Federal	USFWS	TPWD	Provides funding for wetland conservation projects.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
NRCS Conservation Programs	Federal	USDA, NRCS	Community Applicants	Provides funding through several 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 & 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 the development, utilization, and conservation of water and related land resources.
Pollution Prevention Grant: Environmental Justice in Communities	Federal	EPA		Technical assistance for businesses to specifically target an improve human health and the environment in disadvantaged communities.
Pollution Prevention Grant: Environmental Justice Through Safer and More Sustainable Products	Federal	EPA		Technical assistance to businesses to increase the supply, demand, and use of safer and more sustainable products.
Post-Disaster Economic Recovery Grants and Assistance	Federal	DOC-EDA		Provides funds to assist with the long-term economic recovery of communities, industries, and firms adversely impacted by disasters.
Pre-Disaster Mitigation Loan Program	Federal	SBA		Provides low-interest loans to small businesses for mitigation projects.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Pre-Disaster Mitigation (PDM)	Federal	FEMA		Congressionally directed funding for local governments, tribes and states to plan for 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 with preparedness program. Funds are allocated to enhance the capacity of state and local emergency responders to prevent, respond to, and recover from weapons of mass destruction terrorism incidents involving chemical, biological, radiological, nuclear, and explosive devices and cyber-attacks.
Prescribed Fire Grants	State	TAMFS	TAMFS	TAMFS's Mitigation & Prevention Department annually implements four prescribed fire grants intended to protect local communities and restore ecosystems. (1) SFAM Plains Prescribed Fire Grant – aids communities that have been or may be threatened by wildland fire by funding prescribed burning to reduce hazardous fuels in or around communities. Treatment areas will be located adjacent to priority communities in Texas that are at the highest risk for loss during a Southern Plains Wildfire Outbreak event. (2) The Community Protection Program Grant – aids in reducing the hazard of high-risk fuels on private lands through the use of prescribed burning. The treatment area will be within 10 miles of the National Forest boundary. The grant's goal is to protect high-risk communities and associated forest resources by reducing the risk of catastrophic wildfire on private and public lands. (3) The State Fire Assistance for Mitigation Central & East Texas Grant – provides assistance to communities that have been or may be threatened by wildfire by funding prescribed burning to reduce hazardous fuels in and around communities. Treatment areas will be private property in the 43 Counties in Central and East Texas that have a Community Wildfire Protection Plan (CWPP) within the county. The goal is to protect high-risk communities and aid in ecosystem restoration by utilizing prescribed fire to consume excess vegetation before it contributes to catastrophic wildfire. Priority will

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Prescribed Fire Grants (continued)				be given to treatments sites that are within a CWPP, located near a Firewise community, located near homes based on Texas Wildfire Risk Assessment Portal and contain ecosystems that will benefit from prescribed fire. (4) Neches River and Cypress Basin Watershed Restoration Program – provides assistance to landowners in utilizing prescribed fire for ecological improvement to the Neches River and Cypress Basin watersheds. This program will benefit the public and natural resources through improvement of water quality and quantity, control of invasive species and enhancement of wildlife habitat. Treatment areas will be private property in the Neches River and Cypress Basin Watersheds. Priority will be given to prescribed burn treatments that promote native ecosystem restoration, are in priority watershed protection zones and near public land.
Project Modifications for Improvement of the Environment	Federal	DOD-USACE		Provides funds for ecosystem restoration by modifying structures and/or operations or water resources projects constructed by the USACE or restoring areas where a USACE project contributed to the degradation of an area.
Protection of Essential Highways, Highway Bridge Approaches, and Public Works	Federal	USACE		Technical assistance to ensure bank protection of 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 allocated to States and communities to repair damaged infrastructure and public facilities and 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 when repairing damages to a public structure or infrastructure. Wildfire mitigation is also eligible under emergency protection if life is in imminent danger.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Public Health Emergency Preparedness (PHEP) **Cooperative Agreement**	Federal	CDC	TXDSHS	Aids health departments to build and strengthen their abilities 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 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 the State of 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 feasible regional water supply and wastewater facility alternatives, and identify institutional arrangements to provide regional water supply and wastewater services for areas in Texas.
Regional Water Planning Group Grants	State	TWDB	TWDB	Developed to guide and support planning of the State's water resources by administering and assisting in the development of regional and state water plans. This program strives to improve the planning process by developing clear guidance for the program's stakeholders and utilizing the best-available data, methodologies, and technical innovations for each cycle of funding.
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 to 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. Activities eligible for funding are those related to the development, revision, or improvement of regional water plans including public meetings, hearings, and special studies. Plans should be in accordance with Texas Water Code, §16.053 and Chapter 357, or other special studies approved by the TWDB which will enhance water planning efforts in the region.

APPENDIX G: STATE AND FEDERAL FUNDING OPPORTUNITIES

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Resilient Landscapes Program	Federal	USDA, USFS	TAMFS	Provides coordination to restore healthy, resilient, fire-adapted ecosystems. Restoring ecosystems includes thinning crowded forests and using prescribed fire on two to three million acres each year, which can help 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 infrastructure and public safety development and enhancement in rural areas. Provides $100,000 or 75% of the total project, whichever is less.
Rural Fire Assistance Grant	Federal	NIFC	TAMFS	Funds fire mitigation activities in rural communities.
Rural Utilities Service (RUS)	Federal	USDA-Rural Development		Programs designed to provide needed infrastructure or infrastructure improvements to rural communities. These include water and waste treatment, electric power, and telecommunications services.
Rural Water Assistance Fund (RWAF)	State	TWDB	TWDB	Designed to assist small rural utilities to obtain low-cost financing for water and wastewater projects. The RWAF offers tax-exempt equivalent interest rate loans with long-term finance options.
Safe Rest Stops Program	State	TXDOT	TXDOT	Texas has 21 major highways that serve as long distance travel corridors. Along each of these roadways, rest areas are an essential safety feature to reduce accidents caused by driver fatigue. These facilities give travelers a break from driving, and then return them to the road rested, refreshed and alert.
Section 108 Loan Guarantee Program	Federal	HUD		Loan towards public entities for community and economic development (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 to purchase, build, or rehabilitate a home in a rural area.
Section 504 Loans for Housing	Federal	USDA-RHS		Repair loans, grants and technical assistance to low-income senior homeowners living in rural areas to repair their homes and remove health and safety hazards.

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Societal Dimensions of Engineering, Science, and Technology Program	Federal	NSF		Funding towards research and educational activities on topics such as ethics, values, and assessment, communication, management and perception of risk.
Soil Survey	Federal	USDA-NRCS		Maintains soil surveys of counties or other areas to assist with farming, conservation, mitigation or related purposes.
State Fire Assistance for Mitigation (SFAM) **- Mechanical Fuels Grants**	State	TAMFS	TAMFS	Provides financial assistance to reduce the hazard of high-risk fuels on private lands using hazardous fuel reduction. The grant's goal is to protect high risk communities within the 32 high risk counties in Central Texas identified by Texas A&M Forest Service Mitigation and Prevention Department. Priority will be given to landowners that live with in the 32 high risk counties, are in a county or city that has an active Community Wildfire Protection Plan or live with in a 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 the wind. Projects will be located within the Texas High Plains. The goal of the grant is to protect high-risk communities by reducing the risk of catastrophic wildfire 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 3 rows of trees and 400 feet in length.
Silver Jackets	Federal	USACE	TWDB	Provides funding for flood related studies, public awareness, risk analysis, and flood response plans. Construction of small flood control projects.
Small Flood Control Projects (USACE Section 205)	Federal	USACE	TWDB	Authorizes use of USACE to complete feasibility studies and construction of small flood control projects.

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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 a regional water, wastewater, or flood control project when the 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 the benefits can be documented, and where such development is unaffordable without state participation. The goal is to allow for the "right sizing" of projects in consideration of future needs.
State Water Implementation Fund for Texas (SWIFT)	State	TWDB	TWDB	The SWIFT program helps communities develop and optimize water supplies at cost-effective rates. The program provides low-interest loans, extended repayment terms, deferral of loan repayments, and incremental repurchase terms for projects with state ownership aspects.
State Water Resources Research Act Program	Federal	USGS	TWDB	USGS in cooperation with the National Institutes for Water Resources supports an annual call for proposals to focus on water problems and issues that are of a regional or interstate nature or 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 streams gauging stations that provide data on the flood characteristics of rivers.
Surface Transportation Program	Federal	USDOT/ FHWA		Funding allocated for activities including safety construction and transportation enhancements. Transportation enhancements encompass a broad range of safety education, environmental and historically related activities.
Texas Farm and Ranch Lands Conservation Program (TFRLCP)	State	TPWD	TPWD	Maintains and enhances the ecological and agricultural productivity of these lands through Agricultural Conservation Easements. The TFRLCP supports responsible stewardship and conservation of working lands, water, fish and wildlife, and agricultural production through: ► Generating interest and awareness in easement programs and other options for conserving working lands.

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
TFRLCP (continued)				► Leveraging available monies to fund as many high-quality projects as possible. Highlighting the ecological and economic value of working lands and the opportunities to conserve working lands for the future.
Texas HOME Disaster Relief	Federal	TDHCA	TDHCA	The Texas HOME Disaster Relief Program is a long-term housing program designed to help eligible organizations serve income eligible households impacted by disasters. Funds are available to assist with federal or state declared disasters, or other natural or man-made disasters that may occur. The Department's practice is to maintain a HOME Disaster Relief Fund balance of $1 million whenever possible. These funds can be accessed to support impacted households not located in communities that receive HOME funds directly from the U.S. Department of Housing and Urban Development (HUD).
Texas Longleaf Conservation Assistance Program	Federal	National Fish and Wildlife Foundation (NFWF)	TAMFS	Provides eligible landowners with financial and technical assistance for establishing, enhancing, and managing longleaf pine. Landowners with property within 10 East Texas counties which include 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% 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.
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. Enacted through Senate Bill 7 to address needs identified following the flood disasters of 2015, 2016, and 2017. Senate Bill 500 appropriated $685 million. Each account has different purposes. The oversight entity is the TIRF Advisory Board (SWIFT Advisory Committee and TDEM Director as non-voting member).

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Texas Water Development Fund (DFund)	State	TWDB	TWDB	Provides financing for various types of eligible infrastructure projects such as planning, design, acquisitions, and construction of projects for: water supply, including reservoirs and well fields, conservation, water quality enhancement, flood control, and wastewater. This program enables the TWDB to fund projects with multiple purposes (e.g., water and wastewater) in one 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 title of certain inventory farm properties owned by 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	Provides opportunities for non-traditional transportation-related activities. Projects should go above and beyond standard transportation activities and be integrated into the surrounding environment in a sensitive and creative manner that contributes to the livelihood of the communities, promotes the quality of our environment, and enhances the aesthetics of our roadways. Projects undertaken with enhancement funds are eligible for reimbursement of up to 80 percent of allowable costs.
United States Geological Survey (USGS)	Federal	USGS		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	Urban tree canopy (UTC) is the layer of leaves, branches, and stems of trees that cover the ground when viewed from above. In urban areas, the UTC provides an important stormwater management function by intercepting rainfall that would otherwise runoff of paved surfaces and be transported into local waters through the storm drainage system, picking up various pollutants along the way. UTC also reduces the urban heat island effect, reduces heating/cooling costs, lowers air temperatures, reduces air pollution, increases property values, provides wildlife habitat, and provides aesthetic and community benefits such as improved quality of life.

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
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, this can include green infrastructure.
United States Geological Survey (USGS)	Federal	USGS		USGS issues competitive grants and cooperative agreements to support research in earthquake hazards, the physics of earthquakes, earthquake occurrence, and earthquake safety policy.
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, reducing soil erosion, wildlife habitat preservation, preservation and restoration of forests and wetlands, aiding farmers whose farms are 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 of protecting human health and the environment by providing critical resources for what is often an area's first drinking water and basic sanitation services.
Water Research Grant Program Water Research Grant Program	State	TWDB	TWDB	TWDB funds a variety of water planning and water research studies and projects intended to assist and support regional water planning efforts or to answer regional water planning questions.
Water Conservation Field Services Program	Federal	HUD	Texas A&M AgriLife	Encourage beneficiaries of Federal water projects to conserve water, and to assist agricultural and urban water districts in preparing 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, identifying water management improvements through System Optimization Reviews (SORs), designing water management improvements, and improving the understanding of water

[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.

NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Water Conservation Filed Services Program (continued)				conservation techniques through demonstration activities. WaterSMART also supports Reclamation's priorities to increase water reliability and resilience, support racial and economic equity, modernize infrastructure, and enhance water conservation, ecosystem, and climate resilience.
Water2025 Challenge Grant Program for Western States	Federal	Bureau of Reclamation	TWDB	Up to $25,000 for projects that improve water use efficiency and improve water management practices.
Watershed Processes and Water Resources	Federal	Bureau of Reclamation	TWDB	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	$100,000 available. Sponsors research that addresses two areas: (1) understanding fundamental watershed processes; and (2) developing appropriate technology and management practices for improving the effective use of water (consumptive and non-consumptive) and protecting or improving water quality for agriculture and forestry production.
WaterSMART – Drought Response Program	Federal	USDA	TWDB	$500,000 available. Innovative research in understanding fundamental processes that affect the quality and quantity of water resources at diverse spatial and temporal scales, ways on improving water resource management in agriculture, forested, and rangeland watersheds, and developing appropriate technology to reach those goals.
Wetlands Protection – Development Grants	Federal	EPA		Provides funds to support the development and enhancement of state and tribal wetlands protection programs.
Wetlands Reserve Program	Federal	USDA, NRCS		Financial and technical assistance to protect and restore wetlands through easements and restoration agreements.

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NAME	LEVEL	SOURCE AGENCY	MANAGING STATE AGENCY	PURPOSE OF FUNDING
Wildlife Habitat Incentive Program (WHIP)	Federal	USDA, NRCS	TPWD	Voluntary program for conservation-minded landowners who want to develop and improve wildlife habitat on agricultural land, nonindustrial private forest land, and tribal land.